



## ADMINISTRATIVE POLICY TEMPLATE

|                                              |                                                  |
|----------------------------------------------|--------------------------------------------------|
| <b>Policy Title</b>                          | Minors on Campus and University Programs         |
| <b>Policy Subtitle/Subject</b>               | Minors                                           |
| <b>Responsible Executive(s) (RE)</b>         | Patrick Norton                                   |
| <b>Responsible Office(s) (RO)</b>            | Office of Human Resources & Institutional Equity |
| <b>Primary Point of Contact from RO</b>      | Jonathan Small                                   |
| <b>Contact Information (email and phone)</b> | (504) 865-4748 hr@tulane.edu                     |
| <b>Date Proposed</b>                         | 6/7/18                                           |
| <b>Reviewed</b>                              | 6/7/18                                           |
| <b>Last Updated</b>                          | 6/7/18                                           |
| <b>Effective Date</b>                        | 6/7/18                                           |

Permanent

Temporary

### 1.0 POLICY STATEMENT

This Policy facilitates the protection of children under the age of 18 (Minors) who participate in activities and programs sponsored or organized by Tulane University employees, students, or volunteers. It applies to programs held in Louisiana on Tulane University property, in Tulane University-owned or managed facilities, or under the authority and direction of Tulane University at other locations.

### 2.0 PURPOSE AND SCOPE

The purpose of this policy is to establish guidelines and procedures to protect minors participating in University programs from potential harm and to reduce the risk of liability to the University. This policy covers all programs involving minors including athletic camps, debate camps, classes, mentorship, laboratories, and workshops intended for elementary, middle, and high school students, regardless of duration or frequency, and regardless of whether the program involves housing minors in residence halls.

### 3.0 APPLICABILITY OF THIS POLICY

This policy applies to all Tulane University employees, students, volunteers, and other individuals who work with minors in University-sponsored or University-organized programs. This policy does not apply to:

- Children under 18 who are enrolled full-time or part-time as students at the University
- Children who are "dually enrolled" in university programs while enrolled in elementary, middle, and/or high school
- Events open to the general public where parents/guardians are expected to provide supervision
- Non-University groups sponsoring or organizing programs for minors on University Property

## 4.0 WEBSITE ADDRESS FOR THIS POLICY

*Enterprise Risk Services will add the web address of the policy after it is added to the policy library.*

## 5.0 CONTACTS

*Identifies persons or departments that should be contacted if there are any questions or concerns regarding the policy.*

| Subject                     | Contact                                          | Telephone      | E-mail/Web Address |
|-----------------------------|--------------------------------------------------|----------------|--------------------|
| General Policy Questions    | Office of Human Resources & Institutional Equity | (504) 865-4748 | hr@tulane.edu      |
| Registration and Compliance | Office of Human Resources & Institutional Equity | (504) 865-4748 | hr@tulane.edu      |

## 6.0 CONTENT

- Policy Statement
- Purpose and Scope
- Applicability
- Definitions
- Program Requirements
- Background Checks

- Transportation of Minors
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## 7.0 DEFINITIONS

- **Minor:** A person under the age of eighteen (18) who is not enrolled at Tulane University in a degree-seeking program, admitted to Tulane, or "dually enrolled"
- **Program Organizer:** The University point person for a Program for Minors who is responsible for compliance with this Policy
- **Sponsoring Unit:** The academic or administrative unit of the University which offers a Program for Minors
- **Program for Minors:** Any program or activity serving minors without supervision by their parents or guardians
- **Program Staff:** All employees, volunteers, students, and/or independent contractors working with minors in the program
- **Mandated Reporter:** Under Louisiana law, any person who provides or assists in the teaching, training and supervision of a child, including any public or private school teacher, teacher's aide, instructional aide, school principal, school staff member, school resource officer, bus driver, coach, professor, technical or vocational instructor, technical or vocational school staff member, college or university administrator, college or university staff member, social worker, probation officer, foster home parent, group home or other child care institution staff member, personnel of a residential home facilities, a licensed or unlicensed daycare provider, or any individual who provides such services to a child in a voluntary or professional capacity is mandated to report observed or suspected child abuse and/or neglect.

## 8.0 POLICY AND PROCEDURES

### *REQUIREMENTS OF THIS POLICY*

**A. Mandate to Adhere to Policy.** All members of the university community must adhere to this Policy. Failure to comply with the requirements set forth in this Policy may lead to disciplinary action, cancellation of a Program for Minors, or a ban from organizing future Programs for Minors.

**B. Contacts**

Direct any questions about this Policy to the Office of Human Resources & Institutional Equity (HRIE). HRIE serves as the University's liaison to monitor the required registration and compliance with this Policy and may be

reached at (504) 865-4748. For more information about this Policy or registering a Program for Minors you may also call (504) 314-7619 or email [summer@tulane.edu](mailto:summer@tulane.edu).

#### **C. Program Requirements – All Program Organizers must adhere to the following:**

##### **1. Program Registration**

Sponsoring Units shall, prior to the beginning of the university's fiscal year for ongoing Programs for Minors and at least sixty days prior to the first scheduled date of commencement of a new Program for Minors, register the program with the Office of Human Resources & Institutional Equity. The Program for Minors Registration Form is available from the Office of Human Resources & Institutional Equity.

No Program for Minors can take place until it is registered and approved by the Office of Human Resources & Institutional Equity. Additional information may be requested of the Program Organizer. Any requests for clarification as to whether a particular program or activity that involves Minors is subject to this Policy should be sent to Office of Human Resources & Institutional Equity.

Requests for a waiver to all, or any portion of, this Policy should include a detailed explanation as to the reason for the waiver and written approvals of the request by the Program Organizer and the dean or director of the Sponsoring Unit. The request should be forwarded to the Office of Human Resources & Institutional Equity. The Office of Human Resources & Institutional Equity will advise the Program Organizer in writing of its decision.

##### **2. Background Checks**

All Program Organizers and Program Staff for a Program for Minors are required to have a background check on record with the University before the individual will be allowed to participate in the Program for Minors. Background checks will be conducted by the Office of Human Resources, and these checks must be cleared prior to the beginning of the Program for Minors. Subsequent background checks will be required every year for Program Organizers and Program Staff who return to a covered Program for Minors.

Tulane University will conduct criminal history background checks in accordance with the University procedures on criminal background checks, which will include searches in the State of Louisiana, and county-by-county criminal history searches for any location outside of Louisiana in which the Program Staff member indicates they have lived, worked, or attended school within the past seven (7) years. The background check will be limited to criminal offenses for which an individual has been convicted, pled guilty to a felony or misdemeanor, or where such charges are currently pending. In addition to criminal records searches, the university also conducts a national sex offender registry search. For a description of Tulane's policy regarding background investigations and criminal convictions for staff employees, please see the Tulane University Staff Handbook, at section IV B ("Background investigations and Criminal Convictions"), located at <http://tulane.edu/handbooks-and-policies>.

It is the responsibility of the Program Organizer to assure that each Program Staff member has received a background check clearance to participate.

Copies of all correspondence with Program Staff regarding background check reports will be retained by Human Resources.

##### **3. Transportation of Minors**

In the event the Program Staff will transport Minors participating in a Program for Minors, a driving record will also be required in compliance with the University's Authorized Driver Policy. See, [https://orgsync.com/login/tulane-university?redirect\\_to=%2F28726%2Ffiles%2F1152631%2Fshow](https://orgsync.com/login/tulane-university?redirect_to=%2F28726%2Ffiles%2F1152631%2Fshow)

At no time will Program Staff be allowed to transport Minors in a Program for Minors in personally owned vehicles.

##### **4. Required Contractual Obligations for Independent Contractors**

All contracts for the services of independent contractors that will be working with Minors must include a provision assuring that the employees of such independent contractors or the contractor (in the case of a solo contractor) will comply with this policy and provide evidence upon request of the university that background checks and training comparable to those required by the university under this Policy have taken place. In addition, all independent contracts must reference and attach copies of this Policy and the Child Protection and Reporting of Child Abuse Policy <https://tulane.edu/sites/tulane/files/Child-Abuse-Neglect-Reporting.pdf> to such contracts.

## 5. Communication and Notifications

The Program Organizer shall establish an appropriate procedure for the notification of the Minor's parent/legal guardian in case of an emergency, including medical or behavioral problem, natural disasters, or other significant Program for Minors disruptions. Program Staff, as well as Minor participants and their parents/legal guardians, must be advised of this procedure in writing prior to the participation of the Minor in a Program for Minors. The Program Organizer also shall provide information to the parent(s) or legal guardian(s) detailing the manner in which the Minor participant can be contacted during the Program for Minors.

The Program Organizer shall maintain a Program for Minors Roster that includes a list of all Minor participants and a directory of Program Staff. The Program for Minors Roster shall include Minor's name, local room assignment (if applicable), gender, age, address, phone number(s) of parent or legal guardian, and emergency contact information. No later than 45 days prior to commencement of the Program for Minor, the Program Organizer must deliver the Program for Minors Roster to the Office of Human Resources & Institutional Equity and to the Tulane University Police Department (TUPD).

Such Roster shall be kept on file during the active dates of the Program.

## 6. Required Training

Each Program Staff member, who will be participating in a Program for Minors covered by this Policy shall attend annual mandatory training on the requirements of this Policy.

All Program Staff must receive training prior to the start of the Program for Minors. The training must include, at a minimum, protecting Minor participants from abusive emotional and physical treatment, and on required reporting of incidents of improper conduct to the proper authorities including, but not limited to, appropriate law enforcement authorities; information about responsibilities and expectations of the Program Staff; applicable university policies, procedures, and enforcement including the Behavioral Expectations below; crisis/ emergency responses and how to request emergency services; safety and security precautions; addressing medical emergencies; confidentiality issues involving Minors; and University responsibility/liability; and how to report suspected child abuse in accordance with the Child Protection and Reporting of Child Abuse Policy Child Abuse Policy: <https://tulane.edu/sites/tulane/files/Child-Abuse-Neglect-Reporting.pdf>. The training for Program Staff participating in a Program for Minors covered by this policy may be found at <http://www.dcf.la.gov/MandatedReporterTraining>.

Program Organizers must retain written evidence of completion of required training by each Program Staff.

The Program Organizer and/or Sponsoring Units should contact the Office of Human Resources & Institutional Equity or Risk Management for assistance with any aspect of this training requirement.

The Program Organizer may enhance and/or modify the required training Program for Minors to meet specific needs of the particular Program for Minors involved, in consultation with the Office of Human Resources & Institutional Equity, but any such enhanced or modified training for a Program for Minors must include all the elements of training described in this section.

## 7. Behavioral Expectations

- If a Minor discloses any type of assault, abuse or neglect (at any time previous to, during, or after the Program for Minors), or Program Staff has reason to believe that the Minor has been subject to such assault, abuse, or neglect, Program Staff, as a mandatory reporter, must immediately call 911 or the local law enforcement agency **and** notify the Louisiana Department of Children and Family Services (“DCFS”) at 855-4LA-KIDS (855-452-5437) or through the DCFS mandated reporter portal accessible here [dcfs.la.gov](https://dcfs.la.gov) 24 hours a day.

For instances of child sexual assault or abuse Program Staff must immediately call 911. Further instructions for addressing child sexual abuse or assault can be found in the **Child Protection and Reporting of Child Abuse Policy**: <https://tulane.edu/sites/tulane/files/Child-Abuse-Neglect-Reporting.pdf>.

Tulane University, in its sole discretion, reserves the right to deny a Minor’s acceptance into any Program for Minors or to dismiss a Participant from a Program due to unacceptable behavior or other reasonable basis. If an allegation of a violation of any of the Behavioral Expectations is made against a Program Organizer or Program Staff, s/he shall discontinue any further participation in Program for Minors until such allegation has been satisfactorily resolved.

Program Staff should behave professionally and maintain the highest standards of personal behavior at all times. Program Staff participating in Programs for Minors shall NOT:

- a. Have one-on-one contact with Minors. There must be two or more Program Staff members present during a Program for Minors. Program Staff shall not have any direct electronic contact, including social media, with Minors without another Program Staff member being included in the communication. Program Staff should be aware of situations in which actions can be misconstrued or manipulated by others (for example, being alone with the last Minor to leave a class); conduct all dealings with Minors in a public environment as much as possible, in order that all behavior can be readily observed.
- b. Enter a Minor’s room, bathroom facility, changing area, shower area, or similar area without another Program Staff member in attendance, consistent with this Policy of not having one-on-one contact with Minors. Never spend time alone with a Minor away from others. Minors should use a “buddy system” or otherwise be encouraged to stay together when going to the bathroom, on field trips, or when leaving the classroom area.

Share sleeping quarters with Minors. Separate accommodations for Program Staff and Minors are required. Minors should be placed in accommodations that allow for a locked door between themselves and Program Staff. Program Staff should not enter the sleeping quarters of a Minor without another member of the Program Staff present.

- c. Engage in abusive conduct of any kind toward, or in the presence of, a Minor.
- d. Strike, hit, administer corporal punishment to, or touch in an inappropriate or illegal manner any Minor.
- e. Engage in rough or sexually provocative games, including horseplay.
- f. Allow any inappropriate touching, including between children.
- g. Use profanity, use or respond to sexual innuendo, or make sexually suggestive comments.
- h. Use nor provide alcohol or drugs to any Minor. Program Staff shall not use nor provide prescription drugs or any medication to any Minor unless specifically authorized in writing by the parent or legal guardian as being required for the Minor’s care or the Minor’s emergency treatment. Minor participants’ medicines may be distributed by Program Staff, following the conditions outlined in this

document.

- i. Make sexual material in any form, including printed and electronic, available to Minors participating in Programs for Minors or assist them in any way in gaining access to such materials.
- j. Share a bed or sleeping bag with a Minor.
- k. Shower, bathe, or undress with or in the presence of Minors.
- l. Favor one child more than another; do not give gifts to any one child in a Program for Minors; do not accept expensive gifts from any child in the Program for Minors.
- m. Tell a Minor “this is just between the two of us” or use similar language that encourages a Minor to keep secrets from their parent/guardians.
- n. Take photographs of Minors participating in the Program for Minors unless the parent or legal guardian has signed a consent permitting photography for program related purposes. Program Staff should not use photographs for their own use or for posting on their own social media site.

## 8. Required Supervision of Minors and Access to University Facilities

Minors must be supervised at all times by Program Staff including during meals and in the evenings if the Minors stay in University residence halls. Other than in cases outlined below, Programs for Minors shall be supervised by two Program Staff members. Some of the factors to be considered in determining requirements for supervision are the number and age of Minor participants, the activities involved, type of housing if applicable, and age and experience of the Program Staff members.

It is acceptable for an individual Program Staff member to supervise activities for a group of Minor participants in a Program for Minors (e.g., classroom instruction or outdoor activities) if the activities are conducted in an open or public area where the group is visible to others outside the group at all times. This includes classroom or meeting activities where open doors or windows allow for a clear line of sight.

In accordance with the American Camp Association, the ratio of Program Staff to Minor participants in a Program for Minors must reflect the gender distribution of the Minor participants, and should, at a minimum, meet the following:

Standards for resident Programs for Minors are:

- One Program Staff member for every five Minors ages 4 and 5
- One Program Staff member for every six Minors ages 6 to 8
- One Program Staff member for every eight Minors ages 9 to 14
- One Program Staff member for every ten Minors ages 15 to 17

Standards for day Programs for Minors are:

- One Program Staff member for every six Minors ages 4 and 5
- One Program Staff member for every eight Minors ages 6 to 8
- One Program Staff member for every ten Minors ages 9 to 14
- One Program Staff member for every twelve Minors ages 15 to 17

For residential Programs for Minors, a Program Staff member must reside in the housing unit and be accessible to the Minors. Additional Program Staff members should be assigned to ensure one-on-one contact with Minors does not occur and that the required levels of supervision described in this Policy are implemented.

Responsibilities of Program Staff must include, at a minimum, supervision of Minors, informing Minor participants about safety and security procedures, university rules, rules established by the Program for Minors, and behavioral expectations. Program Staff are responsible for following and enforcing all rules and must be able to provide information included herein to Minor participants in Programs for Minors and be able to respond to emergencies.

In addition to the requirement that two Program Staff be present at all times when Minors are being supervised, an additional Program Staff should be available as a "floater" to stand in if one of the two Program Staff member in a classroom or other situation must leave the area. The two Program Staff should not be family members.

All Minor participants in a Program for Minors covered by this Policy are permitted in the general use facilities with supervision (e.g. athletic fields, public spaces, academic buildings), but may, as needed, be restricted from certain areas of the facilities (e.g. storage rooms, equipment rooms, athletic training rooms, staff/ faculty offices) or from utilizing certain equipment.

## 9. University Housing

The Program Organizer is required to adopt and implement rules and regulations for supervision of Minors in university housing. The following must be included:

a. In accordance with the American Camp Association, the ratio of Program Staff to Minor participants must reflect the gender distribution of the Minor participants, and should, at a minimum, meet the following:

Standards for resident Programs for Minors are:

- One Program Staff member for every five Minors ages 4 and 5
- One Program Staff member for every six Minors ages 6 to 8
- One Program Staff member for every eight Minors ages 9 to 14
- One Program Staff member for every ten Minors ages 15 to 17

Standards for day Programs for Minors are:

- One Program Staff member for every six Minors ages 4 and 5
- One Program Staff member for every eight Minors ages 6 to 8
- One Program Staff member for every ten Minors ages 9 to 14
- One Program Staff member for every twelve Minors ages 15 to 17

b. A curfew time which is age-appropriate for the Minor participants, which in no case shall be later than 11 pm.

c. Guests of Minors (other than a parent/legal guardian and other Minor participants) are restricted to visitation in the building lobby and/or floor lounges, and only during approved hours specified by the Program for Minors.

d. The Program for Minors must comply with all security measures and procedures specified by University Housing. See, HRL Community Standards: <https://housing.tulane.edu/residence-life/community-living-standards>.

## 10. Required Forms for Each Minor participant in a Program for Minors

The Program Organizer shall obtain for each Minor participant in a Program for Minors:

- a. Participant Application Form
- b. Emergency Contact List for Minors on Campus and in University Programs
- c. Tulane University Pre-College Summer Programs Assumption of Risks, Consent, Release, Indemnity, and Waiver of Liability Form
- d. Medical Information and Release Form
- e. Parent/Guardian Authorization, Waiver and Consent for Self-Administration of Prescription Medication Form
- f. Parent/Guardian Authorization, Waiver and Consent for Over-the-Counter Medication Form
- g. Media, Photo & Video Release Form
- h. Program for Minors Registration Form
- i. Tulane Pre-College Summer Programs Participant Code of Conduct Acknowledgment Form- Credit Courses
- j. Tulane Pre-College Summer Programs Participant Code of Conduct Acknowledgment Form- Noncredit Courses
- k. Housing Terms and Conditions Form

All forms listed above can be found in Appendix A: Forms.

## 11. Medical Treatment, Administration of Medicines, & Emergency Services

Distribution of Minor participants' medicines by Program Staff should be handled under the following conditions:

- a. Program Staff shall be responsible for reviewing all forms and assessing needs of each Minor participant.
- b. The Minor participant's family provides the medicine in its original pharmacy container labeled with the Minor participant's name, medicine name, dosage, and timing of consumption. Over-the-counter medications must be provided in their manufacturers' container.
- c. Program Staff shall keep the medicine in a secure location, and at the appropriate time for distribution shall meet with the Minor participant.
- d. Program Staff shall allow the Minor participant to self-administer the appropriate dose as shown on the container.
- e. Parent(s) and/or guardian(s) are expected to make arrangements for the administration of any medicine that the Minor participant cannot self-administer.
- f. Devices for the self-administration of medications which are prescribed by a physician may be carried by the Minor participant during the Program for Minors activities (Examples include personal "epi" pens and asthma inhalers).
- g. Over-the-counter medications can only be administered with prior approval. Program Staff should make reasonable efforts to have basic first-aid kits available if needed. Minor participants can self-administer over-the-counter medication that they bring themselves.

Program Organizers shall consult with Office of Human Resources & Institutional Equity to determine whether on-site medical service coverage is required based on the nature of Program activities.

If there is an emergency issue at any time, Program Staff should contact Tulane University Police Department at (504) 865-5911 and instruct the EMT to transport the students to nearest Emergency Department.

#### DOCUMENT RETENTION

A comprehensive file for each program with copies of the registration approval, compliance with background checks, training materials and sign in sheets, Roster for a Program for Minors with the required information regarding the Minor participants, Program Staff and Program Organizer, all forms associated with the Program, promotional and other program documents must be retained by the Sponsoring Unit for six years.

## 9.0 CONSEQUENCE OF VIOLATING THE POLICY

Violation of this policy may result in disciplinary action, up to and including termination and/or criminal prosecution.

## APPENDIX I- Forms

1. Participant Application Form
2. Emergency Contact List for Minors on Campus and in University Programs
3. Tulane University Pre-College Summer Programs Assumption of Risks, Consent, Release, Indemnity and Waiver of Liability Form
4. Medical Information and Release Form
5. Parent/Guardian Authorization, Waiver and Consent for Self-Administration of Prescription Medication Form
6. Parent/Guardian Authorization, Waiver and Consent for Over-the-Counter Medication Form
7. Media, Photo & Video Release Form
8. Program for Minors Registration Form
9. Tulane Pre-College Summer Programs Participant Code of Conduct Acknowledgment Form- Credit Courses
10. Tulane Pre-College Summer Programs Participant Code of Conduct Acknowledgment Form- Noncredit Courses
11. Housing Terms and Conditions Form

## APPENDIX II- TULANE UNIVERSITY GUIDELINES GOVERNING MINORS, STUDENT LEARNERS AND NON-EMPLOYEE VISITORS/OBSERVERS IN LABORATORIES

## **Appendix A- FORMS**

## Participant Application Form

Participant Name \_\_\_\_\_ (hereafter "Participant")

Program/Date \_\_\_\_\_

Date of Birth \_\_\_\_\_ Grade in Fall 2018 \_\_\_\_\_ T-Shirt Size \_\_\_\_\_ Gender:  M  F

Parent/Legal Guardian Name \_\_\_\_\_

Street Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Home Phone \_\_\_\_\_ Work Phone \_\_\_\_\_

Cell Phone \_\_\_\_\_ Email \_\_\_\_\_

Emergency Contact #1 Name \_\_\_\_\_ Home Phone # \_\_\_\_\_ Work Phone # \_\_\_\_\_ Cell Phone # \_\_\_\_\_ Relation \_\_\_\_\_

Emergency Contact #2 Name \_\_\_\_\_ Home Phone # \_\_\_\_\_ Work Phone # \_\_\_\_\_ Cell Phone # \_\_\_\_\_ Relation \_\_\_\_\_

### TRANSPORTATION

I will arrive at Tulane on (date/time) \_\_\_\_\_

Method of Transportation \_\_\_\_\_

I will be traveling from (city) \_\_\_\_\_

Accompanied by \_\_\_\_\_

Relation \_\_\_\_\_

I will depart Tulane on (date/time) \_\_\_\_\_

Method of Transportation \_\_\_\_\_

I will be traveling to (city) \_\_\_\_\_ Accompanied by \_\_\_\_\_

Please indicate whether you plan to keep a vehicle on campus (circle one): YES

NO

(Note: If 'Yes,' keys must be left with the Director and a Parking Pass will be required.)

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Participant Name \_\_\_\_\_ Parent/Guardian Name \_\_\_\_\_

Participant Signature \_\_\_\_\_ Parent/Guardian Signature \_\_\_\_\_

Date \_\_\_\_\_ Date \_\_\_\_\_

**A PARENT OR GUARDIAN MUST SIGN THIS FORM FOR A MINOR UNDER THE AGE OF 18**

## Emergency Contact List for Minors on Campus and in University Programs

To promote security of summer program operations, Program Organizer should provide an Emergency Locator List for their pre-college summer programs to the Office of Human Resources & Institutional Equity no later than one week prior to program start date.

The emergency locator list should include the following information:

- Name of the Program
- Contact persons and phone numbers
- Locator list indicating where Participants are staying overnight
- Daily schedule

Forward a copy of the complete emergency contact list, including schedule, to the Tulane Office of Human Resources & Institutional Equity at [hr@tulane.edu](mailto:hr@tulane.edu). HRIE will forward to the following departments:

- Tulane Office of Insurance and Risk Management
- Tulane University Police Department
- Tulane University Housing and Residence Life
- Sponsoring Department/Unit

## TULANE PRE-COLLEGE SUMMER PROGRAMS

### PARTICIPATION AGREEMENT, ASSUMPTION OF RISKS, CONSENT, RELEASE, INDEMNITY, AND WAIVER OF LIABILITY FORM

(PLEASE READ COMPLETELY AND CAREFULLY BEFORE SIGNING)

1. I grant permission for my minor child **[Please print name]** \_\_\_\_\_ (hereinafter "Participant") to participate in Tulane University ("Tulane") Pre-College Summer Programs **[Print name of Program]** (hereinafter referred to as the "Program").
2. I understand that the activities of the Program may include certain physical activities, as well as transportation to/from certain designated locations, and I give approval for the Participant to participate in any and all activities sponsored or provided by the Program, including transportation to/from designated locations. I understand that New Orleans is situated in an urban metropolitan environment, which comes with inherent risks. I recognize and acknowledge that Participants may have limited unescorted and unchaperoned time (e.g. transitions between classes and meals). I further agree to assume any and all risks, known and unknown, associated with the Program's activities and any unstructured time.
3. I understand that in order to participate in the Program, the Participant must abide by the established rules, including but not limited to the Program for Minors Rules and Disciplinary Procedures and rules established by the Program staff. Tulane reserves the right to refuse acceptance as a Participant into any Program or to dismiss the Participant from a Program due to the Participant's behavior in the Program, including but not limited to inappropriate verbal and physical behavior against staff or other participants, failure to follow safety or program instructions, and failure to follow the rules set forth in the Code of Conduct. I further agree that I will be responsible for any cost associated with dismissal of the Program (i.e. return airfare, fines, damages) and no refund will be provided.
4. If any illness, injury, or accident occurs which, in the sole judgment of the staff of the Program, requires immediate medical attention as determined by an adult staff member of the Program, I give consent for any member of the Program staff to obtain such emergency treatment and to act on my behalf in any medical emergency. I further consent to the signing of any releases by the Program staff, which may be required by any medical care provider. I understand that in the event of an emergency medical situation I will be notified as soon as reasonably possible. I also agree to provide the Program staff with emergency contact numbers.
5. I further understand that the cost of any medical care deemed necessary for the treatment of any emergency illness, injury, or accident occurring while Participant is attending the Program is my responsibility, including but not limited to surgical treatment and hospitalization, and that the Program, the Administrators of the Tulane Educational Fund dba Tulane University, and its officers, trustees, agents, representatives, volunteers, students and/or employees ("Tulane") are not obligated to pay for such medical care.
6. I understand that I am fully and solely responsible for the transportation to/from the Tulane University campus for Program including any daily drop-off and pick-up of Participant.
7. I understand that in exchange for and in consideration of Tulane permitting the Participant to participate in the Program, I hereby agree to waive, release, forever discharge, and to defend, indemnify, and hold the Administrators of the Tulane Educational Fund dba Tulane University, and its officers, trustees, agents, representatives, volunteers, students and/or employees ("Tulane Indemnified Party or Parties") harmless from any and all claims, demands, losses, rights, and causes of action of whatever kind or nature (including attorneys' fees) that arise from, by reason of, or in connection with the Participant's participation in the Program, including but not limited to any injury, accident, illness to, or property damage of the Participant, regardless of whether caused, in whole or in part, by negligence or other legal fault attributable to any Tulane Indemnified Party.
8. I hereby certify that I am voluntarily signing this Participation Agreement, Assumption of Risk, Consent, Release, Indemnity, and Waiver of Liability Form and intend to be legally bound by the terms of this document. I have carefully read all of its provisions and fully understand its significance.

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*Signature of Parent/Legal Guardian*

*Printed Name of Parent/Legal Guardian*

*Date*

*Emergency Contact #*

***Please note: Your child will not be permitted into the Program without this signed form on file.***

## Medical Information and Release Form

### PART 1. GENERAL INFORMATION

Parent/Legal Guardian Name (if applicable) \_\_\_\_\_

Street Address \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Home Phone \_\_\_\_\_ Work Phone \_\_\_\_\_

Date of Birth \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ Sex M \_\_\_\_\_ F \_\_\_\_\_

|                           |             |              |              |          |
|---------------------------|-------------|--------------|--------------|----------|
| Emergency Contact #1 Name | Home Phone# | Work Phone # | Cell Phone # | Relation |
|---------------------------|-------------|--------------|--------------|----------|

|                           |             |              |              |          |
|---------------------------|-------------|--------------|--------------|----------|
| Emergency Contact #2 Name | Home Phone# | Work Phone # | Cell Phone # | Relation |
|---------------------------|-------------|--------------|--------------|----------|

Does the participant require any accommodations? Yes No If so,

please specify needs below:

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**The undersigned understand that** the information requested on this form is intended to help inform program staff of any pre-existing medical conditions and any restrictions the Participant may have with respect to the Program. ***This information will be kept in strict confidence and will only be shared with your permission, except in emergency situations.*** Tulane University requests the information below for use in an emergency. If Participant has a medical condition not covered below, but which you think is important, please include that information.

**I understand that Tulane University does not offer any form of insurance for participants attending this Program and is not responsible for medical expenses. I further understand that I am responsible for paying any charges for such medical treatment provided to the student that are not covered by health insurance.**

### PART 2. MEDICAL INFORMATION

#### COPY OF INSURANCE (FRONT AND BACK) REQUIRED

ALL STUDENTS ARE REQUIRED TO HAVE HEALTH INSURANCE

A scan or photograph of the front and back of the student's insurance card must be emailed to: [precollege@tulane.edu](mailto:precollege@tulane.edu) and a copy front and back included with this form.

It is recommended that Participant consult with your physician prior to participating in this Program. If you are uncertain about any pre-existing medical conditions, ***it is your responsibility to consult with your own physician*** prior to participating in this Program. Please answer all the questions. If you answer yes to any of the following questions, please explain as indicated. Please attach additional documents if needed.

Physician's Name \_\_\_\_\_ Phone Number \_\_\_\_\_

#### FOR OFFICE USE ONLY

Program Name: \_\_\_\_\_

Date(s): \_\_\_\_\_

Date of most recent immunizations:

|                          |  |                                   |  |
|--------------------------|--|-----------------------------------|--|
| Measles (Rubeola)        |  | Meningococcal                     |  |
| Mumps                    |  | Tuberculosis screening or testing |  |
| Rubella (German Measles) |  | Tetanus/Diphtheria/Pertussis      |  |

Please indicate policy number, name, and address of insurance company.

Company Name / Address \_\_\_\_\_ Policy # \_\_\_\_\_

**For the following, circle appropriate response and explain as appropriate:**

Does Participant have any medical conditions or restriction that you or your doctor feel would impact participation in the Program?

YES NO

If yes, identify and explain:

Is Participant currently taking medication that may interfere with ability to safely participate in Program? YES NO

If yes, please indicate the medication and the condition being treated:

Does Participant have a history of any allergies or reactions including but limited to any foods, medications, insect stings, or plants?

YES NO

If yes, please explain:

Does Participant have a history of, or currently suffer from, any medical condition(s) which we need to be aware? YES NO

If yes, please explain:

**PART 3: AUTHORIZATION FOR MEDICAL CARE**

Unless prior arrangements have been made, medical needs will be handled through Tulane University-approved Hospital and Clinics. In cases where medical attention is necessary, parents/guardian will be contacted for approval when possible. However, before medical treatment can be provided, we are required to have a medical release signed by the parent/guardian.

Participant has my permission to receive medical attention in the event of illness or medical emergency while participating in this Program. I will assume the financial responsibility for any cost of health care for my child that may occur during this Program.

The undersigned understand and acknowledge that failure to disclose relevant information may result in harm to Participant and/or others during this Program. I represent and warrant that I have provided all information requested in the form to Tulane University pertaining to my Participant's health condition and that it is accurate and complete. I agree to notify Tulane University of any changes in Participant's health condition prior to Participant's scheduled Program.

The above medical information will not be used by Tulane University personnel or employees to determine Participant's ability to participate safely in activities. I understand that, if Participant chooses to participate in activities, he/she does so voluntarily and the final decision regarding participation is solely the responsibility of myself and/or Participant.

Participant Name \_\_\_\_\_

Parent/Guardian Name \_\_\_\_\_

Participant Signature (if age 18 or older) \_\_\_\_\_

Parent/Guardian Signature \_\_\_\_\_

Date \_\_\_\_\_

Date \_\_\_\_\_

**A PARENT OR GUARDIAN MUST SIGN THIS FORM FOR A MINOR UNDER THE AGE OF 18**

**FOR OFFICE USE ONLY**

Program Name: \_\_\_\_\_

Date(s): \_\_\_\_\_

## Parent/Guardian Authorization, Waiver and Consent for Self-Administration of Prescription Medication Form

Program: \_\_\_\_\_ Date: \_\_\_\_\_

Participant Name: \_\_\_\_\_ (hereafter "Participant")

Parent/Legal Guardian Name (if applicable): \_\_\_\_\_  
This form must be completed fully for Participant to self-administer required medication. A new medication administration form must be completed for each Program attended by the Participant, for each medication, and each time there is a change in dosage or time of administration of a medication.

No, my child does not need to take any prescription medication while at the Program.

Yes, my child will need to take prescription medication while at the Program.

### **PRESCRIBER AUTHORIZATION FOR SELF-ADMINISTRATION OF PRESCRIPTION MEDICATION**

Medication Name: \_\_\_\_\_ Dose: \_\_\_\_\_

Condition for which medication is being administered: \_\_\_\_\_

Specific Directions (e.g., on empty stomach/with water, etc.): \_\_\_\_\_

Time/frequency of administration: \_\_\_\_\_

If PRN, frequency: \_\_\_\_\_

If PRN, for what symptoms: \_\_\_\_\_

Relevant side effects: \_\_\_\_\_

Medication shall be administered from (date) \_\_\_\_\_ to \_\_\_\_\_

Special Storage Requirements: \_\_\_\_\_

Is the participant capable of self-managed care?  YES

All prescription medications, including medications for conditions such as food, drug, or insect allergies; diabetes; asthma; or epilepsy may be brought to the Program under the condition that the Participant can self-manage care and delivery of medication at the Program. Prescription medication must be a current prescription in its original container labeled by the pharmacist or prescriber. Label must include the Participant's name, name of medication, dose and administration instructions, and name, address, and phone number for pharmacist or prescriber. Containers must hold only the amount required for the time the Participant will be attending the Program.

I authorize and recommend self-medication by my child for the above medication. I also affirm that he/she has been instructed in the proper self-administration of the prescribed medication by his/her licensed health care provider.

I agree for myself and my child to indemnify and hold harmless Program Staff, The Administrators of the Tulane Educational Fund dba Tulane University, its employees, officers, directors, governing board, volunteers, students, contractors, and agents against any claims that may arise relating to my child's self-administration of prescribed medication(s).

***I have legal authority to consent to medical treatment for the Participant named above, including the administration of medication at the above referenced Program.***

Participant Name \_\_\_\_\_

Parent/Guardian Name \_\_\_\_\_

Participant Signature (if age 18 or older) \_\_\_\_\_

Parent/Guardian Signature \_\_\_\_\_

Date \_\_\_\_\_

Date \_\_\_\_\_

### **FOR OFFICE USE ONLY**

Program Name: \_\_\_\_\_

Date(s): \_\_\_\_\_

# Parent/Guardian Authorization, Waiver and Consent for Over-the-Counter Medication Form

## PARTICIPANT INFORMATION

Participant Name: \_\_\_\_\_ (hereafter "Participant")

Parent/Legal Guardian Name (if applicable): \_\_\_\_\_

Over-the-Counter (OTC) Medication may at times need to be administered, if authorized by the Participant's parent or legal guardian. Please complete the following section if your child needs any of these OTC medications during his/her participation in the Program. **Note: Unless parental/legal guardian authorization is obtained, Tulane University Program Staff will not administer ANY medications.**

I hereby authorize that the following medications may be given to Participant if the need arises. Dispense only those checked.

Ointments for minor wound care and first aid, as directed. (Antiseptic, anti-itch, anti-sting, antibiotic, sunburn)

Tylenol/Acetaminophen, as directed.

Ibuprofen, as directed.

Throat lozenges and or spray as directed for sore throat.

Micatin or anti-fungus treatment as directed for athlete's foot.

Kapectate or Imodium for diarrhea, as directed.

Milk of Magnesia, Pepto Bismol, or Mylanta for upset stomach or nausea, as directed.

Rolaids or Tums for acid reflux, heartburn, or indigestion, as directed.

Benadryl for swelling, hives, or allergic reaction, as directed.

Claritin/Zyrtec/Allegra, as directed.

Visine or other eye drops for minor eye irritation.

Medicated lip ointment for dry, chapped lips, lip blisters, or canker sores, as directed.

Swimmer's ear drops, as directed.

Hydrocortisone ointment as directed for mild skin irritations, poison ivy, and insect bites.

Medicated powder for skin irritation, as directed.

Robitussin or other cough syrup, as directed.

Calamine lotion for bug bites and poison ivy.

Sunscreen

Bug repellent

Other (list any other approved over-the-counter drugs) \_\_\_\_\_

Program staff reserves the right to use generic equivalents when available for the name brand over-the-counter medications listed above.

I understand that such administration will not be done under the supervision of medical personnel. I also agree that any first aid treatment may be given as needed.

Any non-emergency condition that does not respond to the above outlined treatment will be followed-up by a consultation with the Minor's parents. Parent/guardian will be contacted if any conditions develop requiring treatment with any of the above over-the- counter medications that are not authorized by the parent.

I understand that these over-the-counter medications are not necessarily kept on hand and available to be administered immediately. I agree for myself and my child to indemnify and hold harmless Program Staff, The Administrators of the Tulane Educational Fund dba Tulane University, its employees, officers, directors, governing board, volunteers, students, contractors, and agents against any claims that may arise relating to administration of the above indicated over-the-counter medications to my child. I/We have legal authority to consent to medical treatment for the participant named above, including the administration of medication at the above referenced program.

Participant Name \_\_\_\_\_

Parent/Guardian Name \_\_\_\_\_

Participant Signature (if age 18 or older) \_\_\_\_\_

Parent/Guardian Signature \_\_\_\_\_

Date \_\_\_\_\_

Date \_\_\_\_\_

## FOR OFFICE USE ONLY

Program Name: \_\_\_\_\_

Date(s): \_\_\_\_\_

**TULANE PRE-COLLEGE SUMMER PROGRAMS**  
**MEDIA, PHOTO & VIDEO RELEASE FORM**  
**(PLEASE READ COMPLETELY AND CAREFULLY BEFORE SIGNING)**

Participant Name: \_\_\_\_\_.

I voluntarily give The Administrators of the Tulane Educational Fund dba Tulane University, its trustees, officers, employees, students, volunteers and representatives ("Tulane") permission to film, audio record, and/or photograph me while participating in the Tulane Pre- College Summer Program entitled \_\_\_\_\_ on the following date(s): \_\_\_\_\_, and I understand, acknowledge, and confirm the following:

1. I give Tulane the right and permission to copyright, edit, use, reuse, re-record, duplicate, sell, exhibit, distribute, and broadcast video recordings, audio recordings, and photographs of me ("Works") in whole or in part, for any purpose whatsoever, and through any type of media throughout the world. As a result, I relinquish all rights to the Works. I understand that Tulane is the sole owner of the Works in perpetuity and throughout the world.
2. I waive any right to inspect or approve the finished Works or resulting videotape, soundtrack, advertising copy, or printed matter that may be used in conjunction with the Works or to the eventual use that it might be applied.
3. I release, discharge, and agree to hold harmless Tulane, or any person or persons, corporation or corporations, acting under Tulane's permission or authority, or any person, persons, corporation, or corporations, for whom Tulane might be acting, including any firm publishing or distributing the finished Works, in whole or in part, from and against any liability as a result of the Works and any edits, distortion, blurring, or alteration, optical illusion, or use in composite form, either intentionally or otherwise, that may occur or be produced in the taking, processing, or reproduction of the finished Works, its publication, distribution, or broadcast.
4. I expressly release Tulane from and against any and all claims, demands, and causes of action arising out of actual or alleged violation or infringement of trademark, trade name, copyright, and patent, as well as invasion of privacy, defamation, or misrepresentation.
5. The terms hereof shall serve as a release for myself, my heirs, estate, executor, administrator, assignees, and for all members of my family.
6. This release shall be subject to and governed by the laws of the State of Louisiana.

I hereby certify that I am over eighteen years of age and am competent to contract in my own name insofar as the above is concerned. If I am under eighteen years of age my parents have read this document and have given their consent by signing below.

I have read the foregoing release, authorization, and agreement, before affixing my signature below, and warrant that I fully understand the contents thereof.

---

SINGNATURE (if 18 years of age or older)

---

DATE

---

SIGNATURE PARENT/GUARDIAN

---

PHONE

## Program for Minors Registration Form

**This form must be forwarded to the Office of Human Resources & Institutional Equity when registering your Program. Failure to submit this form with registration will result in denial of your Program.**

Please be advised that the Program and all Program Staff must be in compliance with the Tulane University Minors on Campus and in University Programs Policy.

Program Title: \_\_\_\_\_

Program Organizer's Name: \_\_\_\_\_

Email: \_\_\_\_\_ Phone: \_\_\_\_\_

Sponsoring Unit: \_\_\_\_\_

Type of Program (check the box that is most appropriate):

- Academic Program or Camp
- Athletic/Recreational Program or Camp
- Service/Volunteer Program
- Special Event
- Other

Description of Program: \_\_\_\_\_

Location of Program (specific building(s)/off-campus location(s)): \_\_\_\_\_

Date(s) of Program: \_\_\_\_\_

This Program is a:  One-time Event  Recurring Event

Length of Program: \_\_\_\_\_

Approximate # of Minor Participants: \_\_\_\_\_

Approximate Age of Minor Participants:  6-8 years  9-14 years  15-18 years

### PRELIMINARY ROSTER OF PROGRAM STAFF:

List every Program Staff member who will participate in this program (attach typed list or additional pages if necessary):

| First and Last Name | Email Address | Paid Position? |   | Tulane Student? |   |
|---------------------|---------------|----------------|---|-----------------|---|
|                     |               | Y              | N | Y               | N |
|                     |               |                |   |                 |   |
|                     |               |                |   |                 |   |
|                     |               |                |   |                 |   |
|                     |               |                |   |                 |   |
|                     |               |                |   |                 |   |

### APPROVALS:

Program Organizer: \_\_\_\_\_

Sponsoring Unit: \_\_\_\_\_

Dean or Division Head: \_\_\_\_\_

## **Tulane Pre-College Summer Programs Participant Code of Conduct Acknowledgement Form – Credit Courses**

For the safety and well-being of all Participants in the Tulane Pre-College Summer Programs (“Program”), the following Code of Conduct will be in effect during the Program. Program commences upon initial arrival on campus and terminates at final departure from campus (i.e. entire duration of the course). Participants are expected to follow the Code of Conduct while on field trips and during unescorted, unchaperoned activities. **At the sole discretion of Tulane University, participants in violation of this Code of Conduct, which includes the Tulane University Code of Conduct and Tulane University Code of Academic Conduct, risk being dismissed from the Program and sent home at the expense of Participant’s Parent/Guardian.** Absolutely NO refunds will be provided.

### **Code of Conduct**

1. Participants must adhere to the Tulane University Code of Student Conduct. (<https://conduct.tulane.edu/resources/code-student-conduct>).
2. Participants are expected to conduct themselves in accordance with the Code of Conduct and Code of Academic Conduct (<https://college.tulane.edu/code-of-academic-conduct>). **This includes but is not limited to not engaging in violent or unlawful behavior, theft, bullying, discrimination or harassment, lewd or obscene behavior, or the misuse of social media.**

### **Academic Code of Conduct**

3. All Program courses operate in accordance with the Code of Academic Conduct (<https://college.tulane.edu/code-of-academic-conduct>). **Cheating is defined as giving, receiving, or using, or attempting to give, receive, or use unauthorized assistance, information, or study aids in academic work. Plagiarism is defined as the unacknowledged or falsely acknowledged presentation of another person’s ideas, expressions, or original research as one’s own work. Unless explicitly allowed by the instructor, electronic devices are not allowed to be out of backpacks/bags during class.**

### **Classes & Facilities**

4. Participants are expected to attend all instructional classes, labs, and activities (with minimal absence), and to conduct themselves in accordance with the Code of Conduct in all Tulane facilities – academic, residential, dining, and recreational. Participants must follow instructions and cooperate with Program staff.

### **Alcohol & Smoke-Free Policy**

5. All University buildings and grounds are smoke-free. No smoking is permitted in any indoor or outdoor spaces, including classrooms and dormitories. The use of illegal drugs or alcoholic beverages on or off campus is not allowed during the Program.

### **Firearms & Weapons**

6. Firearms and weapons of any type (and toys that resemble them) are strictly prohibited on the University buildings and grounds.

### **Residence Halls**

7. Residential Participants must occupy the rooms to which they are assigned. No “room-swapping” is allowed.
8. Residential Participants must be in the residence hall at curfew time, **9:00 p.m. every weeknight and 10:00 p.m. on weekends, and must check-in with a Program Counselor.** The residence hall front desk will be staffed daily from 9:00 p.m. – 6:00 a.m. Participants **MAY NOT leave the residential hall after the 9:00 p.m. check-in.** Day Participants are not allowed in the residence hall at any time.
9. **Quiet hours in residence halls are in effect after 10:00 p.m.** and Residential Participants must be in their assigned rooms at this time. The Program chaperones will do “quiet hours” checks promptly at 10:00 p.m. to confirm that Residential Participants are in their assigned rooms and randomly between 11:00 p.m. and 6:00 a.m.
10. There is an **Open-Door Policy at all times.** If anyone other than the Residential Participants assigned to a particular dorm room are in that room, the door must be left propped open.
11. **Residential Participants are not allowed to let individuals who are not affiliated with the Program into the residence hall or their room at any time.**

### **Vandalization and Damages**

12. Residential Participants will be charged for the following: property damage, costs associated with mischievous or accidental fire alarm or sprinkler activation, lost keys, non-returned ID cards, and any other costs incurred by the Participant. Cost for any damages incurred in individual rooms will be charged to the occupants of those rooms. An inspection is made when rooms are vacated.

### **Vehicle Usage**

13. Day or Residential Participants who bring a vehicle to the Program are not allowed to transport any other Participants in their vehicle during the Program.

**Participants found to be in violation of any of these regulations may be dismissed from the Program and sent home.**

I have read the above expectations for this Tulane Pre-College Summer Program Participant Code of Conduct Acknowledgment Form and agree to abide by the conditions set forth herein as well as the Tulane University Code of Conduct and Code of Academic Conduct. I understand that if these conditions are not adhered to, dismissal from the Program will likely occur and the Participant will be sent home at the expense of Participant’s Parent/Guardian. Absolutely NO refunds will be provided.

Participant Name

Participant Signature (if age 18 or older)

Date

Parent/Guardian Name

Parent/Guardian Signature

Date

**Tulane Pre-College Summer Programs Participant Code of Conduct Acknowledgement Form – Noncredit Courses**

For the safety and well-being of all Participants in the Tulane Pre-College Summer Programs ("Program"), the following Code of Conduct will be in effect during the Program. Program commences upon initial arrival on campus and terminates at final departure from campus (i.e. entire duration of the course). Participants are expected to follow the Code of Conduct while on field trips and during unescorted, unchaperoned activities. **At the sole discretion of Tulane University, participants in violation of this Code of Conduct, which includes the Tulane University Code of Conduct and Tulane University Code of Academic Conduct, risk being dismissed from the Program and sent home at the expense of Participant's Parent/Guardian.** Absolutely NO refunds will be provided.

## Code of Conduct

1. Participants must adhere to Tulane University's Division of Student Affairs Seven Core Values:

- a. Live in Community
- b. Lead Lives of Integrity
- c. Model Inclusive Excellence
- d. Educate the Whole Person
- e. Be Person-Centered
- f. Encourage Creativity and Innovation
- g. Commit to Healthy Living

This includes but is not limited to not engaging in violent or unlawful behavior, theft, bullying, discrimination or harassment, lewd or obscene behavior, or the misuse of social media.

## Academic Code of Conduct

2. Participants are expected to represent themselves honestly. **Cheating is defined as** giving, receiving, or using, or attempting to give, receive, or use unauthorized assistance, information, or study aids in academic work. **Plagiarism is defined as** the unacknowledged or falsely acknowledged presentation of another person's ideas, expressions, or original research as one's own work. **Unless explicitly allowed by the instructor, electronic devices are not allowed to be out of backpacks/bags during class.**

## Classes & Facilities

3. Participants are expected to attend all instructional classes, labs, and activities (with minimal absence), and to conduct themselves in accordance with the Code of Conduct in all Tulane facilities – academic, residential, dining, and recreational. Participants must follow instructions and cooperate with Program staff.

## Alcohol & Smoke-Free Policy

4. All University buildings and grounds are smoke-free. No smoking is permitted in any indoor or outdoor spaces, including classrooms and dormitories. The use of illegal drugs or alcoholic beverages on or off campus is not allowed during the Program.

## Firearms & Weapons

5. Firearms and weapons of any type (and toys that resemble them) are strictly prohibited on the University buildings and grounds.

## Residence Halls

6. Residential Participants must occupy the rooms to which they are assigned. No “room-swapping” is allowed.
7. Residential Participants must be in the residence hall at curfew time, **9:00 p.m. every weeknight and 10:00 p.m. on weekends, and must check-in with a Program Counselor.** The residence hall front desk will be staffed daily from 9:00 p.m. – 6:00 a.m. Participants **MAY NOT** leave the residential hall after the **9:00 p.m. check-in.** Day Participants are not allowed in the residence hall at any time.
8. **Quiet hours in residence halls are in effect after 10:00 p.m.** and Residential Participants must be in their assigned rooms at this time. The Program chaperones will do “quiet hours” checks promptly at 10:00 p.m. to confirm that Residential Participants are in their assigned rooms and randomly between 11:00 p.m. and 6:00 a.m.
9. There is an **Open-Door Policy at all times.** If anyone other than the Residential Participants assigned to a particular dorm room are in that room, the door must be left propped open.
10. **Residential Participants are not allowed to let individuals who are not affiliated with the Program into the residence hall or their room at any time.**

## Vandalization and Damages

11. Residential Participants will be charged for the following: property damage, costs associated with mischievous or accidental fire alarm or sprinkler activation, lost keys, non-returned ID cards, and any other costs incurred by the Participant. Cost for any damages incurred in individual rooms will be charged to the occupants of those rooms. An inspection is made when rooms are vacated.

## Vehicle Usage

12. Day or Residential Participants who bring a vehicle to the Program are not allowed to transport any other Participants in their vehicle during the Program.

**Participants found to be in violation of any of these regulations may be dismissed from the Program and sent home.**

I have read the above expectations for this Tulane Pre-College Summer Program Participant Code of Conduct Acknowledgment Form and agree to abide by the conditions set forth herein as well as the Tulane University Code of Conduct and Code of Academic Conduct. I understand that if these conditions are not adhered to, dismissal from the Program will likely occur and the Participant will be sent home at the expense of Participant's Parent/Guardian. Absolutely NO refunds will be provided.

---

Participant Name

---

Participant Signature (if age 18 or older)

---

Date

# TULANE PRE-COLLEGE SUMMER PROGRAMS HOUSING TERMS AND CONDITIONS

Participant Name \_\_\_\_\_ Program Name \_\_\_\_\_ Program Dates \_\_\_\_\_

## I. Period of Contract

- A. This Pre-College Summer Programs Housing Terms and Conditions ("Agreement") grants permission for Pre-College Summer Program participants ("Participant") to utilize and occupy a pre-assigned room in a residence hall on Tulane's campus while Participant is registered for and participating in a Tulane Pre-College Summer Program that includes housing.
- B. Residence halls will open as of June 24, 2018 and will close on Sunday, August 5, 2018.
- C. Participants may not occupy or leave personal belongings in any residence hall before or after the hall is officially open and closed.
- D. Assigned rooms must be vacated, checkout procedures completed, and all keys returned to the Tulane Housing and Residence Life front desk by 3pm on the date of Participant's departure.
- E. Failure to checkout properly and/or return all keys will result in additional charges.

## II. Housing Assignments

- A. Participants will be assigned housing on a space available basis.
- B. Tulane University cannot guarantee a particular type of room assignment.
- C. Requests for assignment with a specific roommate will be honored when possible.
- D. Unless otherwise specified, rooms are to be occupied by the persons assigned to that room only.
- E. Tulane University reserves the right to modify room assignments and relocate Participants at its discretion, including but not limited to reasons pertaining to health, safety, catastrophe, closing of the facility, roommate conflicts, and reserves the right to cancel/terminate the room assignment for violation of rules or breach of this Agreement. Tulane University further reserves the right to immediately remove any Participant or any other person for safety, health, or emergency reasons.

## III. Cancellations and Refunds

Partial and full refunds are at the discretion of the program.

## IV. Furnishings, Utilities, and Sanitation

- A. Tulane University agrees to equip residence hall rooms with a bed, chest of drawers or closet organizer, closet space, desk, desk chair, Ethernet connection, and one active telephone line. Exceptions to this policy may be warranted due to the nature of temporary accommodations.
- B. The temporary failure or interruption of water, heat, or other utilities shall give a Participant no claim for damages or refund.
- C. Tulane University reserves the right to levy and collect charges for damages, unauthorized use, or alterations to rooms or equipment.
- D. Participant may not install equipment, make alterations, or do repairs to their room or employ any person to perform work or service in the room.
- E. Tulane University reserves the right to dispose of all items left in rooms after the halls have officially closed.

## V. Liability and Indemnity

The Undersigned hereby agrees to fully release, indemnify and hold harmless The Administrators of the Tulane Educational Fund dba Tulane University, its employees, governing board, students, volunteers and agents harmless from and against any and all claims, demands, suits, losses, liabilities (including reasonable attorneys' fees associated with same) asserted by or on behalf of the Participant and/or Participants parents or guardians for bodily injury, death, or for any loss of or damage to any personal property (including without limitation money or valuables) of the Participant, regardless of whether caused, in whole or in part, by negligence, strict liability or other legal fault attributable to Tulane University its employees, governing board, students, volunteers or agents. Tulane University strongly encourages all Participants to obtain insurance coverage protecting their personal property.

## VI. University Rights

Tulane University may exercise the following rights:

- A. To enter any facility for the purpose of inspection, repair, or emergency.
- B. To reassign Participants within a residence hall, after timely notification, in order to accomplish necessary repairs and renovation to the building.
- C. To revoke privileges, including residency in or utilization of any of its buildings, of any occupant whose conduct, solely in Tulane University's opinion, becomes injurious or potentially injurious to the Tulane University community.

## VII. Remedies

In the event a Participant breaches this Agreement, Tulane University may, without advance notice, immediately cancel and terminate Participant's permissions for use and occupancy. Tulane University is authorized to enter the room for the purpose of removing the Participant, changing the locks, and removing and disposing of all belongings and property of the Participant remaining in the room, which property shall automatically be deemed abandoned by Participant, with Participant releasing Tulane University from any liability for such removal and disposal.

## VIII. No Waiver

Failure of Tulane University to strictly and promptly exercise any right granted herein shall not operate as a waiver of its right to subsequently enforce such rights and no extension or delay by Tulane University shall be construed as a waiver of any such right.

## IX. Governing Laws

This Agreement shall be governed by and construed in accordance with the laws of the State of Louisiana.

## X. University Policies

Participants are required to adhere to all Tulane University policies, regulations, guidelines, and all local, state, and federal laws concerning health, safety, and public order. Failure to comply with these regulations may result in forfeiture of the privilege of using Tulane University facilities and services.

## XI. Room Rental Rates and Fees

Room Rental Rates and Fees are included the program cost.

## XII. Force Majeure

In the event the residence hall or any substantial part shall be destroyed or damaged by fire, local emergency, utility interruption, or other event beyond the control of either party, or for any reason whatsoever is rendered unfit for occupancy this Agreement shall be suspended for the period during which the residence hall shall be rendered unfit for occupancy, or during which possession cannot be delivered to Participant.

## XIII. Mandatory Evacuation

In the event that a mandatory evacuation is ordered by the City of New Orleans due to an approaching hurricane or other impending event, Tulane University shall have no obligation to arrange for or assist with the evacuation of any Participant.

## XIV. Residential Students

Participants will be living in a residence hall with summer program counselors in a 10:1 ratio (student: chaperone). Participants will also have phone numbers for the on-call counselor and the 24-

hour residence line. For all emergencies during the hours of 8:00am to 9:00pm, please call Tulane University Police Department (TUPD) at (504) 865-5911. No participants will be allowed to leave the building between curfew and 7am when curfew is lifted.

Participant Name (if 18 or older) \_\_\_\_\_

Parent/Guardian Name \_\_\_\_\_

Participant Signature (if 18 or older) \_\_\_\_\_

Parent/Guardian Signature \_\_\_\_\_

Date \_\_\_\_\_

Date \_\_\_\_\_

#### **APPENDIX B: TULANE UNIVERSITY GUIDELINES GOVERNING MINORS, STUDENT LEARNERS AND NON-EMPLOYEE VISITORS/OBSERVERS IN LABORATORIES**

# **TULANE UNIVERSITY GUIDELINES GOVERNING MINORS, STUDENT LEARNERS AND NON-EMPLOYEE VISITORS/OBSERVERS IN LABORATORIES**

## **I. Purpose**

The breadth of research at Tulane University (the “University”) creates an array of opportunities for individuals to participate in enriching educational experiences. The concern of the University for laboratory safety extends not only to employees but also to any individuals visiting University laboratories. The purpose of these guidelines is to provide guidance to faculty members, researchers, managers, and supervisors of laboratories and programs regarding visitors and observers (including minors and student learners) in University laboratories.

NOTE: These guidelines are not intended to be applicable for visiting professors, visiting scholars, or visiting researchers. Visiting professors, visiting scholars, or visiting researchers using University laboratories must adhere to University policies and procedures in the same manner as University employees.

## **II. Definitions**

As defined below,

- a. A "Minor" is any person who has not attained 18 years of age and who is not:
  - 1) enrolled in a University regular catalog course or degree program; or
  - 2) enrolled in a University sponsored course of study/training program or career exploration program designed for persons under the age of 18; or
  - 3) performing work for the University in an employee/employer relationship, either as a full-time or part-time employee.
- b. A "Non-Employee" is any person (age 18 or above) who does not perform work for the University in an employee/employer relationship. A Non-Employee does NOT include Volunteers defined in the Code of Federal Regulations as an individual who performs hours of service for civic, charitable, or humanitarian reasons, without promise, expectation, or receipt of compensation for services rendered. University Volunteers who desire to work in University Laboratories are subject to the Volunteer Policy found on page 58 of the Staff Handbook (<http://tulane.edu/wfmo/employee-support/upload/Staff-Handbook-revised-1-5-2012.pdf>).
- c. A "Designated Supervisor" is a University employee who is directly responsible for overseeing the activities and involvement of a Minor, Student Learner, or Non-Employee and who is thoroughly trained and knowledgeable with:
  - 1) The activities a Minor, Student Learner, or Non-Employee can be involved in; and
  - 2) The safety policies/guidelines and training applicable to the University laboratory; and
  - 3) The hazards within the University laboratory environment.
- d. "Hazardous Activities" shall include exposure to equipment, materials and activities that may be detrimental to the health or well-being of a Minor, Student Learner, or Non-Employee, including but not limited to:
  - 1) Operating, tending, setting up, adjusting, cleaning, oiling of power-driven tools, equipment, or machinery;
  - 2) Operating motor vehicles and unloading/loading of goods in same (except personal non-power-driven tools, personal protective equipment, personal items);
  - 3) Construction or wood-working related operations;
  - 4) Working inside freezers, coolers, engine/boiler rooms;
  - 5) Working with hazards as outlined in Section VIII of these guidelines as "**Prohibitions for Minors, Student Learners or Non-Employees in Laboratories**".

e. A "Student-Learner" is any person who:

- 1) Has not attained 18 years of age and who is enrolled in a University regular catalog course or degree program or enrolled in a University sponsored course of study/training program or career exploration program designed for persons under the age of 18.
- 2) Is a visiting student who is currently enrolled in a university or college elsewhere that desires to develop or enhance their science and research education programs at said university or college or is engaged in a mentor/mentee relationship between researchers and students for supporting their educational goals at said university or college.

### **III. Requirements for Minors, Student Learners or Non-Employees in Laboratories for Tours and Observation**

Minors, Student Learners, or Non-Employees may enter a University laboratory under certain conditions as follows.

#### **a. Tour Participants/Short-Term Observers (5 hours or less)**

Minors, Student Learners, or Non-Employees who are participating in a tour of or acting as a short-term observer of a laboratory must be under the supervision of a Designated Supervisor at all times who is trained and knowledgeable regarding the area's hazards. No person shall be permitted to be an observer in a laboratory during any activity with the potential for exposure to Hazardous Activities. Prior to allowing a Minor, Student Learner, or Non-Employee to tour or observe in a laboratory, the Designated Supervisor must conduct a basic safety orientation, including both general safety information and any hazards particular to the laboratory in question. **Tour participants and short-term observers may only participate in laboratory activities involving supervised demonstrations, such as viewing microscope slides, handling plastic models, providing demonstrations of non-hazardous lab equipment, and providing demonstrations of behavioral testing of animals with minimal handling by participants under direct supervision and with assistance, as permitted under the Institutional Animal Care and Use Committee (IACUC) guidelines.**

### **IV. Requirements for Student Learners and Non-Employees in Laboratories as Participants**

Student Learners between the ages of 15 and 18 and Non-Employees may be permitted to participate in limited activities that take place in University laboratories, provided that certain requirements are met and certain prohibitions (see Section VIII) are not violated. The following outlines the circumstances under which a Student Learner between the ages of 15 and 18 and a Non-Employee may be permitted to participate in activities in a University laboratory:

a. Each Student Learner or Non-Employee must have a Principal Investigator/Sponsor. A Principal Investigator/Sponsor is a University faculty member or full-time staff member who meets the following qualifications:

- Is at least 18 years of age;
- Has authority over the laboratory in which the Student Learner's or Non-Employee's activities are to take place;
- Agrees to supervise and be responsible for the Student Learner or Non-Employee while the Student Learner or Non-Employee is present in the laboratory and/or building in which the laboratory is located.

b. An *Application for Minors, Student Learners, and Non-Employee Visitors/Observers to Enter Tulane University Laboratories* (which includes a Potential Hazards Assessment) must be completed and signed by the Principal Investigator/Sponsor and approved by the Office of Environmental Health and Safety (OEHS), prior to the Student Learner or Non-Employee starting activities in the laboratory.

c. As directed by OEHS, the Principal Investigator/Sponsor conducts and documents completion of all safety training to the Student Learner or Non-Employee regarding potential hazards the Student Learner or Non-Employee may encounter within the laboratory in which the activities will take place, prior to the Student Learner or Non-Employee starting activities in the laboratory. Safety training guidelines are provided in Appendix B: *Safety Training for Approved Minors, Student Learners, and Non-Employee Visitors/Observers in Laboratories*. Activities involving animal research requires specific training as described in Section V below.

Documentation of the safety training is obtained by having the participant acknowledge receipt of safety training (via signature) at the bottom of the Consent to Participate and Acknowledgement of Risk and Release form.

d. The Principal Investigator/Sponsor provides the Student Learner or Non-Employee with hazard-specific personal protective equipment, and instructs the Student Learner or Non-Employee in its proper use and disposal.

e. The laboratory in which the Student Learner or Non-Employee is to participate in activities must be in full compliance with all applicable University safety programs and regulations and any additional rules set forth in Section V when activities involve animal research. Inspections of the laboratory must be current prior to any Student Learner or Non-Employee initiating activity in the laboratory.

f. If a Non-Employee meets the definition of Volunteer under the University's Volunteer Policy, all forms required by the Volunteer Policy as referenced in Section VI must be completed and all terms of the Volunteer Policy must be followed.

## **V. Requirements for Minors, Student Learners, or Non-Employees in Laboratories involving Animal Research**

Minors, Student Learners, or Non-Employees desiring to participate in activities in any laboratory or facility which involves animal research, exposure to animals, animal waste, or animal tissue is subject to the following:

a. Participants must be in compliance with the guidelines set forth by the Society for Science and the Public covering Vertebrate Animals within the *International Rules for Pre-college Science Research: Guidelines for Science and Engineering Fairs* found at <https://student.societyforscience.org/international-rules-pre-college-science-research> (pp. 10-12).

b. Participants under the age of 18 must be in grades 9-12 or equivalent, as referenced within the aforementioned guidelines.

c. Participants must complete the Animal Handler Health Surveillance (AHHS) Program and meet any requirements of the (IACUC).

**NOTE:** As indicated in the next section (VI), Non-Employees who meet the definition of Volunteer under the University's Volunteer Policy **are prohibited** from working with animals or in laboratories where animals are present as referenced in the Volunteer Policy.

## **VI. Requirements for Volunteers in Laboratories**

As referenced under the **Definitions** Section of these Guidelines, Volunteers are defined in the Code of Federal Regulations as an individual who performs hours of service for civic, charitable, or humanitarian reasons, without promise, expectation, or receipt of compensation for services rendered. Volunteers are additionally defined within the University Volunteer Policy on page 95 of the Staff Handbook (<https://tulane.app.box.com/s/r66lu4pi2egwh5y9nd2actf217mjqavd>). University Volunteers must follow the guidelines of the University Workforce Management Organization.

## **VII. Additional Requirements For Minors and Student Learners (under the age of 18) In Laboratories**

a. A *Consent to Participate and Acknowledgement of Risk and Release Form* (under the age of 18) is included in the Parent Guardian Letter and must be completed and signed by the Minor or Student Learner (under the age of 18)

and his/her parent or guardian, prior to the time that the Minor or Student Learner (under the age of 18) begins activities in the laboratory.

- b. While within the laboratory, the Minor or Student Learner (under the age of 18) is never left alone and is supervised at all times by the Principal Investigator/Sponsor or by another University employee to whom the Principal Investigator/Sponsor has specifically delegated this responsibility.

### **VIII. Prohibitions for Minors, Student Learners or Non-Employees in Laboratories**

Although the requirements set forth in Sections III and VII are met, Minors, Student Learners or Non-Employees are not permitted to participate in the following:

- a. Any activities involving BSL-3 and BSL-4 protocols.
- b. Any laboratory or facility in which bio-hazardous or infectious materials are used or stored.
- c. Activities in any laboratory or facility in which radioactive materials or radiation is used.
- d. Activities involving acute toxins.
- e. Any laboratory or facility designated as BSL-3, ABSL-2 or 3, or higher, for recombinant or infectious organisms.
- f. Any laboratory or facility in which Select Agents or explosives are stored.

NOTE: As indicated in Section VI, Non-Employees who meet the definition of Volunteer under the University's Volunteer Policy are prohibited from working with animals or in laboratories where animals are present as referenced in the Volunteer Policy.

#### **Attachments:**

- Parent/Guardian Letter; Consent to Participate and Acknowledgement of Risk and Release Form (General)
- Parent/Guardian Letter; Consent to Participate and Acknowledgement of Risk and Release Form (Including Makerspace)
- Safety Training for Approved Minors, Student Learners and Non-Employee Visitors/Observers in Laboratories.
- International Rules for Pre-college Science Research: Guidelines for Science and Engineering Fairs



Date:

RE: Consent to Participate and Acknowledgement of Risk and Release Form for Tours and Programs involving Laboratories

Dear Parent or Legal Guardian:

This Consent to Participate and Acknowledgement of Risk and Release Form (Form) is required for the referenced participant (Participant) on said Form prior to participation in an educational tour (Tour) or program (Program) at Tulane University referenced on Form, which may involve activities within a research laboratory in the following School/Department. Participation will be under the direct supervision of the individual referenced below in the Tulane University Building and/or Laboratory as follows:

School/Department Name: \_\_\_\_\_

Direct Supervision Provided By: \_\_\_\_\_

Tulane University Building and/or Laboratory: \_\_\_\_\_

Individual laboratories vary in the inherent types of potential hazards present. The Participant may be exposed to these hazards as indicated within the designated checked box below:

Tour Participants and short-term observers may only participate in laboratory activities involving supervised demonstrations, such as viewing microscope slides, handling plastic models, providing demonstrations of non-hazardous lab equipment, and providing demonstrations of behavioral testing of animals with minimal handling by participants under direct supervision and with assistance, as permitted under the Institutional Animal Care and Use Committee (IACUC) guidelines. Tour Participants and short-term observers will be provided a lab safety orientation prior to participating in the laboratory activities described herein.

Program participants may be working with or around animals, biological materials, chemicals or other potentially hazardous material and under the direct supervisor referenced above. Programs for minors in laboratories are viewed by the Tulane University Office of Environmental Health and Safety (OEHS) to confirm that the Programs:

1. Is appropriate for minor Participants.
2. Has appropriate safety precaution in place.
3. Has identified training requirements.
4. Requires Supervisors complete the training requirements for Participants before the lab activity begins.

This Tour or Program entails a field trip involving travel to and from \_\_\_\_\_

Participants may be working with or around animals, biological materials, chemicals, or other potentially hazardous materials. As a part of projects within the Tour or Program, the Participant will work with or perform the following:

Description of Proposed Laboratory Activities (include any potentially hazardous materials or animal research):  
\_\_\_\_\_

Participants who may work with or in the vicinity of potentially hazardous materials will be required to attend laboratory safety training, and may also be required to attend additional training sessions, depending on the nature of the Participant's particular project. If you have further question on these topics, please call the Program Director or an OEHS Safety Program Manager at (504) 988-2800.

Program Director Name: \_\_\_\_\_

Contact Information: \_\_\_\_\_

## **CONSENT TO PARTICIPATE AND ACKNOWLEDGEMENT OF RISK AND RELEASE FORM**

In consideration of the opportunity to allow participation of \_\_\_\_\_ (the "Participant") in \_\_\_\_\_ (the "Tour" or "Program") at Tulane University (the "University"), the undersigned (parent/guardian), hereby acknowledges and agrees as follows:

I acknowledge that activities conducted in the course of the Tour or Program may entail known or unanticipated risks which could cause harm to me or third parties or damage to property. I understand that University facilities and/or laboratories are being made available to Participant as an educational opportunity and that Participant is not a matriculated student, employee, or affiliate of University. I understand that University laboratories may contain chemicals as described on page one (1) and equipment and may involve animal research activities. As a result of these exposures and activities, I understand that Participant may be subjected to potential risks that could result in illnesses or injuries. If this Tour or Program entails field trips involving transportation to and from, I grant permission for the Participant to engage in said field trips.

In addition, the Participant and the undersigned understand and agree:

1. to the risks associated with the activities of the Tour or Program and accept and assume all risks and liabilities associated with participation in the Tour or Program.
2. that participation in the Tour or Program is purely voluntary.
3. that if the University obtains any recorded medium (including but not limited to video, audio, photos) of Participant engaging in Tour or Program activities in any form (including but not limited to print, websites, blogs, internet) that such recorded medium of Participant's name, likeness, voice and biographical material may be used by University to exhibit or distribute in whole or part for educational and promotional purposes of Tour or Program and that Participant or the undersigned waives the right to inspect or approve the recorded medium as well as waiving any royalty and compensation rights related to the use of such recorded medium.
4. that the University will not be responsible for the drop off and/or pick up of the Participant, including verification that individuals dropping off/picking up Participant are indeed the custodial Parent or Guardian of Participant.

The undersigned certifies that Participant has no medical or physical conditions which could interfere with Participant's safety or the safety of others in connection with participation in the Tour or Program, and hereby assumes and agrees to bear the costs of all risks that may be created, directly or indirectly, by any such condition, whether or not disclosed to the University. In addition, in the event of an emergency and medical treatment is deemed necessary, the undersigned and Participant authorizes emergency medical treatment by an attending physician and/or emergency responders and assumes responsibility for costs associated with such emergency medical treatment.

**THE UNDERSIGNED, OR A REPRESENTATIVE ACTING ON BEHALF OF THE UNDERSIGNED OR A PARENT/GUARDIAN FOR MINORS, AND PARTICIPANT HEREBY AGREES TO RELEASE, DEFEND, INDEMNIFY HOLD HARMLESS, AND FOREVER DISCHARGE THE ADMINISTRATORS OF THE TULANE EDUCATIONAL FUND DBA TULANE UNIVERSITY, ITS ADMINISTRATORS, TRUSTEES, OFFICERS, FACULTY, STAFF, AGENTS AND OTHER REPRESENTATIVES (COLLECTIVELY, "THE UNIVERSITY"), ON BEHALF OF THEMSELVES, THEIR CHILDREN, PARENTS, HEIRS, ASSIGNS, PERSONAL REPRESENTATIVES AND ESTATE FROM ANY AND ALL CLAIMS, DEMANDS OR CAUSES OF ACTION WHICH IN ANY WAY RELATE TO OR ARISE OUT OF THEIR PARTICIPATION IN THE PROGRAM OR USE OF THE UNIVERSITY'S EQUIPMENT OR FACILITIES, REGARDLESS OF WHETHER CAUSED OR ALLEGED TO BE CAUSED IN WHOLE OR IN PART BY NEGLIGENT ACTS OR OMISSIONS OF THE UNIVERSITY.**

In the event the undersigned, or a representative acting on behalf of the undersigned, or Participant engages in a lawsuit against the University for participation in the Tour or Program, the undersigned agrees to file suit solely in the state of Louisiana and further agrees that the substantive law of Louisiana (without regard to its conflict of law provisions) shall apply in any such action. The undersigned agrees that if any portion of this agreement is found to be void or unenforceable for any reason, the remaining portions shall remain in full force and effect. **I have read this Consent to Participate and Acknowledgement of Risk and Release in its entirety. I understand it and I agree to be bound by its terms. I certify that I am the legal Parent/Guardian of Participant.**

Parent/Guardian Signature: \_\_\_\_\_ Printed Name: \_\_\_\_\_ Date: \_\_\_\_\_

Emergency Contact Info #1 (Name/Phone): \_\_\_\_\_

Emergency Contact Info #2 (Name/Phone): \_\_\_\_\_

Pediatrician/Physician Contact Info (Name/Phone): \_\_\_\_\_

**COMPLETE THIS SECTION ONLY FOR PROGRAMS. TOURS ARE EXEMPT.**

**SAFETY TRAINING MUST BE COMPLETED PRIOR TO BEGINNING ACTIVITIES WITHIN THE LABORATORY**

I acknowledge that I must receive the Safety Training for Minors, Student Learners and Non-Employee Visitors/Observers in Laboratories prior to being permitted to participate in Program or lab activities. By signing below, I certify that I have received such training and that I will comply with the safety rules provided to me. If I do not comply with the safety rules, my participation in Program or within the laboratory may be terminated.

Participant Signature: \_\_\_\_\_ Printed Name: \_\_\_\_\_ Date: \_\_\_\_\_



Date:

RE: Consent to Participate and Acknowledgement of Risk and Release Form for Tours and Programs involving Laboratories

Dear Parent or Legal Guardian:

This Consent to Participate and Acknowledgement of Risk and Release Form (Form) is required for the referenced participant (Participant) on said Form prior to participation in an educational tour (Tour) or program (Program) at Tulane University referenced on Form, which may involve activities within a learning facility (i.e. Makerspace) and/or research laboratory in the following School/Department. Participation will be under the direct supervision of the individual referenced below in the Tulane University Building and/or Laboratory as follows:

School/Department Name: \_\_\_\_\_

Direct Supervision Provided By: \_\_\_\_\_

Tulane University Building and/or Laboratory: \_\_\_\_\_

Individual learning facilities or research laboratories vary in the inherent types of potential hazards present. The Participant may be exposed to these hazards as indicated within the designated checked box below:

Tour Participants  and short-term observers may only participate in laboratory activities involving supervised demonstrations, such as viewing microscope slides, handling plastic models, providing demonstrations of non-hazardous lab equipment, and providing demonstrations of behavioral testing of animals with minimal handling by participants under direct supervision and with assistance, as permitted under the Institutional Animal Care and Use Committee (IACUC) guidelines. Tour Participants and short-term observers will be provided a lab safety orientation prior to participating in the laboratory activities described herein.

Program participants  may be working with or around animals, biological materials, chemicals or other potentially hazardous material and under the direct supervisor referenced above. Programs for minors in laboratories are viewed by the Tulane University Office of Environmental Health and Safety (OEHS) to confirm that the Program(s):

1. Is appropriate for minor Participants.
2. Has appropriate safety precaution in place.
3. Has identified training requirements.
4. Requires Supervisors complete the training requirements for Participants before the lab activity begins.

**Makerspace**-Program participants using learning facilities for this Program will be using the Makerspace, which includes working in a room which also contains heavy equipment/machinery. While participants are expressly **prohibited** to operate such equipment, or even be in the vicinity of such equipment while it is being operated by others, the mere presence of heavy equipment/machinery has potential to create safety hazards. Participants may use 3D printers and laser cutters with plastic, cardboard, and pre-cut plywood under proper supervision. A separate Acknowledgement of Risk Form is required for use of Makerspace.

This Tour or  Program entails a field trip involving travel to and from \_\_\_\_\_

Participants may be working with or around animals, biological materials, chemicals, or other potentially hazardous materials. As a part of projects within the Tour or Program, the Participant will work with or perform the following:

Description of Proposed Laboratory Activities (include any potentially hazardous materials or animal research):  
\_\_\_\_\_  
\_\_\_\_\_

---

Participants who may work with or in the vicinity of potentially hazardous materials will be required to attend laboratory safety training and may also be required to attend additional training sessions, depending on the nature of the Participant's particular project. If you have further question on these topics, please call the Program Director or an OEHS Safety Program Manager at (504) 988-2800.

Program Director Name: \_\_\_\_\_

Contact Information: \_\_\_\_\_

## **CONSENT TO PARTICIPATE AND ACKNOWLEDGEMENT OF RISK AND RELEASE FORM**

In consideration of the opportunity to allow participation of \_\_\_\_\_ (the "Participant") in \_\_\_\_\_ (the "Tour" or "Program") at Tulane University (the "University"), the undersigned (parent/guardian), hereby acknowledges and agrees as follows:

I acknowledge that activities conducted in the course of the Tour or Program may entail known or unanticipated risks which could cause harm to me or third parties or damage to property. I understand that University facilities and/or laboratories are being made available to Participant as an educational opportunity and that Participant is not a matriculated student, employee, or affiliate of University. I understand that University laboratories may contain chemicals as described in *Consent to Participate and Acknowledgement of Risk and Release Form for Tours and Programs involving Laboratories* and equipment and may involve animal research activities. As a result of these exposures and activities, I understand that Participant may be subjected to potential risks that could result in illnesses or injuries. If this Tour or Program entails field trips involving transportation to and from, I grant permission for the Participant to engage in said field trips.

In addition, the Participant and the undersigned understand and agree:

1. to the risks associated with the activities of the Tour or Program and accept and assume all risks and liabilities associated with participation in the Tour or Program.
2. that participation in the Tour or Program is purely voluntary.

The undersigned certifies that Participant has no medical or physical conditions which could interfere with Participant's safety or the safety of others in connection with participation in the Tour or Program, and hereby assumes and agrees to bear the costs of all risks that may be created, directly or indirectly, by any such condition, whether or not disclosed to the University. In addition, in the event of an emergency and medical treatment is deemed necessary, the undersigned and Participant authorizes emergency medical treatment by an attending physician and/or emergency responder and assumes responsibility for costs associated with such emergency medical treatment.

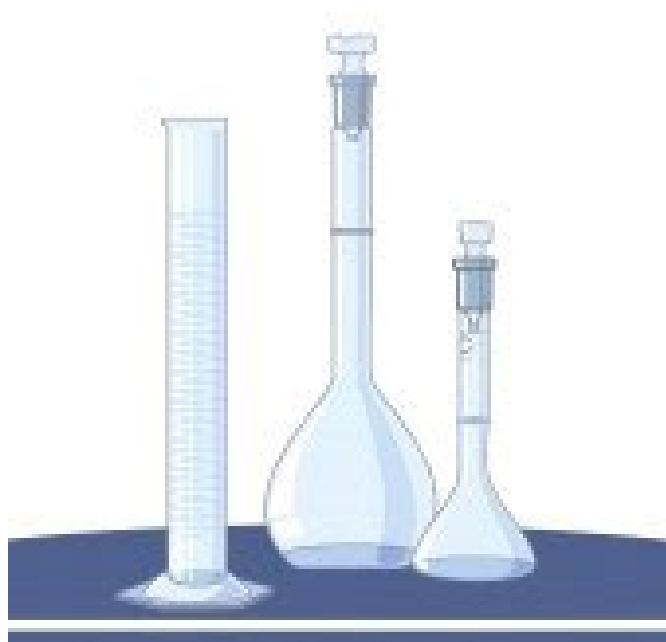
I understand that in exchange for and in consideration of Tulane permitting the Participant to participate in the Program, I hereby agree to waive, release, forever discharge, and to defend, indemnify and hold the Administrators of the Tulane Educational Fund dba Tulane University, and its officers, trustees, agents, representatives, volunteers, students and/or employees ("Tulane Indemnified Party or Parties") harmless from, any and all claims, demands, losses, rights and causes of action of whatever kind or nature (including attorneys' fees) that arise from, by reason of, or in connection with the Participant's participation in the Program, including but not limited to any injury, accident, illness to or property damage of the Participant, regardless of whether caused, in whole or in part, by negligence or other legal fault attributable to any Tulane Indemnified Party.

Parent/Guardian Signature: \_\_\_\_\_ Printed Name: \_\_\_\_\_ Date: \_\_\_\_\_

### **COMPLETE THIS SECTION ONLY FOR PROGRAMS. TOURS ARE EXEMPT. SAFETY TRAINING MUST BE COMPLETED PRIOR TO BEGINNING ACTIVITIES WITHIN THE LABORATORY**

I acknowledge that I must receive the Safety Training for Minors, Student Learners and Non-Employee Visitors/Observers in Laboratories prior to being permitted to participate in Program or lab activities. By signing below, I certify that I have received such training and that I will comply with the safety rules provided to me. If I do not comply with the safety rules, my participation in Program or within the laboratory may be terminated.

# **Safety Training for Approved Minors, Student Learners, and Non-Employee Visitors/Observers in Laboratories**

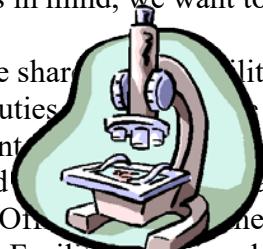


Prepared by the Office of Environmental Health & Safety Tulane University

(504) 988-5486

## Responsibility for Safety

Welcome to Tulane University! We know you are looking forward to your laboratory experience on the Tulane campus and we want to ensure that your experience will be a safe one. With this in mind, we want to share with you our safety philosophy.



Everyone shares responsibility for safety in the laboratory at Tulane – even YOU! Yes, your instructor has certain duties to ensure the lab in a safe condition and to make sure there are appropriate rules and equipment. Yes, the administration has certain responsibilities to put in place and maintain what reduce your risk of injury in the lab.

Yes, the Office of Environmental Health and Safety, Tulane Police, the Office of Emergency Preparedness, and even Facilities Services have responsibilities to ensure the laboratory facilities are adequate, and to plan and protect you in the event of an emergency.

However, YOU play the most important role for safety in the laboratory. YOU need to be alert to the potential hazards of the materials in the lab and follow the appropriate procedures established by your instructor and the administration to protect your health and safety. YOU need to plan and conduct your operations in a cautious and conservative manner. YOU need to ask for assistance if unsure about a step or process. YOU need to report any problems or hazards immediately.

Good planning is important. With that in mind, we want to make you aware that Tulane has resources available to help you. The Office of Environmental Health and Safety (OEHS) has a website <http://tulane.edu/oehs> where you can find detailed safety information, including Safety Data Sheets from manufacturers describing chemical hazards and how to protect yourself. On the website you will also find Tulane University's Environmental Health and Safety Policies and Procedures Manual, Emergency Action Plans for each building on campus, and contact information for the OEHS and Tulane Police. Of course, your instructor is one of your most valuable resources, and is always available to assist you. Never be afraid to ask if you have questions or need advice!



## Emergencies: Be Prepared

When all goes as planned, everything is great, but you also need to be prepared for the unexpected. You need to become familiar with the locations of emergency equipment in your area, to include phones, exits, eyewash stations, emergency showers, fire extinguishers, emergency pull stations, spill kits, etc. You also need to know how to use this equipment.

### Important Numbers:

Let's start with  Yes, of course you know how to use a phone. But who do you call in an emergency? A list of important numbers you may need:

**Instructor Name:** \_\_\_\_\_ **Phone:** \_\_\_\_\_

### Tulane Police:

- Uptown Campus: 504-865-5200
- Health Sciences Campus: 504-988-5555

**Office of Environmental Health and Safety:** 504-988-5486

Be sure to identify yourself and your location, and provide as much information as possible on what happened.

### Fires:



Next let's talk about fires. When you hear the fire alarm you need to evacuate using the nearest stairs and exits. Do not use elevators. You should report to the location indicated in the Emergency Action Plan for your building. (EAPs are available on

OEHS website.)

If a fire is discovered in your lab, we recommend responding using the acronym ESCAPE: E – Evaluate the situation.

S – Secure the area or room by removing occupants.

C – Close the door to the room or area where the fire is located.

A – Activate the fire alarm. (Most pull stations are located near exit doors and stairwells.) P – Phone Tulane Police (504-865-5200 Uptown, 504-988-5555 Health Sciences Center) and also notify your instructor.

E – Extinguish the fire using the nearest extinguisher if the fire is small and not spreading. (We recommend that you evacuate and leave this step to your instructor or other trained personnel.)

If you do use a fire extinguisher, the acronym for proper operation is PASS: P – Pull the

pin.



A – Aim the extinguisher at the base of the fire. S – Squeeze the handles.

S – Sweep fire from left to right side.

OEHS can provide training and resources on fire extinguisher training upon request.

#### **Contamination:**

If a person is exposed to a chemical in the laboratory, flush the exposed area with water for at least 15 minutes. Be sure to locate the nearest emergency eyewash station and flush the exposed area with water for at least 15 minutes. Remove any contaminated clothing including shoes. (This is not the time to be modest.) Report the incident immediately to your instructor who will ensure that medical attention is obtained if necessary. Your instructor will also ensure that proper forms and follow-up are completed for any injury in the laboratory.

#### **Spills:**

If a chemical spill occurs in the lab, report the incident to your instructor who will ensure that the material is cleaned up by trained and experienced personnel. Most laboratories are equipped with a spill kit and procedures for minor spills. Safety Data Sheets on chemicals are available on the OEHS website and can be used to determine the proper procedures and information from the manufacturer on what to do if a chemical should spill. For major spills, the instructor will contact OEHS and Tulane Police.

#### **Accidents and Injuries:**

In the event of an accident or injury in the laboratory, notify your instructor and Tulane Police immediately. Obtain any necessary medical attention. Your instructor will ensure that proper forms and follow-up are completed for any injury in the laboratory and will also take appropriate steps to help prevent a similar accident or injury in the future.



# Basic Laboratory Safety

Just as you cannot cook without some basic rules in the kitchen, you also cannot work in the laboratory without some basic safety procedures. Let's start with what to wear.

## Dress Properly:

When in a laboratory, you need to dress appropriately. Flip-flops, open-toed sandals, and shorts are great for the hot and humid New Orleans weather, but NOT for working in a laboratory. Closed-toe shoes such as leather or tennis shoes must be worn. Long hair should be tied back, and proper laboratory clothing and footwear need to be included in your wardrobe.



## Personal Protective Equipment (PPE):

Not only do you need to dress appropriately, you need to include personal protective equipment (PPE) as well. Lab coats, safety glasses, and appropriate gloves are your fashion statement when working in the lab. You are the "awesome" scientist.

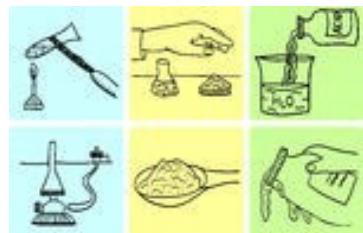


You should not only wear PPE, but you need to know the limitations of the PPE you choose. Goggles are more protective than safety glasses. Latex gloves are good for biological materials but in many cases, nitrile or rubber gloves may be needed when using chemicals. PPE needs to be clean and in good condition. Torn or deteriorated gloves need to be discarded. PPE also needs to be stored properly when not in use. No one wants to put on dirty or scratched goggles or a dirty lab coat that has been left out for months.

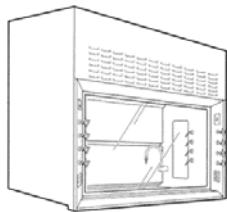
**Contact Lenses:** At Tulane, we allow contact lenses to be worn in the laboratories in most instances as long as appropriate PPE is worn as well. This means that as long as you wear your safety glasses or goggles, you can wear your contacts. This is the same recommendation as the American Chemical Society on the wearing of contact lenses in a chemical environment.

## Basic lab safety rules:

- Don't work alone in the laboratory.
- No eating, drinking, smoking, storing food, or applying cosmetics in the laboratory.
- Plan ahead. Ask your instructor if you are unsure about a procedure or process.
- Never deliberately taste or smell a chemical.
- Do not mouth pipette.
- Use tongs or gloves when handling hot objects.
- Avoid the use of sharps such as needles or glass pipettes wherever possible. If you must use needles, never recap them – instead dispose of them in a proper needle box/sharps container.



- Wear the proper clothing and personal protective equipment.
- Use a fume hood when working with volatile or hazardous materials. Work at least 6 inches behind the hood sash and always make sure the hood is working properly (check the alarm/airflow monitor) before beginning your experiment. Keep the sash as low as possible. Do not store unneeded chemicals or equipment in the fume hood. It is designed for the exhaust of vapors for the experiment in progress. It is not a storage cabinet.
- Housekeeping in the laboratory is very important. Keep your area uncluttered. Clean all lab work surfaces and equipment at the end of your experiment or procedure.
- Store incompatible chemicals separately. Acids and bases need to be stored separately. Flammables need to be separate from oxidizers. A chemical incompatibility chart can be found on the OEHS website, or ask your instructor if you need advice.
- Label containers clearly with the full name of the chemical and any associated hazards. (Don't use abbreviations.)
- Avoid using open flames. Whenever possible, use heating mantles, hot plates, or a sand, water, or oil bath instead of gas burners.
- Do not overload circuits. Extension cords and multiple outlet strips are not recommended for laboratory equipment.
- Always add acid to water when using concentrated acids.
- Be suspicious of any reagent container that has visible residue or crystals around the cap. Seek advice from your instructor before handling suspicious chemicals.
- Wash hands with soap and water when leaving the laboratory.



## Waste Disposal:

All laboratories must properly dispose of waste generated in the laboratory. Hazardous wastes must be disposed of in accordance with the following guidelines:



of properly. Hazardous chemicals must never be discarded into the regular trash. Check with your instructor for proper waste disposal instructions for your laboratory. Chemical containers must be labeled properly. Labels must be legible and clearly state the words "Hazardous Waste" and the full name of the contents (no abbreviations or symbols) and the date of disposal. Secondary containment (placing the chemical container into a secondary container such as a tray, or bin) is highly recommended when storing or transporting/处置 wastes. Your instructor will contact OEHS for disposal of any hazardous waste generated in the laboratory. (Empty chemical containers are not considered hazardous waste. The label should be defaced and they can be put into the regular trash.)

All used sharps such as needles need to be placed in rigid puncture-resistant sharps containers. Broken glass also needs to be placed in a rigid puncture-resistant container and not in the regular trash. Sharps containers need to be disposed when two-thirds full. Contact your instructor if you have questions.



Biological materials need to be placed in appropriate biohazard waste boxes or bags. Contact your instructor for instructions on proper biological waste disposal procedures for your laboratory.

**Special Restrictions for Minors, Student Learners, and Non-Employee Visitors/Observers:** Okay, we've told you some safety basics, but there are certain things you cannot do in Tulane laboratories. You are prohibited from the following activities:

- Working with radioactive materials
- Working with infectious materials
- Working with highly reactive or potentially explosive materials
- Working with acutely toxic chemicals
- Working with DEA controlled substances
- Working with live animals without prior permission and approval from the Department of Comparative Medicine



If you have questions on what is restricted or allowed, please ask your instructor for further clarification.

## Conclusion

Using laboratories at Tulane is a special privilege. We hope you have a safe and enjoyable experience here and welcome any questions or comments. Please feel free to contact the OEHS at (504) 988-5486 to report any concerns or for further safety information.

# **Intel International Science and Engineering Fair**



## **International Rules and Guidelines 2019**



# International Rules for Pre-College Science Research: Guidelines for Science and Engineering Fairs 2018–2019

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The International Rules and Guidelines for Science Fairs is available at [student.societyforscience.org/intel-isef](http://student.societyforscience.org/intel-isef) in multiple formats. Familiarity with the rules is critical for students, parents, teachers, mentors, fair directors and local and affiliated fair Scientific Review Committees (SRC) and Institutional Review Boards (IRB).

- International Rules and Guidelines – The full text of the International Rules and forms in html and as a downloadable pdf.
- The Intel ISEF Rules Wizard – An interactive tool which asks questions about your intended project and provides a list of forms required.
- Common SRC Problems – Frequent problems that emerge during Scientific Review Committee review for qualification at the Intel ISEF. Read these to learn what NOT to do.

These Rules are applicable for:

## **The Intel International Science and Engineering Fair 2019 Phoenix, AZ, USA, May 12–17, 2019**

The purpose of these rules is to:

- protect the rights and welfare of the student researcher
- protect the rights and welfare of human participants
- protect the health and welfare of vertebrate animal subjects
- protect and promote good stewardship of the environment
- ensure adherence to federal regulations
- ensure use of safe laboratory practices
- determine eligibility for competition in the Intel ISEF

For pre-review and approval of your project, find your fair at:

<https://findafair.societyforscience.org/>

**For rules questions, contact the Intel ISEF Scientific Review Committee:  
SRC@societyforscience.org**

For general questions, contact: Society for Science & the  
Public Science Education Programs

1719 N Street, NW, Washington, DC 20036 office: 202-785-2255, fax:

202-785-1243

email: [sciedu@societyforscience.org](mailto:sciedu@societyforscience.org)

# ALL PROJECTS

## Ethics Statement

Student researchers are expected to maintain the highest standards of honesty and integrity. Scientific fraud and misconduct are not condoned at any level of research or competition. This includes plagiarism, forgery, use or presentation of other researcher's work as one's own and fabrication of data. Fraudulent projects will fail to qualify for competition in affiliated fairs and the Intel ISEF. Society for Science & the Public reserves the right to revoke recognition of a project subsequently found to have been fraudulent.

## Eligibility/Limitations

1. Each Intel ISEF-affiliated fair may send to Intel ISEF the number of projects provided by their affiliation agreement.
2. A student must be selected by an Intel ISEF-affiliated fair, and meet both of the following:
  - a. be in grades 9–12 or equivalent; and
  - b. not have reached age 20 on or before May 1 preceding the Intel ISEF.
3. English is the official language of the Intel ISEF. Student project boards and abstracts must be in English.
4. Each student is only allowed to enter one project. That project may include no more than 12 months of continuous research and may not include research performed before January 2018.
5. Team projects must have no more than three members. Teams competing at Intel ISEF must be composed of members who all meet Intel ISEF eligibility.
6. Students may compete in only one Intel ISEF affiliated fair, except when proceeding to a state/national fair affiliated with the Intel ISEF from an affiliated regional fair.
7. Projects that are demonstrations, 'library' research or informational projects, 'explanation' models or kit building are not appropriate for the Intel ISEF.
8. All sciences and engineering disciplines are represented at the Intel ISEF and projects compete in one of the 22 categories. Review a [complete list of categories and sub-categories with definitions](#).
9. A research project may be a part of a larger study performed by professional scientists, but the project presented by the student must be only their own portion of the complete study.

## Requirements

### General

1. All domestic and international students competing in an Intel ISEF-affiliated fair must adhere to all rules as set forth in this document.
2. All projects must adhere to the Ethics Statement above.
3. It is the responsibility of the student and the Adult Sponsor to evaluate the study to determine if the research will require

forms and/or review and approval prior to experimentation.

4. Projects must adhere to local, state and U.S. Federal laws, regulations and permitting conditions. In addition, projects conducted outside the U.S. must also adhere to the laws of the country and jurisdiction in which the project was performed.
5. The use of non-animal research methods and alternatives to animal research are strongly encouraged and must be explored before conducting a vertebrate animal project.
6. Introduction or disposal of non-native, genetically-altered, and/or invasive species (e.g. insects, plants, invertebrates, vertebrates), pathogens, toxic chemicals or foreign substances into the environment is prohibited. It is recommended that students reference their local, state or national regulations and quarantine lists.
7. Projects competing at Intel ISEF must have an exhibit that adheres to Intel ISEF Display & Safety requirements and is visible during all operable hours of the exhibit hall without reliance on electricity or internet connections.
8. All projects must adhere to the requirements of the affiliated fair(s) in which it competes to qualify for participation in the Intel ISEF. Affiliated fairs may have additional restrictions or requirements. Knowledge of these requirements is the responsibility of the student and Adult Sponsor.

### Approval and Documentation

1. Before experimentation begins, a local or regional Institutional Review Board (IRB) or Scientific Review Committee (SRC) associated with the Intel ISEF-affiliated fair must review and approve most projects involving human participants, vertebrate animals, and potentially hazardous biological agents. **Note: If a project involves the testing of a student designed invention, prototype or concept by a human, an IRB review and approval may be required prior to experimentation. See Human Participants Rules for details.**
2. Every student must complete the [Student Checklist \(1A\)](#), a [Research Plan/Project Summary](#) and [Approval Form \(1B\)](#) and review the project with the Adult Sponsor in coordination with completion by the Adult Sponsor of the [Checklist for Adult Sponsor \(1\)](#).
3. A [Qualified Scientist](#) is required for all studies involving Biosafety Lab-2 (BSL-2) potentially hazardous biological agents and DEA-controlled substances and is also required for many human participant studies and many vertebrate animal studies.
4. After initial IRB/SRC approval (if required), any proposed changes in the [Student Checklist \(1A\)](#) and Research Plan/Project Summary must be re-approved before laboratory experimentation/data collection resumes.
5. Projects which are continuations of a previous year's work and which require IRB/SRC approval must undergo the review process with the current year Research Plan/Project Summary prior to experimentation/data collection for the current year.

6. Any continuing project must document that the additional research is new and different. ([Continuation/Research Progression Projects Form \(7\)](#)).
7. If work was conducted in a regulated research institution, industrial setting or any work site other than home, school or field at any time during the current Intel ISEF project year, the [Regulated Research Institutional/Industrial Setting Form \(1C\)](#) must be completed and displayed at the project booth.
8. After experimentation, each student or team must submit a (maximum) 250-word, one-page abstract which summarizes the current year's work. The abstract must describe research conducted by the student, not by the supervising adult(s).
9. A project data book and research paper are not required, but are strongly recommended for judging purposes. Regional or local fairs may require a project data book and/or a research paper.
10. All signed forms, certifications, and permits must be available for review by all regional, state, national and international affiliated fair SRCs in which the student(s) participate.

This review must occur after experimentation and before competition.

## Digital Paperwork and Signatures

Submission of forms generated by a digital system are allowable under the following conditions:

1. The forms must have the same content and order as the Intel ISEF forms.
2. Digital signatures must have a verification system via login and have a time and date stamp to indicate this authentication.
3. Paperwork submitted to Society for Science & the Public for Intel ISEF must be scanned and submitted via the online portal.

## Continuation/Research Progression of Projects

1. As in the professional world, research projects may build on work performed previously. A valid continuation project is a sound scientific endeavor. Students will be judged only on laboratory experiment/data collection performed over 12 continuous months beginning no earlier than January 2018 and ending May 2019.
2. Any project based on the student's prior research could be considered a continuation/research progression project. These projects must document that the additional research is a substantive expansion from prior work (e.g. testing a new variable or new line of investigation). Repetition of previous experimentation with the same methodology and research question, even with an increased sample size, is an example of an unacceptable continuation.
3. The display board and abstract must reflect the current year's work only. The project title displayed in the finalist's booth may mention years (for example, "Year Two of an Ongoing Study"). Previous year's databooks, research papers and supporting documents may be at the booth if properly labeled as such.
4. Longitudinal studies are permitted as an acceptable continuation under the following conditions:
  - a. The study is a multi-year study testing or documenting

the same variables in which time is a critical variable. (Examples: Effect of high rain or drought on soil in a given basin, return of flora and fauna in a burned area over time.)

- b. Each consecutive year must demonstrate time-based change.
- c. The display board must be based on collective past conclusionary data and its comparison to the current year data set. No raw data from previous years may be displayed.
5. All projects must be reviewed and approved each year and forms must be completed for the new year.
6. NOTE: For competition in the Intel ISEF, the Continuation Research Progression Project Form (7) is required for projects in the same field of study as a previous project. This form must be displayed at the project booth. Retention of all prior years' paperwork is required and must be presented to the Intel ISEF SRC upon request

## Team Projects

1. Team projects compete and are judged in the category of their research at the Intel ISEF. All team members must meet the eligibility requirements for Intel ISEF.
2. Teams must have no more than three members. A team with members from different geographic regions may compete at an affiliated fair of one of its members, but not at multiple fairs. However, each affiliated fair holds the authority to determine whether teams with members outside of a fair's geographic territory are eligible to compete, understanding that if the team wins the right to attend Intel ISEF, all team members' expenses must be supported by the fair.
  - a. Team membership cannot be changed during a given research year unless there are extenuating circumstances and the local SRC reviews and approves the change, including converting a team project to an individual project or vice versa. Such conversions must address rationale for the change and include a clear delineation between research preceding the change and that which will follow. A memorandum documenting this review and approval should be attached to Form 1A.
  - b. Once a project has competed in a science fair at any level, team membership cannot change and the project cannot be converted from an individual project to a team project or vice versa.
  - c. In a future research year, any project may be converted from an individual to a team project, from a team to an individual project and/or have a change in team membership.
3. Each team is encouraged to appoint a team leader to coordinate the work and act as spokesperson. However, each member of the team should be able to serve as spokesperson, be fully involved with the project, and be familiar with all aspects of the project. The final work should reflect the coordinated efforts of all team members and will be evaluated using the same judging criteria as individual projects.
4. Each team member must submit an Approval Form (1B). Team members must jointly submit the Checklist for Adult Sponsor (1), one abstract, a Student Checklist (1A), a Research Plan/Project Summary and other required forms.
5. Full names of all team members must appear on the abstract and forms.

# Roles and Responsibilities of Students and Adults

## The Student Researcher(s)

The student researcher is responsible for all aspects of the research project including enlisting the aid of any required supervisory adults (Adult Sponsor, Qualified Scientist, etc.), obtaining necessary approvals (SRC, IRB, etc.), following the Rules & Guidelines of the Intel ISEF, and performing the experimentation, engineering, data analysis, etc.

Students are expected to understand and abide by the Ethics Statement and attest to this understanding on Approval Form 1B.

## The Adult Sponsor

An Adult Sponsor may be a teacher, parent, professor, and/or other professional scientist in whose lab the student is working. An Adult Sponsor should be knowledgeable in the area of student research and should have close contact with the student during the course of the project.

The Adult Sponsor is responsible for working with the student to evaluate any possible risks involved in order to ensure the health and safety of the student conducting the research and the humans and/or animals involved in the study. The Adult Sponsor must review the student's [Student Checklist \(1A\) and Research Plan/Project Summary](#) to insure that: a) experimentation follows local, state, and Federal laws and Intel ISEF rules; b) forms are completed by other required adults; and c) criteria for the Qualified Scientist adhere to those set forth below.

The Adult Sponsor must be familiar with the regulations that govern potentially dangerous research as they apply to a specific student project. These may include chemical and equipment usage, experimental techniques, research involving human and/or vertebrate animals, cell cultures, microorganisms, or animal tissues. Some experiments involve procedures or materials that are regulated by state, federal or non-U.S. national laws. If not thoroughly familiar with the regulations, the Adult Sponsor should help the student enlist the aid of a Qualified Scientist and/or a Designated Supervisor.

The Adult Sponsor is responsible for ensuring the student's research is eligible for entry in the Intel ISEF.

## The Qualified Scientist (QS)

A Qualified Scientist (QS) should have earned a doctoral/professional degree in a scientific discipline that relates to the student's area of research. Alternatively, the SRC may consider an individual with extensive experience and expertise in the student's area of research as a Qualified Scientist. The Qualified Scientist must be thoroughly familiar with local, state, and federal regulations that govern the student's area of research.

The Qualified Scientist and the Adult Sponsor may be the same person, if that person is qualified as described above. A student may work with a Qualified Scientist in a city, state or country that is not where the student resides. In this case, the student must work locally with a Designated Supervisor (see below) who has been trained in the techniques to be applied by the student.

## The Designated Supervisor (DS)

The Designated Supervisor (DS) is an adult who is directly responsible for overseeing student experimentation. The Designated Supervisor need not have an advanced degree, but must be thoroughly familiar with the student's project, and must be trained

in the student's area of research. The Adult Sponsor may act as the Designated Supervisor.

If a student is experimenting with live vertebrates and the animals are in a situation where their behavior or habitat is influenced by humans, the Designated Supervisor must be knowledgeable about the humane care and handling of the animals.

# Review Committees

## The Institutional Review Board (IRB)

An Institutional Review Board (IRB), is a committee that, according to federal regulations (45-CFR-46), must evaluate the potential physical and/or psychological risk of research involving humans. All proposed human research must be reviewed and approved by an IRB before experimentation begins. This includes review of any surveys or questionnaires to be used in a project.

Federal regulations require local community involvement. Therefore, it is advisable that an IRB be established at the school level to evaluate human research projects. If necessary, the local or Intel ISEF-affiliated SRC can serve as an IRB as long as it has the required membership. An IRB must consist of a minimum of **three** members including the following:

- An educator
- A school administrator (preferably principal or vice principal)
- A medical or mental health professional. The medical or mental health professional may be a medical doctor, nurse practitioner, physician's assistant, doctor of pharmacy, registered nurse, psychologist, licensed social worker or licensed clinical professional counselor. The medical or mental health professional on the IRB may change depending on the nature of the study. This person must be knowledgeable about and capable of evaluating the physical and/or psychological risk involved in a given study.

**Additional Expertise:** If an expert is not available in the immediate area, documented contact with an external expert is recommended. A copy of all correspondence with the expert (e.g. emails) must be attached to Form 4 and can be used in lieu of the signature of that expert.

**To avoid conflict of interest, no Adult Sponsor, parent or other relative of the student, the Qualified Scientist, or Designated Supervisor who oversees the project may serve on the IRB reviewing that project. Additional members are recommended to help avoid a potential conflict of interest and to increase the expertise of the committee.**

IRBs exist at federally Regulated Research Institutions (e.g., universities, medical centers, NIH, correctional facilities). Prisoner advocates must be included on the IRB when research participants are incarcerated. The institutional IRB must initially review and approve all proposed research conducted at or sponsored by that institution. The Adult Sponsor and the local IRB are responsible for ensuring that the project is appropriate for a pre-college student and adheres to the Intel ISEF rules.

An IRB is responsible for assessing risk and documenting the determination of risk level on [Human Participant Form 4](#). However, in reviewing projects just prior to a fair, if the SRC serving at that level of competition judges an IRB's decision as inappropriate, thereby placing human participants in jeopardy, they may override the IRB's decision and the project may fail to qualify for competition. It is advised that IRBs consult with the local or affiliated fair SRCs and/or with the Intel ISEF SRC in questionable cases.

**The Affiliated Fair Scientific Review Committee (SRC)** A Scientific Review Committee (SRC) is a group of qualified individuals that is responsible for evaluation of student research, certifications, research plans and exhibits for compliance with the rules, applicable laws and regulations at each level of science fair competition.

Affiliated Fairs may authorize local SRCs to serve in this prior review capacity. The operation and composition of the local and Affiliated Fair SRCs must fully comply with the International Rules.

Directions for obtaining preapproval are available from the affiliated fair. A list of fairs is at: <https://findafair.societyforscience.org/>

Most proposed research projects involving vertebrate animals and/or potentially hazardous biological agents must be reviewed and approved BEFORE experimentation. Local or regional SRC prior review is not required for human studies previously reviewed and approved by a properly constituted IRB.

ALL projects, including those previously reviewed and approved by an IRB must be reviewed and approved by the SRC after experimentation and before competition in an Affiliated Fair. Projects which were conducted at a Regulated Research Institution, industrial setting or any work site other than home, school or field and which were reviewed and approved by the proper institutional board before experimentation, must also be approved by the Affiliated Fair SRC.

An SRC must consist of a minimum of three persons, including the following:

- a biomedical scientist with an earned graduate degree
- an educator
- at least one additional member

**Additional expertise:** Many project evaluations require additional expertise (e.g., on biosafety and/or of human risk groups). If the SRC needs an expert as one of its members and one is not in the immediate area, all documented contact with an external expert must be submitted. If animal research is involved, at least one member must be familiar with proper animal care procedures. Depending on the nature of the study, this person can be a veterinarian or animal care provider with training and/or experience in the species being studied.

**To avoid conflict of interest, no Adult Sponsor, parent or other relative of the student(s), the Qualified Scientist, or the Designated Supervisor who oversees the project may serve on the SRC reviewing that project. Additional members are recommended to diversify and to increase the expertise of the committee.**

A Scientific Review Committee (SRC) examines projects for the following:

- Evidence of proper supervision
- Completed forms, signatures, research dates, and preapproval dates (when required)
- Evidence of proper team composition
- Compliance with rules and laws governing human and/or animal research and research involving potentially hazardous biological agents and/or hazardous chemicals, activities or devices
- Compliance with the Intel ISEF ethics statement
- Use of accepted and appropriate research techniques
- Evidence that risks have been properly assessed
- Evidence of search for alternatives to animal use
- Humane treatment of animals
- Documentation of substantial expansion for continuation projects
- Evidence of appropriate literature search and attribution

## Combined SRC/IRB Committee

A combined committee is allowed as long as the membership meets both the SRC and IRB requirements listed previously.

## Regulated Research Institutions/Industrial Settings (RRI) Review Committees

**Regulated Research Institution:** A Regulated Research Institution within the U.S. is defined as a professional research/teaching institution that is regularly inspected by the USDA and is licensed to use animals covered by the Animal Welfare Act and may also be subject to U.S. Public Health Service Policy. Also included are all federal laboratories such as National Institutes of Health, Veteran's Affairs Medical Centers and the Centers for Disease Control. In addition, pharmaceutical and biotechnology companies and research institutions that utilize research animals that are not covered by the Animal Welfare Act but have an operational Institutional Animal Care and Use Committee and are in compliance with U.S. federal laws are included in this definition. For projects conducted outside of the United States, a Regulated Research Institution would be a comparable research institution that adheres to country laws governing the care and use of vertebrate animals.

Certain areas of research conducted in a regulated research institution or an industrial setting require review and approval by federally mandated committees that have been established at that institution. These committees include:

- Institutional Animal Care and Use Committee (IACUC); Animal Care and Use Committee (ACUC); Animal Ethics Committee
- Institutional Review Board (IRB); Human Subjects Participant Program (HSPP)
- Institutional Biosafety Committee (IBC)
- Embryonic Stem Cell Research Oversight Committee (ESCR)
- Safety Review Committee

**The ISEF Scientific Review Committee (Intel ISEF SRC)** All projects are reviewed by the Intel ISEF Scientific Review Committee prior to competition. The Intel ISEF SRC is the final arbiter of the qualification of students to participate in the Intel ISEF. Before the fair, committee members review research plans and all required forms to confirm that applicable Intel ISEF rules have been followed. The Intel ISEF SRC may request additional information from students prior to the Intel ISEF or may interview potential Intel ISEF participants at the fair to ensure that they qualify to compete.

The Intel ISEF SRC, like an Affiliated Fair SRC, is made up of adults knowledgeable about research regulations. In addition to the review of all projects at the Intel ISEF, committee members answer questions about the rules throughout the year from students and teachers. The ISEF SRC can be contacted at [SRC@societyforscience.org](mailto:SRC@societyforscience.org).

Members of the Intel ISEF Scientific Review Committee 2019:

Ms. Susan Appel Mr. Henry Disston Dr. Jennifer Green Dr. Paula Johnson Dr. Timothy Martin  
Mrs. Evelyn Montalvo Mr. Joseph Scott Dr. Jason Shuffitt  
Mrs. Andrea Spencer

# Human Participants Rules

## Rules involving human participants

The following rules were developed to help pre-college student researchers adhere to the federal regulations governing professional scientists and to protect the welfare of both human participants and the student researcher. Health and well-being is of the highest priority when students conduct research with human participants.

According to Code of Federal Regulation 45, CFR 46, a human participant is a living individual about whom an investigator conducting research obtains (1) data or samples through intervention or interaction with individual(s) or (2) identifiable private information.

Examples of projects that are considered “human participant research” include:

- Participants in physical activities (e.g., physical exertion, ingestion of any substance, any medical procedure)
- Psychological, educational and opinion studies (e.g., surveys, questionnaires, tests)
- Studies in which the researcher is the subject of the research
- Testing of student designed invention, prototype or computer application by human participants other than student researcher
- Data/record review projects that include data that are not de-identified/anonymous (e.g., data set that includes name, birth date, phone number or other identifying variables)
- Behavioral observations that
  - a. involve any interaction with the observed individual(s) or where the researcher has modified the environment (e.g., post a sign, place an object).
  - b. occur in non-public or restricted access settings (e.g., day care setting, doctor's office)
  - c. involve the recording of personally identifiable information.

## Rules

1. Student researchers must complete ALL elements of the Human Participants portion of the Research Plan/Project Summary Instructions and evaluate and minimize the physical, psychological and privacy risks to their human participants. See Risk Assessment information on page 11 and the online Risk Assessment Guide (<https://student.societyforscience.org/human-participants#riskassess>) for additional guidance.
2. Student research involving human participants must be reviewed and approved by an Institutional Review Board (IRB) (See page 5) before any interaction (e.g., recruitment, data collection) with human participants may begin. It is the responsibility of the IRB to evaluate potential physical and/or psychological risks of the project and make a determination about whether the project is appropriate for student research and safe for the student researcher and participants.
  - a. Projects that are conducted at school, at home or in the community that are not affiliated with a Regulated Research Institution (RRI) must be reviewed and approved by the School IRB before the student may begin recruiting and/or interacting with human participants. The School IRB must assess the risk and document its determination of risk on Form 4.
  - b. Projects that are conducted at a Regulated Research Institution (RRI) (e.g., university, hospital, medical center, government lab) must have IRB approval from the RRI. A

copy of the IRB approval for the project must be obtained.

A letter from an adult mentor and/or Qualified Scientist is not sufficient documentation of the RRI IRB review and approval process.

3. The student must comply with all determinations made by the School or RRI IRB before beginning any interaction with human participants (e.g., recruitment, data collection).
  - a. If the IRB requires a Qualified Scientist (QS), Form 2 must be completed by the QS before any interaction with human participants. The School IRB will review this completed form before approving the project.
  - b. If the IRB requires a Designated Supervisor (DS), Form 3 must be completed before any interaction with human participants. The School IRB will review this completed form before approving the project.
  - c. See rule #4 below regarding required procedures for obtaining informed consent/assent and/or parental permission.

Participation in research may begin only after research participants have voluntarily given informed consent/assent (in some cases with parental permission). Adult research participants may give their own consent. Research participants under 18 years of age and/or individuals not able to give consent (e.g. developmentally disabled individuals) give their assent, with the parent/guardian providing permission.

The School IRB will determine whether the consent/assent/parental permission may be a) verbal or implicit or b) must be written. See the Risk Assessment information on page 9 and the online Risk Assessment Guide (<https://sspcdn.blob.core.windows.net/files/Documents/SEP/ISEF/Resources/Risk-Assessment-Guide.pdf>) for further explanation of informed consent.

- a. Informed consent requires that the researcher provides complete information to the participant (and where applicable, parents or guardians) about the risks and benefits associated with participation in the research study, which then allows the participants and parents or guardians to make an informed decision about whether or not to participate.
- b. Participants must be informed that their participation is voluntary and that they are free to stop participating at any time (i.e., they may participate or decline to participate, with no adverse consequences of non-participation or aborted participation).
- c. Informed consent may not involve coercion.
- d. When written parental permission is required and the study includes a survey, the survey must be attached to the consent form.
- e. The student researcher may request that the IRB waive the requirement for written informed consent/parental permission in his/her research plan if the project meets specific requirements. See section on IRB waivers for more information about situations in which written parental permission and/or written informed consent can be waived by the IRB.

5. The research study must be in compliance with all privacy laws (e.g., U.S. Family Educational Rights and Privacy Act

(FERPA) and the U.S. Health Insurance Portability and Accountability Act (HIPAA) when they apply to the project (e.g. the project involves medical information).

6. Students are prohibited from administering medication and/or performing medical procedures on human participants.

A student may observe and collect data for analysis of medical procedures and medication administration only under the direct supervision of a medical professional. This medical professional must be named in the research protocol approved by the IRB. The IRB must also confirm that the student is not violating the medical practice act of the state or country in which he/she is conducting the research.

7. Student researchers may NOT publish or display information in a report that identifies the human participants directly or through identifiers linked to the participants (including photographs) without the written consent of the participant(s) (Public Health Service Act, 42, USC 241 (d)).

8. All published instruments that are not in the public domain must be administered, scored and interpreted by a Qualified Scientist as required by the instrument publisher. Any and all use and distribution of the test must be in accordance with the publisher's requirements, including procurement of legal copies of the instrument.

9. Studies that involve the collection of data via use of the internet (e.g., email, web-based surveys) are allowed, but researchers should be aware that they can pose challenges in a) collecting anonymous data, b) obtaining informed consent and c) ensuring that participants are of the appropriate age to give informed consent. See the Online Survey Consent Procedures <https://sspcdn.blob.core.windows.net/files/Documents/SEP/ISEF/Resources/Online-Survey-Consent-Procedures.pdf>.

10. After initial IRB approval, a student with any proposed changes in the Research Plan must repeat the approval process and regain approval before resuming interaction (recruitment, data collection) with human participants.

11. After experimentation and before competition, the Affiliated Fair SRC will review for compliance with all rules.

12. The following forms are required for studies involving human participants:
  - a. Checklist for Adult Sponsor (1), Student Checklist (1A), Research Plan/Project Summary, and Approval Form (1B)
  - b. Human Participants Form (4) or IRB approval from an RRI and all applicable consents and survey(s)
  - c. Regulated Research Institution Form (1C), when applicable
  - d. Qualified Scientist Form (2), when applicable
  - e. Risk Assessment (3) when applicable

## **IRB Waiver of Written Informed Consent/Parental Permission**

The IRB may waive the requirement for documentation of written informed consent/assent/parental permission if the research involves only minimal risk and anonymous data collection and if it is one of the following:

1. Research involving normal educational practices
2. Research on individual or group behavior or characteristics of individuals where the researcher does not manipulate the

participants' behavior and the study does not involve more than minimal risk.

3. Surveys, questionnaires, or activities that are determined by the IRB to involve perception, cognition, or game theory, etc. and that do NOT involve gathering personal information, invasion of privacy or potential for emotional distress.
4. Studies involving physical activity where the IRB determines that no more than minimal risk exists and where the probability and magnitude of harm or discomfort anticipated in the research are not greater than those ordinarily encountered in DAILY LIFE or during performance of routine physical activities.

If there is any uncertainty regarding the appropriateness of waiving written informed consent/assent/parental permission, it is strongly recommended that documentation of written informed consent/assent/parental permission be obtained.

## **Human Participant Involvement in Student-designed Invention, Prototype, Computer Application & Engineering/Design Projects**

Student-designed invention, prototype, computer application and engineering/design projects that involve testing of the invention by any human participant require attention to the potential risks to the individual(s) testing or trying out the invention/prototype.

1. IRB review and pre-approval is necessary when the student-designed invention, prototype, application, etc. is tested by human participants other than the student researcher(s). This includes surveys conducted regarding potential use, review of the product and/or opinions regarding the project.
2. Projects in which the invention, prototype or project involves a medical diagnosis or intervention (as defined by the FDA or Medical Practices Act) and is tested on human participants must be conducted at a Regulated Research Institution (RRI) with a Qualified Scientist and receive IRB Approval from the Institution.
3. A Risk Assessment Form 3 is recommended for all student-designed inventions or prototypes.

## **Exempt Studies (Do Not Require IRB Preapproval or Human Participants Paperwork)**

Some studies involving humans are exempt from IRB pre-approval or additional human participant forms. Exempt projects for the Intel ISEF and affiliated fairs are:

1. Student-designed Invention, Prototype, Computer Applications or Engineering/Design Project in which the student researcher is the only person testing the invention, prototype or computer application and the testing does not pose a health or safety hazard. It is recommended that a Risk Assessment Form (3) be completed.
2. Data/record review studies (e.g., baseball statistics, crime statistics) in which the data are taken from preexisting data sets that are publicly available and/or published and do not involve any interaction with humans or the collection of any data from a human participant for the purpose of the student's research project.

3. Behavioral observations of unrestricted, public settings (e.g., shopping mall, public park) in which all of the following apply:
  - a. the researcher has no interaction with the individuals being observed
  - b. the researcher does not manipulate the environment in any way and
  - c. the researcher does not record any personally identifiable data.
4. Projects in which the student receives pre-existing/retrospective data in a **de-identified/anonymous** format which complies with both of the following conditions:
  - a. the professional providing the data certifies in writing that the data have been appropriately de-identified before being given to the student researcher and are in compliance with all privacy and HIPAA laws, and
  - b. the affiliated fair SRC ensures that the data were appropriately de-identified by review of the written documentation provided by the supervising adult(s).

## Human Participant Risk Assessment

Use this information to help determine the level of risk involved in a study involving human participants.

All human participant projects are considered to have some level of risk.

No more than minimal risk exists when the probability and magnitude of harm or discomfort anticipated in the research are not greater (in and of themselves) than those ordinarily encountered in everyday life or during performance of routine physical or psychological examinations or tests.

More than minimal risk exists when the possibility of physical or psychological harm or harm related to breach of confidentiality or invasion of privacy is greater than what is typically encountered in everyday life. Most of these studies require documented informed consent or minor assent with the permission of parent or guardian (as applicable).

### 1. Examples of Greater than Minimal Physical Risk

- a. Exercise other than ordinarily encountered in everyday life
- b. Ingestion, tasting, smelling, or application of a substance. However, ingestion or tasting projects that involve commonly available food or drink will be evaluated by the IRB which determines risk level based upon the nature of the study and local norms.
- c. Exposure to any potentially hazardous material.

### 2. Examples of Greater than Minimal Psychological Risk

A research activity (e.g. survey, questionnaire, viewing of stimuli) or experimental condition that could potentially result in emotional stress. Some examples include: answering questions related to personal experiences such as sexual or physical abuse, divorce, depression, anxiety; answering questions that could result in feelings of depression, anxiety, or low self esteem; or viewing violent or distressing video images.

### 3. Privacy Concerns

- a. The student researcher and IRB must consider whether an activity could potentially result in negative consequences for the participant due to invasion of privacy or breach of confidentiality. Protecting confidentiality requires measures to ensure that identifiable research data are not disclosed to the public or unauthorized individuals.
- b. Risk level can be reduced by protecting confidentiality or collecting data that is strictly anonymous. This requires the collection of research in such a way that it is impossible to connect research data with the individual who provided the data.

### 4. Risk Groups

If the research study includes participants from any of the following groups, the IRB and student research must consider whether the nature of the study requires special protections or accommodations:

- a. Any member of a group that is naturally at-risk (e.g. pregnant women, developmentally disabled persons, economically or educationally disadvantaged persons, individuals with diseases such as cancer, asthma, diabetes, AIDS, dyslexia, cardiac disorders, psychiatric disorders, learning disorders, etc.)
- b. Special groups that are protected by federal regulations or guidelines (e.g. children/minors, prisoners, pregnant women, students receiving services under the Individuals with Disabilities Education Act (IDEA)).

See the online Risk Assessment Guide (<https://sspcdn.blob.core.windows.net/files/Documents/SEP/ISEF/Resources/Risk-Assessment-Guide.pdf>) and Online Survey Consent Procedures (<https://sspcdn.blob.core.windows.net/files/Documents/SEP/ISEF/Resources/Online-Survey-Consent-Procedures.pdf>) for more detailed information on risk assessment.

# Vertebrate Animals Rules

## Rules involving vertebrate animals

The following rules were developed to help pre-college student researchers adhere to the federal regulations governing professional scientists and to protect the welfare of both animal subjects and the student researcher. Health and well-being is of high priority when students conduct research with animal subjects.

The Society strongly endorses the use of non-animal research methods and encourages students to use alternatives to animal research, which must be explored and discussed in the research plan. The guiding principles for the use of animals in research include the following "Four R's":

- **Replace** vertebrate animals with invertebrates, lower life forms, tissue/cell cultures and/or computer simulations where possible.
- **Reduce** the number of animals without compromising statistical validity.
- **Refine** the experimental protocol to minimize pain or distress to the animals.
- **Respect** animals and their contribution to research.

If the use of vertebrate animals is necessary, students must consider additional alternatives to reduce and refine the use of animals.

All projects involving vertebrate animals must adhere to the rules for all vertebrate animal studies AND to either Section A or Section B rules, depending on the nature of the study and the research site.

A project is considered a tissue study and not a vertebrate animal study if tissue is obtained from an animal that was euthanized for a purpose other than the student's project. (Use of tissues obtained from research conducted at a Regulated Research Institution requires a copy of an IACUC certification with the name of the research institution, the title of the study, the IACUC approval number and date of IACUC approval.) In tissue studies, a student may observe the vertebrate study, but may not manipulate or have any direct involvement in the vertebrate animal experimental procedures.

Vertebrate animals, as covered by these rules, are defined as:

1. Live, nonhuman vertebrate mammalian embryos or fetuses
2. Tadpoles
3. Bird and reptile eggs starting three days (72 hours) prior to hatching
4. All other nonhuman vertebrates (including fish) at hatching or birth.

Exception: Because of their delayed cognitive neural development, zebrafish embryos may be used up to seven days (168 hours) post-fertilization.

### Rules for ALL Vertebrate Animal Studies

1. All vertebrate animal studies must have a research plan that includes:
  - a. Justification why animals must be used, including the reasons for the choice of species, the source of animals and the number of animals to be used; description, explanation, or identification of alternatives to animal use that were considered, and the reasons these alternatives were unacceptable; explanation of the potential impact or contribution this research may have on the broad fields of biology or medicine.

- b. Description of how the animals will be used. Include methods and procedures, such as experimental design and data analysis; description of the procedures that will minimize the potential for discomfort, distress, pain and injury to the animals during the course of experimentation; identification of the species, strain, sex, age, weight, source and number of animals proposed for use.
2. All vertebrate animal studies must be reviewed and approved before experimentation begins. An Institutional Animal Care and Use Committee, known as an IACUC, is the institutional animal oversight review and approval body for all animal studies at a Regulated Research Institution. The local OR affiliated fair SRC serves in this capacity for vertebrate animals studies performed in a school, home or field. Any SRC serving in this capacity must include a veterinarian or an animal care provider with training and/or experience in the species being studied.
3. Students performing vertebrate animal research must satisfy US federal law as well as local, state, and country laws and regulations of the jurisdiction in which research is performed.
4. Research projects which cause more than momentary or slight pain or distress are prohibited. Any illness or unexpected weight loss must be investigated and a veterinarian consulted to receive required medical care. This investigation must be documented by the Qualified Scientist or Designated Supervisor, who is qualified to determine the illness, or by a veterinarian. If the illness or distress is caused by the study, the experiment must be terminated immediately.
5. No vertebrate animal deaths due to the experimental procedures are permitted in any group or subgroup.
  - a. Studies that are designed or anticipated to cause vertebrate animal death are prohibited.
  - b. Any death that occurs must be investigated by a veterinarian, the Qualified Scientist or the Designated Supervisor who is qualified to determine if the cause of death was incidental or due to the experimental procedures. The project must be suspended until the cause is determined and then the results must be documented in writing.
  - c. If death was the result of the experimental procedure, the study must be terminated, and the study will not qualify for competition.
6. All animals must be monitored for signs of distress. Because significant weight loss is one sign of stress, weight must be recorded at least weekly with 15% being the maximum permissible weight loss or growth retardation (compared to controls) of any experimental or control animal. Additionally, body conditioning scoring (BCS) systems are available for most species of animals utilized in research and are an objective method for assessing the overall health status of the research subject, with or without weight loss. A BCS system should be included in the design of any study utilizing live vertebrate animals and results regularly recorded.
7. Students are prohibited from designing or participating in an experiment associated with the following types of studies on vertebrate animals:
  - a. Induced toxicity studies with known toxic substances that could cause pain, distress, or death, including but

not limited to alcohol, acid rain, pesticides, or heavy metals or studies with the intent to study toxic effects of a substance on a vertebrate animal.

- b. Behavioral experiments using conditioning with aversive stimuli, mother/infant separation or induced helplessness.
- c. Studies of pain.
- d. Predator/vertebrate prey experiments.

8. Justification is required for an experimental design that involves food or fluid restriction and must be appropriate to the species. If the restriction exceeds 18 hours, the project must be reviewed and approved by an IACUC and conducted at a Regulated Research Institution (RRI).

9. Animals may not be captured from or released into the wild without approval of authorized wildlife or other regulatory officials. All appropriate methods and precautions must be used to decrease stress. Fish may be obtained from the wild only if the researcher releases the fish unharmed, has the proper license, and adheres to state, local and national fishing laws and regulations. The use of electrofishing is permissible only if conducted by a trained supervisor; students are prohibited from performing electrofishing.

10. A Qualified Scientist or Designated Supervisor must directly supervise all research involving vertebrate animals, except for observational studies.

11. After initial SRC approval, a student with any proposed changes in the Research Plan/Project Summary of the project must repeat the approval process before laboratory experimentation/data collection resumes.

### **Exempt Studies (Do Not Require SRC Preapproval)**

1. Studies involving behavioral observations of animals are exempt from prior SRC review if ALL of the following apply:
  - a. There is no interaction with the animals being observed,
  - b. There is no manipulation of the animal environment in any way, and
  - c. The study meets all federal and state agriculture, fish, game and wildlife laws and regulations.

### **A. Additional Rules for Projects Conducted at School/Home/Field**

Vertebrate animal studies may be conducted at a home, school, farm, ranch, in the field, etc. This includes:

1. Studies of animals in their natural environment.
2. Studies of animals in zoological parks.
3. Studies of livestock that use standard agricultural practices.
4. Studies of fish that use standard aquaculture practices

These projects must be reviewed and approved by an SRC in which one member is either a veterinarian and/or an animal care provider/expert with training and/or experience in the species being studied.

1. These projects must adhere to BOTH of the following guidelines:
  - a. The research involves only agricultural, behavioral, observational or supplemental nutritional studies on animals.

### **AND**

- b. The research involves only non-invasive and non-intrusive methods that do not negatively affect an animal's health or well-being.

All vertebrate animal studies that do not meet the criteria in Section A. must be conducted in a Regulated Research Institution (see Section B).

2. Animals must be treated kindly and cared for properly. Animals must be housed in a clean, ventilated, comfortable environment appropriate for the species. They must be given a continuous, clean (uncontaminated) water and food supply. Cages, pens and fish tanks must be cleaned frequently. Proper care must be provided at all times, including weekends, holidays, and vacation periods. Animals must be observed daily to assess their health and well-being. A Designated Supervisor is required to oversee the daily husbandry of the animals. Any of the following U.S. documents provide further guidance for animal husbandry:
  - Federal Animal Welfare Regulation
  - Guide for the Care and Use of Laboratory Animals
  - Guide for the Care and Use of Agricultural Animals in Agricultural Research and Teaching (Ag-Guide)
  - Quality Assurance Manuals (for the appropriate species)
3. The local or affiliated fair Scientific Review Committee must determine if a veterinarian's certification of the research and animal husbandry plan is required. This certification, as well as SRC approval, is required before experimentation and is documented on Vertebrate Animal Form 5A. A veterinarian must certify experiments that involve supplemental nutrition, administration of prescription drugs and/or activities that would not be ordinarily encountered in the animal's daily life.
4. If an illness or emergency occurs, the affected animal(s) must receive proper medical or nursing care that is directed by a veterinarian. A student researcher must stop experimentation if there is unexpected weight loss or death in the experimental subjects. The experiment can only be resumed if the cause of illness or death is not related to the experimental procedures and if appropriate steps are taken to eliminate the causal factors. If death is the result of the experimental procedure, the study must be terminated, and the study will not qualify for competition.
5. The final disposition of the animals must be conducted in a responsible and ethical manner, and must be described on Vertebrate Animal Form 5A.
6. Euthanasia for tissue removal and/or pathological analysis is not permitted for a project conducted in a school/home/field site.
7. Livestock or fish raised for food using standard agricultural/aquacultural production practices may be euthanized by a qualified adult for carcass evaluation.
8. The following forms are required:
  - a. Checklist for Adult Sponsor (1), Student Checklist (1A), Research Plan/Project Summary, and Approval Form (1B)
  - b. Vertebrate Animal Form (5A)
  - c. Qualified Scientist Form (2), when applicable

## **B. Additional Rules for Projects Conducted in a Regulated Research Institution**

All studies not meeting the criteria in Section A that are otherwise permissible under Intel ISEF rules must be conducted in a Regulated Research Institution (RRI). A Regulated Research Institution within the U.S. is defined as a professional research/teaching institution that is regularly inspected by the USDA and is licensed to use animals covered by the Animal Welfare Act and may also be subject to U.S. Public Health Service Policy. Also included are all federal laboratories such as National Institutes of Health, Veteran's Affairs Medical Centers and the Centers for Disease Control. In addition, pharmaceutical and biotechnology companies and research institutions that utilize research animals that are not covered by the Animal Welfare Act but have an operational Institutional Animal Care and Use Committee (IACUC) and are in compliance with U.S. federal laws are included in this definition. For projects conducted outside of the United States, a Regulated Research Institution would be a comparable research institution that adheres to country laws governing the care and use of vertebrate animals.

*Some protocols permitted in a Regulated Research Institution are not permitted for participation in the Intel ISEF; adherence to RRI rules is necessary but may not be sufficient.*

1. The Institutional Animal Care and Use Committee (IACUC) or the comparable animal oversight committee must approve all student research projects before experimentation begins. Such research projects must be conducted under the responsibility of a principal investigator. The local and affiliated fair SRCs must also review the project to certify that the research project complies with Intel ISEF Rules. This local and regional SRC review should occur before experimentation begins, if possible.
2. Student researchers are prohibited from performing euthanasia. Euthanasia at the end of experimentation for tissue removal and/or pathological analysis is permitted. All methods of euthanasia must adhere to current American Veterinarian Medical Association (AVMA) Guidelines.
3. Research projects that cause more than momentary or slight pain or distress to vertebrate animals that is not mitigated by approved anesthetics, analgesics and/or tranquilizers are prohibited.
4. Research in nutritional deficiency or research involving substances or drugs of unknown effect is permitted to the point that any clinical sign of distress is noted. In the case that distress is observed, the project must be suspended and measures must be taken to correct the deficiency or drug effect. A project can only be resumed if appropriate steps are taken to correct the causal factors.
5. The following forms are required:
  - a. Checklist for Adult Sponsor (1), Student Checklist (1A), Research Plan/Project Summary, and Approval Form (1B)
  - b. Regulated Research Institution Form (1C)
  - c. Qualified Scientist Form (2)
  - d. Vertebrate Animal Form (5B)
  - e. PHBA Risk Assessment Form (6A) –for all studies involving tissues and body fluids.
  - f. Human and Vertebrate Animal Tissue Form (6B) – for all studies involving tissues and body fluids.

Sources of Information are available as a separate section at the end of the document.

# Potentially Hazardous Biological Agents (PHBA) Rules

Potentially Hazardous Biological Agents Rules for use of microorganisms (including bacteria, viruses, viroids, prions, rickettsia, fungi and parasites), recombinant DNA technologies or human or animal fresh/frozen tissues, blood, or body fluids.

Students are permitted to do research projects with potentially hazardous biological agents meeting the conditions and rules described below which were designed to protect students and to ensure adherence to federal and international biosafety regulations and guidelines.

When dealing with potentially hazardous biological agents, it is the responsibility of the student and all of the adults involved in a research project to conduct and document a risk assessment on Form (6A) to define the potential level of harm, injury or disease to plants, animals and humans that may occur when working with biological agents. The risk assessment determines a biosafety level which in turn determines if the project can proceed, and if so, the laboratory facilities, equipment, training, and supervision required.

All projects involving microorganisms, recombinant DNA technologies and human or animal fresh/frozen tissues, blood or body fluids must adhere to the rules below AND, depending on the study, to the additional rules in Section A, B or C.

## Rules for ALL Studies with Potentially Hazardous Biological Agents (PHBA)

1. Prior review and approval is required for the use of potentially hazardous microorganisms (including bacteria, viruses, viroids, prions, rickettsia, fungi, and parasites), recombinant DNA (rDNA) technologies or human or animal fresh/frozen tissues, blood, or body fluids.
2. An affiliated fair SRC, an IBC or an IACUC must approve all research before experimentation begins. The initial risk assessment determined by the student researcher and adults supervising the project must be confirmed by the SRC, IBC or IACUC.
3. Experimentation involving the culturing of potentially hazardous biological agents, even BSL-1 organisms, is prohibited in a home environment. However, specimens may be collected at home as long as they are immediately transported to a laboratory with the BSL containment determined by the affiliated fair SRC.
4. Research determined to be at Biosafety Level 1 (BSL-1) must be conducted in a BSL-1 or higher laboratory. The research must be supervised by a trained Designated Supervisor or a Qualified Scientist. The student must be properly trained in standard microbiological practices.
5. Research determined to be a Biosafety Level 2 (BSL-2) must be conducted in a laboratory rated BSL-2 or above (commonly limited to a Regulated Research Institution). The research must be reviewed and approved by the Institutional Biosafety Committee (IBC) if the Regulated Research Institution requires the review. For a high school BSL-2 laboratory, the SRC must review and approve. The research must be supervised by a Qualified Scientist.
6. Students are prohibited from designing or participating in BSL-3 or BSL-4 Research.
7. Laboratory studies designed to culture known clinically significant multidrug resistant organisms (MDROs) must have a written justification for usage and be conducted at a Regulated Research Institution laboratory with a minimum of BSL-2 containment and documented IBC review and approval. Representative examples include, but are not limited to the following known agents: MRSA (Methicillin-Resistant *Staphylococcus aureus*), VISA/VRSA (Vancomycin Intermediate or Resistant *Staphylococcus aureus*), VRE (Vancomycin-Resistant *Enterococci*), CRE (Carbapenem Resistant *Enterobacteriaceae*), ESBLs (Extended Spectrum Beta-Lactamase producing gram negative organisms), and fungi (yeasts or molds) with known resistance to antifungal agents.
8. Insertion of antibiotic resistance markers for the clonal selection of bioengineered organisms is permitted. However, students may not genetically engineer organisms with multiple drug resistant traits, nor intentionally select for such organisms through passage in culture, with the intended purpose of investigating the pathology, development, or treatment of antibiotic-resistant infections. Insertion of antibiotic-resistance traits or selection of organisms expressing traits that may affect the ability to provide effective treatment of infections acquired by humans, animals, or plants is strictly prohibited.
9. Extreme caution must be exercised when selecting and sub-culturing antibiotic-resistant organisms. Studies using such organisms, including BSL-1 organisms that may have originally been exempt from prior SRC approval, require at least BSL-2 containment.
10. The culturing of human or animal waste, including sewage sludge, is considered a BSL-2 study.
11. Naturally-occurring plant pathogens may be studied (not cultured) at home, but may not be introduced into a home/garden environment.
12. All potentially hazardous biological agents must be properly disposed at the end of experimentation in accordance with their biosafety level. For BSL 1 or BSL 2 organisms: Autoclave at 121 degrees Celsius for 20 minutes, use of a 10% bleach solution (1:10 dilution of domestic bleach), incineration, alkaline hydrolysis, biosafety pick-up and other manufacturer recommendations are acceptable.
13. Any proposed changes in the Research Plan/Project Summary by the student after initial local or affiliated fair SRC approval must undergo subsequent SRC or IBC review and approval before such changes are made and before experimentation resumes.
14. The following forms are required:
  - a. Checklist for Adult Sponsor (1), Student Checklist (1A), Research Plan/Project Summary, and Approval Form (1B)
  - b. Regulated Research Institution Form (1C) - when applicable
  - c. Qualified Scientist (2), when applicable

- d. Risk Assessment (3), when applicable
- e. PHBA Risk Assessment Form (6A), when applicable
- f. Human and Vertebrate Animal Tissue Form (6B) – for all studies involving tissues and body fluids.

## A. Additional Rules for Projects Involving Unknown Microorganisms

Studies involving unknown microorganisms present a challenge because the presence, concentration and pathogenicity of possible agents are unknown. In science fair projects, these studies typically involve the collection and culturing of microorganisms from the environment (e.g. soil, household surfaces, skin.)

1. Research with unknown microorganisms can be treated as a BSL-1 study under the following conditions:
  - a. Organism is cultured in a plastic petri dish (or other standard sterile non-breakable container) and sealed.
  - b. Experiment involves only procedures in which the petri dish remains sealed throughout the experiment (e.g., counting presence of organisms or colonies).
  - c. The sealed petri dish is disposed of via autoclaving or disinfection under the supervision of the Designated Supervisor.
2. If a culture container with unknown microorganisms is opened for any purpose, (except for disinfection/disposal), it must be treated as a BSL-2 study and involve BSL-2 laboratory precautions.

## B. Additional Rules for Projects Involving Recombinant DNA (rDNA) Technologies

Studies involving rDNA technologies in which microorganisms, plants and/or animals have been genetically modified require close review to assess the risk level assignment. Some rDNA studies can be safely conducted in a BSL-1 high school laboratory with prior review by a SRC.

1. All rDNA technology studies involving BSL-1 organisms and BSL-1 host vector systems, including commercially available kits, must be conducted in a BSL-1 laboratory under the supervision of a Qualified Scientist or Designated Supervisor and must be approved by the SRC prior to experimentation. Examples include cloning of DNA in *E. coli* K-12, *S. cerevesiae*, and *B. subtilis* host- vector systems.
2. An rDNA technology study using BSL-1 agents that may convert to BSL-2 agents during the course of experimentation must be conducted entirely in a BSL-2 facility.
3. All rDNA technology studies involving BSL-2 organisms and/or BSL-2 host vector systems must be conducted in a Regulated Research Institution and approved by the IBC prior to experimentation, where applicable.
4. Propagation of recombinants containing DNA coding for human, plant or animal toxins (including viruses) is prohibited.
5. All genome editing studies that include alteration of germline cells, insertion of gene drives, use of rapid trait development systems (RTDS®), etc., should be categorized as a BSL-2 study and must be conducted at an RRI and approved by the IBC from the institution. Qualified scientists are expected to ensure that student research protocols address appropriate intrinsic and extrinsic containment precautions.

6. Introduction or disposal of non-native, genetically-altered, and/or invasive species (e.g. insects or other invertebrates, plants, vertebrates), pathogens, toxic chemicals or foreign substances into the environment is prohibited. Students and adult sponsors should reference their local, state and national regulations and quarantine lists.

## C. Additional Rules for Projects with Tissues and Body Fluids, including Blood and Blood Products

Studies involving fresh/frozen tissue, blood or body fluids obtained from humans and/or vertebrates may contain microorganisms and have the potential of causing disease. Therefore, a proper risk assessment is required.

1. Research involving human and/or non-human primate established cell lines and tissue culture collections (e.g., obtained from the American Type Culture Collection) must be considered a BSL-1 or BSL-2 level organism as indicated by source information and treated accordingly. The source and/or catalog number of the cultures must be identified in the Research Plan/Project Summary.
2. If tissues are obtained from an animal that was euthanized for a purpose other than the student's project, it may be considered a tissue study.
  - a. Use of tissues obtained from research conducted at a Regulated Research Institution requires a copy of the IACUC certification with the name of the research institution, the title of the study, the IACUC approval number and date of IACUC approval.
  - b. Use of tissues obtained from agricultural/aquacultural studies require prior SRC approval.
3. If the animal was euthanized solely for the student's project, the study must be considered a vertebrate animal project and is subject to the vertebrate animal rules. (See vertebrate animal rules.)
4. The collection and examination of fresh/frozen tissue and/or body fluids, (not including blood or blood products; see rule 8) from a non-infectious source with little likelihood of microorganisms present must be considered Biosafety level 1 studies and must be conducted in a BSL-1 laboratory or higher and must be supervised by a Qualified Scientist or trained Designated Supervisor.
5. The collection and examination of fresh/frozen tissues or body fluids or meat and meat by-products NOT obtained from food stores, restaurants, or packing houses may contain microorganisms. Because of the increased risk from unknown potentially hazardous agents, these studies must be considered biosafety level 2 studies conducted in a BSL-2 laboratory under the supervision of a Qualified Scientist.
6. Human breast milk of unknown origin, unless certified free of HIV and Hepatitis C, and domestic unpasteurized animal milk are considered BSL-2.
7. All studies involving human or wild animal blood or blood products should be considered at a minimum a Biosafety level 2 study and must be conducted in a BSL-2 laboratory under the supervision of a Qualified Scientist. Known BSL-3 or BSL-4 blood is prohibited. Studies involving domestic animal blood may be considered a BSL-1 level study. All blood must be handled in accordance with standards and

guidelines set forth in the OSHA, 29CFR, Subpart Z. Any tissue or instruments with the potential of containing blood-borne pathogens (e.g. blood, blood products, tissues that release blood when compressed, blood contaminated instruments) must be properly disposed after experimentation.

8. Studies of human body fluids, where the sample can be identified with a specific person, must have IRB review and approval, and informed consent.
9. Any study involving the collection and examination of body fluids that may contain biological agents belonging to BSL-3 or BSL-4 is prohibited.
10. A project involving a student researcher using their own body fluids (if not cultured)
  - a. can be considered a BSL-1 study
  - b. may be conducted in a home setting
  - c. must have IRB review if the body fluid is serving as a measure of an effect of an experimental procedure on the student researcher (e.g. Student manipulates diet and takes a blood or urine sample). An example of a project not needing IRB review would be collecting urine to serve as a deer repellent.
  - d. must receive prior SRC review and approval prior to experimentation.
11. Studies involving embryonic human stem cells must be conducted in a Registered Research Institution and reviewed and approved by the ESCRO (Embryonic Stem Cell Research Oversight) Committee.

**Exempt Studies (no SRC pre-approval required)** The following types of studies are exempt from requiring SRC pre-approval as listed below, but may be subject to additional rules dependent upon the design of the project. Student researchers and adult sponsors are required to refer to sections A, B, and C of this section to review additional rules for projects that involve unknown organisms, recombinant DNA (rDNA) technologies, tissues, fluids, blood, or blood products before deciding upon a final biosafety level (BSL) designation for projects.

1. The following types of studies are exempt from prior SRC review, but require a Risk Assessment Form 3:
  - a. Studies involving protists and archaea.
  - b. Research using manure for composting, fuel production, or other non-culturing experiments.
  - c. Commercially-available color change coliform water test kits. These kits must remain sealed and must be properly disposed.
  - d. Studies involving decomposition of vertebrate organisms (such as in forensic projects).
  - e. Studies with microbial fuel cells.
2. The following types of studies involve BSL-1 organisms and are exempt from prior SRC review and require no additional forms:
  - a. Studies involving baker's yeast and brewer's yeast, except in rDNA studies.
  - b. Studies involving *Lactobacillus*, *Bacillus thuringiensis*, nitrogen-fixing, oil-eating, and algae-eating bacteria introduced into their natural environment. (Not exempt if cultured in a petri dish environment.)

- c. Studies involving water or soil microbes not concentrated in media conducive to their microbial growth
- d. Studies of mold growth on food items if the experiment is terminated at the first evidence of mold.
- e. Studies of slime molds and edible mushrooms.
- f. Studies involving *E. coli* k-12 (and other strains of *E. coli* used solely as a food source for *C. elegans*) that are performed at school and are not subject to additional rules for recombinant DNA studies or use of antibiotic resistant organisms.

### **Exempt Tissues (no SRC pre-approval required)**

1. The following types of tissue do not need to be treated as potentially hazardous biological agents:
  - a. Plant tissue (except those known to be toxic or hazardous)
  - b. Plant and non-primate established cell lines and tissue culture collections (e.g., obtained from the American Type Culture Collection). The source and/or catalog number of the cultures must be identified in the Research Plan/Project Summary.
  - c. Fresh or frozen meat, meat by-products obtained from food stores, restaurants, or packing houses and pasteurized milk or eggs.
  - d. Hair, hooves, nails and feathers
  - e. Teeth that have been sterilized to kill any blood-borne pathogen that may be present.
  - f. Fossilized tissue or archeological specimens.
  - g. Prepared fixed tissue

Sources of Information are available as a separate section at the end of the document.

# Potentially Hazardous Biological Agents Risk Assessment

Use this information to complete PHBA Risk Assessment Form (6A)

Risk assessment defines the potential level of harm, injury or disease to plants, animals and humans that may occur when working with biological agents. The end result of a risk assessment is the assignment of a biosafety level which then determines the laboratory facilities, equipment, training, and supervision required. Risk assessment involves:

1. Assignment of the biological agent to a risk group
2. Studies involving a known microorganism must begin with an initial assignment of the microorganism to a biosafety level risk group based on information available through a literature search.
3. The study of unknown microorganisms and the use of fresh tissues relies on the expertise of the supervising adult(s).
4. Determination of the level of biological containment available to the student researcher to conduct the experimentation. (See “Levels of Biological Containment” for details.)
5. Assessment of the experience and expertise of the adult(s) supervising the student.

6. Assignment of a biosafety level for the study based on risk group of biological agent, level of biological containment available and the expertise of the Qualified Scientist or Designated Supervisor who will be supervising the project
7. Documentation of review and approval of study prior to experimentation:
  - a. If a study is conducted at a non-regulated site (e.g. school), the SRC reviews the Research Plan/Project Summary.
  - b. If the study was conducted at a Regulated Research Institution, and was approved by the appropriate institutional board (e.g. IBC, IACUC), the SRC reviews the institutional forms provided and documents SRC approval (Form(6A)).
  - c. If a PHBA study was conducted at a Regulated Research Institution but the institution does not require review for this type of study, the SRC must review the study and document approval on Form 6A that the student received appropriate training and the project complies with Intel ISEF rules.

## Classification of Biological Agents Risk Groups

Biological agents, plant or animal, are classified according to biosafety level risk groups. These classifications presume ordinary circumstances in the research laboratory, or growth of agents in small volumes for diagnostic and experimental purposes.

**BSL-1** risk group contains biological agents that pose low risk to personnel and the environment. These agents are highly unlikely to cause disease in healthy laboratory workers, animals or plants. The agents require Biosafety Level 1 containment. Examples of BSL-1 organisms are: *Agrobacterium tumefaciens*, *Micrococcus leuteus*, *Neurospora crassa*, *Bacillus subtilis*.

**BSL-2** risk group contains biological agents that pose moderate risk to personnel and the environment. If exposure occurs in a laboratory situation, the risk of spread is limited and it rarely would cause infection that would lead to serious disease. Effective treatment and preventive measures are available in the event that an infection occurs. The agents require Biosafety Level 2 containment. Examples of BSL-2 organisms are: *Mycobacterium*, *Streptococcus pneumoniae*, *Salmonella choleraesuis*.

**BSL-3** risk group contains biological agents that usually cause serious disease (human, animal or plant) or that can result in serious economic consequences. Projects in the BSL-3 group are prohibited.

**BSL-4** risk group contains biological agents that usually produce very serious disease (human, animal or plant) that is often untreatable. Projects in the BSL-4 group are prohibited.

## Levels of Biological Containment

There are four levels of biological containment (Biosafety Level 1–4). Each level has guidelines for laboratory facilities, safety equipment and laboratory practices and techniques.

**BSL-1** containment is normally found in water-testing laboratories, in high schools, and in colleges teaching introductory microbiology classes. Work is done on an open bench or in an appropriate biosafety hood. Standard microbiological practices are used when working in the laboratory. Decontamination can be achieved by treating with chemical disinfectants or by steam autoclaving. Lab coats and gloves are required. The laboratory work is supervised by an individual with general training in microbiology or a related science.

**BSL-2** containment is designed to maximize safety when working with agents of moderate risk to humans and the environment. Access to the laboratory is restricted. Biological safety cabinets (Class 2, type A, BSC) must be available. An autoclave should be readily available for decontaminating waste materials. Lab coats and gloves are required; eye protection and face shields must also be worn as needed. The laboratory work must be supervised by a scientist who understands the risk associated with working with the agents involved.

**BSL-3** containment is required for infectious agents that may cause serious or potentially lethal diseases as a result of exposure by inhalation. Projects in the BSL-3 group are prohibited.

**BSL-4** containment is required for dangerous/exotic agents that pose high risk of life-threatening disease. Projects in the BSL-4 group are prohibited.

# Hazardous Chemicals, Activities or Devices Rules

Includes DEA-controlled substances, prescription drugs, alcohol & tobacco, firearms and explosives, radiation, lasers, etc.

The following rules apply to research using hazardous chemicals, devices and activities. These include substances and devices that are regulated by local, state, country, or international law, most often with restrictions of their use by minors such as DEA-controlled substances, prescription drugs, alcohol, tobacco, firearms and explosives. Hazardous activities are those that involve a level of risk above and beyond that encountered in the student's everyday life.

These rules are intended to protect the student researcher by ensuring proper supervision and the consideration of all potential risks so that the appropriate safety precautions are taken. Students are required to meet all standards imposed by Intel ISEF, school, local, and/or regional fair(s).

## Rules for ALL Projects Involving Hazardous Chemicals, Activities and Devices

1. All projects involving hazardous chemicals, activities or devices must describe in the research plan the risk assessment process, supervision, safety precautions and methods of disposal.
2. The use of hazardous chemicals and devices and involvement in hazardous activities require direct supervision by a Designated Supervisor, except those involving DEA-controlled substances, which require supervision by a Qualified Scientist.
3. The student researcher must conduct a risk assessment in collaboration with a Designated Supervisor or Qualified Scientist prior to experimentation. This risk assessment is documented on the Risk Assessment Form 3.
4. Student researchers must acquire and use regulated substances in accordance with all local, state, U.S. federal and country laws. For further information or classification for these laws and regulations, contact the appropriate regulatory agencies.
5. For all chemicals, devices or activities requiring a Federal and/or State Permit, the student/supervisor must obtain the permit prior to the onset of experimentation. A copy of the permit must be available for review by adults supervising the project and the local, affiliated, and Intel ISEF SRCs in their review prior to competition.
6. The student researcher must minimize the impact of an experiment on the environment. Examples include using minimal quantities of chemicals that will require subsequent disposal; ensuring that all disposal is done in an environmentally safe manner and in accordance with good laboratory practices.
7. The following forms are required:
  - a. Checklist for Adult Sponsor (1), Student Checklist (1A), Research Plan/Project Summary and Approval Form (1B)
  - b. Regulated Research Institution Form (1C), when applicable
  - c. Qualified Scientist Form (2), when applicable
  - d. Risk Assessment Form (3)

## Additional Rules for Specific Regulated Areas

There are additional rules for the following regulated areas:

- A. DEA-controlled Substances
- B. Prescription Drugs
- C. Alcohol & Tobacco
- D. Firearms and Explosives
- E. Regulated Drones
- F. Radiation

### A. DEA-Controlled Substances

The U.S. Drug Enforcement Administration (DEA) regulates chemicals that can be diverted from their intended use to make illegal drugs. Other countries may have similar regulatory bodies; students outside of the U.S. must adhere to their own country's drug regulatory agency requirements in addition to U.S. DEA regulations. DEA-controlled substances and their schedule number are at the DEA website under Sources of Information. It is the responsibility of the student to consult this list if there is a possibility that substances used in experimentation could be regulated.

1. All studies using DEA-controlled substances must be supervised by a Qualified Scientist who is licensed by the DEA (or other international regulatory body) for use of the controlled substance.
2. All studies using DEA Schedule 1 substances (including marijuana) must have the research protocol approved by DEA before research begins. Schedule 2, 3 and 4 substances do not require protocol approval by DEA.

### B. Prescription Drugs

Prescription drugs are regulated by federal or country laws to protect against inappropriate or unsafe use. Special precautions must be taken in their use for a science project as follows:

1. Students are prohibited from administering prescription drugs to human participants.
2. A veterinarian must supervise student administration of any prescription drugs to vertebrate animals.

### C. Alcohol and Tobacco

The U.S. Alcohol and Tobacco Tax and Trade Bureau (TTB) regulates the production of alcohol and distribution of alcohol and tobacco products. Many such products are restricted by age for purchase, possession and consumption.

1. Fermentation studies in which minute quantities of ethyl alcohol are produced are permitted.
2. The Designated Supervisor is responsible for the acquisition, usage and appropriate disposal of the alcohol or tobacco used in the study.
3. Production of wine or beer by adults is allowable in the home and must meet TTB home production regulations. Students are allowed to design and conduct a research project, under direct parental supervision, involving the legal production of the wine or beer.
4. Students are prohibited from conducting experiments where consumable ethyl alcohol is produced by distillation. However, students are allowed to distill

alcohol for fuel or other non-consumable products. To do so, the work must be conducted at school or a Regulated Research Institution and follow all local and country laws. See Alcohol and Tobacco Tax and Trade Bureau (TTB) website for details.

## **D. Firearms and Explosives**

The U.S. Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF), along with state agencies, regulates the purchase and use of firearms and explosives. A firearm is defined as a small arms weapon from which a projectile is fired by gunpowder. An explosive is any chemical compound, mixture or device, the primary purpose of which is to function by explosion.

Explosives include, but are not limited to, dynamite, black powder, pellet powder, detonators, and igniters.

The purchase of a firearm by a minor is generally unlawful. The use of a firearm, without proper state certification, is illegal. Students should check the training and certification requirements of individual states and countries.

1. Projects involving firearms and explosives are allowable when conducted with the direct supervision of a Designated Supervisor and when in compliance with all federal, state and local laws.
2. A fully assembled rocket motor, reload kit or propellant modules containing more than 62.5 grams of propellant are subject to the permitting, storage and other requirements of federal explosive laws and regulations.
3. Potato guns and paintball guns are not considered firearms unless they are intended to be used as weapons. However, they must be treated as hazardous devices.

## **E. Regulated Drones**

Projects involving unmanned aircraft systems (UAS)/drones must follow all state, Federal and country laws. See the Federal Aviation Administration (FAA) for more details ([www.faa.gov/uas/registration](http://www.faa.gov/uas/registration)).

## **F. Radiation**

Projects involving radionuclides (radioisotopes) and X-rays must involve a careful examination of the risks associated with the study and appropriate safety precautions must be taken. Depending upon the level of exposure, radiation released from these sources can be a health hazard.

1. All studies may not exceed the dose limits set by the Nuclear Regulatory Commission of 0.5 mrem/hr or 100 mrem/year of exposure.
2. If the voltage needed in the study is <10 kvolts, a risk assessment must be conducted. The study may be done at home or school, and SRC preapproval is not required.
3. A study using 10-25 kvolts must have a risk assessment conducted and must be preapproved by the SRC to assess safety. Such a study must be conducted in a metal chamber using a camera only, not direct view through glass. A dosimeter or radiation survey meter is required to measure radiation exposure.

4. All studies using > 25 kvolts must be conducted at an institution with a Licensed Radiation Program and must be preapproved by the Institutions' Radiation Safety Officer or the Committee which oversees the use of ionizing radiation to ensure compliance with state and federal regulations.

# Guidance for Risk Assessment

Please find below guidance on conducting risk assessment when using the following:

- Hazardous Chemicals
- Hazardous Devices
- Radiation

## 1. Hazardous Chemicals

A proper risk assessment of chemicals must include review of the following factors:

- Toxicity – the tendency of a chemical to be hazardous to health when inhaled, swallowed, injected or in contact with the skin.
- Reactivity - the tendency of a chemical to undergo chemical change.
- Flammability - the tendency of a chemical to give off vapors which readily ignite when used under normal working conditions.
- Corrosiveness - the tendency of a chemical, upon physical contact, to harm or destroy living tissues or physical equipment.

must refer to Safety Data Sheets provided by the vendor (SDS) to ensure that proper safety precautions are taken. Some SDS sheets (e.g., Flinn) rank the degree of hazard associated with a chemical. This rating may assist students and adult sponsors in determining risk associated with the use of a chemical.

A risk assessment (documented on Form 3) must include proper disposal methods for the chemicals used in an experiment. The Flinn Catalog (referenced in the Sources of Information section) provides information for the proper disposal of chemicals. If applicable, the student researcher must incorporate in the research plan disposal procedure required by federal and state guidelines.

## 2. Hazardous Devices

The documentation of risk assessment (Form 3) is required when a student researcher works with potentially hazardous/ dangerous equipment and/or other devices, in or outside a laboratory setting that require a moderate to high level of expertise to ensure their safe usage. Some commonly used devices (Bunsen burners, hot plates, saws, drills, etc.) may not require a documented risk assessment, assuming that the student researcher has experience working with the device. Use of other potentially dangerous devices such as high vacuum equipment, heated oil baths, NMR equipment, and high temperature ovens must have documentation of a risk assessment. It is recommended that all student designed inventions also have documentation of a risk assessment.

## 3. Radiation

A risk assessment (documented on Form 3) must be conducted when a student's project involves radiation beyond that normally encountered in everyday life. Non- ionizing radiation includes the spectrum of ultraviolet (UV), visible light, infrared (IR), microwave (NW), radiofrequency (RF) and extremely low frequency (ELF).

## Environmentally Responsible Chemistry

The mission of environmentally responsible (green) chemistry is to avoid the use or production of hazardous substances during chemical process. The principles of green chemistry are described on the EPA website in the Sources of Information section.

Whenever possible the following principles should be incorporated into the research plan.

- Waste prevention
- Use of the safest possible chemicals and products
- Design of the least possible hazardous chemical syntheses

When assessing risk, the type and amount of exposure to a chemical must be considered. For example, an individual's allergic and genetic disposition may have an influence on the overall effect of the chemical. The student researcher

# Engineering Projects Guide

Use this information to help determine the requirements of Engineering Projects and potential areas that will require pre-approval and/or extra safety precautions.

## Engineering Project Checklist

Consider the answers to the questions below. If the response is yes, then the project may fall under more specific rules and those sections of the International Rules & Guidelines should be consulted.

### Hazardous Chemicals, Activities and Devices

Will your project involve any of the following:

- DEA-controlled Substances
- Firearms and Explosives
- Prescription Drugs
- Alcohol & Tobacco
- Regulated Drones
- Radiation

### Human Participants

- Do you intend to gather background knowledge through a survey or interviews to understand the potential use and needs for your project design?
- Are you going to ask for opinions or suggestions on your project design at any point of the project?
- Are you going to test your project (device, app, invention, prototype, etc.)? If yes, does it require persons to interact with it other than yourself?
- Does your project intend to gather personal data/have a health benefit to the user?

### Vertebrate Animals

- Does your project include any interaction with vertebrate animals in any phase of the project?

### Potentially Hazardous Biological Agents

- Does your project include any collection, examination or handling of microorganisms, and/or fresh or frozen tissue, primary cell cultures, blood, blood products or body fluids?
- Are you going to culture or isolate any substance, known or unknown?

## Sources of Information for All Projects

1. United States Patent and Trade Office  
Customer Service: 1-800-786-9199 (toll-free);  
571-272-1000 (local); 571-272-9950 (TTY)  
[www.uspto.gov](http://www.uspto.gov) [www.uspto.gov/patents/process/index.jsp](http://www.uspto.gov/patents/process/index.jsp)

2. European Patent Office  
[www.epo.org](http://www.epo.org)  
[www.epo.org/applying/basics.html](http://www.epo.org/applying/basics.html)

3. The Mad Scientist Network at Washington University School of Medicine:  
[www.madsci.org](http://www.madsci.org)

4. ANS Task Force  
[www.anstaskforce.gov](http://www.anstaskforce.gov)

Aquatic Nuisance Species (ANS) Task Force [www.anstaskforce.gov](http://www.anstaskforce.gov)  
[www.anstaskforce.gov/Documents/ISEF.pdf](http://www.anstaskforce.gov/Documents/ISEF.pdf)

5. APHIS  
[www.aphis.usda.gov/](http://www.aphis.usda.gov/)

Animal and Plant Health Inspection Service Invasive Species List

6. Invasive Species Specialist Group  
[www.issg.org](http://www.issg.org)

The Global Invasive Species database contains invasive species information supplied by experts from around the world.

7. Invasive Species Information  
[www.invasivespeciesinfo.gov/resources/lists.shtml](http://www.invasivespeciesinfo.gov/resources/lists.shtml)

Provides information for species declared invasive, noxious, prohibited, or harmful or potentially harmful.

8. *Success with Science: The Winner's Guide to High School Research*  
<http://www.successwithscience.org>

Gaglani, S. and DeObaldia, G. (2011). Research Corporation for Science Advancement.

ISBN 0-9633504-8-X

## Human Participants

1. Code of Federal Regulation (CFR), Title 45 (Public Welfare), Part 46-Protection of Human Subjects (45CFR46)  
<https://www.hhs.gov/ohrp/regulations-and-policy/regulations/45-cfr-46>
2. Dunn, C. M. and Chadwick, G. L., *Protecting Study Volunteers in Research*, 3rd Edition (2004). Boston, MA: Thomson Centerwatch. ISBN 1-930624-44-1.

Can be purchased from:

[www.amazon.com](http://www.amazon.com)

3. NIH tutorial, "Protecting Human Research Participants"  
<http://phrp.nihtraining.com/files/PHRP.pdf>
4. Belmont Report, April 18, 1979  
[www.hhs.gov/ohrp/humansubjects/guidance/belmont.html](http://www.hhs.gov/ohrp/humansubjects/guidance/belmont.html)
5. *Standards for Educational and Psychological Testing*. (1999). Washington, DC: AERA, APA, NCME.  
[www.apa.org/science/programs/testing/standards.aspx](http://www.apa.org/science/programs/testing/standards.aspx)

6. American Psychological Association  
750 First Street, NE Washington, DC 20002-4242 phone: 202-336-5500; 800-374-2721  
[www.apa.org](http://www.apa.org)

Information for students:

[www.apa.org/science/leadership/students/information.aspx](http://www.apa.org/science/leadership/students/information.aspx)

Information regarding publications: [www.apa.org/pubs/index.aspx](http://www.apa.org/pubs/index.aspx)

7. Educational and Psychological Testing  
Testing Office for the APA Science Directorate  
phone: 202-336-6000  
email: [testing@apa.org](mailto:testing@apa.org)  
[www.apa.org/science/programs/testing/index.aspx](http://www.apa.org/science/programs/testing/index.aspx)

8. The Children's Online Privacy Protection Act of 1998 (COPPA)  
(15 U.S.C. §§ 6501–6506)  
[www.ftc.gov/privacy/coppaFAQs.shtm](http://www.ftc.gov/privacy/coppaFAQs.shtm)

## Vertebrate Animals Animal Care and Use

1. *Laboratory Animals*, Institute of Laboratory Animal Research (ILAR), Commission on Life Sciences, National Research <http://dels.nas.edu/ilar>

2. *Guide for the Care and Use of Laboratory Animals, 8<sup>th</sup> Edition* (2011)  
<http://grants.nih.gov/grants/olaw/Guide-for-the-Care-and-Use-of-Laboratory-Animals.pdf>  
[www.nap.edu/catalog.php?record\\_id=12910](http://www.nap.edu/catalog.php?record_id=12910)

3. *Guidelines for the Care and Use of Mammals in Neuroscience and Behavioral Research* (2003), Institute for Laboratory Animal Research (ILAR).  
<https://www.nap.edu/catalog/10732/guidelines-for-the-care-and-use-of-mammals-in-neuroscience-and-behavioral-research>

To order these ILAR publications contact:

National Academies Press 500 Fifth Street, NW Washington, DC 20055  
phone: 888-624-8373 or 202-334-3313; fax: 202-334-2451  
[www.nap.edu](http://www.nap.edu)

4. Federal Animal Welfare Act (AWA)  
7 U.S.C. 2131-2157  
Subchapter A - Animal Welfare (Parts I, II, III)  
<https://www.nal.usda.gov/awic/animal-welfare-act>  
Document is available from:  
USDA/APHIS/AC  
4700 River Road, Unit 84  
Riverdale, MD 20737-1234  
email: [ace@aphis.usda.gov](mailto:ace@aphis.usda.gov)  
phone: 301-734-7833; fax: 301-734-4978  
<http://awic.nal.usda.gov>

5. *Guide for the Care and Use of Agricultural Animals in Agricultural Research and Teaching (Agri-Guide)*  
Association for Assessment and Accreditation of Laboratory Animal Care International (AAALAC International) <https://www.aaalac.org/>  
[https://www.aaalac.org/about/Ag\\_Guide\\_3rd\\_ed.pdf](https://www.aaalac.org/about/Ag_Guide_3rd_ed.pdf)

6. *Guidelines for the Use of Fish in Research* (2014), American Fisheries Society.

[www.fisheries.org](http://www.fisheries.org)

[www.fisheries.org/afs/docs/policy\\_16.pdf](http://www.fisheries.org/afs/docs/policy_16.pdf)

7. Euthanasia Guidelines

AVMA Guidelines on Euthanasia (2013)

American Veterinary Medical Association

[www.avma.org/KB/Policies/Documents/euthanasia.pdf](http://www.avma.org/KB/Policies/Documents/euthanasia.pdf)

## Alternative Research and Animal Welfare

1. The National Library of Medicine provides computer searches through MEDLINE:

Reference & Customer Services National

Library of Medicine 8600 Rockville Pike

Bethesda, MD 20894

888-FIND-NLM or 888-346-3656; 301-594-5983;

email: [info@ncbi.nlm.nih.gov](mailto:info@ncbi.nlm.nih.gov)

[www.nlm.nih.gov](http://www.nlm.nih.gov)

[www.ncbi.nlm.nih.gov/sites/entrez](http://www.ncbi.nlm.nih.gov/sites/entrez)

2. National Agriculture Library (NAL) provides reference service for materials that document a) Alternative Procedures to Animal Use and b) Animal Welfare.

Animal Welfare Information Center

National Agriculture Library

10301 Baltimore Avenue, Room 410

Beltsville, MD 20705-2351

phone: 301-504-6212, fax: 301-504-7125

email: [awic@ars.usda.gov](mailto:awic@ars.usda.gov)

[www.nal.usda.gov/awic](http://www.nal.usda.gov/awic)

3. Institute of Laboratory Animal Resources (ILAR) provides a variety of information on animal sources, housing and handling standards, and alternatives to animal use through annotated bibliographies published quarterly in ILAR Journal.

ILAR - The Keck Center of the National Academies 500 Fifth

Street, NW, Keck 687

Washington, DC 20001

phone: 202-334-2590, fax: 202-334-1687

email: [ILAR@nas.edu](mailto:ILAR@nas.edu)

<http://dels.nas.edu/ilar>

4. Quarterly bibliographies of Alternatives to the Use of Live Vertebrates in Biomedical Research and Testing may be obtained from:

Specialized Information Services

NLM/NIH

2 Democracy Plaza, Suite 510

6707 Democracy Blvd., MSC 5467

Bethesda, MD 20892-5467

phone: 301-496-1131; Fax: 301-480-3537

email: [tehip@teh.nlm.nih.gov](mailto:tehip@teh.nlm.nih.gov) <https://www.sis.nlm.nih.gov>

<http://toxnet.nlm.nih.gov/altbib.html>

5. Johns Hopkins Center for Alternatives to Animal Testing (CAAT) has worked with scientists since 1981 to find new methods to replace the use of laboratory animals in experiments, reduce the number of animals tested, and refine necessary tests to eliminate pain and distress.

email: [caat@jhsp.edu](mailto:caat@jhsp.edu)

<http://caat.jhsp.edu/>

6. Quality Assurance Manuals (for appropriate species)

Such as:

Poultry: <https://www.bordbia.ie/industry/farmers/quality/PoultrySchemeStandards/Poultry%20Producer.pdf>

Beef: <https://www.bqa.org/Media/BQA/Docs/nationalmanual.pdf>

Pork: <http://www.pork.org/>

## Potentially Hazardous Biological Agents

1. American Biological Safety Association: ABSA Risk Group Classification – list of organisms

[www.absa.org](http://www.absa.org)

2. American Type Culture Collection (ATCC)

[www.atcc.org](http://www.atcc.org)

3. Bergey's Manual of Systematic Bacteriology website – follow the links for resources and microbial databases for a collection of international websites of microorganisms and cell cultures.

[www.bergeys.org/resources.html](http://www.bergeys.org/resources.html)

4. Biosafety in Microbiological and Biomedical Laboratories (BMBL) - 4th Edition. Published by CDC-NIH

[www.cdc.gov/biosafety/publications/bmbl5/BMBL.pdf](http://www.cdc.gov/biosafety/publications/bmbl5/BMBL.pdf)

5. World Health Organization Laboratory Safety Manual

[www.who.int/diagnostics\\_laboratory/guidance/en](http://www.who.int/diagnostics_laboratory/guidance/en)

6. Canada – Agency of Public Health – list of non-pathogenic organisms

<https://www.canada.ca/en/public-health/services/laboratory-biosafety-biosecurity/pathogen-safety-data-sheets-risk-assessment.html>

7. American Society for Microbiology

<https://www.asm.org/division/w/web-sites.htm>

8. Microbiology Society

Charles Darwin House

12 Roger Street

London

WC1N 2JU UK

[education@microbiologysociety.org](mailto:education@microbiologysociety.org) <http://microbiologyonline.org>

9. *NIH Guidelines for Research Involving Recombinant DNA Molecules*. Published by National Institutes of Health.

[https://osp.od.nih.gov/wp-content/uploads/2013/06/NIH\\_Guidelines.pdf](https://osp.od.nih.gov/wp-content/uploads/2013/06/NIH_Guidelines.pdf)

10. OSHA – Occupational Health and Safety Administration

[www.osha.gov](http://www.osha.gov)

## Hazardous Chemicals, Activities or Devices

General Lab/Chemical Safety

1. *Safety in Academic Chemistry Laboratories, Volumes 1 and 2, 2003*. Washington, DC: American Chemical Society.

Order from (first copy free of charge):

American Chemical Society Publications

Support Services

1155 16th Street, NW Washington,

DC 20036

phone: 202-872-4000 or 800-227-5558

email: [help@acs.org](mailto:help@acs.org) [www.acs.org/education](http://www.acs.org/education)

## 2. General

Howard Hughes Medical Institute has resources for working with cell cultures, radioactive materials and other laboratory materials.

<http://www.hhmi.org/developing-scientists/resources>

## 3. Environmental Protection Agency (EPA) website for green chemistry

[www.epa.gov/greenchemistry](http://www.epa.gov/greenchemistry)

## 4. Safety Data Sheets (SDS)

[www.flinnsci.com/msds-search.aspx](http://www.flinnsci.com/msds-search.aspx)

A directory of SDS sheets from Flinn Scientific Inc. that includes a ranking of hazard level and disposal methods.

[www.ilpi.com/msds/index.html](http://www.ilpi.com/msds/index.html) - A listing of numerous sites that have free downloads of MSDS sheets.

## 5. Pesticides

National Pesticide Information Center

<http://npic.orst.edu/ingred/products.html>

Describes the various types of pesticides and the legal requirements for labelling. Provides links and phone numbers to get additional information.

Environmental Protection Agency

<http://iaspub.epa.gov/apex/pesticides/f?p=PPLS:1>

A database of product labels. Enter the product name or company name to view the approved label information of pesticides which are registered with the agency.

## 6. DEA Controlled Substances

Drug Enforcement Agency website: [www.justice.gov/dea/index.htm](http://www.justice.gov/dea/index.htm)

Controlled Substance Schedules – a list of controlled substances: [www.deadiversion.usdoj.gov/schedules/](http://www.deadiversion.usdoj.gov/schedules/)

## 7. Alcohol, Tobacco, Firearms, and Explosives

Alcohol and Tobacco Tax and Trade Bureau

[www.ttb.gov](http://www.ttb.gov)

Bureau of Alcohol, Tobacco, Firearms and Explosives

[www.atf.gov](http://www.atf.gov)

## 8. Radiation

Radiation Studies Information (CDC)

[www.cdc.gov/nceh/radiation/default.htm](http://www.cdc.gov/nceh/radiation/default.htm)

## 9. CDC Laboratory Safety Manuals

[www.cdc.gov/biosafety/publications/index.htm](http://www.cdc.gov/biosafety/publications/index.htm)

## 10. Occupational Safety and Health Administration

[www.osha.gov](http://www.osha.gov)

Safety and Health Topics:

[www.osha.gov/SLTC](http://www.osha.gov/SLTC)

[www.osha.gov/SLTC/reactivechemicals/index.html](http://www.osha.gov/SLTC/reactivechemicals/index.html)

[www.osha.gov/SLTC/laserhazards/index.html](http://www.osha.gov/SLTC/laserhazards/index.html)

[www.osha.gov/SLTC/radiationionizing/index.html](http://www.osha.gov/SLTC/radiationionizing/index.html)

## 11. U.S. Nuclear Regulatory Commission

Material Safety and Inspection Branch

One White Flint North

11555 Rockville Pike

Rockville, MD 20852

phone: 301-415-8200; 800-368-5642

[www.nrc.gov](http://www.nrc.gov)

# Intel ISEF Display & Safety Regulations

Please address any questions regarding Intel ISEF Display & Safety Regulations to  
[displayandsafety@societyforscience.org](mailto:displayandsafety@societyforscience.org)

## Display & Safety Committee Mission

The mission of this committee is to ensure that all competitors qualify for competition according to the rules established in conjunction with the Scientific Review Committee and Society for Science & the Public.

The Intel ISEF Display & Safety Committee will offer guidance on Display & Safety issues for projects approved by the SRC to compete in the Intel ISEF. Occasionally, the Intel ISEF Display & Safety Committee may require students to make revisions to conform to Display & Safety regulations. Persistent issues will be directed to a committee of individuals which may include Society for Science & the Public (SSP) personnel, Display & Safety (D & S) and/or Scientific Review Committee (SRC) executive committee members.

The following regulations must be adhered to when a finalist exhibits a project at Intel ISEF. All projects must adhere to the Display & Safety requirements of the affiliated fair(s) in which they compete to qualify for participation in the Intel ISEF. Affiliated fairs may have additional restrictions or requirements. Knowledge of these requirements is the responsibility of the Finalist, Adult Sponsor, and Fair Director.

## Display Regulations

### Maximum Size of Project

**Depth (front to back): 30 inches or 76 centimeters** **Width (side to side): 48 inches or 122 centimeters** **Height (floor to top): 108 inches or 274 centimeters**

Please be aware when ordering posters that the mechanism that supports the poster should conform to the maximum size limitations stated above.

1. All project materials and support mechanisms must fit within the project dimensions (including table covers).
2. Fair-provided tables at the Intel ISEF will not exceed a height of 36 inches (91 centimeters).
3. If a table is used it becomes part of the project and must not exceed the allowed dimensions.
4. Nothing can be attached to the rear curtain.
5. All demonstrations must be done within the confines of the finalist's booth space. When not being demonstrated, all project components must be returned to the project display and must fit within allowable dimensions as defined above.
6. Projects can be continued under the table BUT this area is not to be used for storage.

### Position of Project

The fair provided table or freestanding display must be parallel to, and positioned at, the back curtain of the booth. Projects may NOT lean against the back curtain.

### Forms Required to be Visible and Vertically Displayed at the Project Booth

The placement of the required forms may include the front edge of the table, the display board, or in a free-standing acrylic frame placed on the table top.

### Forms required at all projects:

1. An original Official Abstract and Certification as approved (stamped/embossed) by the Intel ISEF Scientific Review Committee.
  - a. Upon SRC approval, the stamped/embossed Official Abstract and Certification will be provided.

- The abstract must be the official Intel International Science and Engineering Fair Abstract and embossed/ stamped by the Intel ISEF Scientific Review Committee.
- No other format or version of your approved Abstract & Certification will be allowed for any purpose at the Intel ISEF. Abstract handouts to judges and to the public are limited to UNALTERED photocopies of the official abstract and certification.
- b. The term "abstract" may NOT be used as a title or reference for any information on a finalist's display or materials at the project except as part of displaying the official stamped/embossed abstract.
  - It is the recommendation of the Display & Safety Committee to NOT include the word "abstract" nor the abstract itself when preparing backboards or posters prior to the fair.
- 2. Intel ISEF Project Set-up Approval Form (received on-site at the Fair)
  - a. This form documents the project as approved by the Scientific Review Committee and is used to document the Display & Safety Committee's review and final approval.
  - b. This form must be signed by the Finalist and the Display and Safety Committee member at the time of inspection

### Additional Forms required (only when applicable):

1. Regulated Research Institutional/Industrial Setting Form (1C)
  - a. If work was conducted in a regulated research institution, industrial setting or any work site other than home, school or field at any time during the current Intel ISEF project year, the **Regulated Research Institutional/Industrial Setting Form (1C)** must be completed and vertically displayed at the project booth.
  - b. The information provided by the mentor on Form 1C may be referenced to confirm that the information provided on the project board is that of the finalist. Only minimal reference to mentor's or another researcher's work is allowable and must only reflect background information or be used to clarify differences between finalist's and others' work.
2. Continuation/Research Progression Projects Form (7)
  - a. If a study is a continuation/research progression, the Continuation/Research Progression Projects Form (7) must be completed and vertically displayed at the project booth.

- b. The display board and abstract must reflect only the current year's work. The project title displayed in the finalist's booth may mention years of continuing research (for example, "Year Two of an Ongoing Study").
- c. Reference to past work on the display board must be limited to summative past conclusory data and its comparison to the current year data set. No raw data from previous years may be publicly displayed; however, it may be included in the student research notebooks and/or logbooks if properly labeled.

## Forms Required at Project but not Displayed

1. Forms, excluding those listed above, that were required for the Scientific Review Committee approval should not be vertically displayed, but must be available in the booth in case asked for by a judge or other Intel ISEF official. These forms include, but are not limited to, Checklist for Adult Sponsor (1), Student Checklist (1A), Research Plan, Approval Form (1B), and a photograph/video release form.
2. A photograph/video release form signed by the subject is required for visual images of humans (other than the finalist) displayed as part of the project.

## Forms NOT to be at the Project Display Booth or in the Exhibit Hall

Completed informed consent/assent forms for a human participant study are NOT to be displayed and should NOT be present at the project display. The Finalist may include a sample (incomplete) form in their logbook or research notebook but under NO CIRCUMSTANCE should the completed informed consent/assent forms for a human participant be in the Exhibit Hall.

## Photograph/Image Display Requirements

1. Any photograph/visual image/chart/table and/or graph is allowed if:
  - a. It is not deemed offensive or inappropriate (which includes images/photographs showing invertebrate or vertebrate animals/humans in surgical, necrotizing or dissection situations) by the Scientific Review Committee, the Display & Safety Committee, or Society for Science & the Public.
  - b. It has a credit line of origin ("Photograph taken by..." or "Image taken from..." or "Graph/Chart/Table taken from..."). If all images, etc. displayed were created by the finalist or are from the same source, one credit line prominently and vertically displayed on the backboard/ poster or tabletop is sufficient. All images MUST BE properly cited. This includes photographs and/or visual depictions of the finalist or photographs and/or visual depictions of others for which a signed photo/video release form is in a notebook or logbook at the project booth. These signed consent forms must be available upon request during set-up and the inspection process, but may not be displayed
  - c. Sample release text: "I consent to the use of visual images (photos, videos, etc.) involving my participation/my child's participation in this research."
2. Finalists using any presentation or demonstration outside of a project board must be prepared to show the entire presentation to the Display & Safety Inspectors before the project is approved. All aforementioned rules apply to this presentation and the presentation may not be altered in any way after the final Display & Safety inspection. Examples of presentations that require approval include, but are not

limited to PowerPoint, Prezi, Keynote, YouTube, software program/simulation and other images and/or graphics displayed on a computer screen or other non-print delivery method.

## Items/Materials Not Allowed on Display or at Project Booth

1. Any information on the project display or items that are acknowledgments, self-promotions or external endorsements are not allowed in the project booth. This includes:
  - a. The use of logos including known commercial brands, institutional crests or trademarks, flags unless integral to the project and approved by the SRC via inclusion in the Official Abstract and Certification.
  - b. Personalized graphic/logo that is developed to indicate a commercial purpose or viability of an established or proposed business associated with the project, unless student-created in which it can be displayed on the board only once.
  - c. Any reference to an institution or mentor that supported your research except as provided in the official Intel ISEF paperwork, most notably Form 1C.
  - d. Any reference to patent status of the project.
  - e. Any items intended for distribution such as disks, CDs, flash drives, brochures, booklets, endorsements, give-away items, business cards, or printed materials designed to be distributed to judges or the public. Once again, handouts to judges and to the public are limited to UNALTERED photocopies of the official abstract and certification.
2. Any awards or medals, except for past or present Intel ISEF medals that may be worn by the finalist.
3. Postal addresses, World Wide Web, email and/or social media addresses, QR codes, telephone and/or fax numbers of a project or finalist. Note: The only personal information that is permissible to include on the display is information that is also included on the Official Abstract and Certification (Finalist Name, School, City, State, Country). Information regarding finalist's age and grade are not permitted.
4. Active Internet or email connections as part of displaying or operating the project at the Intel ISEF.
5. Any changes, modifications, or additions to projects including any attempt to uncover, replenish or return removed language or items after the approval by the Display & Safety Committee and the Scientific Review Committee has been received is prohibited.
  - a. Display & Safety inspections will include recording photographic evidence of the approved Project Display and Project booth.
  - b. Finalists who do not adhere to this signed agreement on the Intel ISEF Project Set-up Approval Form regarding this regulation will fail to qualify for competition.

# Safety Regulations

## Not Allowed at Project or Booth

Note: In the case in which a Finalist's Project includes an item that is prohibited from display, please consider taking photographs and/or documenting the significance of the prohibited item through video.

1. Living organisms, including plants
2. Glass
3. Soil, sand, rock, cement and/or waste samples, **even if** permanently **encased in a slab of acrylic**
4. Taxidermy specimens or parts
5. Preserved vertebrate or invertebrate animals
6. Human or animal food
7. Human/animal parts or body fluids (for example, blood, urine)
8. Plant materials (living, dead, or preserved) that are in their raw, unprocessed, or non-manufactured state
9. All chemicals including water. Absolutely no liquids can be utilized in the Project Display
10. All hazardous substances or devices (Example: poisons, drugs, firearms, weapons, ammunition, reloading devices, grease/oil and sublimating solids such as dry ice)
11. Items that may have contained or been in contact with hazardous chemicals (Exception: Item may be permitted if professionally cleaned and document for such cleaning is available) Filters (including microbial) may not be displayed unless the Display & Safety Committee can reasonably determine that the device was cleaned or was never used (please include receipts in your notebooks and/or logbooks)
12. Sharp items (for example, syringes, needles, pipettes, knives)
13. Flames and highly flammable materials
14. Batteries with open-top cells or wet cells
15. Drones or any flight-capable apparatus unless the propulsion power source removed.
16. 3D Printers unless the power source is removed.
17. Inadequately insulated apparatus capable of producing dangerous temperatures are not permitted
18. Any apparatus with belts, pulleys, chains, or moving parts with tension or pinch points that are not appropriately shielded
19. Any display items that are deemed distracting (i.e. sounds, lights, odors, etc.)
20. Personal items or packaging materials stored underneath the booth
21. Any apparatus deemed unsafe by the Scientific Review Committee, the Display & Safety Committee, or the Society (Example: large vacuum tubes or dangerous ray-generating devices, empty tanks that previously contained combustible liquids or gases, pressurized tanks, 3D printers etc.)

## Electrical Regulations

1. Electrical power supplied to the project is 120 or 220 Volt, AC, single phase, 60 cycle. No multi-phase will be available or shall be used. Maximum circuit amperage/wattage available is determined by the electrical circuit capacities of the exhibit hall and may be adjusted on-site by the Display & Safety Committee. For all electrical regulations, "120 Volt AC" or "220 Volt AC" is intended to encompass the corresponding range of voltage as supplied by the facility in which the Intel ISEF is being held.
2. Electrical devices must be protectively enclosed. Any enclosure must be non-combustible. All external non-current carrying metal parts must be grounded.
3. Energized wiring, switches, and metal parts must have adequate insulation and over-current safety devices (such as fuses) and must be inaccessible to anyone other than the finalist. Exposed electrical equipment or metal that possibly may be energized must be shielded with a non-conducting material or with a grounded metal box to prevent accidental contact.
4. Decorative lighting or illumination is discouraged. If used, lighting must be as low a voltage as possible and must be LED lighting that does not generate heat. Light bulbs are prohibited. When student is not at the exhibit, all electrical power must be disconnected, or power bars must be switched off (Exception: during pre-judging audio visual displays may be available.)
5. An insulating grommet is required at the point where any wire or cable enters any enclosure.
6. No exposed live circuits over 36 volts are allowed.
7. There must be an accessible, clearly visible on/off switch or other means of quickly disconnecting from the 120 or 220 Volt power source.

## Laser/Laser Pointer Regulations

Any Class 1 or Class 2 lasers, along with only Class 3A or 3R lasers, are allowed to be used provided a finalist avoids indiscriminate exposure to other finalists, judges, or visitors (except if passed through magnifying optics such as microscopes and telescopes, in which case they may not be used). No other lasers may be used or displayed.

1. Lasers must be labeled by the manufacturer so that power output can be inspected. Lasers without labels will NOT be permitted.
2. LEDs that consume over 1 watt, unless they are in a commercial light bulb/ fixture or otherwise shielded, will not be allowed.
3. Handheld lasers are NOT permitted.
4. Lasers will be confiscated with no warning if not used in a safe manner.

## Information on Required Abstract & Certification for ALL Projects at the Intel ISEF

\* This form may not be relevant for your regional or state fair; please refer to instructions from your affiliated fair.\*

In ADDITION to the basic form requirements for ALL Projects and any other requirements due to specific areas of research, an Abstract & Certification is required at the conclusion of research. Details on this requirement follow.

### Completing the Abstract

After finishing research and experimentation, you are required to write a (maximum) 250 word, one-page abstract. For Intel ISEF, this abstract is written in the online Finalist Questionnaire portal and submitted electronically.

It is recommended that it **include the following:**

- a. purpose of the experiment
- b. procedure
- c. data
- d. conclusions

It may also include any possible research applications. Only minimal reference to previous work may be included.

An abstract **must not include the following:**

- a. acknowledgments (including naming the research institution and/or mentor

with which you were working), or self-promotions and external endorsements

- b. logos or proper names of commercial products

b. work or procedures done by the mentor

### Completing the Certification

At the bottom of the Abstract & Certification form there are six questions. Please read each carefully and answer appropriately. The Intel ISEF Scientific Research Committee will review and approve the abstract and answers to the questions.

Revisions are permitted via the online portal through late April (please reference the system for current year deadlines.)

Once approved, two copies of the Intel ISEF Abstract & Certification will be provided with a gold embossed seal; only this version of the abstract may be displayed or distributed.

**NOTE:** Your abstract must be on the Intel International Science and Engineering Fair Abstract & Certification form and have the Intel ISEF Scientific Review Committee approval seal before it is displayed or handed out. No other format or version of your approved Abstract will be allowed for any purpose at the Intel ISEF.

### Intel ISEF Sample Abstract & Certification

| Project Title                                  | Project ID                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                 |                          |                                |                          |              |                          |                                |                          |                        |                          |                              |                          |           |                          |                                          |                          |                                |                          |                  |                          |                  |                          |                  |                          |                       |                          |                           |                          |                   |                          |             |                          |              |                          |                       |                          |                |                          |                                 |                          |                  |                          |                               |                          |
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| Finalist Name(s)                               | Category<br>Pick one only-- mark an "X" in box at right                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                 |                          |                                |                          |              |                          |                                |                          |                        |                          |                              |                          |           |                          |                                          |                          |                                |                          |                  |                          |                  |                          |                  |                          |                       |                          |                           |                          |                   |                          |             |                          |              |                          |                       |                          |                |                          |                                 |                          |                  |                          |                               |                          |
| Finalist School, City, State/Province, Country |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                 |                          |                                |                          |              |                          |                                |                          |                        |                          |                              |                          |           |                          |                                          |                          |                                |                          |                  |                          |                  |                          |                  |                          |                       |                          |                           |                          |                   |                          |             |                          |              |                          |                       |                          |                |                          |                                 |                          |                  |                          |                               |                          |
| <b>Abstract</b>                                | <table border="0"><tr><td>Animal Sciences</td><td><input type="checkbox"/></td></tr><tr><td>Behavioral and Social Sciences</td><td><input type="checkbox"/></td></tr><tr><td>Biochemistry</td><td><input type="checkbox"/></td></tr><tr><td>Biomedical and Health Sciences</td><td><input type="checkbox"/></td></tr><tr><td>Biomedical Engineering</td><td><input type="checkbox"/></td></tr><tr><td>Cellular &amp; Molecular Biology</td><td><input type="checkbox"/></td></tr><tr><td>Chemistry</td><td><input type="checkbox"/></td></tr><tr><td>Computational Biology and Bioinformatics</td><td><input type="checkbox"/></td></tr><tr><td>Earth &amp; Environmental Sciences</td><td><input type="checkbox"/></td></tr><tr><td>Embedded Systems</td><td><input type="checkbox"/></td></tr><tr><td>Energy: Chemical</td><td><input type="checkbox"/></td></tr><tr><td>Energy: Physical</td><td><input type="checkbox"/></td></tr><tr><td>Engineering Mechanics</td><td><input type="checkbox"/></td></tr><tr><td>Environmental Engineering</td><td><input type="checkbox"/></td></tr><tr><td>Materials Science</td><td><input type="checkbox"/></td></tr><tr><td>Mathematics</td><td><input type="checkbox"/></td></tr><tr><td>Microbiology</td><td><input type="checkbox"/></td></tr><tr><td>Physics and Astronomy</td><td><input type="checkbox"/></td></tr><tr><td>Plant Sciences</td><td><input type="checkbox"/></td></tr><tr><td>Robotics &amp; Intelligent Machines</td><td><input type="checkbox"/></td></tr><tr><td>Systems Software</td><td><input type="checkbox"/></td></tr><tr><td>Translational Medical Science</td><td><input type="checkbox"/></td></tr></table> | Animal Sciences | <input type="checkbox"/> | Behavioral and Social Sciences | <input type="checkbox"/> | Biochemistry | <input type="checkbox"/> | Biomedical and Health Sciences | <input type="checkbox"/> | Biomedical Engineering | <input type="checkbox"/> | Cellular & Molecular Biology | <input type="checkbox"/> | Chemistry | <input type="checkbox"/> | Computational Biology and Bioinformatics | <input type="checkbox"/> | Earth & Environmental Sciences | <input type="checkbox"/> | Embedded Systems | <input type="checkbox"/> | Energy: Chemical | <input type="checkbox"/> | Energy: Physical | <input type="checkbox"/> | Engineering Mechanics | <input type="checkbox"/> | Environmental Engineering | <input type="checkbox"/> | Materials Science | <input type="checkbox"/> | Mathematics | <input type="checkbox"/> | Microbiology | <input type="checkbox"/> | Physics and Astronomy | <input type="checkbox"/> | Plant Sciences | <input type="checkbox"/> | Robotics & Intelligent Machines | <input type="checkbox"/> | Systems Software | <input type="checkbox"/> | Translational Medical Science | <input type="checkbox"/> |
| Animal Sciences                                | <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                 |                          |                                |                          |              |                          |                                |                          |                        |                          |                              |                          |           |                          |                                          |                          |                                |                          |                  |                          |                  |                          |                  |                          |                       |                          |                           |                          |                   |                          |             |                          |              |                          |                       |                          |                |                          |                                 |                          |                  |                          |                               |                          |
| Behavioral and Social Sciences                 | <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                 |                          |                                |                          |              |                          |                                |                          |                        |                          |                              |                          |           |                          |                                          |                          |                                |                          |                  |                          |                  |                          |                  |                          |                       |                          |                           |                          |                   |                          |             |                          |              |                          |                       |                          |                |                          |                                 |                          |                  |                          |                               |                          |
| Biochemistry                                   | <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                 |                          |                                |                          |              |                          |                                |                          |                        |                          |                              |                          |           |                          |                                          |                          |                                |                          |                  |                          |                  |                          |                  |                          |                       |                          |                           |                          |                   |                          |             |                          |              |                          |                       |                          |                |                          |                                 |                          |                  |                          |                               |                          |
| Biomedical and Health Sciences                 | <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                 |                          |                                |                          |              |                          |                                |                          |                        |                          |                              |                          |           |                          |                                          |                          |                                |                          |                  |                          |                  |                          |                  |                          |                       |                          |                           |                          |                   |                          |             |                          |              |                          |                       |                          |                |                          |                                 |                          |                  |                          |                               |                          |
| Biomedical Engineering                         | <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                 |                          |                                |                          |              |                          |                                |                          |                        |                          |                              |                          |           |                          |                                          |                          |                                |                          |                  |                          |                  |                          |                  |                          |                       |                          |                           |                          |                   |                          |             |                          |              |                          |                       |                          |                |                          |                                 |                          |                  |                          |                               |                          |
| Cellular & Molecular Biology                   | <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                 |                          |                                |                          |              |                          |                                |                          |                        |                          |                              |                          |           |                          |                                          |                          |                                |                          |                  |                          |                  |                          |                  |                          |                       |                          |                           |                          |                   |                          |             |                          |              |                          |                       |                          |                |                          |                                 |                          |                  |                          |                               |                          |
| Chemistry                                      | <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                 |                          |                                |                          |              |                          |                                |                          |                        |                          |                              |                          |           |                          |                                          |                          |                                |                          |                  |                          |                  |                          |                  |                          |                       |                          |                           |                          |                   |                          |             |                          |              |                          |                       |                          |                |                          |                                 |                          |                  |                          |                               |                          |
| Computational Biology and Bioinformatics       | <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                 |                          |                                |                          |              |                          |                                |                          |                        |                          |                              |                          |           |                          |                                          |                          |                                |                          |                  |                          |                  |                          |                  |                          |                       |                          |                           |                          |                   |                          |             |                          |              |                          |                       |                          |                |                          |                                 |                          |                  |                          |                               |                          |
| Earth & Environmental Sciences                 | <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                 |                          |                                |                          |              |                          |                                |                          |                        |                          |                              |                          |           |                          |                                          |                          |                                |                          |                  |                          |                  |                          |                  |                          |                       |                          |                           |                          |                   |                          |             |                          |              |                          |                       |                          |                |                          |                                 |                          |                  |                          |                               |                          |
| Embedded Systems                               | <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                 |                          |                                |                          |              |                          |                                |                          |                        |                          |                              |                          |           |                          |                                          |                          |                                |                          |                  |                          |                  |                          |                  |                          |                       |                          |                           |                          |                   |                          |             |                          |              |                          |                       |                          |                |                          |                                 |                          |                  |                          |                               |                          |
| Energy: Chemical                               | <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                 |                          |                                |                          |              |                          |                                |                          |                        |                          |                              |                          |           |                          |                                          |                          |                                |                          |                  |                          |                  |                          |                  |                          |                       |                          |                           |                          |                   |                          |             |                          |              |                          |                       |                          |                |                          |                                 |                          |                  |                          |                               |                          |
| Energy: Physical                               | <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                 |                          |                                |                          |              |                          |                                |                          |                        |                          |                              |                          |           |                          |                                          |                          |                                |                          |                  |                          |                  |                          |                  |                          |                       |                          |                           |                          |                   |                          |             |                          |              |                          |                       |                          |                |                          |                                 |                          |                  |                          |                               |                          |
| Engineering Mechanics                          | <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                 |                          |                                |                          |              |                          |                                |                          |                        |                          |                              |                          |           |                          |                                          |                          |                                |                          |                  |                          |                  |                          |                  |                          |                       |                          |                           |                          |                   |                          |             |                          |              |                          |                       |                          |                |                          |                                 |                          |                  |                          |                               |                          |
| Environmental Engineering                      | <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                 |                          |                                |                          |              |                          |                                |                          |                        |                          |                              |                          |           |                          |                                          |                          |                                |                          |                  |                          |                  |                          |                  |                          |                       |                          |                           |                          |                   |                          |             |                          |              |                          |                       |                          |                |                          |                                 |                          |                  |                          |                               |                          |
| Materials Science                              | <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                 |                          |                                |                          |              |                          |                                |                          |                        |                          |                              |                          |           |                          |                                          |                          |                                |                          |                  |                          |                  |                          |                  |                          |                       |                          |                           |                          |                   |                          |             |                          |              |                          |                       |                          |                |                          |                                 |                          |                  |                          |                               |                          |
| Mathematics                                    | <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                 |                          |                                |                          |              |                          |                                |                          |                        |                          |                              |                          |           |                          |                                          |                          |                                |                          |                  |                          |                  |                          |                  |                          |                       |                          |                           |                          |                   |                          |             |                          |              |                          |                       |                          |                |                          |                                 |                          |                  |                          |                               |                          |
| Microbiology                                   | <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                 |                          |                                |                          |              |                          |                                |                          |                        |                          |                              |                          |           |                          |                                          |                          |                                |                          |                  |                          |                  |                          |                  |                          |                       |                          |                           |                          |                   |                          |             |                          |              |                          |                       |                          |                |                          |                                 |                          |                  |                          |                               |                          |
| Physics and Astronomy                          | <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                 |                          |                                |                          |              |                          |                                |                          |                        |                          |                              |                          |           |                          |                                          |                          |                                |                          |                  |                          |                  |                          |                  |                          |                       |                          |                           |                          |                   |                          |             |                          |              |                          |                       |                          |                |                          |                                 |                          |                  |                          |                               |                          |
| Plant Sciences                                 | <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                 |                          |                                |                          |              |                          |                                |                          |                        |                          |                              |                          |           |                          |                                          |                          |                                |                          |                  |                          |                  |                          |                  |                          |                       |                          |                           |                          |                   |                          |             |                          |              |                          |                       |                          |                |                          |                                 |                          |                  |                          |                               |                          |
| Robotics & Intelligent Machines                | <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                 |                          |                                |                          |              |                          |                                |                          |                        |                          |                              |                          |           |                          |                                          |                          |                                |                          |                  |                          |                  |                          |                  |                          |                       |                          |                           |                          |                   |                          |             |                          |              |                          |                       |                          |                |                          |                                 |                          |                  |                          |                               |                          |
| Systems Software                               | <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                 |                          |                                |                          |              |                          |                                |                          |                        |                          |                              |                          |           |                          |                                          |                          |                                |                          |                  |                          |                  |                          |                  |                          |                       |                          |                           |                          |                   |                          |             |                          |              |                          |                       |                          |                |                          |                                 |                          |                  |                          |                               |                          |
| Translational Medical Science                  | <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                 |                          |                                |                          |              |                          |                                |                          |                        |                          |                              |                          |           |                          |                                          |                          |                                |                          |                  |                          |                  |                          |                  |                          |                       |                          |                           |                          |                   |                          |             |                          |              |                          |                       |                          |                |                          |                                 |                          |                  |                          |                               |                          |

1. As a part of this research project, the student directly handled, manipulated, or interacted with (check all that apply):

human participants       potentially hazardous biological agents  
 vertebrate animals       microorganisms     rDNA     tissue

2. This abstract describes only procedures performed by me/us, reflects my/our own independent research, and represents one year's work only.

yes       no

3. I/We worked or used equipment in a regulated research institution or industrial setting.

yes       no

4. This project is a continuation of previous research.

yes       no

5. My display board includes non-published photographs/visual depictions of humans (other than myself):

yes       no

6. I/We hereby certify that the abstract and responses to the above statements are correct and properly reflect my/our own work.

yes       no



# Intel ISEF Categories and Subcategories

The categories have been established with the goal of better aligning judges and student projects for the judging at the Intel ISEF. Local, regional, state and country fairs may or may not choose to use these categories, dependent on the needs of their area. Please check with your affiliated fair(s) for the appropriate category listings at that level of competition.

Please visit our website at [student.societyforscience.org/intel-isef-categories-and-subcategories](http://student.societyforscience.org/intel-isef-categories-and-subcategories) for a full description and definition of the Intel ISEF categories:

## ANIMAL SCIENCES (ANIM)

Animal Behavior  
Cellular Studies  
Development  
Ecology Genetics  
Nutrition and Growth Physiology  
Systematics and Evolution Other

## CHEMISTRY (CHEM)

Analytical Chemistry  
Computational Chemistry  
Environmental Chemistry  
Inorganic Chemistry  
Materials Chemistry  
Organic Chemistry Physical Chemistry  
Other

## ENERGY: PHYSICAL (EGPH)

Hydro Power  
Nuclear Power  
Solar  
Sustainable Design  
Thermal Power Wind  
Other

## PHYSICS AND ASTRONOMY (PHYS)

Astronomy and Cosmology Atomic, Molecular, and Optical  
Physics Biological  
Physics  
Condensed Matter and Materials Mechanics

## BEHAVIORAL AND SOCIAL SCIENCES (BEHA)

Clinical and Developmental  
Psychology  
Cognitive Psychology  
Neuroscience Physiological  
Psychology  
Sociology and Social Psychology  
Other

## COMPUTATIONAL BIOLOGY AND BIOINFORMATICS (CBIO)

Computational Biomodeling  
Computational Epidemiology  
Computational Evolutionary Biology  
Computational Neuroscience  
Computational Pharmacology  
Genomics  
Other

## ENGINEERING MECHANICS (ENMC)

Aerospace and Aeronautical Engineering  
Civil Engineering  
Computational Mechanics  
Control Theory  
Ground Vehicle Systems Industrial Engineering-Processing Mechanical Engineering  
Naval Systems  
Other

## PLANT SCIENCES (PLNT)

Agriculture and Agronomy  
Ecology Genetics/Breeding  
Growth and Development  
Pathology  
Plant Physiology Systematics and Evolution Other

## BIOCHEMISTRY (BCHM)

Analytical Biochemistry  
General Biochemistry Medical  
Biochemistry Structural  
Biochemistry Other

## EARTH AND ENVIRONMENTAL SCIENCES (EAEV)

Atmospheric Science  
Climate Science  
Environmental Effects on Ecosystems  
Geosciences  
Water Science  
Other

## ENVIRONMENTAL ENGINEERING (ENEV)

Bioremediation Land  
Reclamation Pollution Control  
Recycling and Waste Management  
Water Resources Management Other

## ROBOTICS AND INTELLIGENT MACHINES (ROBO)

Biomechanics Cognitive  
Systems Control Theory  
Machine Learning Robot Kinematics Other

## BIOMEDICAL AND HEALTH SCIENCES (BMED)

Cell, Organ, and Systems Physiology  
Genetics and Molecular Biology of Disease  
Immunology  
Nutrition and Natural Products  
Pathophysiology  
Other

## EMBEDDED SYSTEMS (EBED)

Circuits  
Internet of Things  
Microcontrollers  
Networking and Data Communications Optics  
Sensors  
Signal Processing Other

## MATERIALS SCIENCE (MATS)

Biomaterials Ceramic and Glasses Composite  
Materials  
Computation and Theory Electronic, Optical and Magnetic Materials  
Nanomaterials  
Polymers Other

## SYSTEMS SOFTWARE (SOFT)

Algorithms  
Cybersecurity  
Databases  
Human/Machine Interface Languages and Operating Systems Mobile Apps  
Online Learning Other

## BIOMEDICAL ENGINEERING (ENBM)

Biomaterials and Regen Medicine  
Biomechanics  
Biomedical Devices Biomedical Imaging  
Cell and Tissue Engineering Synthetic Biology  
Other

## ENERGY: CHEMICAL (EGCH)

Alternative Fuels Computational Energy Science Fossil Fuel Energy  
Fuel Cells and Battery Develop Microbial Fuel Cells  
Solar Materials  
Other

## MATHEMATICS (MATH)

Analysis  
Combinatorics, Graph Theory, and Game Theory  
Geometry and Topology  
Number Theory Probability and Statistics Other

## TRANSLATIONAL MEDICAL SCIENCES (TMED)

Disease Detection and Diagnosis Disease Prevention  
Disease Treatment and Therapies  
Drug Identification and Testing Pre-Clinical Studies  
Other

## CELLULAR AND MOLECULAR BIOLOGY (CELL)

Cell Physiology Cellular Immunology Genetics Molecular Biology  
Neurobiology Other

## MICROBIOLOGY (MCRO)

Antimicrobials and Antibiotics Applied  
Microbiology Bacteriology  
Environmental Microbiology  
Microbial Genetics  
Virology Other

# Checklist for Adult Sponsor (1)

This completed form is required for ALL projects.

To be completed by the Adult Sponsor in collaboration with the student researcher(s):

Student's Name(s): \_\_\_\_\_

Project Title: \_\_\_\_\_

1.  I have reviewed the Intel ISEF Rules and Guidelines.
2.  I have reviewed the student's completed Student Checklist (1A) and Research Plan/Project Summary.
3.  I have worked with the student and we have discussed the possible risks involved in the project.

4.  The project involves one or more of the following and requires prior approval by an SRC, IRB, IACUC or IBC:

Humans Potentially Hazardous Biological Agents  
 Vertebrate Animals  Microorganisms  rDNA  Tissues

5.  Items to be completed for ALL PROJECTS

|                                                                                                                                      |                                                        |
|--------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|
| <input type="checkbox"/> Adult Sponsor Checklist (1)                                                                                 | <input type="checkbox"/> Research Plan/Project Summary |
| <input type="checkbox"/> Student Checklist (1A)                                                                                      | <input type="checkbox"/> Approval Form (1B)            |
| <input type="checkbox"/> Regulated Research Institutional/Industrial Setting Form (1C) (when applicable; after completed experiment) |                                                        |
| <input type="checkbox"/> Continuation/Research Progression Form (7) (when applicable)                                                |                                                        |

**Additional forms required if the project includes the use of one or more of the following** (check all that apply):

Humans, including student designed inventions/prototypes. (Requires prior approval by an Institutional Review Board (IRB); see full text of the rules.)

Human Participants Form (4) or appropriate Institutional IRB documentation

Sample of Informed Consent Form (when applicable and/or required by the IRB)

Qualified Scientist Form (2) (when applicable and/or required by the IRB)

Vertebrate Animals (Requires prior approval, see full text of the rules.)

Vertebrate Animal Form (5A)-for projects conducted in a school/home/field research site (SRC prior approval required.)

Vertebrate Animal Form (5B)-for projects conducted at a Regulated Research Institution. (Institutional Animal Care and Use Committee (IACUC) approval required prior experimentation.)

Qualified Scientist Form (2) (Required for all vertebrate animal projects at a regulated research site or when applicable)

Potentially Hazardous Biological Agents (Requires prior approval by SRC, IACUC or IBC, see full text of the rules.)

Potentially Hazardous Biological Agents Risk Assessment Form (6A)

Human and Vertebrate Animal Tissue Form (6B)-to be completed in addition to Form 6A when project involves the use of fresh or frozen tissue, primary cell cultures, blood, blood products and body fluids.

Qualified Scientist Form (2) (when applicable)

The following are exempt from prior review but require a Risk Assessment Form 3: projects involving protists, archae and similar microorganisms, for projects using manure for composting, fuel production or other non-culturing experiments, projects using color change coliform water test kits, microbial fuel cells, and projects involving decomposing vertebrate organisms.

Hazardous Chemicals, Activities and Devices (No SRC prior approval required, see full text of the rules.)

Risk Assessment Form (3)

Qualified Scientist Form (2) (required for projects involving DEA-controlled substances or when applicable)

Adult Sponsor's Printed Name

Signature

Date of Review (mm/dd/yy)

Phone

Email

# Student Checklist (1A)

**This form is required for ALL projects.**

1. a. Student/Team Leader: \_\_\_\_\_ Grade: \_\_\_\_\_  
Email: \_\_\_\_\_ Phone: \_\_\_\_\_
- b. Team Member: \_\_\_\_\_ c. Team Member: \_\_\_\_\_
2. Title of Project:  
\_\_\_\_\_
3. School: \_\_\_\_\_ School Phone: \_\_\_\_\_  
School Address: \_\_\_\_\_
4. Adult Sponsor: \_\_\_\_\_ Phone/Email: \_\_\_\_\_
5. Does this project need SRC/IRB/IACUC or other pre-approval?  Yes  No Tentative start date: \_\_\_\_\_
6. Is this a continuation/progression from a previous year?  Yes  No  
If Yes:
  - a. Attach the previous year's  Abstract **and**  Research Plan/Project Summary
  - b. Explain how this project is new and different from previous years on  
 Continuation/Research Progression Form (7)
7. This year's laboratory experiment/data collection:  
\_\_\_\_\_

Actual Start Date: (mm/dd/yy) End Date: (mm/dd/yy)

8. Where will you conduct your experimentation? (check all that apply)  
 Research Institution  School  Field  Home  Other: \_\_\_\_\_

9. List name and address of all non-home and non-school work site(s):

Name: \_\_\_\_\_

Address: \_\_\_\_\_

Phone/  
email: \_\_\_\_\_

10. Complete a Research Plan/Project Summary following the Research Plan/Project Summary instructions and attach to this form.

11. An abstract is required for all projects after experimentation.

# Research Plan/Project Summary Instructions

A complete Research Plan/Project Summary is required for ALL projects and must accompany Student Checklist (1A).

1. All projects must have a Research Plan/Project Summary
  - a. Written prior to experimentation following the instructions below to detail the rationale, research question(s), methodology, and risk assessment of the proposed research.
  - b. If changes are made during the research, such changes can be added to the original research plan as an addendum, recognizing that some changes may require returning to the IRB or SRC for appropriate review and approvals. If no additional approvals are required, this addendum serves as a project summary to explain research that was conducted.
  - c. If no changes are made from the original research plan, no project summary is required.
2. Some studies, such as an engineering design or mathematics projects, will be less detailed in the initial project plan and will change through the course of research. If such changes occur, a project summary that explains what was done is required and can be appended to the original research plan.
3. The Research Plan/Project Summary should include the following:
  - a. **RATIONALE:** Include a brief synopsis of the background that supports your research problem and explain why this research is important and if applicable, explain any societal impact of your research.
  - b. **RESEARCH QUESTION(S), HYPOTHESIS(ES), ENGINEERING GOAL(S), EXPECTED OUTCOMES:** How is this based on the rationale described above?
  - c. Describe the following in detail:
    - **Procedures:** Detail all procedures and experimental design including methods for data collection. Describe only your project. Do not include work done by mentor or others.
    - **Risk and Safety:** Identify any potential risks and safety precautions needed.
    - **Data Analysis:** Describe the procedures you will use to analyze the data/results.
  - d. **BIBLIOGRAPHY:** List major references (e.g. science journal articles, books, internet sites) from your literature review. If you plan to use vertebrate animals, one of these references must be an animal care reference.

Items 1–4 below are subject-specific guidelines for additional items to be included in your research plan/project summary as applicable.

1. **Human participants research:**
  - a. **Participants:** Describe age range, gender, racial/ethnic composition of participants. Identify vulnerable populations (minors, pregnant women, prisoners, mentally disabled or economically disadvantaged).
  - b. **Recruitment:** Where will you find your participants? How will they be invited to participate?
  - c. **Methods:** What will participants be asked to do? Will you use any surveys, questionnaires or tests? If yes and not your own, how did you obtain? Did it require permissions? If so, explain. What is the frequency and length of time involved for each subject?
  - d. **Risk Assessment:** What are the risks or potential discomforts (physical, psychological, time involved, social, legal, etc.) to participants? How will you minimize risks? List any benefits to society or participants.
  - e. **Protection of Privacy:** Will identifiable information (e.g., names, telephone numbers, birth dates, email addresses) be collected? Will data be confidential/anonymous? If anonymous, describe how the data will be collected. If not anonymous, what procedures are in place for safeguarding confidentiality? Where will data be stored? Who will have access to the data? What will you do with the data after the study?
  - f. **Informed Consent Process:** Describe how you will inform participants about the purpose of the study, what they will be asked to do, that their participation is voluntary and they have the right to stop at any time.
2. **Vertebrate animal research:**
  - a. Discuss potential ALTERNATIVES to vertebrate animal use and present justification for use of vertebrates.
  - b. Explain potential impact or contribution of this research.
  - c. Detail all procedures to be used, including methods used to minimize potential discomfort, distress, pain and injury to the animals and detailed chemical concentrations and drug dosages.
  - d. Detail animal numbers, species, strain, sex, age, source, etc., include justification of the numbers planned.
  - e. Describe housing and oversight of daily care
  - f. Discuss disposition of the animals at the termination of the study.
3. **Potentially hazardous biological agents research:**
  - a. Give source of the organism and describe BSL assessment process and BSL determination.
  - b. Detail safety precautions and discuss methods of disposal.
4. **Hazardous chemicals, activities & devices:**
  - Describe Risk Assessment process, supervision, safety precautions and methods of disposal.
  - Material Safety Data Sheets are not necessary to submit with paperwork.

# Approval Form (1B)

A completed form is required for each student, including all team members.

## 1. To Be Completed by Student and Parent

### a. Student Acknowledgment:

- I understand the risks and possible dangers to me of the proposed research plan.
- I have read the Intel ISEF Rules and Guidelines and will adhere to all International Rules when conducting this research.
- I have read and will abide by the following Ethics statement

Student researchers are expected to maintain the highest standards of honesty and integrity. Scientific fraud and misconduct are not condoned at any level of research or competition. Such practices include but are not limited to plagiarism, forgery, use or presentation of other researcher's work as one's own, and fabrication of data. Fraudulent projects will fail to qualify for competition in affiliated fairs and the Intel ISEF.

---

Student's Printed Name

---

Signature

---

Date Acknowledged (mm/dd/yy)

(Must be prior to experimentation.)

**b. Parent/Guardian Approval:** I have read and understand the risks and possible dangers involved in the Research Plan/Project Summary. I consent to my child participating in this research.

---

Parent/Guardian's Printed Name

---

Signature

---

Date Acknowledged (mm/dd/yy)

(Must be prior to experimentation.)

## 2. To be completed by the local or affiliated Fair SRC

(Required for projects requiring prior SRC/IRB APPROVAL. Sign 2a or 2b as appropriate.)

### a. Required for projects that need prior SRC/IRB approval BEFORE experimentation (humans, vertebrates or potentially hazardous biological agents).

The SRC/IRB has carefully studied this project's **Research Plan/Project Summary** and all the required forms are included. My signature indicates approval of the **Research Plan/Project Summary** before the student begins experimentation.

---

SRC/IRB Chair's Printed

---

Signature

---

Date of Approval (mm/dd/yy)  
(Must be prior to experimentation.)

OR

### b. Required for research conducted at all Regulated Research Institutions with no prior fair SRC/IRB approval.

This project was conducted at a regulated research institution (**not home or high school, etc.**), was reviewed and approved by the proper institutional board before experimentation and complies with the Intel ISEF Rules. **Attach (1C) and any required institutional approvals** (e.g. IACUC, IRB).

---

SRC Chair's Printed

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Signature

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Date of Approval (mm/dd/yy)

## 3. Final Intel ISEF Affiliated Fair SRC Approval (Required for ALL Projects)

### SRC Approval After Experimentation and Before Competition at Regional/State/National Fair

I certify that this project adheres to the approved **Research Plan/Project Summary** and complies with all Intel ISEF Rules.

---

Regional SRC Chair's Printed Name

---

Signature

---

Date of Approval (mm/dd/yy)

---

State/National SRC Chair's Printed Name  
(where applicable)

---

Signature

---

Date of Approval (mm/dd/yy)

# Regulated Research Institutional/Industrial Setting Form (1C)

This form must be completed AFTER experimentation by the adult supervising the student research conducted in a regulated research institution, industrial setting or any work site other than home, school or field.

Student's Name(s) \_\_\_\_\_ Title of Project \_\_\_\_\_

## To be completed by the Supervising Adult in the Setting (NOT the Student(s)) after experimentation:

(Responses must be on the form as it is required to be displayed at student's project booth; please do not print double-sided.)

The student(s) conducted research at my work site:

1. Did you or your proxy (e.g. graduate student, postdoc, employee) mentor or provide substantial guidance to the student researcher?  Yes  No

a. If no, describe your and/or your institution's role with the student researcher and his/her project (e.g. supervised use of equipment on site without ongoing mentorship and sign below.

b. If yes, complete questions 2–5.

2. Is the student's research project a subset of your ongoing research or work?  Yes  No

Use questions 3, 4 and 5 to detail how the student's project was similar and/or different from ongoing research or work at your site.

3. Describe the independence and creativity with which the student:

a. developed the hypotheses or engineering goals for the research project

b. designed the methodology for his/her research project

c. analyzed and interpreted data

(Continued on next page)

## Regulated Research Institutional/Industrial Setting Form (1C) Continued

Student's Name(s) \_\_\_\_\_

4. Detail the student's role in conducting the research (e.g. data collection, specific procedures performed). Differentiate what the student observed and what the student actually did.

5. Did the student(s) work on the project as part of a group?

If yes, how many individuals were in the group and who were they (e.g. high school students, graduate students, faculty, professional researchers)?

Yes       No

I attest that the student has conducted the work as indicated above and that any required review and approval by institutional regulatory board (IRB/IACUC/IBC) has been obtained. Copies are attached if applicable.

I further acknowledge that the student will be presenting this work publicly in competition and I have communicated with the student research regarding any requirements for my review and/or restrictions of what is publicized.

Supervising Adult's Printed Name

Signature

Title

Institution

Date Signed (must be after experimentation) (mm/dd/yy)

Address

Email/Phone

## Qualified Scientist Form (2)

May be required for research involving human participants, vertebrate animals, potentially hazardous biological agents, and hazardous substances and devices. Must be completed and signed before the start of student experimentation.

Student's Name(s) \_\_\_\_\_ Title of Project \_\_\_\_\_

### To be completed by the Qualified Scientist:

Scientist Name: \_\_\_\_\_

Educational Background: \_\_\_\_\_ Degree(s): \_\_\_\_\_

Experience/Training as relates to the student's area of research: \_\_\_\_\_

Position: \_\_\_\_\_ Institution: \_\_\_\_\_

Address: \_\_\_\_\_ Email/Phone: \_\_\_\_\_

1) Have you reviewed the Intel ISEF rules relevant to this project?  Yes  No

a. Human participants  Yes  No

b. Vertebrate animals  Yes  No

c. Potentially hazardous biological agents (microorganisms, rDNA and tissues, including blood and blood products)  Yes  No

d. Hazardous substances and devices  Yes  No

2. Will any of the following be used?  Yes  No

3. Will this study be a sub-set of a larger study?  Yes  No

4. Will you directly supervise the student?  Yes  No

a. If no, who will directly supervise and serve as the Designated Supervisor? \_\_\_\_\_

b. Experience/Training of the Designated Supervisor: \_\_\_\_\_

### To be completed by the Qualified Scientist:

I certify that I have reviewed and approved the Research Plan/Project Summary prior to the start of the experimentation. If the student or Designated Supervisor is not trained in the necessary procedures, I will ensure her/his training. I will provide advice and supervision during the research. I have a working knowledge of the techniques to be used by the student in the Research Plan/Project Summary. I understand that a Designated Supervisor is required when the student is not conducting experimentation under my direct supervision.

Qualified Scientist's Printed Name \_\_\_\_\_

Signature \_\_\_\_\_ Date of Approval (mm/dd/yy) \_\_\_\_\_

### To be completed by the Designated Supervisor when the Qualified Scientist cannot directly supervise.

I certify that I have reviewed the Research Plan/Project Summary and have been trained in the techniques to be used by this student,

Designated Supervisor's Printed Name \_\_\_\_\_

Signature \_\_\_\_\_

Date of Approval (mm/dd/yy) \_\_\_\_\_

Phone \_\_\_\_\_ Email \_\_\_\_\_

## **Risk Assessment Form (3)**

**Must be completed before experimentation.**

Student's Name(s) \_\_\_\_\_

Title of Project \_\_\_\_\_

**To be completed by the Student Researcher(s) in collaboration with Designated Supervisor/Qualified Scientist:** (All questions must be answered; additional page(s) may be attached.)

1. List all hazardous chemicals, activities, or devices that will be used; identify microorganisms exempt from pre-approval (see Potentially Hazardous Biological Agent rules).
  
2. Identify and assess the risks involved in this project.
  
3. Describe the safety precautions and procedures that will be used to reduce the risks.
  
4. Describe the disposal procedures that will be used (when applicable).
  
5. List the source(s) of safety information.

**To be completed and signed by the Designated Supervisor (or Qualified Scientist, when applicable):** I agree with the risk assessment and safety precautions and procedures described above. I certify that I have reviewed the Research Plan/Project Summary and will provide direct supervision.

Designated Supervisor's Printed Name \_\_\_\_\_

Signature \_\_\_\_\_

Date of Review (mm/dd/yy) \_\_\_\_\_

Position & Institution \_\_\_\_\_

Phone or email contact information \_\_\_\_\_

Experience/Training as relates to the student's area of research \_\_\_\_\_



# Human Informed Consent Form

**Instructions to the Student Researcher(s):** An informed consent/assent/permission form should be developed in consultation with the Adult Sponsor, Designated Supervisor or Qualified Scientist.

This form is used to provide information to the research participant (or parent/guardian) and to document written informed consent, minor assent, and/or parental permission.

- When written documentation is required, the researcher keeps the original, signed form.
- Students may use this sample form or may copy ALL elements of it into a new document.

If the form is serving to document parental permission, a copy of any survey or questionnaire must be attached.

Student Researcher(s): \_\_\_\_\_

Title of Project: \_\_\_\_\_

I am asking for your voluntary participation in my science fair project. Please read the following information about the project. If you would like to participate, please sign in the appropriate area below.

Purpose of the project:

If you participate, you will be asked to:

Time required for participation:

Potential Risks of Study:

Benefits:

How confidentiality will be maintained:

If you have any questions about this study, feel free to contact:

Adult Sponsor/QS/DS: \_\_\_\_\_ Phone/email: \_\_\_\_\_

## Voluntary Participation:

Participation in this study is completely voluntary. If you decide not to participate there will not be negative consequences. Please be aware that if you decide to participate, you may stop participating at any time and you may decide not to answer any specific question.

By signing this form I am attesting that I have read and understand the information above and I freely give my consent/assent to participate or permission for my child to participate.

## Adult Informed Consent or Minor Assent

Date Reviewed & Signed:  
(mm/dd/yy)

Research Participant Printed Name:

Signature:

## Parental/Guardian Permission (if applicable)

Date Reviewed & Signed:  
(mm/dd/yy)

Parent/Guardian Printed Name:

Signature:

# Vertebrate Animal Form (5A)

Required for all research involving vertebrate animals that is conducted in a school/home/field research site.  
(SRC approval required before experimentation.)

Student's Name(s) \_\_\_\_\_

Title of Project \_\_\_\_\_

## To be completed by Student Researcher:

1. Common name (or Genus, species) and number of animals used.
2. Describe completely the housing and husbandry to be provided. Include the cage/pen size, number of animals per cage, environment, bedding, type of food, frequency of food and water, how often animal is observed, etc. Add an additional page as necessary.
3. What will happen to the animals after experimentation?
4. Attach a copy of wildlife licenses or approval forms, as applicable
5. The Intel ISEF Vertebrate Animal Rules require that any death, illness or unexpected weight loss be investigated and documented by a letter from the qualified scientist, designated supervisor or a veterinarian. If applicable, attach this letter with this form when submitting your paperwork to the SRC prior to competition.

## To be completed by Local or Affiliate Fair Scientific Review Committee (SRC) BEFORE experimentation.

### Level of Supervision Required for agricultural, behavioral or nutritional studies:

Designated Supervisor REQUIRED. Please have applicable person sign below.

Veterinarian and Designated Supervisor REQUIRED. Please have applicable persons sign below.

Veterinarian, Designated Supervisor and Qualified Scientist REQUIRED. Please have applicable persons sign below and have the Qualified Scientist complete Form (2).

The SRC has carefully reviewed this study and finds it is an appropriate study that may be conducted in a non-regulated research site.

### Local or Affiliate Fair SRC Pre-Approval Signature:

\_\_\_\_\_  
SRC Chair Printed

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date of Approval (must be prior to experimentation) (mm/dd/yy)

#### To be completed by Veterinarian:

I have reviewed this research and animal husbandry with the student before the start of experimentation.

I have approved the use and dosages of prescription drugs and/or nutritional supplements.

I will provide veterinary medical and nursing care in case of illness or emergency. (Fees may apply.)

\_\_\_\_\_  
Printed Name

\_\_\_\_\_  
Email/Phone

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date of Approval (mm/dd/yy)

#### To be completed by Designated Supervisor or Qualified Scientist when applicable:

I have reviewed this research and animal husbandry with the student before the start of experimentation and I accept primary responsibility for the care and handling of the animals in this project.

I will directly supervise the experiment.

\_\_\_\_\_  
Printed Name

\_\_\_\_\_  
Email/Phone

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date of Approval (mm/dd/yy)

## Vertebrate Animal Form (5B)

**Required for all research involving vertebrate animals that is conducted in at a Regulated Research Institution.**

**(IACUC approval required before experimentation. Form must be completed and signed after**

Student's Name(s) \_\_\_\_\_

Title of Project \_\_\_\_\_

Title and Protocol Number of IACUC Approved Project \_\_\_\_\_

**To be completed by Qualified Scientist or Principal Investigator:**

1. Species of animals used: \_\_\_\_\_ Number of animals used: \_\_\_\_\_

2. Describe, in detail, the role of the student in this project: animal procedures and related equipment that were involved, oversight provided and safety precautions employed. (Attach extra pages if necessary.)

3. Was there any weight loss or death of any animal? If yes, attach a letter obtained from the qualified scientist, designated supervisor or a veterinarian documenting the situation and the results of the investigation.

4. Did the student's project also involve the use of tissues?

No

Yes; complete Forms 6A and 6B

5. What laboratory training, including dates, was provided to the student?

6. **Attach a copy of the Regulated Research Institution IACUC Approval.** A letter from the Qualified Scientist or Principal Investigator is not sufficient.

### **Qualified Scientist/Principal Investigator**

Printed Name

**Signature**

Date (mm/dd/yy)

# Potentially Hazardous Biological Agents Risk Assessment Form (6A)

Required for research involving microorganisms, rDNA, fresh/frozen tissue (including primary cell lines, human and other primate established cell lines and tissue cultures), blood, blood products and body fluids.

SRC/IACUC/IBC approval required before experimentation.

Student's Name(s) \_\_\_\_\_

Title of Project \_\_\_\_\_

**To be completed by the QUALIFIED SCIENTIST/DESIGNATED SUPERVISOR in collaboration with the student researcher(s). All questions are applicable and must be answered; additional page(s) may be attached.**

## SECTION 1: PROJECT ASSESSMENT

1. Identify potentially hazardous biological agents to be used in this experiment. Include the source, quantity and the biosafety level risk group of each microorganism.
2. Describe the site of experimentation including the level of biological containment.
3. Describe the procedures that will be used to minimize risk (personal protective equipment, hood type, etc.).
4. What final biosafety level do you recommend for this project given the risk assessment you conducted?
5. Describe the method of disposal of all cultured materials and other potentially hazardous biological agents.

## SECTION 2: TRAINING

1. What training will the student receive for this project?
2. Experience/training of Designated Supervisor as it relates to the student's area of research (if applicable).

## SECTION 3: For ALL MICROORGANISMS, CELL LINES and TISSUES – To be completed by the QUALIFIED SCIENTIST or DESIGNATED SUPERVISOR - Check the appropriate box(es) below:

Experimentation on the microorganisms/cell lines/tissues used in this study will NOT be conducted at a Regulated Research Institution, but will be conducted at a (check one) \_\_\_\_\_ BSL-1 or \_\_\_\_\_ BSL-2 laboratory. This study has been reviewed by the local SRC and the procedures have been approved prior to experimentation.

Experimentation on the microorganisms/cell lines/tissues used in this study will be conducted at a Regulated Research Institution and was approved by the appropriate institutional board prior to experimentation; institutional approval forms are attached.

Origin of cell lines: \_\_\_\_\_ Date of IACUC/IBC approval \_\_\_\_\_

Experimentation on the microorganisms/cell lines/tissues used in this study will be conducted at a Regulated Research Institution, which does not require pre-approval for this type of study. The SRC has reviewed that the student received appropriate training and the project complies with Intel ISEF rules.

## CERTIFICATION – To be SIGNED by the QUALIFIED SCIENTIST or DESIGNATED SUPERVISOR

The QS/DS has seen this project's research plan and supporting documentation and acknowledges the accuracy of the information provided above. This study has been approved as a (check one)  BSL-1/  BSL-2 study, and will be conducted in an appropriate laboratory.

QS/DS Printed Name \_\_\_\_\_

Signature \_\_\_\_\_

Date of review (mm/dd/yy) \_\_\_\_\_

## SECTION 4: CERTIFICATION – To be completed by the LOCAL or AFFILIATED FAIR SRC

The SRC has seen this project's research plan and supporting documentation and acknowledges the accuracy of the information provided above.

SRC Printed \_\_\_\_\_

Signature \_\_\_\_\_

Date of review (mm/dd/yy) \_\_\_\_\_

## Human and Vertebrate Animal Tissue Form (6B)

Required for research involving fresh/frozen tissue (including primary cell lines, human and other primate established cell lines and tissue cultures), blood, blood products and body fluids. If the research involves living organisms please ensure that the proper human or animal forms are completed. **All projects using any tissue listed above must also complete Form 6A.**

Student's Name(s) \_\_\_\_\_

Title of Project \_\_\_\_\_

### To be completed by Student Researcher(s):

1. What vertebrate animal tissue will be used in this study? Check all that apply.

- Fresh or frozen tissue sample
- Fresh organ or other body part
- Blood
- Body fluids
- Primary cell/tissue cultures
- Human or other primate established cell lines

2. Where will the above tissue(s) be obtained. If using an established cell line include source and catalog number.

3. If the tissue will be obtained from a vertebrate animal study conducted at a research institution attach a copy of the IACUC certification with the name of the research institution, the title of the study, the IACUC approval number and a of IACUC approval.

### To be completed by the Qualified Scientist or Designated Supervisor:

I verify that the student will work solely with organs, tissues, cultures or cells that will be supplied to him/her by myself or qualified personnel from the laboratory; and that if vertebrate animals were euthanized they were euthanized for a purpose other than the student's research.

**AND/OR**

I certify that the blood, blood products, tissues or body fluids in this project will be handled in accordance with the standards and guidance set forth in U.S. Occupational Safety and Health Act, 29CFR, Subpart Z, 1910.1030 - Blood Borne Pathogens.

---

Printed Name

---

Signature

---

Date of Approval (mm/dd/yy)  
(Must be prior to experimentation.)

---

Title

---

Phone/Email

---

Institution

# Continuation/Research Progression Projects Form (7)

Required for projects that are a continuation/progression in the same field of study as a previous project.

*This form must be accompanied by the previous year's abstract and Research Plan/Project Summary.*

Student's Name(s) \_\_\_\_\_

**To be completed by Student Researcher:** List all components of the current project that make it new and different from previous research. The information must be on the form; use an additional form for 2016–2017 and earlier projects.

| Components                              | Current Research Project<br>(2018-2019) | Previous Research Project Year: |
|-----------------------------------------|-----------------------------------------|---------------------------------|
| 1. Title                                |                                         |                                 |
| 2. Change in goal/<br>purpose/objective |                                         |                                 |
| 3. Changes in<br>methodology            |                                         |                                 |
| 4. Variable studied                     |                                         |                                 |
| 5. Additional<br>changes                |                                         |                                 |

Attached are:

2017–2018 Abstract and Research Plan/Project Summary

I hereby certify that the above information is correct and that the current year Abstract & Certification and project display board properly reflect work done only in the current year.

\_\_\_\_\_  
Student's Printed Name(s)

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date of Signature (mm/dd/yy)

## NOTES



The Intel International Science and Engineering Fair encourages students to tackle challenging scientific questions and develop the skills needed to solve the problems of tomorrow.

### **Society for Science & the Public**

The Society for Science & the Public is a champion for science, dedicated to expanding scientific literacy, effective STEM education and scientific research. Founded in 1921, we are a nonprofit 501(c)(3) membership organization focused on promoting the understanding and appreciation of science and the vital role it plays in human advancement. Through its acclaimed education competitions, including the Regeneron Science Talent Search, the Intel International Science and Engineering Fair and the Broadcom MASTERS, and the Science News Media Group, including the award-winning *Science News* and *Science News for Students*, the Society is committed to inform, educate and inspire. [societyforscience.org](http://societyforscience.org)

To learn more about the Intel International Science and Engineering Fair, visit:

[student.societyforscience.org/intel-isef](http://student.societyforscience.org/intel-isef)

### **Intel Corporation**

The foundation of tomorrow's innovation is education. That's why making quality education available to more students around the world - with the help of technology - has inspired Intel's commitment to education for 40 years. We do more than make contributions. Intel gets directly involved in developing and helping to change policy, training teachers, offering free curricula, providing kids with a place to explore technology, and encouraging young innovators. Intel believes that students at all levels everywhere deserve to have the skills they need to become part of the next generation of innovators.

In the last decade, Intel has invested more than \$1 billion, and Intel employees have donated more than four million hours, toward improving education in more than 80 countries, regions, and territories. We are actively involved in education programs, advocacy, and technology access to help tomorrow's innovators. [intel.com/education](http://intel.com/education)

Society for Science & the Public

**1 TULANE UNIVERSITY GUIDELINES GOVERNING  
MINORS, STUDENT LEARNERS AND NON-EMPLOYEE VISITORS/OBSERVERS  
LABORATORIES**



## **IX. Purpose**

The breadth of research at Tulane University (the “University”) creates an array of opportunities for individuals to participate in enriching educational experiences. The concern of the University for laboratory safety extends not only to employees but also to any individuals visiting University laboratories. The purpose of these guidelines is to provide guidance to faculty members, researchers, managers, and supervisors of laboratories and programs regarding visitors and observers (including minors and student learners) in University laboratories.

NOTE: These guidelines are not intended to be applicable for visiting professors, visiting scholars, or visiting researchers. Visiting professors, visiting scholars, or visiting researchers using University laboratories must adhere to University policies and procedures in the same manner as University employees.

## **X. Definitions**

As defined below,

- a. A “Minor” is any person who has not attained 18 years of age and who is not:
  - 1) enrolled in a University regular catalog course or degree program; or
  - 2) enrolled in a University sponsored course of study/training program or career exploration program designed for persons under the age of 18; or
  - 3) performing work for the University in an employee/employer relationship, either as a full-time or part-time employee.
- b. A “Non-Employee” is any person (age 18 or above) who does not perform work for the University in an employee/employer relationship. A Non-Employee does NOT include Volunteers defined in the Code of Federal Regulations as an individual who performs hours of service for civic, charitable, or humanitarian reasons, without promise, expectation, or receipt of compensation for services rendered. University Volunteers who desire to work in University Laboratories are subject to the Volunteer Policy found on page 58 of the Staff Handbook (<http://tulane.edu/wfmo/employee-support/upload/Staff-Handbook-revised-1-5-2012.pdf>).
- c. A “Designated Supervisor” is a University employee who is directly responsible for overseeing the activities and involvement of a Minor, Student Learner, or Non-Employee and who is thoroughly trained and knowledgeable with:
  - 1) The activities a Minor, Student Learner, or Non-Employee can be involved in; and
  - 2) The safety policies/guidelines and training applicable to the University laboratory; and
  - 3) The hazards within the University laboratory environment.
- d. “Hazardous Activities” shall include exposure to equipment, materials and activities that may be detrimental to the health or well-being of a Minor, Student Learner, or Non-Employee, including but not limited to:
  - 1) Operating, tending, setting up, adjusting, cleaning, oiling of power-driven tools, equipment, or machinery;
  - 2) Operating motor vehicles and unloading/loading of goods in same (except personal non-power-driven tools, personal protective equipment, personal items);
  - 3) Construction or wood-working related operations;
  - 4) Working inside freezers, coolers, engine/boiler rooms;
  - 5) Working with hazards as outlined in Section VIII of these guidelines as “**Prohibitions for Minors, Student Learners or Non-Employees in Laboratories**”.

e. A "Student-Learner" is any person who:

- 1) Has not attained 18 years of age and who is enrolled in a University regular catalog course or degree program or enrolled in a University sponsored course of study/training program or career exploration program designed for persons under the age of 18.
- 2) Is a visiting student who is currently enrolled in a university or college elsewhere that desires to develop or enhance their science and research education programs at said university or college or is engaged in a mentor/mentee relationship between researchers and students for supporting their educational goals at said university or college.

**XI. Requirements for Minors, Student Learners or Non-Employees in Laboratories for Tours and Observation**

Minors, Student Learners, or Non-Employees may enter a University laboratory under certain conditions as follows.

a. Tour Participants/Short-Term Observers (5 hours or less)

Minors, Student Learners, or Non-Employees who are participating in a tour of or acting as a short-term observer of a laboratory must be under the supervision of a Designated Supervisor at all times who is trained and knowledgeable regarding the area's hazards. No person shall be permitted to be an observer in a laboratory during any activity with the potential for exposure to Hazardous Activities. Prior to allowing a Minor, Student Learner, or Non-Employee to tour or observe in a laboratory, the Designated Supervisor must conduct a basic safety orientation, including both general safety information and any hazards particular to the laboratory in question. **Tour participants and short-term observers may only participate in laboratory activities involving supervised demonstrations, such as viewing microscope slides, handling plastic models, providing demonstrations of non-hazardous lab equipment, and providing demonstrations of behavioral testing of animals with minimal handling by participants under direct supervision and with assistance, as permitted under the Institutional Animal Care and Use Committee (IACUC) guidelines.**

**XII. Requirements for Student Learners and Non-Employees in Laboratories as Participants**

Student Learners between the ages of 15 and 18 and Non-Employees may be permitted to participate in limited activities that take place in University laboratories, provided that certain requirements are met and certain prohibitions (see Section VIII) are not violated. The following outlines the circumstances under which a Student Learner between the ages of 15 and 18 and a Non-Employee may be permitted to participate in activities in a University laboratory:

a. Each Student Learner or Non-Employee must have a Principal Investigator/Sponsor. A Principal Investigator/Sponsor is a University faculty member or full-time staff member who meets the following qualifications:

- Is at least 18 years of age;
- Has authority over the laboratory in which the Student Learner's or Non-Employee's activities are to take place;
- Agrees to supervise and be responsible for the Student Learner or Non-Employee while the Student Learner or Non-Employee is present in the laboratory and/or building in which the laboratory is located.

b. An *Application for Minors, Student Learners, and Non-Employee Visitors/Observers to Enter Tulane University Laboratories* (which includes a Potential Hazards Assessment) must be completed and signed by the Principal Investigator/Sponsor and approved by the Office of Environmental Health and Safety (OEHS), prior to the Student Learner or Non-Employee starting activities in the laboratory.

c. As directed by OEHS, the Principal Investigator/Sponsor conducts and documents completion of all safety training to the Student Learner or Non-Employee regarding potential hazards the Student Learner or Non-Employee may encounter within the laboratory in which the activities will take place, prior to the Student Learner or Non-Employee starting activities in the laboratory. Safety training guidelines are provided in Appendix B: *Safety Training for Approved Minors, Student Learners, and Non-Employee Visitors/Observers in Laboratories*. Activities involving animal research requires specific training as described in Section V below.

Documentation of the safety training is obtained by having the participant acknowledge receipt of safety training (via signature) at the bottom of the Consent to Participate and Acknowledgement of Risk and Release form.

d. The Principal Investigator/Sponsor provides the Student Learner or Non-Employee with hazard-specific personal protective equipment, and instructs the Student Learner or Non-Employee in its proper use and disposal.

e. The laboratory in which the Student Learner or Non-Employee is to participate in activities must be in full compliance with all applicable University safety programs and regulations and any additional rules set forth in Section V when activities involve animal research. Inspections of the laboratory must be current prior to any Student Learner or Non-Employee initiating activity in the laboratory.

f. If a Non-Employee meets the definition of Volunteer under the University's Volunteer Policy, all forms required by the Volunteer Policy as referenced in Section VI must be completed and all terms of the Volunteer Policy must be followed.

### **XIII. Requirements for Minors, Student Learners, or Non-Employees in Laboratories involving Animal Research**

Minors, Student Learners, or Non-Employees desiring to participate in activities in any laboratory or facility which involves animal research, exposure to animals, animal waste, or animal tissue is subject to the following:

a. Participants must be in compliance with the guidelines set forth by the Society for Science and the Public covering Vertebrate Animals within the *International Rules for Pre-college Science Research: Guidelines for Science and Engineering Fairs* found at <https://student.societyforscience.org/international-rules-pre-college-science-research> (pp. 10-12).

b. Participants under the age of 18 must be in grades 9-12 or equivalent, as referenced within the aforementioned guidelines.

c. Participants must complete the Animal Handler Health Surveillance (AHHS) Program and meet any requirements of the (IACUC).

**NOTE:** As indicated in the next section (VI), Non-Employees who meet the definition of Volunteer under the University's Volunteer Policy **are prohibited** from working with animals or in laboratories where animals are present as referenced in the Volunteer Policy.

### **XIV. Requirements for Volunteers in Laboratories**

As referenced under the **Definitions** Section of these Guidelines, Volunteers are defined in the Code of Federal Regulations as an individual who performs hours of service for civic, charitable, or humanitarian reasons, without promise, expectation, or receipt of compensation for services rendered. Volunteers are additionally defined within the University Volunteer Policy on page 95 of the Staff Handbook (<https://tulane.app.box.com/s/r66lu4pi2egwh5y9nd2actf217mjqavd>). University Volunteers must follow the guidelines of the University Workforce Management Organization.

### **XV. Additional Requirements For Minors and Student Learners (under the age of 18) In Laboratories**

a. A *Consent to Participate and Acknowledgement of Risk and Release Form* (under the age of 18) is included in the Parent Guardian Letter and must be completed and signed by the Minor or Student Learner (under the age of 18)

and his/her parent or guardian, prior to the time that the Minor or Student Learner (under the age of 18) begins activities in the laboratory.

- b. While within the laboratory, the Minor or Student Learner (under the age of 18) is never left alone and is supervised at all times by the Principal Investigator/Sponsor or by another University employee to whom the Principal Investigator/Sponsor has specifically delegated this responsibility.

#### **XVI. Prohibitions for Minors, Student Learners or Non-Employees in Laboratories**

Although the requirements set forth in Sections III and VII are met, Minors, Student Learners or Non-Employees are not permitted to participate in the following:

- a. Any activities involving BSL-3 and BSL-4 protocols.
- b. Any laboratory or facility in which bio-hazardous or infectious materials are used or stored.
- c. Activities in any laboratory or facility in which radioactive materials or radiation is used.
- d. Activities involving acute toxins.
- e. Any laboratory or facility designated as BSL-3, ABSL-2 or 3, or higher, for recombinant or infectious organisms.
- f. Any laboratory or facility in which Select Agents or explosives are stored.

NOTE: As indicated in Section VI, Non-Employees who meet the definition of Volunteer under the University's Volunteer Policy are prohibited from working with animals or in laboratories where animals are present as referenced in the Volunteer Policy.

#### **Attachments:**

- Parent/Guardian Letter; Consent to Participate and Acknowledgement of Risk and Release Form (General)
- Parent/Guardian Letter; Consent to Participate and Acknowledgement of Risk and Release Form (Including Makerspace)
- Safety Training for Approved Minors, Student Learners and Non-Employee Visitors/Observers in Laboratories.
- International Rules for Pre-college Science Research: Guidelines for Science and Engineering Fairs



Date:

RE: Consent to Participate and Acknowledgement of Risk and Release Form for Tours and Programs involving Laboratories

Dear Parent or Legal Guardian:

This Consent to Participate and Acknowledgement of Risk and Release Form (Form) is required for the referenced participant (Participant) on said Form prior to participation in an educational tour (Tour) or program (Program) at Tulane University referenced on Form, which may involve activities within a research laboratory in the following School/Department. Participation will be under the direct supervision of the individual referenced below in the Tulane University Building and/or Laboratory as follows:

School/Department Name: \_\_\_\_\_

Direct Supervision Provided By: \_\_\_\_\_

Tulane University Building and/or Laboratory: \_\_\_\_\_

Individual laboratories vary in the inherent types of potential hazards present. The Participant may be exposed to these hazards as indicated within the designated checked box below:

Tour Participants and short-term observers may only participate in laboratory activities involving supervised demonstrations, such as viewing microscope slides, handling plastic models, providing demonstrations of non-hazardous lab equipment, and providing demonstrations of behavioral testing of animals with minimal handling by participants under direct supervision and with assistance, as permitted under the Institutional Animal Care and Use Committee (IACUC) guidelines. Tour Participants and short-term observers will be provided a lab safety orientation prior to participating in the laboratory activities described herein.

Program participants may be working with or around animals, biological materials, chemicals or other potentially hazardous material and under the direct supervisor referenced above. Programs for minors in laboratories are viewed by the Tulane University Office of Environmental Health and Safety (OEHS) to confirm that the Programs:

5. Is appropriate for minor Participants.
6. Has appropriate safety precaution in place.
7. Has identified training requirements.
8. Requires Supervisors complete the training requirements for Participants before the lab activity begins.

This Tour or Program entails a field trip involving travel to and from \_\_\_\_\_

Participants may be working with or around animals, biological materials, chemicals, or other potentially hazardous materials. As a part of projects within the Tour or Program, the Participant will work with or perform the following:

Description of Proposed Laboratory Activities (include any potentially hazardous materials or animal research):  
\_\_\_\_\_

Participants who may work with or in the vicinity of potentially hazardous materials will be required to attend laboratory safety training, and may also be required to attend additional training sessions, depending on the nature of the Participant's particular project. If you have further question on these topics, please call the Program Director or an OEHS Safety Program Manager at (504) 988-2800.

Program Director Name: \_\_\_\_\_

Contact Information: \_\_\_\_\_

## **CONSENT TO PARTICIPATE AND ACKNOWLEDGEMENT OF RISK AND RELEASE FORM**

In consideration of the opportunity to allow participation of \_\_\_\_\_ (the "Participant") in \_\_\_\_\_ (the "Tour" or "Program") at Tulane University (the "University"), the undersigned (parent/guardian), hereby acknowledges and agrees as follows:

I acknowledge that activities conducted in the course of the Tour or Program may entail known or unanticipated risks which could cause harm to me or third parties or damage to property. I understand that University facilities and/or laboratories are being made available to Participant as an educational opportunity and that Participant is not a matriculated student, employee, or affiliate of University. I understand that University laboratories may contain chemicals as described on page one (1) and equipment and may involve animal research activities. As a result of these exposures and activities, I understand that Participant may be subjected to potential risks that could result in illnesses or injuries. If this Tour or Program entails field trips involving transportation to and from, I grant permission for the Participant to engage in said field trips.

In addition, the Participant and the undersigned understand and agree:

5. to the risks associated with the activities of the Tour or Program and accept and assume all risks and liabilities associated with participation in the Tour or Program.
6. that participation in the Tour or Program is purely voluntary.
7. that if the University obtains any recorded medium (including but not limited to video, audio, photos) of Participant engaging in Tour or Program activities in any form (including but not limited to print, websites, blogs, internet) that such recorded medium of Participant's name, likeness, voice and biographical material may be used by University to exhibit or distribute in whole or part for educational and promotional purposes of Tour or Program and that Participant or the undersigned waives the right to inspect or approve the recorded medium as well as waiving any royalty and compensation rights related to the use of such recorded medium.
8. that the University will not be responsible for the drop off and/or pick up of the Participant, including verification that individuals dropping off/picking up Participant are indeed the custodial Parent or Guardian of Participant.

The undersigned certifies that Participant has no medical or physical conditions which could interfere with Participant's safety or the safety of others in connection with participation in the Tour or Program, and hereby assumes and agrees to bear the costs of all risks that may be created, directly or indirectly, by any such condition, whether or not disclosed to the University. In addition, in the event of an emergency and medical treatment is deemed necessary, the undersigned and Participant authorizes emergency medical treatment by an attending physician and/or emergency responders and assumes responsibility for costs associated with such emergency medical treatment.

**THE UNDERSIGNED, OR A REPRESENTATIVE ACTING ON BEHALF OF THE UNDERSIGNED OR A PARENT/GUARDIAN FOR MINORS, AND PARTICIPANT HEREBY AGREES TO RELEASE, DEFEND, INDEMNIFY HOLD HARMLESS, AND FOREVER DISCHARGE THE ADMINISTRATORS OF THE TULANE EDUCATIONAL FUND DBA TULANE UNIVERSITY, ITS ADMINISTRATORS, TRUSTEES, OFFICERS, FACULTY, STAFF, AGENTS AND OTHER REPRESENTATIVES (COLLECTIVELY, "THE UNIVERSITY"), ON BEHALF OF THEMSELVES, THEIR CHILDREN, PARENTS, HEIRS, ASSIGNS, PERSONAL REPRESENTATIVES AND ESTATE FROM ANY AND ALL CLAIMS, DEMANDS OR CAUSES OF ACTION WHICH IN ANY WAY RELATE TO OR ARISE OUT OF THEIR PARTICIPATION IN THE PROGRAM OR USE OF THE UNIVERSITY'S EQUIPMENT OR FACILITIES, REGARDLESS OF WHETHER CAUSED OR ALLEGED TO BE CAUSED IN WHOLE OR IN PART BY NEGLIGENT ACTS OR OMISSIONS OF THE UNIVERSITY.**

In the event the undersigned, or a representative acting on behalf of the undersigned, or Participant engages in a lawsuit against the University for participation in the Tour or Program, the undersigned agrees to file suit solely in the state of Louisiana and further agrees that the substantive law of Louisiana (without regard to its conflict of law provisions) shall apply in any such action. The undersigned agrees that if any portion of this agreement is found to be void or unenforceable for any reason, the remaining portions shall remain in full force and effect. **I have read this Consent to Participate and Acknowledgement of Risk and Release in its entirety. I understand it and I agree to be bound by its terms. I certify that I am the legal Parent/Guardian of Participant.**

Parent/Guardian Signature: \_\_\_\_\_ Printed Name: \_\_\_\_\_ Date: \_\_\_\_\_

Emergency Contact Info #1 (Name/Phone): \_\_\_\_\_

Emergency Contact Info #2 (Name/Phone): \_\_\_\_\_

Pediatrician/Physician Contact Info (Name/Phone): \_\_\_\_\_

**COMPLETE THIS SECTION ONLY FOR PROGRAMS. TOURS ARE EXEMPT.**

**SAFETY TRAINING MUST BE COMPLETED PRIOR TO BEGINNING ACTIVITIES WITHIN THE LABORATORY**

I acknowledge that I must receive the Safety Training for Minors, Student Learners and Non-Employee Visitors/Observers in Laboratories prior to being permitted to participate in Program or lab activities. By signing below, I certify that I have received such training and that I will comply with the safety rules provided to me. If I do not comply with the safety rules, my participation in Program or within the laboratory may be terminated.

Participant Signature: \_\_\_\_\_ Printed Name: \_\_\_\_\_ Date: \_\_\_\_\_



Date:

RE: Consent to Participate and Acknowledgement of Risk and Release Form for Tours and Programs involving Laboratories

Dear Parent or Legal Guardian:

This Consent to Participate and Acknowledgement of Risk and Release Form (Form) is required for the referenced participant (Participant) on said Form prior to participation in an educational tour (Tour) or program (Program) at Tulane University referenced on Form, which may involve activities within a learning facility (i.e. Makerspace) and/or research laboratory in the following School/Department. Participation will be under the direct supervision of the individual referenced below in the Tulane University Building and/or Laboratory as follows:

School/Department Name: \_\_\_\_\_

Direct Supervision Provided By: \_\_\_\_\_

Tulane University Building and/or Laboratory: \_\_\_\_\_

Individual learning facilities or research laboratories vary in the inherent types of potential hazards present. The Participant may be exposed to these hazards as indicated within the designated checked box below:

Tour Participants  and short-term observers may only participate in laboratory activities involving supervised demonstrations, such as viewing microscope slides, handling plastic models, providing demonstrations of non-hazardous lab equipment, and providing demonstrations of behavioral testing of animals with minimal handling by participants under direct supervision and with assistance, as permitted under the Institutional Animal Care and Use Committee (IACUC) guidelines. Tour Participants and short-term observers will be provided a lab safety orientation prior to participating in the laboratory activities described herein.

Program participants  may be working with or around animals, biological materials, chemicals or other potentially hazardous material and under the direct supervisor referenced above. Programs for minors in laboratories are viewed by the Tulane University Office of Environmental Health and Safety (OEHS) to confirm that the Program(s):

5. Is appropriate for minor Participants.
6. Has appropriate safety precaution in place.
7. Has identified training requirements.
8. Requires Supervisors complete the training requirements for Participants before the lab activity begins.

**Makerspace**-Program participants using learning facilities for this Program will be using the Makerspace, which includes working in a room which also contains heavy equipment/machinery. While participants are expressly **prohibited** to operate such equipment, or even be in the vicinity of such equipment while it is being operated by others, the mere presence of heavy equipment/machinery has potential to create safety hazards. Participants may use 3D printers and laser cutters with plastic, cardboard, and pre-cut plywood under proper supervision. A separate Acknowledgement of Risk Form is required for use of Makerspace.

This Tour or  Program entails a field trip involving travel to and from \_\_\_\_\_

Participants may be working with or around animals, biological materials, chemicals, or other potentially hazardous materials. As a part of projects within the Tour or Program, the Participant will work with or perform the following:

Description of Proposed Laboratory Activities (include any potentially hazardous materials or animal research):  
\_\_\_\_\_  
\_\_\_\_\_

---

Participants who may work with or in the vicinity of potentially hazardous materials will be required to attend laboratory safety training and may also be required to attend additional training sessions, depending on the nature of the Participant's particular project. If you have further question on these topics, please call the Program Director or an OEHS Safety Program Manager at (504) 988-2800.

Program Director Name: \_\_\_\_\_

Contact Information: \_\_\_\_\_

## **CONSENT TO PARTICIPATE AND ACKNOWLEDGEMENT OF RISK AND RELEASE FORM**

In consideration of the opportunity to allow participation of \_\_\_\_\_ (the "Participant") in \_\_\_\_\_ (the "Tour" or "Program") at Tulane University (the "University"), the undersigned (parent/guardian), hereby acknowledges and agrees as follows:

I acknowledge that activities conducted in the course of the Tour or Program may entail known or unanticipated risks which could cause harm to me or third parties or damage to property. I understand that University facilities and/or laboratories are being made available to Participant as an educational opportunity and that Participant is not a matriculated student, employee, or affiliate of University. I understand that University laboratories may contain chemicals as described in *Consent to Participate and Acknowledgement of Risk and Release Form for Tours and Programs involving Laboratories* and equipment and may involve animal research activities. As a result of these exposures and activities, I understand that Participant may be subjected to potential risks that could result in illnesses or injuries. If this Tour or Program entails field trips involving transportation to and from, I grant permission for the Participant to engage in said field trips.

In addition, the Participant and the undersigned understand and agree:

3. to the risks associated with the activities of the Tour or Program and accept and assume all risks and liabilities associated with participation in the Tour or Program.
4. that participation in the Tour or Program is purely voluntary.

The undersigned certifies that Participant has no medical or physical conditions which could interfere with Participant's safety or the safety of others in connection with participation in the Tour or Program, and hereby assumes and agrees to bear the costs of all risks that may be created, directly or indirectly, by any such condition, whether or not disclosed to the University. In addition, in the event of an emergency and medical treatment is deemed necessary, the undersigned and Participant authorizes emergency medical treatment by an attending physician and/or emergency responder and assumes responsibility for costs associated with such emergency medical treatment.

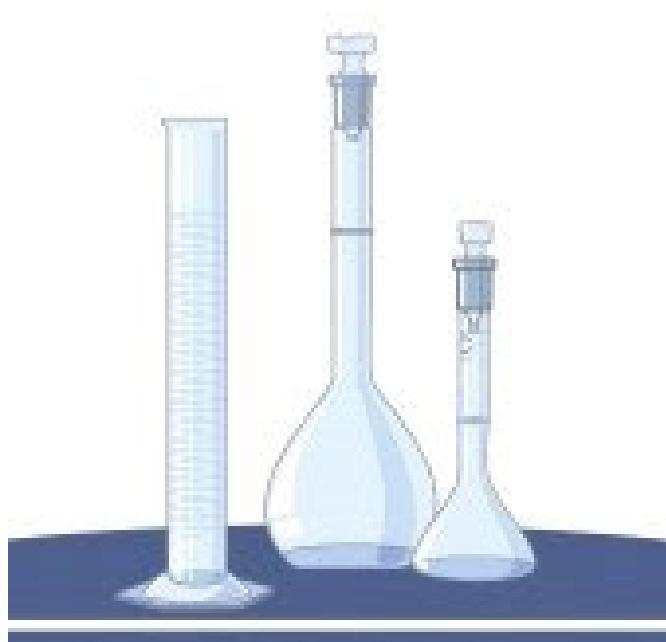
I understand that in exchange for and in consideration of Tulane permitting the Participant to participate in the Program, I hereby agree to waive, release, forever discharge, and to defend, indemnify and hold the Administrators of the Tulane Educational Fund dba Tulane University, and its officers, trustees, agents, representatives, volunteers, students and/or employees ("Tulane Indemnified Party or Parties") harmless from, any and all claims, demands, losses, rights and causes of action of whatever kind or nature (including attorneys' fees) that arise from, by reason of, or in connection with the Participant's participation in the Program, including but not limited to any injury, accident, illness to or property damage of the Participant, regardless of whether caused, in whole or in part, by negligence or other legal fault attributable to any Tulane Indemnified Party.

Parent/Guardian Signature: \_\_\_\_\_ Printed Name: \_\_\_\_\_ Date: \_\_\_\_\_

### **COMPLETE THIS SECTION ONLY FOR PROGRAMS. TOURS ARE EXEMPT. SAFETY TRAINING MUST BE COMPLETED PRIOR TO BEGINNING ACTIVITIES WITHIN THE LABORATORY**

I acknowledge that I must receive the Safety Training for Minors, Student Learners and Non-Employee Visitors/Observers in Laboratories prior to being permitted to participate in Program or lab activities. By signing below, I certify that I have received such training and that I will comply with the safety rules provided to me. If I do not comply with the safety rules, my participation in Program or within the laboratory may be terminated.

# **Safety Training for Approved Minors, Student Learners, and Non-Employee Visitors/Observers in Laboratories**

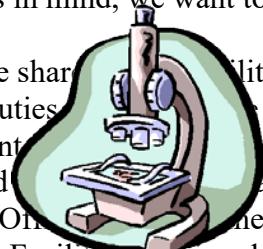


Prepared by the Office of Environmental Health & Safety Tulane University

(504) 988-5486

## Responsibility for Safety

Welcome to Tulane University! We know you are looking forward to your laboratory experience on the Tulane campus and we want to ensure that your experience will be a safe one. With this in mind, we want to share with you our safety philosophy.



Everyone shares responsibility for safety in the laboratory at Tulane – even YOU! Yes, your instructor has certain duties to ensure the lab in a safe condition and to make sure there are appropriate rules and equipment to protect you. Yes, the dean and administration have certain responsibilities to put in place and maintain that reduce your risk of injury in the lab.

Yes, the Office of Environmental Health and Safety, Tulane Police, the Office of Emergency Preparedness, and even Facilities Services have responsibilities to ensure the laboratory facilities are adequate, and to plan and protect you in the event of an emergency.

However, YOU play the most important role for safety in the laboratory. YOU need to be alert to the potential hazards of the materials in the lab and follow the appropriate procedures established by your instructor and the administration to protect your health and safety. YOU need to plan and conduct your operations in a cautious and conservative manner. YOU need to ask for assistance if unsure about a step or process. YOU need to report any problems or hazards immediately.

Good planning is important. With that in mind, we want to make you aware that Tulane has resources available to help you. The Office of Environmental Health and Safety (OEHS) has a website <http://tulane.edu/oehs> where you can find detailed safety information, including Safety Data Sheets from manufacturers describing chemical hazards and how to protect yourself. On the website you will also find Tulane University's Environmental Health and Safety Policies and Procedures Manual, Emergency Action Plans for each building on campus, and contact information for the OEHS and Tulane Police. Of course, your instructor is one of your most valuable resources, and is always available to assist you. Never be afraid to ask if you have questions or need advice!



## Emergencies: Be Prepared

When all goes as planned, everything is great, but you also need to be prepared for the unexpected. You need to become familiar with the locations of emergency equipment in your area, to include phones, exits, eyewash stations, emergency showers, fire extinguishers, emergency pull stations, spill kits, etc. You also need to know how to use this equipment.

### Important Numbers:

Let's start with  Yes, of course you know how to use a phone. But who do you call in an emergency? A list of important numbers you may need:

**Instructor Name:** \_\_\_\_\_ **Phone:** \_\_\_\_\_

### Tulane Police:

- Uptown Campus: 504-865-5200
- Health Sciences Campus: 504-988-5555

**Office of Environmental Health and Safety:** 504-988-5486

Be sure to identify yourself and your location, and provide as much information as possible on what happened.

### Fires:



Next let's talk about fires. When you hear the fire alarm you need to evacuate using the nearest stairs and exits. Do not use elevators. You should report to the location indicated in the Emergency Action Plan for your building. (EAPs are available on

OEHS website.)

If a fire is discovered in your lab, we recommend responding using the acronym ESCAPE: E – Evaluate the situation.

S – Secure the area or room by removing occupants.

C – Close the door to the room or area where the fire is located.

A – Activate the fire alarm. (Most pull stations are located near exit doors and stairwells.) P – Phone Tulane Police (504-865-5200 Uptown, 504-988-5555 Health Sciences Center) and also notify your instructor.

E – Extinguish the fire using the nearest extinguisher if the fire is small and not spreading. (We recommend that you evacuate and leave this step to your instructor or other trained personnel.)

If you do use a fire extinguisher, the acronym for proper operation is PASS: P – Pull the

pin.



A – Aim the extinguisher at the base of the fire. S – Squeeze the handles.

S – Sweep fire from left to right side.

OEHS can provide training and resources on fire extinguisher training upon request.

#### **Contamination:**

If a person is exposed to a chemical in the laboratory, flush the exposed area with water for at least 15 minutes. Be sure to locate the nearest emergency eyewash station and flush the exposed area with water for at least 15 minutes. Remove any contaminated clothing including shoes. (This is not the time to be modest.) Report the incident immediately to your instructor who will ensure that medical attention is obtained if necessary. Your instructor will also ensure that proper forms and follow-up are completed for any injury in the laboratory.

#### **Spills:**

If a chemical spill occurs in the lab, report the incident to your instructor who will ensure that the material is cleaned up by trained and experienced personnel. Most laboratories are equipped with a spill kit and procedures for minor spills. Safety Data Sheets on chemicals are available on the OEHS website and can be used to determine what to do if a chemical should spill. For major spills, the instructor will contact OEHS and Tulane Police.

#### **Accidents and Injuries:**

In the event of an accident or injury in the laboratory, notify your instructor and Tulane Police immediately. Obtain any necessary medical attention. Your instructor will ensure that proper forms and follow-up are completed for any injury in the laboratory and will also take appropriate steps to help prevent a similar accident or injury in the future.



# Basic Laboratory Safety

Just as you cannot cook without some basic rules in the kitchen, you also cannot work in the laboratory without some basic safety procedures. Let's start with what to wear.

## Dress Properly:

When in a laboratory, you need to dress appropriately. Flip-flops, open-toed sandals, and shorts are great for the hot and humid New Orleans weather, but NOT for working in a laboratory. Closed-toe shoes such as leather or tennis shoes must be worn. Long hair should be tied back, and proper laboratory clothing and footwear need to be included in your wardrobe.



## Personal Protective Equipment (PPE):

Not only do you need to dress appropriately, you need to include personal protective equipment (PPE) as well. Lab coats, safety glasses, and appropriate gloves are your fashion statement when working in the lab. You are the "awesome" scientist.



You should not only wear PPE, but you need to know the limitations of the PPE you choose. Goggles are more protective than safety glasses. Latex gloves are good for biological materials but in many cases, nitrile or rubber gloves may be needed when using chemicals. PPE needs to be clean and in good condition. Torn or deteriorated gloves need to be discarded. PPE also needs to be stored properly when not in use. No one wants to put on dirty or scratched goggles or a dirty lab coat that has been left out for months.

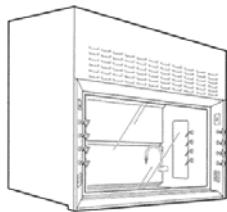
**Contact Lenses:** At Tulane, we allow contact lenses to be worn in the laboratories in most instances as long as appropriate PPE is worn as well. This means that as long as you wear your safety glasses or goggles, you can wear your contacts. This is the same recommendation as the American Chemical Society on the wearing of contact lenses in a chemical environment.

## Basic lab safety rules:

- Don't work alone in the laboratory.
- No eating, drinking, smoking, storing food, or applying cosmetics in the laboratory.
- Plan ahead. Ask your instructor if you are unsure about a procedure or process.
- Never deliberately taste or smell a chemical.
- Do not mouth pipette.
- Use tongs or gloves when handling hot objects.
- Avoid the use of sharps such as needles or glass pipettes wherever possible. If you must use needles, never recap them – instead dispose of them in a proper needle box/sharps container.



- Wear the proper clothing and personal protective equipment.
- Use a fume hood when working with volatile or hazardous materials. Work at least 6 inches behind the hood sash and always make sure the hood is working properly (check the alarm/airflow monitor) before beginning your experiment. Keep the sash as low as possible. Do not store unneeded chemicals or equipment in the fume hood. It is designed for the exhaust of vapors for the experiment in progress. It is not a storage cabinet.
- Housekeeping in the laboratory is very important. Keep your area uncluttered. Clean all lab work surfaces and equipment at the end of your experiment or procedure.
- Store incompatible chemicals separately. Acids and bases need to be stored separately. Flammables need to be separate from oxidizers. A chemical incompatibility chart can be found on the OEHS website, or ask your instructor if you need advice.
- Label containers clearly with the full name of the chemical and any associated hazards. (Don't use abbreviations.)
- Avoid using open flames. Whenever possible, use heating mantles, hot plates, or a sand, water, or oil bath instead of gas burners.
- Do not overload circuits. Extension cords and multiple outlet strips are not recommended for laboratory equipment.
- Always add acid to water when using concentrated acids.
- Be suspicious of any reagent container that has visible residue or crystals around the cap. Seek advice from your instructor before handling suspicious chemicals.
- Wash hands with soap and water when leaving the laboratory.



## Waste Disposal:

All laboratories must properly dispose of waste generated in the laboratory. Hazardous wastes must be disposed of in accordance with the following guidelines:



of properly. Hazardous chemicals must never be discarded into the regular trash. Check with your instructor for proper waste disposal instructions for your laboratory. Chemical containers must be labeled properly. Labels must be legible and clearly state the words "Hazardous Waste" and the full name of the contents (no abbreviations or symbols) and the date of disposal. Secondary containment (placing the chemical container into a secondary container such as a tray, or bin) is highly recommended when storing or transporting/处置 wastes. Your instructor will contact OEHS for disposal of any hazardous waste generated in the laboratory. (Empty chemical containers are not considered hazardous waste. The label should be defaced and they can be put into the regular trash.)

All used sharps such as needles need to be placed in rigid puncture-resistant sharps containers. Broken glass also needs to be placed in a rigid puncture-resistant container and not in the regular trash. Sharps containers need to be disposed when two-thirds full. Contact your instructor if you have questions.



Biological materials need to be placed in appropriate biohazard waste boxes or bags. Contact your instructor for instructions on proper biological waste disposal procedures for your laboratory.

**Special Restrictions for Minors, Student Learners, and Non-Employee Visitors/Observers:** Okay, we've told you some safety basics, but there are certain things you cannot do in Tulane laboratories. You are prohibited from the following activities:

- Working with radioactive materials
- Working with infectious materials
- Working with highly reactive or potentially explosive materials
- Working with acutely toxic chemicals
- Working with DEA controlled substances
- Working with live animals without prior permission and approval from the Department of Comparative Medicine



If you have questions on what is restricted or allowed, please ask your instructor for further clarification.

## Conclusion

Using laboratories at Tulane is a special privilege. We hope you have a safe and enjoyable experience here and welcome any questions or comments. Please feel free to contact the OEHS at (504) 988-5486 to report any concerns or for further safety information.

# **Intel International Science and Engineering Fair**



## **International Rules and Guidelines 2019**



# International Rules for Pre-College Science Research: Guidelines for Science and Engineering Fairs 2018–2019

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The International Rules and Guidelines for Science Fairs is available at [student.societyforscience.org/intel-isef](http://student.societyforscience.org/intel-isef) in multiple formats. Familiarity with the rules is critical for students, parents, teachers, mentors, fair directors and local and affiliated fair Scientific Review Committees (SRC) and Institutional Review Boards (IRB).

- International Rules and Guidelines – The full text of the International Rules and forms in html and as a downloadable pdf.
- The Intel ISEF Rules Wizard – An interactive tool which asks questions about your intended project and provides a list of forms required.
- Common SRC Problems – Frequent problems that emerge during Scientific Review Committee review for qualification at the Intel ISEF. Read these to learn what NOT to do.

These Rules are applicable for:

## **The Intel International Science and Engineering Fair 2019 Phoenix, AZ, USA, May 12–17, 2019**

The purpose of these rules is to:

- protect the rights and welfare of the student researcher
- protect the rights and welfare of human participants
- protect the health and welfare of vertebrate animal subjects
- protect and promote good stewardship of the environment
- ensure adherence to federal regulations
- ensure use of safe laboratory practices
- determine eligibility for competition in the Intel ISEF

For pre-review and approval of your project, find your fair at:

<https://findafair.societyforscience.org/>

**For rules questions, contact the Intel ISEF Scientific Review Committee:  
SRC@societyforscience.org**

For general questions, contact: Society for Science & the  
Public Science Education Programs

1719 N Street, NW, Washington, DC 20036 office: 202-785-2255, fax:

202-785-1243

email: [sciedu@societyforscience.org](mailto:sciedu@societyforscience.org)

# ALL PROJECTS

## Ethics Statement

Student researchers are expected to maintain the highest standards of honesty and integrity. Scientific fraud and misconduct are not condoned at any level of research or competition. This includes plagiarism, forgery, use or presentation of other researcher's work as one's own and fabrication of data. Fraudulent projects will fail to qualify for competition in affiliated fairs and the Intel ISEF. Society for Science & the Public reserves the right to revoke recognition of a project subsequently found to have been fraudulent.

## Eligibility/Limitations

10. Each Intel ISEF-affiliated fair may send to Intel ISEF the number of projects provided by their affiliation agreement.
11. A student must be selected by an Intel ISEF-affiliated fair, and meet both of the following:
  - a. be in grades 9–12 or equivalent; and
  - b. not have reached age 20 on or before May 1 preceding the Intel ISEF.
12. English is the official language of the Intel ISEF. Student project boards and abstracts must be in English.
13. Each student is only allowed to enter one project. That project may include no more than 12 months of continuous research and may not include research performed before January 2018.
14. Team projects must have no more than three members. Teams competing at Intel ISEF must be composed of members who all meet Intel ISEF eligibility.
15. Students may compete in only one Intel ISEF affiliated fair, except when proceeding to a state/national fair affiliated with the Intel ISEF from an affiliated regional fair.
16. Projects that are demonstrations, 'library' research or informational projects, 'explanation' models or kit building are not appropriate for the Intel ISEF.
17. All sciences and engineering disciplines are represented at the Intel ISEF and projects compete in one of the 22 categories. Review a [complete list of categories and sub-categories with definitions](#).
18. A research project may be a part of a larger study performed by professional scientists, but the project presented by the student must be only their own portion of the complete study.

## Requirements

### General

9. All domestic and international students competing in an Intel ISEF-affiliated fair must adhere to all rules as set forth in this document.
10. All projects must adhere to the Ethics Statement above.
11. It is the responsibility of the student and the Adult Sponsor to evaluate the study to determine if the research will require

forms and/or review and approval prior to experimentation.

12. Projects must adhere to local, state and U.S. Federal laws, regulations and permitting conditions. In addition, projects conducted outside the U.S. must also adhere to the laws of the country and jurisdiction in which the project was performed.
13. The use of non-animal research methods and alternatives to animal research are strongly encouraged and must be explored before conducting a vertebrate animal project.
14. Introduction or disposal of non-native, genetically-altered, and/or invasive species (e.g. insects, plants, invertebrates, vertebrates), pathogens, toxic chemicals or foreign substances into the environment is prohibited. It is recommended that students reference their local, state or national regulations and quarantine lists.
15. Projects competing at Intel ISEF must have an exhibit that adheres to Intel ISEF Display & Safety requirements and is visible during all operable hours of the exhibit hall without reliance on electricity or internet connections.
16. All projects must adhere to the requirements of the affiliated fair(s) in which it competes to qualify for participation in the Intel ISEF. Affiliated fairs may have additional restrictions or requirements. Knowledge of these requirements is the responsibility of the student and Adult Sponsor.

## Approval and Documentation

11. Before experimentation begins, a local or regional Institutional Review Board (IRB) or Scientific Review Committee (SRC) associated with the Intel ISEF-affiliated fair must review and approve most projects involving human participants, vertebrate animals, and potentially hazardous biological agents. **Note: If a project involves the testing of a student designed invention, prototype or concept by a human, an IRB review and approval may be required prior to experimentation. See Human Participants Rules for details.**
12. Every student must complete the [Student Checklist \(1A\)](#), a [Research Plan/Project Summary](#) and [Approval Form \(1B\)](#) and review the project with the Adult Sponsor in coordination with completion by the Adult Sponsor of the [Checklist for Adult Sponsor \(1\)](#).
13. A [Qualified Scientist](#) is required for all studies involving Biosafety Lab-2 (BSL-2) potentially hazardous biological agents and DEA-controlled substances and is also required for many human participant studies and many vertebrate animal studies.
14. After initial IRB/SRC approval (if required), any proposed changes in the [Student Checklist \(1A\)](#) and Research Plan/Project Summary must be re-approved before laboratory experimentation/data collection resumes.
15. Projects which are continuations of a previous year's work and which require IRB/SRC approval must undergo the review process with the current year Research Plan/Project Summary prior to experimentation/data collection for the current year.

16. Any continuing project must document that the additional research is new and different. ([Continuation/Research Progression Projects Form \(7\)](#)).
17. If work was conducted in a regulated research institution, industrial setting or any work site other than home, school or field at any time during the current Intel ISEF project year, the [Regulated Research Institutional/Industrial Setting Form \(1C\)](#) must be completed and displayed at the project booth.
18. After experimentation, each student or team must submit a (maximum) 250-word, one-page abstract which summarizes the current year's work. The abstract must describe research conducted by the student, not by the supervising adult(s).
19. A project data book and research paper are not required, but are strongly recommended for judging purposes. Regional or local fairs may require a project data book and/or a research paper.
20. All signed forms, certifications, and permits must be available for review by all regional, state, national and international affiliated fair SRCs in which the student(s) participate.

This review must occur after experimentation and before competition.

## Digital Paperwork and Signatures

Submission of forms generated by a digital system are allowable under the following conditions:

4. The forms must have the same content and order as the Intel ISEF forms.
5. Digital signatures must have a verification system via login and have a time and date stamp to indicate this authentication.
6. Paperwork submitted to Society for Science & the Public for Intel ISEF must be scanned and submitted via the online portal.

## Continuation/Research Progression of Projects

7. As in the professional world, research projects may build on work performed previously. A valid continuation project is a sound scientific endeavor. Students will be judged only on laboratory experiment/data collection performed over 12 continuous months beginning no earlier than January 2018 and ending May 2019.
8. Any project based on the student's prior research could be considered a continuation/research progression project. These projects must document that the additional research is a substantive expansion from prior work (e.g. testing a new variable or new line of investigation). Repetition of previous experimentation with the same methodology and research question, even with an increased sample size, is an example of an unacceptable continuation.
9. The display board and abstract must reflect the current year's work only. The project title displayed in the finalist's booth may mention years (for example, "Year Two of an Ongoing Study"). Previous year's databooks, research papers and supporting documents may be at the booth if properly labeled as such.
10. Longitudinal studies are permitted as an acceptable continuation under the following conditions:
  - a. The study is a multi-year study testing or documenting

the same variables in which time is a critical variable. (Examples: Effect of high rain or drought on soil in a given basin, return of flora and fauna in a burned area over time.)

- b. Each consecutive year must demonstrate time-based change.
- c. The display board must be based on collective past conclusionary data and its comparison to the current year data set. No raw data from previous years may be displayed.
11. All projects must be reviewed and approved each year and forms must be completed for the new year.
12. NOTE: For competition in the Intel ISEF, the Continuation Research Progression Project Form (7) is required for projects in the same field of study as a previous project. This form must be displayed at the project booth. Retention of all prior years' paperwork is required and must be presented to the Intel ISEF SRC upon request

## Team Projects

6. Team projects compete and are judged in the category of their research at the Intel ISEF. All team members must meet the eligibility requirements for Intel ISEF.
7. Teams must have no more than three members. A team with members from different geographic regions may compete at an affiliated fair of one of its members, but not at multiple fairs. However, each affiliated fair holds the authority to determine whether teams with members outside of a fair's geographic territory are eligible to compete, understanding that if the team wins the right to attend Intel ISEF, all team members' expenses must be supported by the fair.
  - a. Team membership cannot be changed during a given research year unless there are extenuating circumstances and the local SRC reviews and approves the change, including converting a team project to an individual project or vice versa. Such conversions must address rationale for the change and include a clear delineation between research preceding the change and that which will follow. A memorandum documenting this review and approval should be attached to Form 1A.
  - b. Once a project has competed in a science fair at any level, team membership cannot change and the project cannot be converted from an individual project to a team project or vice versa.
  - c. In a future research year, any project may be converted from an individual to a team project, from a team to an individual project and/or have a change in team membership.
8. Each team is encouraged to appoint a team leader to coordinate the work and act as spokesperson. However, each member of the team should be able to serve as spokesperson, be fully involved with the project, and be familiar with all aspects of the project. The final work should reflect the coordinated efforts of all team members and will be evaluated using the same judging criteria as individual projects.
9. Each team member must submit an Approval Form (1B). Team members must jointly submit the Checklist for Adult Sponsor (1), one abstract, a Student Checklist (1A), a Research Plan/Project Summary and other required forms.
10. Full names of all team members must appear on the abstract and forms.

# Roles and Responsibilities of Students and Adults

## The Student Researcher(s)

The student researcher is responsible for all aspects of the research project including enlisting the aid of any required supervisory adults (Adult Sponsor, Qualified Scientist, etc.), obtaining necessary approvals (SRC, IRB, etc.), following the Rules & Guidelines of the Intel ISEF, and performing the experimentation, engineering, data analysis, etc.

Students are expected to understand and abide by the Ethics Statement and attest to this understanding on Approval Form 1B.

## The Adult Sponsor

An Adult Sponsor may be a teacher, parent, professor, and/or other professional scientist in whose lab the student is working. An Adult Sponsor should be knowledgeable in the area of student research and should have close contact with the student during the course of the project.

The Adult Sponsor is responsible for working with the student to evaluate any possible risks involved in order to ensure the health and safety of the student conducting the research and the humans and/or animals involved in the study. The Adult Sponsor must review the student's [Student Checklist \(1A\) and Research Plan/Project Summary](#) to insure that: a) experimentation follows local, state, and Federal laws and Intel ISEF rules; b) forms are completed by other required adults; and c) criteria for the Qualified Scientist adhere to those set forth below.

The Adult Sponsor must be familiar with the regulations that govern potentially dangerous research as they apply to a specific student project. These may include chemical and equipment usage, experimental techniques, research involving human and/or vertebrate animals, cell cultures, microorganisms, or animal tissues. Some experiments involve procedures or materials that are regulated by state, federal or non-U.S. national laws. If not thoroughly familiar with the regulations, the Adult Sponsor should help the student enlist the aid of a Qualified Scientist and/or a Designated Supervisor.

The Adult Sponsor is responsible for ensuring the student's research is eligible for entry in the Intel ISEF.

## The Qualified Scientist (QS)

A Qualified Scientist (QS) should have earned a doctoral/professional degree in a scientific discipline that relates to the student's area of research. Alternatively, the SRC may consider an individual with extensive experience and expertise in the student's area of research as a Qualified Scientist. The Qualified Scientist must be thoroughly familiar with local, state, and federal regulations that govern the student's area of research.

The Qualified Scientist and the Adult Sponsor may be the same person, if that person is qualified as described above. A student may work with a Qualified Scientist in a city, state or country that is not where the student resides. In this case, the student must work locally with a Designated Supervisor (see below) who has been trained in the techniques to be applied by the student.

## The Designated Supervisor (DS)

The Designated Supervisor (DS) is an adult who is directly responsible for overseeing student experimentation. The Designated Supervisor need not have an advanced degree, but must be thoroughly familiar with the student's project, and must be trained

in the student's area of research. The Adult Sponsor may act as the Designated Supervisor.

If a student is experimenting with live vertebrates and the animals are in a situation where their behavior or habitat is influenced by humans, the Designated Supervisor must be knowledgeable about the humane care and handling of the animals.

# Review Committees

## The Institutional Review Board (IRB)

An Institutional Review Board (IRB), is a committee that, according to federal regulations (45-CFR-46), must evaluate the potential physical and/or psychological risk of research involving humans. All proposed human research must be reviewed and approved by an IRB before experimentation begins. This includes review of any surveys or questionnaires to be used in a project.

Federal regulations require local community involvement. Therefore, it is advisable that an IRB be established at the school level to evaluate human research projects. If necessary, the local or Intel ISEF-affiliated SRC can serve as an IRB as long as it has the required membership. An IRB must consist of a minimum of **three** members including the following:

- An educator
- A school administrator (preferably principal or vice principal)
- A medical or mental health professional. The medical or mental health professional may be a medical doctor, nurse practitioner, physician's assistant, doctor of pharmacy, registered nurse, psychologist, licensed social worker or licensed clinical professional counselor. The medical or mental health professional on the IRB may change depending on the nature of the study. This person must be knowledgeable about and capable of evaluating the physical and/or psychological risk involved in a given study.

**Additional Expertise:** If an expert is not available in the immediate area, documented contact with an external expert is recommended. A copy of all correspondence with the expert (e.g. emails) must be attached to Form 4 and can be used in lieu of the signature of that expert.

**To avoid conflict of interest, no Adult Sponsor, parent or other relative of the student, the Qualified Scientist, or Designated Supervisor who oversees the project may serve on the IRB reviewing that project. Additional members are recommended to help avoid a potential conflict of interest and to increase the expertise of the committee.**

IRBs exist at federally Regulated Research Institutions (e.g., universities, medical centers, NIH, correctional facilities). Prisoner advocates must be included on the IRB when research participants are incarcerated. The institutional IRB must initially review and approve all proposed research conducted at or sponsored by that institution. The Adult Sponsor and the local IRB are responsible for ensuring that the project is appropriate for a pre-college student and adheres to the Intel ISEF rules.

An IRB is responsible for assessing risk and documenting the determination of risk level on [Human Participant Form 4](#). However, in reviewing projects just prior to a fair, if the SRC serving at that level of competition judges an IRB's decision as inappropriate, thereby placing human participants in jeopardy, they may override the IRB's decision and the project may fail to qualify for competition. It is advised that IRBs consult with the local or affiliated fair SRCs and/or with the Intel ISEF SRC in questionable cases.

**The Affiliated Fair Scientific Review Committee (SRC)** A Scientific Review Committee (SRC) is a group of qualified individuals that is responsible for evaluation of student research, certifications, research plans and exhibits for compliance with the rules, applicable laws and regulations at each level of science fair competition.

Affiliated Fairs may authorize local SRCs to serve in this prior review capacity. The operation and composition of the local and Affiliated Fair SRCs must fully comply with the International Rules.

Directions for obtaining preapproval are available from the affiliated fair. A list of fairs is at: <https://findafair.societyforscience.org/>

Most proposed research projects involving vertebrate animals and/or potentially hazardous biological agents must be reviewed and approved BEFORE experimentation. Local or regional SRC prior review is not required for human studies previously reviewed and approved by a properly constituted IRB.

ALL projects, including those previously reviewed and approved by an IRB must be reviewed and approved by the SRC after experimentation and before competition in an Affiliated Fair. Projects which were conducted at a Regulated Research Institution, industrial setting or any work site other than home, school or field and which were reviewed and approved by the proper institutional board before experimentation, must also be approved by the Affiliated Fair SRC.

An SRC must consist of a minimum of three persons, including the following:

- a biomedical scientist with an earned graduate degree
- an educator
- at least one additional member

**Additional expertise:** Many project evaluations require additional expertise (e.g., on biosafety and/or of human risk groups). If the SRC needs an expert as one of its members and one is not in the immediate area, all documented contact with an external expert must be submitted. If animal research is involved, at least one member must be familiar with proper animal care procedures. Depending on the nature of the study, this person can be a veterinarian or animal care provider with training and/or experience in the species being studied.

**To avoid conflict of interest, no Adult Sponsor, parent or other relative of the student(s), the Qualified Scientist, or the Designated Supervisor who oversees the project may serve on the SRC reviewing that project. Additional members are recommended to diversify and to increase the expertise of the committee.**

A Scientific Review Committee (SRC) examines projects for the following:

- Evidence of proper supervision
- Completed forms, signatures, research dates, and preapproval dates (when required)
- Evidence of proper team composition
- Compliance with rules and laws governing human and/or animal research and research involving potentially hazardous biological agents and/or hazardous chemicals, activities or devices
- Compliance with the Intel ISEF ethics statement
- Use of accepted and appropriate research techniques
- Evidence that risks have been properly assessed
- Evidence of search for alternatives to animal use
- Humane treatment of animals
- Documentation of substantial expansion for continuation projects
- Evidence of appropriate literature search and attribution

## Combined SRC/IRB Committee

A combined committee is allowed as long as the membership meets both the SRC and IRB requirements listed previously.

## Regulated Research Institutions/Industrial Settings (RRI) Review Committees

**Regulated Research Institution:** A Regulated Research Institution within the U.S. is defined as a professional research/teaching institution that is regularly inspected by the USDA and is licensed to use animals covered by the Animal Welfare Act and may also be subject to U.S. Public Health Service Policy. Also included are all federal laboratories such as National Institutes of Health, Veteran's Affairs Medical Centers and the Centers for Disease Control. In addition, pharmaceutical and biotechnology companies and research institutions that utilize research animals that are not covered by the Animal Welfare Act but have an operational Institutional Animal Care and Use Committee and are in compliance with U.S. federal laws are included in this definition. For projects conducted outside of the United States, a Regulated Research Institution would be a comparable research institution that adheres to country laws governing the care and use of vertebrate animals.

Certain areas of research conducted in a regulated research institution or an industrial setting require review and approval by federally mandated committees that have been established at that institution. These committees include:

- Institutional Animal Care and Use Committee (IACUC); Animal Care and Use Committee (ACUC); Animal Ethics Committee
- Institutional Review Board (IRB); Human Subjects Participant Program (HSPP)
- Institutional Biosafety Committee (IBC)
- Embryonic Stem Cell Research Oversight Committee (ESCR)
- Safety Review Committee

**The ISEF Scientific Review Committee (Intel ISEF SRC)** All projects are reviewed by the Intel ISEF Scientific Review Committee prior to competition. The Intel ISEF SRC is the final arbiter of the qualification of students to participate in the Intel ISEF. Before the fair, committee members review research plans and all required forms to confirm that applicable Intel ISEF rules have been followed. The Intel ISEF SRC may request additional information from students prior to the Intel ISEF or may interview potential Intel ISEF participants at the fair to ensure that they qualify to compete.

The Intel ISEF SRC, like an Affiliated Fair SRC, is made up of adults knowledgeable about research regulations. In addition to the review of all projects at the Intel ISEF, committee members answer questions about the rules throughout the year from students and teachers. The ISEF SRC can be contacted at [SRC@societyforscience.org](mailto:SRC@societyforscience.org).

Members of the Intel ISEF Scientific Review Committee 2019:

Ms. Susan Appel Mr. Henry Disston Dr. Jennifer Green Dr. Paula Johnson Dr. Timothy Martin  
Mrs. Evelyn Montalvo Mr. Joseph Scott Dr. Jason Shuffitt  
Mrs. Andrea Spencer

# Human Participants Rules

## Rules involving human participants

The following rules were developed to help pre-college student researchers adhere to the federal regulations governing professional scientists and to protect the welfare of both human participants and the student researcher. Health and well-being is of the highest priority when students conduct research with human participants.

According to Code of Federal Regulation 45, CFR 46, a human participant is a living individual about whom an investigator conducting research obtains (1) data or samples through intervention or interaction with individual(s) or (2) identifiable private information.

Examples of projects that are considered “human participant research” include:

- Participants in physical activities (e.g., physical exertion, ingestion of any substance, any medical procedure)
- Psychological, educational and opinion studies (e.g., surveys, questionnaires, tests)
- Studies in which the researcher is the subject of the research
- Testing of student designed invention, prototype or computer application by human participants other than student researcher
- Data/record review projects that include data that are not de-identified/anonymous (e.g., data set that includes name, birth date, phone number or other identifying variables)
- Behavioral observations that
  - a. involve any interaction with the observed individual(s) or where the researcher has modified the environment (e.g., post a sign, place an object).
  - b. occur in non-public or restricted access settings (e.g., day care setting, doctor's office)
  - c. involve the recording of personally identifiable information.

## Rules

4. Student researchers must complete ALL elements of the Human Participants portion of the Research Plan/Project Summary Instructions and evaluate and minimize the physical, psychological and privacy risks to their human participants. See Risk Assessment information on page 11 and the online Risk Assessment Guide (<https://student.societyforscience.org/human-participants#riskassess>) for additional guidance.
5. Student research involving human participants must be reviewed and approved by an Institutional Review Board (IRB) (See page 5) before any interaction (e.g., recruitment, data collection) with human participants may begin. It is the responsibility of the IRB to evaluate potential physical and/or psychological risks of the project and make a determination about whether the project is appropriate for student research and safe for the student researcher and participants.
  - a. Projects that are conducted at school, at home or in the community that are not affiliated with a Regulated Research Institution (RRI) must be reviewed and approved by the School IRB before the student may begin recruiting and/or interacting with human participants. The School IRB must assess the risk and document its determination of risk on Form 4.
  - b. Projects that are conducted at a Regulated Research Institution (RRI) (e.g., university, hospital, medical center, government lab) must have IRB approval from the RRI. A

copy of the IRB approval for the project must be obtained. A letter from an adult mentor and/or Qualified Scientist is not sufficient documentation of the RRI IRB review and approval process.

6. The student must comply with all determinations made by the School or RRI IRB before beginning any interaction with human participants (e.g., recruitment, data collection).
  - a. If the IRB requires a Qualified Scientist (QS), Form 2 must be completed by the QS before any interaction with human participants. The School IRB will review this completed form before approving the project.
  - b. If the IRB requires a Designated Supervisor (DS), Form 3 must be completed before any interaction with human participants. The School IRB will review this completed form before approving the project.
  - c. See rule #4 below regarding required procedures for obtaining informed consent/assent and/or parental permission.

Participation in research may begin only after research participants have voluntarily given informed consent/assent (in some cases with parental permission). Adult research participants may give their own consent. Research participants under 18 years of age and/or individuals not able to give consent (e.g. developmentally disabled individuals) give their assent, with the parent/guardian providing permission.

The School IRB will determine whether the consent/assent/parental permission may be a) verbal or implicit or b) must be written. See the Risk Assessment information on page 9 and the online Risk Assessment Guide (<https://sspcdn.blob.core.windows.net/files/SEP/ISEF/Resources/Risk-Assessment-Guide.pdf>) for further explanation of informed consent.

- f. Informed consent requires that the researcher provides complete information to the participant (and where applicable, parents or guardians) about the risks and benefits associated with participation in the research study, which then allows the participants and parents or guardians to make an informed decision about whether or not to participate.
- g. Participants must be informed that their participation is voluntary and that they are free to stop participating at any time (i.e., they may participate or decline to participate, with no adverse consequences of non-participation or aborted participation).
- h. Informed consent may not involve coercion.
- i. When written parental permission is required and the study includes a survey, the survey must be attached to the consent form.
- j. The student researcher may request that the IRB waive the requirement for written informed consent/parental permission in his/her research plan if the project meets specific requirements. See section on IRB waivers for more information about situations in which written parental permission and/or written informed consent can be waived by the IRB.

13. The research study must be in compliance with all privacy laws (e.g., U.S. Family Educational Rights and Privacy Act

(FERPA) and the U.S. Health Insurance Portability and Accountability Act (HIPAA) when they apply to the project (e.g. the project involves medical information).

14. Students are prohibited from administering medication and/or performing medical procedures on human participants.

A student may observe and collect data for analysis of medical procedures and medication administration only under the direct supervision of a medical professional. This medical professional must be named in the research protocol approved by the IRB. The IRB must also confirm that the student is not violating the medical practice act of the state or country in which he/she is conducting the research.

15. Student researchers may NOT publish or display information in a report that identifies the human participants directly or through identifiers linked to the participants (including photographs) without the written consent of the participant(s) (Public Health Service Act, 42, USC 241 (d)).

16. All published instruments that are not in the public domain must be administered, scored and interpreted by a Qualified Scientist as required by the instrument publisher. Any and all use and distribution of the test must be in accordance with the publisher's requirements, including procurement of legal copies of the instrument.

17. Studies that involve the collection of data via use of the internet (e.g., email, web-based surveys) are allowed, but researchers should be aware that they can pose challenges in a) collecting anonymous data, b) obtaining informed consent and c) ensuring that participants are of the appropriate age to give informed consent. See the Online Survey Consent Procedures <https://sspcdn.blob.core.windows.net/files/Documents/SEP/ISEF/Resources/Online-Survey-Consent-Procedures.pdf>.

18. After initial IRB approval, a student with any proposed changes in the Research Plan must repeat the approval process and regain approval before resuming interaction (recruitment, data collection) with human participants.

19. After experimentation and before competition, the Affiliated Fair SRC will review for compliance with all rules.

20. The following forms are required for studies involving human participants:

- Checklist for Adult Sponsor (1), Student Checklist (1A), Research Plan/Project Summary, and Approval Form (1B)
- Human Participants Form (4) or IRB approval from an RRI and all applicable consents and survey(s)
- Regulated Research Institution Form (1C), when applicable
- Qualified Scientist Form (2), when applicable
- Risk Assessment (3) when applicable

## **IRB Waiver of Written Informed Consent/Parental Permission**

The IRB may waive the requirement for documentation of written informed consent/assent/parental permission if the research involves only minimal risk and anonymous data collection and if it is one of the following:

- Research involving normal educational practices
- Research on individual or group behavior or characteristics of individuals where the researcher does not manipulate the

participants' behavior and the study does not involve more than minimal risk.

- Surveys, questionnaires, or activities that are determined by the IRB to involve perception, cognition, or game theory, etc. and that do NOT involve gathering personal information, invasion of privacy or potential for emotional distress.
- Studies involving physical activity where the IRB determines that no more than minimal risk exists and where the probability and magnitude of harm or discomfort anticipated in the research are not greater than those ordinarily encountered in DAILY LIFE or during performance of routine physical activities.

If there is any uncertainty regarding the appropriateness of waiving written informed consent/assent/parental permission, it is strongly recommended that documentation of written informed consent/assent/parental permission be obtained.

## **Human Participant Involvement in Student-designed Invention, Prototype, Computer Application & Engineering/Design Projects**

Student-designed invention, prototype, computer application and engineering/design projects that involve testing of the invention by any human participant require attention to the potential risks to the individual(s) testing or trying out the invention/prototype.

- IRB review and pre-approval is necessary when the student-designed invention, prototype, application, etc. is tested by human participants other than the student researcher(s). This includes surveys conducted regarding potential use, review of the product and/or opinions regarding the project.
- Projects in which the invention, prototype or project involves a medical diagnosis or intervention (as defined by the FDA or Medical Practices Act) and is tested on human participants must be conducted at a Regulated Research Institution (RRI) with a Qualified Scientist and receive IRB Approval from the Institution.
- A Risk Assessment Form 3 is recommended for all student-designed inventions or prototypes.

## **Exempt Studies (Do Not Require IRB Preapproval or Human Participants Paperwork)**

Some studies involving humans are exempt from IRB pre- approval or additional human participant forms. Exempt projects for the Intel ISEF and affiliated fairs are:

- Student-designed Invention, Prototype, Computer Applications or Engineering/Design Project in which the student researcher is the only person testing the invention, prototype or computer application and the testing does not pose a health or safety hazard. It is recommended that a Risk Assessment Form (3) be completed.
- Data/record review studies (e.g., baseball statistics, crime statistics) in which the data are taken from preexisting data sets that are publicly available and/or published and do not involve any interaction with humans or the collection of any data from a human participant for the purpose of the student's research project.

7. Behavioral observations of unrestricted, public settings (e.g., shopping mall, public park) in which all of the following apply:
  - a. the researcher has no interaction with the individuals being observed
  - b. the researcher does not manipulate the environment in any way and
  - c. the researcher does not record any personally identifiable data.
8. Projects in which the student receives pre-existing/retrospective data in a **de-identified/anonymous** format which complies with both of the following conditions:
  - a. the professional providing the data certifies in writing that the data have been appropriately de-identified before being given to the student researcher and are in compliance with all privacy and HIPAA laws, and
  - b. the affiliated fair SRC ensures that the data were appropriately de-identified by review of the written documentation provided by the supervising adult(s).

## Human Participant Risk Assessment

Use this information to help determine the level of risk involved in a study involving human participants.

All human participant projects are considered to have some level of risk.

No more than minimal risk exists when the probability and magnitude of harm or discomfort anticipated in the research are not greater (in and of themselves) than those ordinarily encountered in everyday life or during performance of routine physical or psychological examinations or tests.

More than minimal risk exists when the possibility of physical or psychological harm or harm related to breach of confidentiality or invasion of privacy is greater than what is typically encountered in everyday life. Most of these studies require documented informed consent or minor assent with the permission of parent or guardian (as applicable).

### 1. Examples of Greater than Minimal Physical Risk

- a. Exercise other than ordinarily encountered in everyday life
- b. Ingestion, tasting, smelling, or application of a substance. However, ingestion or tasting projects that involve commonly available food or drink will be evaluated by the IRB which determines risk level based upon the nature of the study and local norms.
- c. Exposure to any potentially hazardous material.

### 2. Examples of Greater than Minimal Psychological Risk

A research activity (e.g. survey, questionnaire, viewing of stimuli) or experimental condition that could potentially result in emotional stress. Some examples include: answering questions related to personal experiences such as sexual or physical abuse, divorce, depression, anxiety; answering questions that could result in feelings of depression, anxiety, or low self esteem; or viewing violent or distressing video images.

### 3. Privacy Concerns

- a. The student researcher and IRB must consider whether an activity could potentially result in negative consequences for the participant due to invasion of privacy or breach of confidentiality. Protecting confidentiality requires measures to ensure that identifiable research data are not disclosed to the public or unauthorized individuals.
- b. Risk level can be reduced by protecting confidentiality or collecting data that is strictly anonymous. This requires the collection of research in such a way that it is impossible to connect research data with the individual who provided the data.

### 4. Risk Groups

If the research study includes participants from any of the following groups, the IRB and student research must consider whether the nature of the study requires special protections or accommodations:

- a. Any member of a group that is naturally at-risk (e.g. pregnant women, developmentally disabled persons, economically or educationally disadvantaged persons, individuals with diseases such as cancer, asthma, diabetes, AIDS, dyslexia, cardiac disorders, psychiatric disorders, learning disorders, etc.)
- b. Special groups that are protected by federal regulations or guidelines (e.g. children/minors, prisoners, pregnant women, students receiving services under the Individuals with Disabilities Education Act (IDEA)).

See the online Risk Assessment Guide (<https://sspcdn.blob.core.windows.net/files/Documents/SEP/ISEF/Resources/Risk-Assessment-Guide.pdf>) and Online Survey Consent Procedures (<https://sspcdn.blob.core.windows.net/files/Documents/SEP/ISEF/Resources/Online-Survey-Consent-Procedures.pdf>) for more detailed information on risk assessment.

# Vertebrate Animals Rules

## Rules involving vertebrate animals

The following rules were developed to help pre-college student researchers adhere to the federal regulations governing professional scientists and to protect the welfare of both animal subjects and the student researcher. Health and well-being is of high priority when students conduct research with animal subjects.

The Society strongly endorses the use of non-animal research methods and encourages students to use alternatives to animal research, which must be explored and discussed in the research plan. The guiding principles for the use of animals in research include the following "Four R's":

- **Replace** vertebrate animals with invertebrates, lower life forms, tissue/cell cultures and/or computer simulations where possible.
- **Reduce** the number of animals without compromising statistical validity.
- **Refine** the experimental protocol to minimize pain or distress to the animals.
- **Respect** animals and their contribution to research.

If the use of vertebrate animals is necessary, students must consider additional alternatives to reduce and refine the use of animals.

All projects involving vertebrate animals must adhere to the rules for all vertebrate animal studies AND to either Section A or Section B rules, depending on the nature of the study and the research site.

A project is considered a tissue study and not a vertebrate animal study if tissue is obtained from an animal that was euthanized for a purpose other than the student's project. (Use of tissues obtained from research conducted at a Regulated Research Institution requires a copy of an IACUC certification with the name of the research institution, the title of the study, the IACUC approval number and date of IACUC approval.) In tissue studies, a student may observe the vertebrate study, but may not manipulate or have any direct involvement in the vertebrate animal experimental procedures.

Vertebrate animals, as covered by these rules, are defined as:

5. Live, nonhuman vertebrate mammalian embryos or fetuses
6. Tadpoles
7. Bird and reptile eggs starting three days (72 hours) prior to hatching
8. All other nonhuman vertebrates (including fish) at hatching or birth.

Exception: Because of their delayed cognitive neural development, zebrafish embryos may be used up to seven days (168 hours) post-fertilization.

### Rules for ALL Vertebrate Animal Studies

12. All vertebrate animal studies must have a research plan that includes:
  - a. Justification why animals must be used, including the reasons for the choice of species, the source of animals and the number of animals to be used; description, explanation, or identification of alternatives to animal use that were considered, and the reasons these alternatives were unacceptable; explanation of the potential impact or contribution this research may have on the broad fields of biology or medicine.

- b. Description of how the animals will be used. Include methods and procedures, such as experimental design and data analysis; description of the procedures that will minimize the potential for discomfort, distress, pain and injury to the animals during the course of experimentation; identification of the species, strain, sex, age, weight, source and number of animals proposed for use.
13. All vertebrate animal studies must be reviewed and approved before experimentation begins. An Institutional Animal Care and Use Committee, known as an IACUC, is the institutional animal oversight review and approval body for all animal studies at a Regulated Research Institution. The local OR affiliated fair SRC serves in this capacity for vertebrate animals studies performed in a school, home or field. Any SRC serving in this capacity must include a veterinarian or an animal care provider with training and/or experience in the species being studied.
14. Students performing vertebrate animal research must satisfy US federal law as well as local, state, and country laws and regulations of the jurisdiction in which research is performed.
15. Research projects which cause more than momentary or slight pain or distress are prohibited. Any illness or unexpected weight loss must be investigated and a veterinarian consulted to receive required medical care. This investigation must be documented by the Qualified Scientist or Designated Supervisor, who is qualified to determine the illness, or by a veterinarian. If the illness or distress is caused by the study, the experiment must be terminated immediately.
16. No vertebrate animal deaths due to the experimental procedures are permitted in any group or subgroup.
  - a. Studies that are designed or anticipated to cause vertebrate animal death are prohibited.
  - b. Any death that occurs must be investigated by a veterinarian, the Qualified Scientist or the Designated Supervisor who is qualified to determine if the cause of death was incidental or due to the experimental procedures. The project must be suspended until the cause is determined and then the results must be documented in writing.
  - c. If death was the result of the experimental procedure, the study must be terminated, and the study will not qualify for competition.
17. All animals must be monitored for signs of distress. Because significant weight loss is one sign of stress, weight must be recorded at least weekly with 15% being the maximum permissible weight loss or growth retardation (compared to controls) of any experimental or control animal. Additionally, body conditioning scoring (BCS) systems are available for most species of animals utilized in research and are an objective method for assessing the overall health status of the research subject, with or without weight loss. A BCS system should be included in the design of any study utilizing live vertebrate animals and results regularly recorded.
18. Students are prohibited from designing or participating in an experiment associated with the following types of studies on vertebrate animals:
  - a. Induced toxicity studies with known toxic substances that could cause pain, distress, or death, including but

not limited to alcohol, acid rain, pesticides, or heavy metals or studies with the intent to study toxic effects of a substance on a vertebrate animal.

- b. Behavioral experiments using conditioning with aversive stimuli, mother/infant separation or induced helplessness.
- c. Studies of pain.
- d. Predator/vertebrate prey experiments.

19. Justification is required for an experimental design that involves food or fluid restriction and must be appropriate to the species. If the restriction exceeds 18 hours, the project must be reviewed and approved by an IACUC and conducted at a Regulated Research Institution (RRI).

20. Animals may not be captured from or released into the wild without approval of authorized wildlife or other regulatory officials. All appropriate methods and precautions must be used to decrease stress. Fish may be obtained from the wild only if the researcher releases the fish unharmed, has the proper license, and adheres to state, local and national fishing laws and regulations. The use of electrofishing is permissible only if conducted by a trained supervisor; students are prohibited from performing electrofishing.

21. A Qualified Scientist or Designated Supervisor must directly supervise all research involving vertebrate animals, except for observational studies.

22. After initial SRC approval, a student with any proposed changes in the Research Plan/Project Summary of the project must repeat the approval process before laboratory experimentation/data collection resumes.

#### **Exempt Studies (Do Not Require SRC Preapproval)**

2. Studies involving behavioral observations of animals are exempt from prior SRC review if ALL of the following apply:
  - a. There is no interaction with the animals being observed,
  - b. There is no manipulation of the animal environment in any way, and
  - c. The study meets all federal and state agriculture, fish, game and wildlife laws and regulations.

#### **C. Additional Rules for Projects Conducted at School/Home/Field**

Vertebrate animal studies may be conducted at a home, school, farm, ranch, in the field, etc. This includes:

1. Studies of animals in their natural environment.
2. Studies of animals in zoological parks.
3. Studies of livestock that use standard agricultural practices.
4. Studies of fish that use standard aquaculture practices

These projects must be reviewed and approved by an SRC in which one member is either a veterinarian and/or an animal care provider/expert with training and/or experience in the species being studied.

9. These projects must adhere to BOTH of the following guidelines:
  - a. The research involves only agricultural, behavioral, observational or supplemental nutritional studies on animals.

#### **AND**

- b. The research involves only non-invasive and non-intrusive methods that do not negatively affect an animal's health or well-being.

All vertebrate animal studies that do not meet the criteria in Section A. must be conducted in a Regulated Research Institution (see Section B).

10. Animals must be treated kindly and cared for properly. Animals must be housed in a clean, ventilated, comfortable environment appropriate for the species. They must be given a continuous, clean (uncontaminated) water and food supply. Cages, pens and fish tanks must be cleaned frequently. Proper care must be provided at all times, including weekends, holidays, and vacation periods. Animals must be observed daily to assess their health and well-being. A Designated Supervisor is required to oversee the daily husbandry of the animals. Any of the following U.S. documents provide further guidance for animal husbandry:
  - Federal Animal Welfare Regulation
  - Guide for the Care and Use of Laboratory Animals
  - Guide for the Care and Use of Agricultural Animals in Agricultural Research and Teaching (Ag-Guide)
  - Quality Assurance Manuals (for the appropriate species)
11. The local or affiliated fair Scientific Review Committee must determine if a veterinarian's certification of the research and animal husbandry plan is required. This certification, as well as SRC approval, is required before experimentation and is documented on Vertebrate Animal Form 5A. A veterinarian must certify experiments that involve supplemental nutrition, administration of prescription drugs and/or activities that would not be ordinarily encountered in the animal's daily life.
12. If an illness or emergency occurs, the affected animal(s) must receive proper medical or nursing care that is directed by a veterinarian. A student researcher must stop experimentation if there is unexpected weight loss or death in the experimental subjects. The experiment can only be resumed if the cause of illness or death is not related to the experimental procedures and if appropriate steps are taken to eliminate the causal factors. If death is the result of the experimental procedure, the study must be terminated, and the study will not qualify for competition.
13. The final disposition of the animals must be conducted in a responsible and ethical manner, and must be described on Vertebrate Animal Form 5A.
14. Euthanasia for tissue removal and/or pathological analysis is not permitted for a project conducted in a school/home/field site.
15. Livestock or fish raised for food using standard agricultural/aquacultural production practices may be euthanized by a qualified adult for carcass evaluation.
16. The following forms are required:
  - a. Checklist for Adult Sponsor (1), Student Checklist (1A), Research Plan/Project Summary, and Approval Form (1B)
  - b. Vertebrate Animal Form (5A)
  - c. Qualified Scientist Form (2), when applicable

#### **D. Additional Rules for Projects Conducted in a Regulated Research Institution**

All studies not meeting the criteria in Section A that are otherwise permissible under Intel ISEF rules must be conducted in a Regulated Research Institution (RRI). A Regulated Research Institution within the U.S. is defined as a professional research/teaching institution that is regularly inspected by the USDA and is licensed to use animals covered by the Animal Welfare Act and may also be subject to U.S. Public Health Service Policy. Also included are all federal laboratories such as National Institutes of Health, Veteran's Affairs Medical Centers and the Centers for Disease Control. In addition, pharmaceutical and biotechnology companies and research institutions that utilize research animals that are not covered by the Animal Welfare Act but have an operational Institutional Animal Care and Use Committee (IACUC) and are in compliance with U.S. federal laws are included in this definition. For projects conducted outside of the United States, a Regulated Research Institution would be a comparable research institution that adheres to country laws governing the care and use of vertebrate animals.

*Some protocols permitted in a Regulated Research Institution are not permitted for participation in the Intel ISEF; adherence to RRI rules is necessary but may not be sufficient.*

6. The Institutional Animal Care and Use Committee (IACUC) or the comparable animal oversight committee must approve all student research projects before experimentation begins. Such research projects must be conducted under the responsibility of a principal investigator. The local and affiliated fair SRCs must also review the project to certify that the research project complies with Intel ISEF Rules. This local and regional SRC review should occur before experimentation begins, if possible.
7. Student researchers are prohibited from performing euthanasia. Euthanasia at the end of experimentation for tissue removal and/or pathological analysis is permitted. All methods of euthanasia must adhere to current American Veterinarian Medical Association (AVMA) Guidelines.
8. Research projects that cause more than momentary or slight pain or distress to vertebrate animals that is not mitigated by approved anesthetics, analgesics and/or tranquilizers are prohibited.
9. Research in nutritional deficiency or research involving substances or drugs of unknown effect is permitted to the point that any clinical sign of distress is noted. In the case that distress is observed, the project must be suspended and measures must be taken to correct the deficiency or drug effect. A project can only be resumed if appropriate steps are taken to correct the causal factors.
10. The following forms are required:
  - a. Checklist for Adult Sponsor (1), Student Checklist (1A), Research Plan/Project Summary, and Approval Form (1B)
  - b. Regulated Research Institution Form (1C)
  - c. Qualified Scientist Form (2)
  - d. Vertebrate Animal Form (5B)
  - e. PHBA Risk Assessment Form (6A) –for all studies involving tissues and body fluids.
  - f. Human and Vertebrate Animal Tissue Form (6B) – for all studies involving tissues and body fluids.

Sources of Information are available as a separate section at the end of the document.

# Potentially Hazardous Biological Agents (PHBA) Rules

Potentially Hazardous Biological Agents Rules for use of microorganisms (including bacteria, viruses, viroids, prions, rickettsia, fungi and parasites), recombinant DNA technologies or human or animal fresh/frozen tissues, blood, or body fluids.

Students are permitted to do research projects with potentially hazardous biological agents meeting the conditions and rules described below which were designed to protect students and to ensure adherence to federal and international biosafety regulations and guidelines.

When dealing with potentially hazardous biological agents, it is the responsibility of the student and all of the adults involved in a research project to conduct and document a risk assessment on Form (6A) to define the potential level of harm, injury or disease to plants, animals and humans that may occur when working with biological agents. The risk assessment determines a biosafety level which in turn determines if the project can proceed, and if so, the laboratory facilities, equipment, training, and supervision required.

All projects involving microorganisms, recombinant DNA technologies and human or animal fresh/frozen tissues, blood or body fluids must adhere to the rules below AND, depending on the study, to the additional rules in Section A, B or C.

## Rules for ALL Studies with Potentially Hazardous Biological Agents (PHBA)

15. Prior review and approval is required for the use of potentially hazardous microorganisms (including bacteria, viruses, viroids, prions, rickettsia, fungi, and parasites), recombinant DNA (rDNA) technologies or human or animal fresh/frozen tissues, blood, or body fluids.
16. An affiliated fair SRC, an IBC or an IACUC must approve all research before experimentation begins. The initial risk assessment determined by the student researcher and adults supervising the project must be confirmed by the SRC, IBC or IACUC.
17. Experimentation involving the culturing of potentially hazardous biological agents, even BSL-1 organisms, is prohibited in a home environment. However, specimens may be collected at home as long as they are immediately transported to a laboratory with the BSL containment determined by the affiliated fair SRC.
18. Research determined to be at Biosafety Level 1 (BSL-1) must be conducted in a BSL-1 or higher laboratory. The research must be supervised by a trained Designated Supervisor or a Qualified Scientist. The student must be properly trained in standard microbiological practices.
19. Research determined to be a Biosafety Level 2 (BSL-2) must be conducted in a laboratory rated BSL-2 or above (commonly limited to a Regulated Research Institution). The research must be reviewed and approved by the Institutional Biosafety Committee (IBC) if the Regulated Research Institution requires the review. For a high school BSL-2 laboratory, the SRC must review and approve. The research must be supervised by a Qualified Scientist.
20. Students are prohibited from designing or participating in BSL-3 or BSL-4 Research.
21. Laboratory studies designed to culture known clinically significant multidrug resistant organisms (MDROs) must have a written justification for usage and be conducted at a Regulated Research Institution laboratory with a minimum of BSL-2 containment and documented IBC review and approval. Representative examples include, but are not limited to the following known agents: MRSA (Methicillin-Resistant *Staphylococcus aureus*), VISA/VRSA (Vancomycin Intermediate or Resistant *Staphylococcus aureus*), VRE (Vancomycin-Resistant *Enterococci*), CRE (Carbapenem Resistant *Enterobacteriaceae*), ESBLs (Extended Spectrum Beta-Lactamase producing gram negative organisms), and fungi (yeasts or molds) with known resistance to antifungal agents.
22. Insertion of antibiotic resistance markers for the clonal selection of bioengineered organisms is permitted. However, students may not genetically engineer organisms with multiple drug resistant traits, nor intentionally select for such organisms through passage in culture, with the intended purpose of investigating the pathology, development, or treatment of antibiotic-resistant infections. Insertion of antibiotic-resistance traits or selection of organisms expressing traits that may affect the ability to provide effective treatment of infections acquired by humans, animals, or plants is strictly prohibited.
23. Extreme caution must be exercised when selecting and sub-culturing antibiotic-resistant organisms. Studies using such organisms, including BSL-1 organisms that may have originally been exempt from prior SRC approval, require at least BSL-2 containment.
24. The culturing of human or animal waste, including sewage sludge, is considered a BSL-2 study.
25. Naturally-occurring plant pathogens may be studied (not cultured) at home, but may not be introduced into a home/garden environment.
26. All potentially hazardous biological agents must be properly disposed at the end of experimentation in accordance with their biosafety level. For BSL 1 or BSL 2 organisms: Autoclave at 121 degrees Celsius for 20 minutes, use of a 10% bleach solution (1:10 dilution of domestic bleach), incineration, alkaline hydrolysis, biosafety pick-up and other manufacturer recommendations are acceptable.
27. Any proposed changes in the Research Plan/Project Summary by the student after initial local or affiliated fair SRC approval must undergo subsequent SRC or IBC review and approval before such changes are made and before experimentation resumes.
28. The following forms are required:
  - a. Checklist for Adult Sponsor (1), Student Checklist (1A), Research Plan/Project Summary, and Approval Form (1B)
  - b. Regulated Research Institution Form (1C) - when applicable
  - c. Qualified Scientist (2), when applicable

- d. Risk Assessment (3), when applicable
- e. PHBA Risk Assessment Form (6A), when applicable
- f. Human and Vertebrate Animal Tissue Form (6B) – for all studies involving tissues and body fluids.

## **D. Additional Rules for Projects Involving Unknown Microorganisms**

Studies involving unknown microorganisms present a challenge because the presence, concentration and pathogenicity of possible agents are unknown. In science fair projects, these studies typically involve the collection and culturing of microorganisms from the environment (e.g. soil, household surfaces, skin.)

- 3. Research with unknown microorganisms can be treated as a BSL-1 study under the following conditions:
  - a. Organism is cultured in a plastic petri dish (or other standard sterile non-breakable container) and sealed.
  - b. Experiment involves only procedures in which the petri dish remains sealed throughout the experiment (e.g., counting presence of organisms or colonies).
  - c. The sealed petri dish is disposed of via autoclaving or disinfection under the supervision of the Designated Supervisor.
- 4. If a culture container with unknown microorganisms is opened for any purpose, (except for disinfection/disposal), it must be treated as a BSL-2 study and involve BSL-2 laboratory precautions.

## **E. Additional Rules for Projects Involving Recombinant DNA (rDNA) Technologies**

Studies involving rDNA technologies in which microorganisms, plants and/or animals have been genetically modified require close review to assess the risk level assignment. Some rDNA studies can be safely conducted in a BSL-1 high school laboratory with prior review by a SRC.

- 1. All rDNA technology studies involving BSL-1 organisms and BSL-1 host vector systems, including commercially available kits, must be conducted in a BSL-1 laboratory under the supervision of a Qualified Scientist or Designated Supervisor and must be approved by the SRC prior to experimentation. Examples include cloning of DNA in *E. coli* K-12, *S. cerevesiae*, and *B. subtilis* host- vector systems.
- 2. An rDNA technology study using BSL-1 agents that may convert to BSL-2 agents during the course of experimentation must be conducted entirely in a BSL-2 facility.
- 3. All rDNA technology studies involving BSL-2 organisms and/or BSL-2 host vector systems must be conducted in a Regulated Research Institution and approved by the IBC prior to experimentation, where applicable.
- 4. Propagation of recombinants containing DNA coding for human, plant or animal toxins (including viruses) is prohibited.
- 5. All genome editing studies that include alteration of germline cells, insertion of gene drives, use of rapid trait development systems (RTDS®), etc., should be categorized as a BSL-2 study and must be conducted at an RRI and approved by the IBC from the institution. Qualified scientists are expected to ensure that student research protocols address appropriate intrinsic and extrinsic containment precautions.

- 6. Introduction or disposal of non-native, genetically-altered, and/or invasive species (e.g. insects or other invertebrates, plants, vertebrates), pathogens, toxic chemicals or foreign substances into the environment is prohibited. Students and adult sponsors should reference their local, state and national regulations and quarantine lists.

## **F. Additional Rules for Projects with Tissues and Body Fluids, including Blood and Blood Products**

Studies involving fresh/frozen tissue, blood or body fluids obtained from humans and/or vertebrates may contain microorganisms and have the potential of causing disease. Therefore, a proper risk assessment is required.

- 1. Research involving human and/or non-human primate established cell lines and tissue culture collections (e.g., obtained from the American Type Culture Collection) must be considered a BSL-1 or BSL-2 level organism as indicated by source information and treated accordingly. The source and/or catalog number of the cultures must be identified in the Research Plan/Project Summary.
- 2. If tissues are obtained from an animal that was euthanized for a purpose other than the student's project, it may be considered a tissue study.
  - a. Use of tissues obtained from research conducted at a Regulated Research Institution requires a copy of the IACUC certification with the name of the research institution, the title of the study, the IACUC approval number and date of IACUC approval.
  - b. Use of tissues obtained from agricultural/aquacultural studies require prior SRC approval.
- 3. If the animal was euthanized solely for the student's project, the study must be considered a vertebrate animal project and is subject to the vertebrate animal rules. (See vertebrate animal rules.)
- 4. The collection and examination of fresh/frozen tissue and/or body fluids, (not including blood or blood products; see rule 8) from a non-infectious source with little likelihood of microorganisms present must be considered Biosafety level 1 studies and must be conducted in a BSL-1 laboratory or higher and must be supervised by a Qualified Scientist or trained Designated Supervisor.
- 5. The collection and examination of fresh/frozen tissues or body fluids or meat and meat by-products NOT obtained from food stores, restaurants, or packing houses may contain microorganisms. Because of the increased risk from unknown potentially hazardous agents, these studies must be considered biosafety level 2 studies conducted in a BSL-2 laboratory under the supervision of a Qualified Scientist.
- 6. Human breast milk of unknown origin, unless certified free of HIV and Hepatitis C, and domestic unpasteurized animal milk are considered BSL-2.
- 7. All studies involving human or wild animal blood or blood products should be considered at a minimum a Biosafety level 2 study and must be conducted in a BSL-2 laboratory under the supervision of a Qualified Scientist. Known BSL-3 or BSL-4 blood is prohibited. Studies involving domestic animal blood may be considered a BSL-1 level study. All blood must be handled in accordance with standards and

guidelines set forth in the OSHA, 29CFR, Subpart Z. Any tissue or instruments with the potential of containing blood-borne pathogens (e.g. blood, blood products, tissues that release blood when compressed, blood contaminated instruments) must be properly disposed after experimentation.

8. Studies of human body fluids, where the sample can be identified with a specific person, must have IRB review and approval, and informed consent.
9. Any study involving the collection and examination of body fluids that may contain biological agents belonging to BSL-3 or BSL-4 is prohibited.
10. A project involving a student researcher using their own body fluids (if not cultured)
  - a. can be considered a BSL-1 study
  - b. may be conducted in a home setting
  - c. must have IRB review if the body fluid is serving as a measure of an effect of an experimental procedure on the student researcher (e.g. Student manipulates diet and takes a blood or urine sample). An example of a project not needing IRB review would be collecting urine to serve as a deer repellent.
  - d. must receive prior SRC review and approval prior to experimentation.
11. Studies involving embryonic human stem cells must be conducted in a Registered Research Institution and reviewed and approved by the ESCRO (Embryonic Stem Cell Research Oversight) Committee.

#### **Exempt Studies (no SRC pre-approval required)**

The following types of studies are exempt from requiring SRC pre-approval as listed below, but may be subject to additional rules dependent upon the design of the project. Student researchers and adult sponsors are required to refer to sections A, B, and C of this section to review additional rules for projects that involve unknown organisms, recombinant DNA (rDNA) technologies, tissues, fluids, blood, or blood products before deciding upon a final biosafety level (BSL) designation for projects.

3. The following types of studies are exempt from prior SRC review, but require a Risk Assessment Form 3:
  - a. Studies involving protists and archaea.
  - b. Research using manure for composting, fuel production, or other non-culturing experiments.
  - c. Commercially-available color change coliform water test kits. These kits must remain sealed and must be properly disposed.
  - d. Studies involving decomposition of vertebrate organisms (such as in forensic projects).
  - e. Studies with microbial fuel cells.
4. The following types of studies involve BSL-1 organisms and are exempt from prior SRC review and require no additional forms:
  - a. Studies involving baker's yeast and brewer's yeast, except in rDNA studies.
  - b. Studies involving *Lactobacillus*, *Bacillus thuringiensis*, nitrogen-fixing, oil-eating, and algae-eating bacteria introduced into their natural environment. (Not exempt if cultured in a petri dish environment.)

- c. Studies involving water or soil microbes not concentrated in media conducive to their microbial growth
- d. Studies of mold growth on food items if the experiment is terminated at the first evidence of mold.
- e. Studies of slime molds and edible mushrooms.
- f. Studies involving *E. coli* k-12 (and other strains of *E. coli* used solely as a food source for *C. elegans*) that are performed at school and are not subject to additional rules for recombinant DNA studies or use of antibiotic resistant organisms.

#### **Exempt Tissues (no SRC pre-approval required)**

5. The following types of tissue do not need to be treated as potentially hazardous biological agents:
  - a. Plant tissue (except those known to be toxic or hazardous)
  - b. Plant and non-primate established cell lines and tissue culture collections (e.g., obtained from the American Type Culture Collection). The source and/or catalog number of the cultures must be identified in the Research Plan/Project Summary.
  - c. Fresh or frozen meat, meat by-products obtained from food stores, restaurants, or packing houses and pasteurized milk or eggs.
  - d. Hair, hooves, nails and feathers
  - e. Teeth that have been sterilized to kill any blood-borne pathogen that may be present.
  - f. Fossilized tissue or archeological specimens.
  - g. Prepared fixed tissue

Sources of Information are available as a separate section at the end of the document.

# Potentially Hazardous Biological Agents Risk Assessment

Use this information to complete PHBA Risk Assessment Form (6A)

Risk assessment defines the potential level of harm, injury or disease to plants, animals and humans that may occur when working with biological agents. The end result of a risk assessment is the assignment of a biosafety level which then determines the laboratory facilities, equipment, training, and supervision required. Risk assessment involves:

1. Assignment of the biological agent to a risk group
2. Studies involving a known microorganism must begin with an initial assignment of the microorganism to a biosafety level risk group based on information available through a literature search.
3. The study of unknown microorganisms and the use of fresh tissues relies on the expertise of the supervising adult(s).
4. Determination of the level of biological containment available to the student researcher to conduct the experimentation. (See “Levels of Biological Containment” for details.)
5. Assessment of the experience and expertise of the adult(s) supervising the student.

6. Assignment of a biosafety level for the study based on risk group of biological agent, level of biological containment available and the expertise of the Qualified Scientist or Designated Supervisor who will be supervising the project
7. Documentation of review and approval of study prior to experimentation:
  - a. If a study is conducted at a non-regulated site (e.g. school), the SRC reviews the Research Plan/Project Summary.
  - b. If the study was conducted at a Regulated Research Institution, and was approved by the appropriate institutional board (e.g. IBC, IACUC), the SRC reviews the institutional forms provided and documents SRC approval (Form(6A)).
  - c. If a PHBA study was conducted at a Regulated Research Institution but the institution does not require review for this type of study, the SRC must review the study and document approval on Form 6A that the student received appropriate training and the project complies with Intel ISEF rules.

## Classification of Biological Agents Risk Groups

Biological agents, plant or animal, are classified according to biosafety level risk groups. These classifications presume ordinary circumstances in the research laboratory, or growth of agents in small volumes for diagnostic and experimental purposes.

**BSL-1** risk group contains biological agents that pose low risk to personnel and the environment. These agents are highly unlikely to cause disease in healthy laboratory workers, animals or plants. The agents require Biosafety Level 1 containment. Examples of BSL-1 organisms are: *Agrobacterium tumefaciens*, *Micrococcus leuteus*, *Neurospora crassa*, *Bacillus subtilis*.

**BSL-2** risk group contains biological agents that pose moderate risk to personnel and the environment. If exposure occurs in a laboratory situation, the risk of spread is limited and it rarely would cause infection that would lead to serious disease. Effective treatment and preventive measures are available in the event that an infection occurs. The agents require Biosafety Level 2 containment. Examples of BSL-2 organisms are: *Mycobacterium*, *Streptococcus pneumoniae*, *Salmonella choleraesuis*.

**BSL-3** risk group contains biological agents that usually cause serious disease (human, animal or plant) or that can result in serious economic consequences. Projects in the BSL-3 group are prohibited.

**BSL-4** risk group contains biological agents that usually produce very serious disease (human, animal or plant) that is often untreatable. Projects in the BSL-4 group are prohibited.

## Levels of Biological Containment

There are four levels of biological containment (Biosafety Level 1–4). Each level has guidelines for laboratory facilities, safety equipment and laboratory practices and techniques.

**BSL-1** containment is normally found in water-testing laboratories, in high schools, and in colleges teaching introductory microbiology classes. Work is done on an open bench or in an appropriate biosafety hood. Standard microbiological practices are used when working in the laboratory. Decontamination can be achieved by treating with chemical disinfectants or by steam autoclaving. Lab coats and gloves are required. The laboratory work is supervised by an individual with general training in microbiology or a related science.

**BSL-2** containment is designed to maximize safety when working with agents of moderate risk to humans and the environment. Access to the laboratory is restricted. Biological safety cabinets (Class 2, type A, BSC) must be available. An autoclave should be readily available for decontaminating waste materials. Lab coats and gloves are required; eye protection and face shields must also be worn as needed. The laboratory work must be supervised by a scientist who understands the risk associated with working with the agents involved.

**BSL-3** containment is required for infectious agents that may cause serious or potentially lethal diseases as a result of exposure by inhalation. Projects in the BSL-3 group are prohibited.

**BSL-4** containment is required for dangerous/exotic agents that pose high risk of life-threatening disease. Projects in the BSL-4 group are prohibited.

# Hazardous Chemicals, Activities or Devices Rules

Includes DEA-controlled substances, prescription drugs, alcohol & tobacco, firearms and explosives, radiation, lasers, etc.

The following rules apply to research using hazardous chemicals, devices and activities. These include substances and devices that are regulated by local, state, country, or international law, most often with restrictions of their use by minors such as DEA-controlled substances, prescription drugs, alcohol, tobacco, firearms and explosives. Hazardous activities are those that involve a level of risk above and beyond that encountered in the student's everyday life.

These rules are intended to protect the student researcher by ensuring proper supervision and the consideration of all potential risks so that the appropriate safety precautions are taken. Students are required to meet all standards imposed by Intel ISEF, school, local, and/or regional fair(s).

## Rules for ALL Projects Involving Hazardous Chemicals, Activities and Devices

8. All projects involving hazardous chemicals, activities or devices must describe in the research plan the risk assessment process, supervision, safety precautions and methods of disposal.
9. The use of hazardous chemicals and devices and involvement in hazardous activities require direct supervision by a Designated Supervisor, except those involving DEA-controlled substances, which require supervision by a Qualified Scientist.
10. The student researcher must conduct a risk assessment in collaboration with a Designated Supervisor or Qualified Scientist prior to experimentation. This risk assessment is documented on the Risk Assessment Form 3.
11. Student researchers must acquire and use regulated substances in accordance with all local, state, U.S. federal and country laws. For further information or classification for these laws and regulations, contact the appropriate regulatory agencies.
12. For all chemicals, devices or activities requiring a Federal and/or State Permit, the student/supervisor must obtain the permit prior to the onset of experimentation. A copy of the permit must be available for review by adults supervising the project and the local, affiliated, and Intel ISEF SRCs in their review prior to competition.
13. The student researcher must minimize the impact of an experiment on the environment. Examples include using minimal quantities of chemicals that will require subsequent disposal; ensuring that all disposal is done in an environmentally safe manner and in accordance with good laboratory practices.
14. The following forms are required:
  - a. Checklist for Adult Sponsor (1), Student Checklist (1A), Research Plan/Project Summary and Approval Form (1B)
  - b. Regulated Research Institution Form (1C), when applicable
  - c. Qualified Scientist Form (2), when applicable
  - d. Risk Assessment Form (3)

## Additional Rules for Specific Regulated Areas

There are additional rules for the following regulated areas:

- G. DEA-controlled Substances
- H. Prescription Drugs
- I. Alcohol & Tobacco
- J. Firearms and Explosives
- K. Regulated Drones
- L. Radiation

### G. DEA-Controlled Substances

The U.S. Drug Enforcement Administration (DEA) regulates chemicals that can be diverted from their intended use to make illegal drugs. Other countries may have similar regulatory bodies; students outside of the U.S. must adhere to their own country's drug regulatory agency requirements in addition to U.S. DEA regulations. DEA-controlled substances and their schedule number are at the DEA website under Sources of Information. It is the responsibility of the student to consult this list if there is a possibility that substances used in experimentation could be regulated.

1. All studies using DEA-controlled substances must be supervised by a Qualified Scientist who is licensed by the DEA (or other international regulatory body) for use of the controlled substance.
2. All studies using DEA Schedule 1 substances (including marijuana) must have the research protocol approved by DEA before research begins. Schedule 2, 3 and 4 substances do not require protocol approval by DEA.

### H. Prescription Drugs

Prescription drugs are regulated by federal or country laws to protect against inappropriate or unsafe use. Special precautions must be taken in their use for a science project as follows:

1. Students are prohibited from administering prescription drugs to human participants.
2. A veterinarian must supervise student administration of any prescription drugs to vertebrate animals.

### I. Alcohol and Tobacco

The U.S. Alcohol and Tobacco Tax and Trade Bureau (TTB) regulates the production of alcohol and distribution of alcohol and tobacco products. Many such products are restricted by age for purchase, possession and consumption.

1. Fermentation studies in which minute quantities of ethyl alcohol are produced are permitted.
2. The Designated Supervisor is responsible for the acquisition, usage and appropriate disposal of the alcohol or tobacco used in the study.
3. Production of wine or beer by adults is allowable in the home and must meet TTB home production regulations. Students are allowed to design and conduct a research project, under direct parental supervision, involving the legal production of the wine or beer.
4. Students are prohibited from conducting experiments where consumable ethyl alcohol is produced by distillation. However, students are allowed to distill

alcohol for fuel or other non-consumable products. To do so, the work must be conducted at school or a Regulated Research Institution and follow all local and country laws. See Alcohol and Tobacco Tax and Trade Bureau (TTB) website for details.

## **J. Firearms and Explosives**

The U.S. Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF), along with state agencies, regulates the purchase and use of firearms and explosives. A firearm is defined as a small arms weapon from which a projectile is fired by gunpowder. An explosive is any chemical compound, mixture or device, the primary purpose of which is to function by explosion.

Explosives include, but are not limited to, dynamite, black powder, pellet powder, detonators, and igniters.

The purchase of a firearm by a minor is generally unlawful. The use of a firearm, without proper state certification, is illegal. Students should check the training and certification requirements of individual states and countries.

1. Projects involving firearms and explosives are allowable when conducted with the direct supervision of a Designated Supervisor and when in compliance with all federal, state and local laws.
2. A fully assembled rocket motor, reload kit or propellant modules containing more than 62.5 grams of propellant are subject to the permitting, storage and other requirements of federal explosive laws and regulations.
3. Potato guns and paintball guns are not considered firearms unless they are intended to be used as weapons. However, they must be treated as hazardous devices.

## **K. Regulated Drones**

Projects involving unmanned aircraft systems (UAS)/drones must follow all state, Federal and country laws. See the Federal Aviation Administration (FAA) for more details ([www.faa.gov/uas/registration](http://www.faa.gov/uas/registration)).

## **L. Radiation**

Projects involving radionuclides (radioisotopes) and X-rays must involve a careful examination of the risks associated with the study and appropriate safety precautions must be taken. Depending upon the level of exposure, radiation released from these sources can be a health hazard.

1. All studies may not exceed the dose limits set by the Nuclear Regulatory Commission of 0.5 mrem/hr or 100 mrem/year of exposure.
2. If the voltage needed in the study is <10 kvolts, a risk assessment must be conducted. The study may be done at home or school, and SRC preapproval is not required.
3. A study using 10-25 kvolts must have a risk assessment conducted and must be preapproved by the SRC to assess safety. Such a study must be conducted in a metal chamber using a camera only, not direct view through glass. A dosimeter or radiation survey meter is required to measure radiation exposure.

4. All studies using > 25 kvolts must be conducted at an institution with a Licensed Radiation Program and must be preapproved by the Institutions' Radiation Safety Officer or the Committee which oversees the use of ionizing radiation to ensure compliance with state and federal regulations.

# Guidance for Risk Assessment

Please find below guidance on conducting risk assessment when using the following:

- Hazardous Chemicals
- Hazardous Devices
- Radiation

## 4. Hazardous Chemicals

A proper risk assessment of chemicals must include review of the following factors:

- Toxicity – the tendency of a chemical to be hazardous to health when inhaled, swallowed, injected or in contact with the skin.
- Reactivity - the tendency of a chemical to undergo chemical change.
- Flammability - the tendency of a chemical to give off vapors which readily ignite when used under normal working conditions.
- Corrosiveness - the tendency of a chemical, upon physical contact, to harm or destroy living tissues or physical equipment.

must refer to Safety Data Sheets provided by the vendor (SDS) to ensure that proper safety precautions are taken. Some SDS sheets (e.g., Flinn) rank the degree of hazard associated with a chemical. This rating may assist students and adult sponsors in determining risk associated with the use of a chemical.

A risk assessment (documented on Form 3) must include proper disposal methods for the chemicals used in an experiment. The Flinn Catalog (referenced in the Sources of Information section) provides information for the proper disposal of chemicals. If applicable, the student researcher must incorporate in the research plan disposal procedure required by federal and state guidelines.

## 5. Hazardous Devices

The documentation of risk assessment (Form 3) is required when a student researcher works with potentially hazardous/ dangerous equipment and/or other devices, in or outside a laboratory setting that require a moderate to high level of expertise to ensure their safe usage. Some commonly used devices (Bunsen burners, hot plates, saws, drills, etc.) may not require a documented risk assessment, assuming that the student researcher has experience working with the device. Use of other potentially dangerous devices such as high vacuum equipment, heated oil baths, NMR equipment, and high temperature ovens must have documentation of a risk assessment. It is recommended that all student designed inventions also have documentation of a risk assessment.

## 6. Radiation

A risk assessment (documented on Form 3) must be conducted when a student's project involves radiation beyond that normally encountered in everyday life. Non- ionizing radiation includes the spectrum of ultraviolet (UV), visible light, infrared (IR), microwave (NW), radiofrequency (RF) and extremely low frequency (ELF).

## Environmentally Responsible Chemistry

The mission of environmentally responsible (green) chemistry is to avoid the use or production of hazardous substances during chemical process. The principles of green chemistry are described on the EPA website in the Sources of Information section.

Whenever possible the following principles should be incorporated into the research plan.

- Waste prevention
- Use of the safest possible chemicals and products
- Design of the least possible hazardous chemical syntheses

When assessing risk, the type and amount of exposure to a chemical must be considered. For example, an individual's allergic and genetic disposition may have an influence on the overall effect of the chemical. The student researcher

# Engineering Projects Guide

Use this information to help determine the requirements of Engineering Projects and potential areas that will require pre-approval and/or extra safety precautions.

## Engineering Project Checklist

Consider the answers to the questions below. If the response is yes, then the project may fall under more specific rules and those sections of the International Rules & Guidelines should be consulted.

### Hazardous Chemicals, Activities and Devices

Will your project involve any of the following:

- DEA-controlled Substances
- Firearms and Explosives
- Prescription Drugs
- Alcohol & Tobacco
- Regulated Drones
- Radiation

### Human Participants

- Do you intend to gather background knowledge through a survey or interviews to understand the potential use and needs for your project design?
- Are you going to ask for opinions or suggestions on your project design at any point of the project?
- Are you going to test your project (device, app, invention, prototype, etc.)? If yes, does it require persons to interact with it other than yourself?
- Does your project intend to gather personal data/have a health benefit to the user?

### Vertebrate Animals

- Does your project include any interaction with vertebrate animals in any phase of the project?

### Potentially Hazardous Biological Agents

- Does your project include any collection, examination or handling of microorganisms, and/or fresh or frozen tissue, primary cell cultures, blood, blood products or body fluids?
- Are you going to culture or isolate any substance, known or unknown?

## Sources of Information for All Projects

9. United States Patent and Trade Office  
Customer Service: 1-800-786-9199 (toll-free);  
571-272-1000 (local); 571-272-9950 (TTY)

[www.uspto.gov](http://www.uspto.gov) [www.uspto.gov/patents/process/index.jsp](http://www.uspto.gov/patents/process/index.jsp)

10. European Patent Office

[www.epo.org](http://www.epo.org)  
[www.epo.org/applying/basics.html](http://www.epo.org/applying/basics.html)

11. The Mad Scientist Network at Washington University School of Medicine:

[www.madsci.org](http://www.madsci.org)

12. ANS Task Force

[www.anstaskforce.gov](http://www.anstaskforce.gov)

Aquatic Nuisance Species (ANS) Task Force [www.anstaskforce.gov](http://www.anstaskforce.gov)

[www.anstaskforce.gov/Documents/ISEF.pdf](http://www.anstaskforce.gov/Documents/ISEF.pdf)

13. APHIS

[www.aphis.usda.gov/](http://www.aphis.usda.gov/)

Animal and Plant Health Inspection Service Invasive Species List

14. Invasive Species Specialist Group

[www.issg.org](http://www.issg.org)

The Global Invasive Species database contains invasive species information supplied by experts from around the world.

15. Invasive Species Information

[www.invasivespeciesinfo.gov/resources/lists.shtml](http://www.invasivespeciesinfo.gov/resources/lists.shtml)

Provides information for species declared invasive, noxious, prohibited, or harmful or potentially harmful.

16. *Success with Science: The Winner's Guide to High School Research*

<http://www.successwithscience.org>

Gaglani, S. and DeObaldia, G. (2011). Research Corporation for Science Advancement.

ISBN 0-9633504-8-X

## Human Participants

9. Code of Federal Regulation (CFR), Title 45 (Public Welfare), Part 46-Protection of Human Subjects (45CFR46)

<https://www.hhs.gov/ohrp/regulations-and-policy/regulations/45-cfr-46>

10. Dunn, C. M. and Chadwick, G. L., *Protecting Study Volunteers in Research*, 3rd Edition (2004). Boston, MA: Thomson Centerwatch. ISBN 1-930624-44-1.

Can be purchased from:

[www.amazon.com](http://www.amazon.com)

11. NIH tutorial, "Protecting Human Research Participants"

<http://phrp.nihtraining.com/files/PHRP.pdf>

12. Belmont Report, April 18, 1979

[www.hhs.gov/ohrp/humansubjects/guidance/belmont.html](http://www.hhs.gov/ohrp/humansubjects/guidance/belmont.html)

13. *Standards for Educational and Psychological Testing*. (1999). Washington, DC: AERA, APA, NCME.

[www.apa.org/science/programs/testing/standards.aspx](http://www.apa.org/science/programs/testing/standards.aspx)

14. American Psychological Association  
750 First Street, NE Washington, DC 20002-4242 phone: 202-336-5500; 800-374-2721  
[www.apa.org](http://www.apa.org)

Information for students:

[www.apa.org/science/leadership/students/information.aspx](http://www.apa.org/science/leadership/students/information.aspx)

Information regarding publications: [www.apa.org/pubs/index.aspx](http://www.apa.org/pubs/index.aspx)

15. Educational and Psychological Testing

Testing Office for the APA Science Directorate  
phone: 202-336-6000

email: [testing@apa.org](mailto:testing@apa.org)

[www.apa.org/science/programs/testing/index.aspx](http://www.apa.org/science/programs/testing/index.aspx)

16. The Children's Online Privacy Protection Act of 1998 (COPPA)  
(15 U.S.C. §§ 6501–6506)

[www.ftc.gov/privacy/coppaFAQs.shtm](http://www.ftc.gov/privacy/coppaFAQs.shtm)

## Vertebrate Animals Animal Care and Use

8. *Laboratory Animals*, Institute of Laboratory Animal Research (ILAR), Commission on Life Sciences, National Research <http://dels.nas.edu/ilar>

9. *Guide for the Care and Use of Laboratory Animals, 8<sup>th</sup> Edition* (2011)

<http://grants.nih.gov/grants/olaw/Guide-for-the-Care-and-Use-of-Laboratory-Animals.pdf>

[www.nap.edu/catalog.php?record\\_id=12910](http://www.nap.edu/catalog.php?record_id=12910)

10. *Guidelines for the Care and Use of Mammals in Neuroscience and Behavioral Research* (2003), Institute for Laboratory Animal Research (ILAR).

<https://www.nap.edu/catalog/10732/guidelines-for-the-care-and-use-of-mammals-in-neuroscience-and-behavioral-research>

To order these ILAR publications contact:

National Academies Press 500 Fifth

Street, NW Washington, DC 20055

phone: 888-624-8373 or 202-334-3313; fax: 202-334-2451

[www.nap.edu](http://www.nap.edu)

11. Federal Animal Welfare Act (AWA)

7 U.S.C. 2131-2157

Subchapter A - Animal Welfare (Parts I, II, III)

<https://www.nal.usda.gov/awic/animal-welfare-act>

Document is available from:

USDA/APHIS/AC

4700 River Road, Unit 84

Riverdale, MD 20737-1234

email: [ace@aphis.usda.gov](mailto:ace@aphis.usda.gov)

phone: 301-734-7833; fax: 301-734-4978

<http://awic.nal.usda.gov>

12. *Guide for the Care and Use of Agricultural Animals in Agricultural Research and Teaching (Agri-Guide)*

Association for Assessment and Accreditation of Laboratory Animal Care International (AAALAC International) <https://www.aaalac.org/>

[https://www.aaalac.org/about/Ag\\_Guide\\_3rd\\_ed.pdf](https://www.aaalac.org/about/Ag_Guide_3rd_ed.pdf)

13. *Guidelines for the Use of Fish in Research* (2014), American Fisheries Society.

[www.fisheries.org](http://www.fisheries.org)

[www.fisheries.org/afs/docs/policy\\_16.pdf](http://www.fisheries.org/afs/docs/policy_16.pdf)

**14. Euthanasia Guidelines**

AVMA Guidelines on Euthanasia (2013)

American Veterinary Medical Association

[www.avma.org/KB/Policies/Documents/euthanasia.pdf](http://www.avma.org/KB/Policies/Documents/euthanasia.pdf)

**Alternative Research and Animal Welfare**

7. The National Library of Medicine provides computer searches through MEDLINE:

Reference & Customer Services National

Library of Medicine 8600 Rockville Pike

Bethesda, MD 20894

888-FIND-NLM or 888-346-3656; 301-594-5983;

email: [info@ncbi.nlm.nih.gov](mailto:info@ncbi.nlm.nih.gov)

[www.nlm.nih.gov](http://www.nlm.nih.gov)

[www.ncbi.nlm.nih.gov/sites/entrez](http://www.ncbi.nlm.nih.gov/sites/entrez)

8. National Agriculture Library (NAL) provides reference service for materials that document a) Alternative Procedures to Animal Use and b) Animal Welfare.

Animal Welfare Information Center

National Agriculture Library

10301 Baltimore Avenue, Room 410

Beltsville, MD 20705-2351

phone: 301-504-6212, fax: 301-504-7125

email: [awic@ars.usda.gov](mailto:awic@ars.usda.gov)

[www.nal.usda.gov/awic](http://www.nal.usda.gov/awic)

9. Institute of Laboratory Animal Resources (ILAR) provides a variety of information on animal sources, housing and handling standards, and alternatives to animal use through annotated bibliographies published quarterly in ILAR Journal.

ILAR - The Keck Center of the National Academies 500 Fifth

Street, NW, Keck 687

Washington, DC 20001

phone: 202-334-2590, fax: 202-334-1687

email: [ILAR@nas.edu](mailto:ILAR@nas.edu)

<http://dels.nas.edu/ilar>

10. Quarterly bibliographies of Alternatives to the Use of Live Vertebrates in Biomedical Research and Testing may be obtained from:

Specialized Information Services

NLM/NIH

2 Democracy Plaza, Suite 510

6707 Democracy Blvd., MSC 5467

Bethesda, MD 20892-5467

phone: 301-496-1131; Fax: 301-480-3537

email: [tehip@teh.nlm.nih.gov](mailto:tehip@teh.nlm.nih.gov) <https://www.sis.nlm.nih.gov>

<http://toxnet.nlm.nih.gov/altbib.html>

11. Johns Hopkins Center for Alternatives to Animal Testing (CAAT) has worked with scientists since 1981 to find new methods to replace the use of laboratory animals in experiments, reduce the number of animals tested, and refine necessary tests to eliminate pain and distress.

email: [caat@jhsph.edu](mailto:caat@jhsph.edu)

<http://caat.jhsph.edu/>

12. Quality Assurance Manuals (for appropriate species)

Such as:

Poultry: <https://www.bordbia.ie/industry/farmers/quality/PoultrySchemeStandards/Poultry%20Producer.pdf>

Beef: <https://www.bqa.org/Media/BQA/Docs/nationalmanual.pdf>

Pork: <http://www.pork.org/>

**Potentially Hazardous Biological Agents**

11. American Biological Safety Association: ABSA Risk Group Classification – list of organisms

[www.absa.org](http://www.absa.org)

12. American Type Culture Collection (ATCC)

[www.atcc.org](http://www.atcc.org)

13. Bergey's Manual of Systematic Bacteriology website – follow the links for resources and microbial databases for a collection of international websites of microorganisms and cell cultures.

[www.bergeys.org/resources.html](http://www.bergeys.org/resources.html)

14. Biosafety in Microbiological and Biomedical Laboratories (BMBL) - 4th Edition. Published by CDC-NIH

[www.cdc.gov/biosafety/publications/bmbl5/BMBL.pdf](http://www.cdc.gov/biosafety/publications/bmbl5/BMBL.pdf)

15. World Health Organization Laboratory Safety Manual

[www.who.int/diagnostics\\_laboratory/guidance/en](http://www.who.int/diagnostics_laboratory/guidance/en)

16. Canada – Agency of Public Health – list of non-pathogenic organisms

<https://www.canada.ca/en/public-health/services/laboratory-biosafety-biosecurity/pathogen-safety-data-sheets-risk-assessment.html>

17. American Society for Microbiology

<https://www.asm.org/division/w/web-sites.htm>

18. Microbiology Society

Charles Darwin House

12 Roger Street

London

WC1N 2JU UK

[education@microbiologysociety.org](mailto:education@microbiologysociety.org) <http://microbiologyonline.org>

19. *NIH Guidelines for Research Involving Recombinant DNA Molecules*. Published by National Institutes of Health.

[https://osp.od.nih.gov/wp-content/uploads/2013/06/NIH\\_Guidelines.pdf](https://osp.od.nih.gov/wp-content/uploads/2013/06/NIH_Guidelines.pdf)

20. OSHA – Occupational Health and Safety Administration

[www.osha.gov](http://www.osha.gov)

**Hazardous Chemicals, Activities or Devices**

General Lab/Chemical Safety

12. *Safety in Academic Chemistry Laboratories, Volumes 1 and 2*, 2003. Washington, DC: American Chemical Society.

Order from (first copy free of charge):

American Chemical Society Publications

Support Services

1155 16th Street, NW Washington,

DC 20036

phone: 202-872-4000 or 800-227-5558

email: [help@acs.org](mailto:help@acs.org) [www.acs.org/education](http://www.acs.org/education)

13. General

Howard Hughes Medical Institute has resources for working with cell cultures, radioactive materials and other laboratory materials.

<http://www.hhmi.org/developing-scientists/resources>

14. Environmental Protection Agency (EPA) website for green chemistry

[www.epa.gov/greenchemistry](http://www.epa.gov/greenchemistry)

15. Safety Data Sheets (SDS)

[www.flinnsci.com/msds-search.aspx](http://www.flinnsci.com/msds-search.aspx)

A directory of SDS sheets from Flinn Scientific Inc. that includes a ranking of hazard level and disposal methods.

[www.ilpi.com/msds/index.html](http://www.ilpi.com/msds/index.html) - A listing of numerous sites that have free downloads of MSDS sheets.

16. Pesticides

National Pesticide Information Center

<http://npic.orst.edu/ingred/products.html>

Describes the various types of pesticides and the legal requirements for labelling. Provides links and phone numbers to get additional information.

Environmental Protection Agency

<http://iaspub.epa.gov/apex/pesticides/f?p=PPLS:1>

A database of product labels. Enter the product name or company name to view the approved label information of pesticides which are registered with the agency.

17. DEA Controlled Substances

Drug Enforcement Agency website: [www.justice.gov/dea/index.htm](http://www.justice.gov/dea/index.htm)

Controlled Substance Schedules – a list of controlled substances: [www.deadiversion.usdoj.gov/schedules/](http://www.deadiversion.usdoj.gov/schedules/)

18. Alcohol, Tobacco, Firearms, and Explosives

Alcohol and Tobacco Tax and Trade Bureau  
[www.ttb.gov](http://www.ttb.gov)

Bureau of Alcohol, Tobacco, Firearms and Explosives

[www.atf.gov](http://www.atf.gov)

19. Radiation

Radiation Studies Information (CDC)

[www.cdc.gov/nceh/radiation/default.htm](http://www.cdc.gov/nceh/radiation/default.htm)

20. CDC Laboratory Safety Manuals

[www.cdc.gov/biosafety/publications/index.htm](http://www.cdc.gov/biosafety/publications/index.htm)

21. Occupational Safety and Health Administration

[www.osha.gov](http://www.osha.gov)

Safety and Health Topics:

[www.osha.gov/SLTC](http://www.osha.gov/SLTC)

[www.osha.gov/SLTC/reactivechemicals/index.html](http://www.osha.gov/SLTC/reactivechemicals/index.html)

[www.osha.gov/SLTC/laserhazards/index.html](http://www.osha.gov/SLTC/laserhazards/index.html)

[www.osha.gov/SLTC/radiationionizing/index.html](http://www.osha.gov/SLTC/radiationionizing/index.html)

22. U.S. Nuclear Regulatory Commission

Material Safety and Inspection Branch  
One White Flint North

11555 Rockville Pike

Rockville, MD 20852

phone: 301-415-8200; 800-368-5642

[www.nrc.gov](http://www.nrc.gov)

# Intel ISEF Display & Safety Regulations

Please address any questions regarding Intel ISEF Display & Safety Regulations to  
[displayandsafety@societyforscience.org](mailto:displayandsafety@societyforscience.org)

## Display & Safety Committee Mission

The mission of this committee is to ensure that all competitors qualify for competition according to the rules established in conjunction with the Scientific Review Committee and Society for Science & the Public.

The Intel ISEF Display & Safety Committee will offer guidance on Display & Safety issues for projects approved by the SRC to compete in the Intel ISEF. Occasionally, the Intel ISEF Display & Safety Committee may require students to make revisions to conform to Display & Safety regulations. Persistent issues will be directed to a committee of individuals which may include Society for Science & the Public (SSP) personnel, Display & Safety (D & S) and/or Scientific Review Committee (SRC) executive committee members.

The following regulations must be adhered to when a finalist exhibits a project at Intel ISEF. All projects must adhere to the Display & Safety requirements of the affiliated fair(s) in which they compete to qualify for participation in the Intel ISEF. Affiliated fairs may have additional restrictions or requirements. Knowledge of these requirements is the responsibility of the Finalist, Adult Sponsor, and Fair Director.

## Display Regulations

### Maximum Size of Project

**Depth (front to back): 30 inches or 76 centimeters Width (side to side): 48 inches or 122 centimeters Height (floor to top): 108 inches or 274 centimeters**

Please be aware when ordering posters that the mechanism that supports the poster should conform to the maximum size limitations stated above.

7. All project materials and support mechanisms must fit within the project dimensions (including table covers).
8. Fair-provided tables at the Intel ISEF will not exceed a height of 36 inches (91 centimeters).
9. If a table is used it becomes part of the project and must not exceed the allowed dimensions.
10. Nothing can be attached to the rear curtain.
11. All demonstrations must be done within the confines of the finalist's booth space. When not being demonstrated, all project components must be returned to the project display and must fit within allowable dimensions as defined above.
12. Projects can be continued under the table BUT this area is not to be used for storage.

### Position of Project

The fair provided table or freestanding display must be parallel to, and positioned at, the back curtain of the booth. Projects may NOT lean against the back curtain.

### Forms Required to be Visible and Vertically Displayed at the Project Booth

The placement of the required forms may include the front edge of the table, the display board, or in a free-standing acrylic frame placed on the table top.

### Forms required at all projects:

3. An original Official Abstract and Certification as approved (stamped/embossed) by the Intel ISEF Scientific Review Committee.
  - a. Upon SRC approval, the stamped/embossed Official Abstract and Certification will be provided.

- The abstract must be the official Intel International Science and Engineering Fair Abstract and embossed/ stamped by the Intel ISEF Scientific Review Committee.
- No other format or version of your approved Abstract & Certification will be allowed for any purpose at the Intel ISEF. Abstract handouts to judges and to the public are limited to UNALTERED photocopies of the official abstract and certification.
- b. The term "abstract" may NOT be used as a title or reference for any information on a finalist's display or materials at the project except as part of displaying the official stamped/embossed abstract.
  - It is the recommendation of the Display & Safety Committee to NOT include the word "abstract" nor the abstract itself when preparing backboards or posters prior to the fair.
- 4. Intel ISEF Project Set-up Approval Form (received on-site at the Fair)
  - a. This form documents the project as approved by the Scientific Review Committee and is used to document the Display & Safety Committee's review and final approval.
  - b. This form must be signed by the Finalist and the Display and Safety Committee member at the time of inspection

### Additional Forms required (only when applicable):

3. Regulated Research Institutional/Industrial Setting Form (1C)
  - a. If work was conducted in a regulated research institution, industrial setting or any work site other than home, school or field at any time during the current Intel ISEF project year, the **Regulated Research Institutional/Industrial Setting Form (1C)** must be completed and vertically displayed at the project booth.
  - b. The information provided by the mentor on Form 1C may be referenced to confirm that the information provided on the project board is that of the finalist. Only minimal reference to mentor's or another researcher's work is allowable and must only reflect background information or be used to clarify differences between finalist's and others' work.
4. Continuation/Research Progression Projects Form (7)
  - a. If a study is a continuation/research progression, the Continuation/Research Progression Projects Form (7) must be completed and vertically displayed at the project booth.

- b. The display board and abstract must reflect only the current year's work. The project title displayed in the finalist's booth may mention years of continuing research (for example, "Year Two of an Ongoing Study").
- c. Reference to past work on the display board must be limited to summative past conclusory data and its comparison to the current year data set. No raw data from previous years may be publicly displayed; however, it may be included in the student research notebooks and/or logbooks if properly labeled.

## Forms Required at Project but not Displayed

- 3. Forms, excluding those listed above, that were required for the Scientific Review Committee approval should not be vertically displayed, but must be available in the booth in case asked for by a judge or other Intel ISEF official. These forms include, but are not limited to, Checklist for Adult Sponsor (1), Student Checklist (1A), Research Plan, Approval Form (1B), and a photograph/video release form.
- 4. A photograph/video release form signed by the subject is required for visual images of humans (other than the finalist) displayed as part of the project.

## Forms NOT to be at the Project Display Booth or in the Exhibit Hall

Completed informed consent/assent forms for a human participant study are NOT to be displayed and should NOT be present at the project display. The Finalist may include a sample (incomplete) form in their logbook or research notebook but under NO CIRCUMSTANCE should the completed informed consent/assent forms for a human participant be in the Exhibit Hall.

## Photograph/Image Display Requirements

- 6. Any photograph/visual image/chart/table and/or graph is allowed if:
  - a. It is not deemed offensive or inappropriate (which includes images/photographs showing invertebrate or vertebrate animals/humans in surgical, necrotizing or dissection situations) by the Scientific Review Committee, the Display & Safety Committee, or Society for Science & the Public.
  - b. It has a credit line of origin ("Photograph taken by..." or "Image taken from..." or "Graph/Chart/Table taken from..."). If all images, etc. displayed were created by the finalist or are from the same source, one credit line prominently and vertically displayed on the backboard/ poster or tabletop is sufficient. All images MUST BE properly cited. This includes photographs and/or visual depictions of the finalist or photographs and/or visual depictions of others for which a signed photo/video release form is in a notebook or logbook at the project booth. These signed consent forms must be available upon request during set-up and the inspection process, but may not be displayed
  - c. Sample release text: "I consent to the use of visual images (photos, videos, etc.) involving my participation/my child's participation in this research."
- 4. Finalists using any presentation or demonstration outside of a project board must be prepared to show the entire presentation to the Display & Safety Inspectors before the project is approved. All aforementioned rules apply to this presentation and the presentation may not be altered in any way after the final Display & Safety inspection. Examples of presentations that require approval include, but are not

limited to PowerPoint, Prezi, Keynote, YouTube, software program/simulation and other images and/or graphics displayed on a computer screen or other non-print delivery method.

## Items/Materials Not Allowed on Display or at Project Booth

- 3. Any information on the project display or items that are acknowledgments, self-promotions or external endorsements are not allowed in the project booth. This includes:
  - a. The use of logos including known commercial brands, institutional crests or trademarks, flags unless integral to the project and approved by the SRC via inclusion in the Official Abstract and Certification.
  - b. Personalized graphic/logo that is developed to indicate a commercial purpose or viability of an established or proposed business associated with the project, unless student-created in which it can be displayed on the board only once.
  - c. Any reference to an institution or mentor that supported your research except as provided in the official Intel ISEF paperwork, most notably Form 1C.
  - d. Any reference to patent status of the project.
  - e. Any items intended for distribution such as disks, CDs, flash drives, brochures, booklets, endorsements, give-away items, business cards, or printed materials designed to be distributed to judges or the public. Once again, handouts to judges and to the public are limited to UNALTERED photocopies of the official abstract and certification.
- 7. Any awards or medals, except for past or present Intel ISEF medals that may be worn by the finalist.
- 8. Postal addresses, World Wide Web, email and/or social media addresses, QR codes, telephone and/or fax numbers of a project or finalist. Note: The only personal information that is permissible to include on the display is information that is also included on the Official Abstract and Certification (Finalist Name, School, City, State, Country). Information regarding finalist's age and grade are not permitted.
- 9. Active Internet or email connections as part of displaying or operating the project at the Intel ISEF.
- 10. Any changes, modifications, or additions to projects including any attempt to uncover, replenish or return removed language or items after the approval by the Display & Safety Committee and the Scientific Review Committee has been received is prohibited.
  - a. Display & Safety inspections will include recording photographic evidence of the approved Project Display and Project booth.
  - b. Finalists who do not adhere to this signed agreement on the Intel ISEF Project Set-up Approval Form regarding this regulation will fail to qualify for competition.

# Safety Regulations

## Not Allowed at Project or Booth

Note: In the case in which a Finalist's Project includes an item that is prohibited from display, please consider taking photographs and/or documenting the significance of the prohibited item through video.

22. Living organisms, including plants
23. Glass
24. Soil, sand, rock, cement and/or waste samples, **even if** permanently **encased in a slab of acrylic**
25. Taxidermy specimens or parts
26. Preserved vertebrate or invertebrate animals
27. Human or animal food
28. Human/animal parts or body fluids (for example, blood, urine)
29. Plant materials (living, dead, or preserved) that are in their raw, unprocessed, or non-manufactured state
30. All chemicals including water. Absolutely no liquids can be utilized in the Project Display
31. All hazardous substances or devices (Example: poisons, drugs, firearms, weapons, ammunition, reloading devices, grease/oil and sublimating solids such as dry ice)
32. Items that may have contained or been in contact with hazardous chemicals (Exception: Item may be permitted if professionally cleaned and document for such cleaning is available) Filters (including microbial) may not be displayed unless the Display & Safety Committee can reasonably determine that the device was cleaned or was never used (please include receipts in your notebooks and/or logbooks)
33. Sharp items (for example, syringes, needles, pipettes, knives)
34. Flames and highly flammable materials
35. Batteries with open-top cells or wet cells
36. Drones or any flight-capable apparatus unless the propulsion power source removed.
37. 3D Printers unless the power source is removed.
38. Inadequately insulated apparatus capable of producing dangerous temperatures are not permitted
39. Any apparatus with belts, pulleys, chains, or moving parts with tension or pinch points that are not appropriately shielded
40. Any display items that are deemed distracting (i.e. sounds, lights, odors, etc.)
41. Personal items or packaging materials stored underneath the booth
42. Any apparatus deemed unsafe by the Scientific Review Committee, the Display & Safety Committee, or the Society (Example: large vacuum tubes or dangerous ray-generating devices, empty tanks that previously contained combustible liquids or gases, pressurized tanks, 3D printers etc.)

**Electrical Regulations**

8. Electrical power supplied to the project is 120 or 220 Volt, AC, single phase, 60 cycle. No multi-phase will be available or shall be used. Maximum circuit amperage/wattage available is determined by the electrical circuit capacities of the exhibit hall and may be adjusted on-site by the Display & Safety Committee. For all electrical regulations, "120 Volt AC" or "220 Volt AC" is intended to encompass the corresponding range of voltage as supplied by the facility in which the Intel ISEF is being held.
9. Electrical devices must be protectively enclosed. Any enclosure must be non-combustible. All external non-current carrying metal parts must be grounded.
10. Energized wiring, switches, and metal parts must have adequate insulation and over-current safety devices (such as fuses) and must be inaccessible to anyone other than the finalist. Exposed electrical equipment or metal that possibly may be energized must be shielded with a non-conducting material or with a grounded metal box to prevent accidental contact.
11. Decorative lighting or illumination is discouraged. If used, lighting must be as low a voltage as possible and must be LED lighting that does not generate heat. Light bulbs are prohibited. When student is not at the exhibit, all electrical power must be disconnected, or power bars must be switched off (Exception: during pre-judging audio visual displays may be available.)
12. An insulating grommet is required at the point where any wire or cable enters any enclosure.
13. No exposed live circuits over 36 volts are allowed.
14. There must be an accessible, clearly visible on/off switch or other means of quickly disconnecting from the 120 or 220 Volt power source.

## Laser/Laser Pointer Regulations

Any Class 1 or Class 2 lasers, along with only Class 3A or 3R lasers, are allowed to be used provided a finalist avoids indiscriminate exposure to other finalists, judges, or visitors (except if passed through magnifying optics such as microscopes and telescopes, in which case they may not be used). No other lasers may be used or displayed.

5. Lasers must be labeled by the manufacturer so that power output can be inspected. Lasers without labels will NOT be permitted.
6. LEDs that consume over 1 watt, unless they are in a commercial light bulb/ fixture or otherwise shielded, will not be allowed.
7. Handheld lasers are NOT permitted.
8. Lasers will be confiscated with no warning if not used in a safe manner.

## Information on Required Abstract & Certification for ALL Projects at the Intel ISEF

\* This form may not be relevant for your regional or state fair; please refer to instructions from your affiliated fair.\*

In ADDITION to the basic form requirements for ALL Projects and any other requirements due to specific areas of research, an Abstract & Certification is required at the conclusion of research. Details on this requirement follow.

### Completing the Abstract

After finishing research and experimentation, you are required to write a (maximum) 250 word, one-page abstract. For Intel ISEF, this abstract is written in the online Finalist Questionnaire portal and submitted electronically.

It is recommended that it **include the following:**

- e. purpose of the experiment
- f. procedure
- g. data
- h. conclusions

It may also include any possible research applications. Only minimal reference to previous work may be included.

An abstract **must not include the following:**

- c. acknowledgments (including naming the research institution and/or mentor

with which you were working), or self-promotions and external endorsements

- d. logos or proper names of commercial products

b. work or procedures done by the mentor

### Completing the Certification

At the bottom of the Abstract & Certification form there are six questions. Please read each carefully and answer appropriately. The Intel ISEF Scientific Research Committee will review and approve the abstract and answers to the questions.

Revisions are permitted via the online portal through late April (please reference the system for current year deadlines.)

Once approved, two copies of the Intel ISEF Abstract & Certification will be provided with a gold embossed seal; only this version of the abstract may be displayed or distributed.

**NOTE:** Your abstract must be on the Intel International Science and Engineering Fair Abstract & Certification form and have the Intel ISEF Scientific Review Committee approval seal before it is displayed or handed out. No other format or version of your approved Abstract will be allowed for any purpose at the Intel ISEF.

### Intel ISEF Sample Abstract & Certification

| Project Title                                  | Project ID                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                 |                          |                                |                          |              |                          |                                |                          |                        |                          |                              |                          |           |                          |                                          |                          |                                |                          |                  |                          |                  |                          |                  |                          |                       |                          |                           |                          |                   |                          |             |                          |              |                          |                       |                          |                |                          |                                 |                          |                  |                          |                               |                          |
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| Finalist Name(s)                               | Category<br>Pick one only-- mark an "X" in box at right                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                 |                          |                                |                          |              |                          |                                |                          |                        |                          |                              |                          |           |                          |                                          |                          |                                |                          |                  |                          |                  |                          |                  |                          |                       |                          |                           |                          |                   |                          |             |                          |              |                          |                       |                          |                |                          |                                 |                          |                  |                          |                               |                          |
| Finalist School, City, State/Province, Country |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                 |                          |                                |                          |              |                          |                                |                          |                        |                          |                              |                          |           |                          |                                          |                          |                                |                          |                  |                          |                  |                          |                  |                          |                       |                          |                           |                          |                   |                          |             |                          |              |                          |                       |                          |                |                          |                                 |                          |                  |                          |                               |                          |
| <b>Abstract</b>                                | <table border="0"><tr><td>Animal Sciences</td><td><input type="checkbox"/></td></tr><tr><td>Behavioral and Social Sciences</td><td><input type="checkbox"/></td></tr><tr><td>Biochemistry</td><td><input type="checkbox"/></td></tr><tr><td>Biomedical and Health Sciences</td><td><input type="checkbox"/></td></tr><tr><td>Biomedical Engineering</td><td><input type="checkbox"/></td></tr><tr><td>Cellular &amp; Molecular Biology</td><td><input type="checkbox"/></td></tr><tr><td>Chemistry</td><td><input type="checkbox"/></td></tr><tr><td>Computational Biology and Bioinformatics</td><td><input type="checkbox"/></td></tr><tr><td>Earth &amp; Environmental Sciences</td><td><input type="checkbox"/></td></tr><tr><td>Embedded Systems</td><td><input type="checkbox"/></td></tr><tr><td>Energy: Chemical</td><td><input type="checkbox"/></td></tr><tr><td>Energy: Physical</td><td><input type="checkbox"/></td></tr><tr><td>Engineering Mechanics</td><td><input type="checkbox"/></td></tr><tr><td>Environmental Engineering</td><td><input type="checkbox"/></td></tr><tr><td>Materials Science</td><td><input type="checkbox"/></td></tr><tr><td>Mathematics</td><td><input type="checkbox"/></td></tr><tr><td>Microbiology</td><td><input type="checkbox"/></td></tr><tr><td>Physics and Astronomy</td><td><input type="checkbox"/></td></tr><tr><td>Plant Sciences</td><td><input type="checkbox"/></td></tr><tr><td>Robotics &amp; Intelligent Machines</td><td><input type="checkbox"/></td></tr><tr><td>Systems Software</td><td><input type="checkbox"/></td></tr><tr><td>Translational Medical Science</td><td><input type="checkbox"/></td></tr></table> | Animal Sciences | <input type="checkbox"/> | Behavioral and Social Sciences | <input type="checkbox"/> | Biochemistry | <input type="checkbox"/> | Biomedical and Health Sciences | <input type="checkbox"/> | Biomedical Engineering | <input type="checkbox"/> | Cellular & Molecular Biology | <input type="checkbox"/> | Chemistry | <input type="checkbox"/> | Computational Biology and Bioinformatics | <input type="checkbox"/> | Earth & Environmental Sciences | <input type="checkbox"/> | Embedded Systems | <input type="checkbox"/> | Energy: Chemical | <input type="checkbox"/> | Energy: Physical | <input type="checkbox"/> | Engineering Mechanics | <input type="checkbox"/> | Environmental Engineering | <input type="checkbox"/> | Materials Science | <input type="checkbox"/> | Mathematics | <input type="checkbox"/> | Microbiology | <input type="checkbox"/> | Physics and Astronomy | <input type="checkbox"/> | Plant Sciences | <input type="checkbox"/> | Robotics & Intelligent Machines | <input type="checkbox"/> | Systems Software | <input type="checkbox"/> | Translational Medical Science | <input type="checkbox"/> |
| Animal Sciences                                | <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                 |                          |                                |                          |              |                          |                                |                          |                        |                          |                              |                          |           |                          |                                          |                          |                                |                          |                  |                          |                  |                          |                  |                          |                       |                          |                           |                          |                   |                          |             |                          |              |                          |                       |                          |                |                          |                                 |                          |                  |                          |                               |                          |
| Behavioral and Social Sciences                 | <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                 |                          |                                |                          |              |                          |                                |                          |                        |                          |                              |                          |           |                          |                                          |                          |                                |                          |                  |                          |                  |                          |                  |                          |                       |                          |                           |                          |                   |                          |             |                          |              |                          |                       |                          |                |                          |                                 |                          |                  |                          |                               |                          |
| Biochemistry                                   | <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                 |                          |                                |                          |              |                          |                                |                          |                        |                          |                              |                          |           |                          |                                          |                          |                                |                          |                  |                          |                  |                          |                  |                          |                       |                          |                           |                          |                   |                          |             |                          |              |                          |                       |                          |                |                          |                                 |                          |                  |                          |                               |                          |
| Biomedical and Health Sciences                 | <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                 |                          |                                |                          |              |                          |                                |                          |                        |                          |                              |                          |           |                          |                                          |                          |                                |                          |                  |                          |                  |                          |                  |                          |                       |                          |                           |                          |                   |                          |             |                          |              |                          |                       |                          |                |                          |                                 |                          |                  |                          |                               |                          |
| Biomedical Engineering                         | <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                 |                          |                                |                          |              |                          |                                |                          |                        |                          |                              |                          |           |                          |                                          |                          |                                |                          |                  |                          |                  |                          |                  |                          |                       |                          |                           |                          |                   |                          |             |                          |              |                          |                       |                          |                |                          |                                 |                          |                  |                          |                               |                          |
| Cellular & Molecular Biology                   | <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                 |                          |                                |                          |              |                          |                                |                          |                        |                          |                              |                          |           |                          |                                          |                          |                                |                          |                  |                          |                  |                          |                  |                          |                       |                          |                           |                          |                   |                          |             |                          |              |                          |                       |                          |                |                          |                                 |                          |                  |                          |                               |                          |
| Chemistry                                      | <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                 |                          |                                |                          |              |                          |                                |                          |                        |                          |                              |                          |           |                          |                                          |                          |                                |                          |                  |                          |                  |                          |                  |                          |                       |                          |                           |                          |                   |                          |             |                          |              |                          |                       |                          |                |                          |                                 |                          |                  |                          |                               |                          |
| Computational Biology and Bioinformatics       | <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                 |                          |                                |                          |              |                          |                                |                          |                        |                          |                              |                          |           |                          |                                          |                          |                                |                          |                  |                          |                  |                          |                  |                          |                       |                          |                           |                          |                   |                          |             |                          |              |                          |                       |                          |                |                          |                                 |                          |                  |                          |                               |                          |
| Earth & Environmental Sciences                 | <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                 |                          |                                |                          |              |                          |                                |                          |                        |                          |                              |                          |           |                          |                                          |                          |                                |                          |                  |                          |                  |                          |                  |                          |                       |                          |                           |                          |                   |                          |             |                          |              |                          |                       |                          |                |                          |                                 |                          |                  |                          |                               |                          |
| Embedded Systems                               | <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                 |                          |                                |                          |              |                          |                                |                          |                        |                          |                              |                          |           |                          |                                          |                          |                                |                          |                  |                          |                  |                          |                  |                          |                       |                          |                           |                          |                   |                          |             |                          |              |                          |                       |                          |                |                          |                                 |                          |                  |                          |                               |                          |
| Energy: Chemical                               | <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                 |                          |                                |                          |              |                          |                                |                          |                        |                          |                              |                          |           |                          |                                          |                          |                                |                          |                  |                          |                  |                          |                  |                          |                       |                          |                           |                          |                   |                          |             |                          |              |                          |                       |                          |                |                          |                                 |                          |                  |                          |                               |                          |
| Energy: Physical                               | <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                 |                          |                                |                          |              |                          |                                |                          |                        |                          |                              |                          |           |                          |                                          |                          |                                |                          |                  |                          |                  |                          |                  |                          |                       |                          |                           |                          |                   |                          |             |                          |              |                          |                       |                          |                |                          |                                 |                          |                  |                          |                               |                          |
| Engineering Mechanics                          | <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                 |                          |                                |                          |              |                          |                                |                          |                        |                          |                              |                          |           |                          |                                          |                          |                                |                          |                  |                          |                  |                          |                  |                          |                       |                          |                           |                          |                   |                          |             |                          |              |                          |                       |                          |                |                          |                                 |                          |                  |                          |                               |                          |
| Environmental Engineering                      | <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                 |                          |                                |                          |              |                          |                                |                          |                        |                          |                              |                          |           |                          |                                          |                          |                                |                          |                  |                          |                  |                          |                  |                          |                       |                          |                           |                          |                   |                          |             |                          |              |                          |                       |                          |                |                          |                                 |                          |                  |                          |                               |                          |
| Materials Science                              | <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                 |                          |                                |                          |              |                          |                                |                          |                        |                          |                              |                          |           |                          |                                          |                          |                                |                          |                  |                          |                  |                          |                  |                          |                       |                          |                           |                          |                   |                          |             |                          |              |                          |                       |                          |                |                          |                                 |                          |                  |                          |                               |                          |
| Mathematics                                    | <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                 |                          |                                |                          |              |                          |                                |                          |                        |                          |                              |                          |           |                          |                                          |                          |                                |                          |                  |                          |                  |                          |                  |                          |                       |                          |                           |                          |                   |                          |             |                          |              |                          |                       |                          |                |                          |                                 |                          |                  |                          |                               |                          |
| Microbiology                                   | <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                 |                          |                                |                          |              |                          |                                |                          |                        |                          |                              |                          |           |                          |                                          |                          |                                |                          |                  |                          |                  |                          |                  |                          |                       |                          |                           |                          |                   |                          |             |                          |              |                          |                       |                          |                |                          |                                 |                          |                  |                          |                               |                          |
| Physics and Astronomy                          | <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                 |                          |                                |                          |              |                          |                                |                          |                        |                          |                              |                          |           |                          |                                          |                          |                                |                          |                  |                          |                  |                          |                  |                          |                       |                          |                           |                          |                   |                          |             |                          |              |                          |                       |                          |                |                          |                                 |                          |                  |                          |                               |                          |
| Plant Sciences                                 | <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                 |                          |                                |                          |              |                          |                                |                          |                        |                          |                              |                          |           |                          |                                          |                          |                                |                          |                  |                          |                  |                          |                  |                          |                       |                          |                           |                          |                   |                          |             |                          |              |                          |                       |                          |                |                          |                                 |                          |                  |                          |                               |                          |
| Robotics & Intelligent Machines                | <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                 |                          |                                |                          |              |                          |                                |                          |                        |                          |                              |                          |           |                          |                                          |                          |                                |                          |                  |                          |                  |                          |                  |                          |                       |                          |                           |                          |                   |                          |             |                          |              |                          |                       |                          |                |                          |                                 |                          |                  |                          |                               |                          |
| Systems Software                               | <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                 |                          |                                |                          |              |                          |                                |                          |                        |                          |                              |                          |           |                          |                                          |                          |                                |                          |                  |                          |                  |                          |                  |                          |                       |                          |                           |                          |                   |                          |             |                          |              |                          |                       |                          |                |                          |                                 |                          |                  |                          |                               |                          |
| Translational Medical Science                  | <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                 |                          |                                |                          |              |                          |                                |                          |                        |                          |                              |                          |           |                          |                                          |                          |                                |                          |                  |                          |                  |                          |                  |                          |                       |                          |                           |                          |                   |                          |             |                          |              |                          |                       |                          |                |                          |                                 |                          |                  |                          |                               |                          |

7. As a part of this research project, the student directly handled, manipulated, or interacted with (check all that apply):

- human participants
- vertebrate animals
- potentially hazardous biological agents
- microorganisms
- rDNA
- tissue

8. This abstract describes only procedures performed by me/us, reflects my/our own independent research, and represents one year's work only.

yes       no

9. I/We worked or used equipment in a regulated research institution or industrial setting.

yes       no

10. This project is a continuation of previous research.

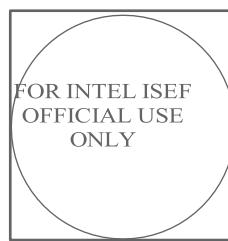
yes       no

11. My display board includes non-published photographs/visual depictions of humans (other than myself):

yes       no

12. I/We hereby certify that the abstract and responses to the above statements are correct and properly reflect my/our own work.

yes       no



# Intel ISEF Categories and Subcategories

The categories have been established with the goal of better aligning judges and student projects for the judging at the Intel ISEF. Local, regional, state and country fairs may or may not choose to use these categories, dependent on the needs of their area. Please check with your affiliated fair(s) for the appropriate category listings at that level of competition.

Please visit our website at [student.societyforscience.org/intel-isef-categories-and-subcategories](http://student.societyforscience.org/intel-isef-categories-and-subcategories) for a full description and definition of the Intel ISEF categories:

## ANIMAL SCIENCES (ANIM)

Animal Behavior  
Cellular Studies  
Development  
Ecology Genetics  
Nutrition and Growth Physiology  
Systematics and Evolution Other

## CHEMISTRY (CHEM)

Analytical Chemistry  
Computational Chemistry  
Environmental Chemistry  
Inorganic Chemistry  
Materials Chemistry  
Organic Chemistry Physical Chemistry  
Other

## ENERGY: PHYSICAL (EGPH)

Hydro Power  
Nuclear Power  
Solar  
Sustainable Design  
Thermal Power Wind  
Other

## PHYSICS AND ASTRONOMY (PHYS)

Astronomy and Cosmology Atomic, Molecular, and Optical  
Physics Biological  
Physics  
Condensed Matter and Materials Mechanics

## BEHAVIORAL AND SOCIAL SCIENCES (BEHA)

Clinical and Developmental  
Psychology  
Cognitive Psychology  
Neuroscience Physiological  
Psychology  
Sociology and Social Psychology  
Other

## COMPUTATIONAL BIOLOGY AND BIOINFORMATICS (CBIO)

Computational Biomodeling  
Computational Epidemiology  
Computational Evolutionary Biology  
Computational Neuroscience  
Computational Pharmacology  
Genomics  
Other

## ENGINEERING MECHANICS (ENMC)

Aerospace and Aeronautical Engineering  
Civil Engineering  
Computational Mechanics  
Control Theory  
Ground Vehicle Systems Industrial Engineering-Processing Mechanical Engineering  
Naval Systems  
Other

## PLANT SCIENCES (PLNT)

Agriculture and Agronomy  
Ecology Genetics/Breeding  
Growth and Development  
Pathology  
Plant Physiology Systematics and Evolution Other

## BIOCHEMISTRY (BCHM)

Analytical Biochemistry  
General Biochemistry Medical  
Biochemistry Structural  
Biochemistry Other

## EARTH AND ENVIRONMENTAL SCIENCES (EAEV)

Atmospheric Science  
Climate Science  
Environmental Effects on Ecosystems  
Geosciences  
Water Science  
Other

## ENVIRONMENTAL ENGINEERING (ENEV)

Bioremediation Land  
Reclamation Pollution Control  
Recycling and Waste Management  
Water Resources Management Other

## ROBOTICS AND INTELLIGENT MACHINES (ROBO)

Biomechanics Cognitive  
Systems Control Theory  
Machine Learning Robot Kinematics Other

## BIOMEDICAL AND HEALTH SCIENCES (BMED)

Cell, Organ, and Systems Physiology  
Genetics and Molecular Biology of Disease  
Immunology  
Nutrition and Natural Products  
Pathophysiology  
Other

## EMBEDDED SYSTEMS (EBED)

Circuits  
Internet of Things  
Microcontrollers  
Networking and Data Communications Optics  
Sensors  
Signal Processing Other

## MATERIALS SCIENCE (MATS)

Biomaterials Ceramic and Glasses Composite  
Materials  
Computation and Theory Electronic, Optical and Magnetic Materials  
Nanomaterials  
Polymers Other

## SYSTEMS SOFTWARE (SOFT)

Algorithms  
Cybersecurity  
Databases  
Human/Machine Interface Languages and Operating Systems Mobile Apps  
Online Learning Other

## BIOMEDICAL ENGINEERING (ENBM)

Biomaterials and Regen Medicine  
Biomechanics  
Biomedical Devices Biomedical Imaging  
Cell and Tissue Engineering Synthetic Biology  
Other

## ENERGY: CHEMICAL (EGCH)

Alternative Fuels Computational Energy Science Fossil Fuel Energy  
Fuel Cells and Battery Develop Microbial Fuel Cells  
Solar Materials  
Other

## MATHEMATICS (MATH)

Analysis  
Combinatorics, Graph Theory, and Game Theory  
Geometry and Topology  
Number Theory Probability and Statistics Other

## TRANSLATIONAL MEDICAL SCIENCES (TMED)

Disease Detection and Diagnosis Disease Prevention  
Disease Treatment and Therapies  
Drug Identification and Testing Pre-Clinical Studies  
Other

## CELLULAR AND MOLECULAR BIOLOGY (CELL)

Cell Physiology Cellular Immunology Genetics Molecular Biology  
Neurobiology Other

## MICROBIOLOGY (MCRO)

Antimicrobials and Antibiotics Applied  
Microbiology Bacteriology  
Environmental Microbiology  
Microbial Genetics  
Virology Other

# Checklist for Adult Sponsor (1)

This completed form is required for ALL projects.

To be completed by the Adult Sponsor in collaboration with the student researcher(s):

Student's Name(s): \_\_\_\_\_

Project Title: \_\_\_\_\_

6.  I have reviewed the Intel ISEF Rules and Guidelines.
7.  I have reviewed the student's completed Student Checklist (1A) and Research Plan/Project Summary.
8.  I have worked with the student and we have discussed the possible risks involved in the project.
9.  The project involves one or more of the following and requires prior approval by an SRC, IRB, IACUC or IBC:  
 Humans Potentially Hazardous Biological Agents  
 Vertebrate Animals  Microorganisms  rDNA  Tissues
10.  Items to be completed for ALL PROJECTS  
 Adult Sponsor Checklist (1)  Research Plan/Project Summary  
 Student Checklist (1A)  Approval Form (1B)  
 Regulated Research Institutional/Industrial Setting Form (1C) (when applicable; after completed experiment)  
 Continuation/Research Progression Form (7) (when applicable)

**Additional forms required if the project includes the use of one or more of the following** (check all that apply):

**Humans**, including student designed inventions/prototypes. (Requires prior approval by an Institutional Review Board (IRB); see full text of the rules.)

Human Participants Form (4) or appropriate Institutional IRB documentation

Sample of Informed Consent Form (when applicable and/or required by the IRB)

Qualified Scientist Form (2) (when applicable and/or required by the IRB)

**Vertebrate Animals** (Requires prior approval, see full text of the rules.)

Vertebrate Animal Form (5A)-for projects conducted in a school/home/field research site (SRC prior approval required.)

Vertebrate Animal Form (5B)-for projects conducted at a Regulated Research Institution. (Institutional Animal Care and Use Committee (IACUC) approval required prior experimentation.)

Qualified Scientist Form (2) (Required for all vertebrate animal projects at a regulated research site or when applicable)

**Potentially Hazardous Biological Agents** (Requires prior approval by SRC, IACUC or IBC, see full text of the rules.)

Potentially Hazardous Biological Agents Risk Assessment Form (6A)

Human and Vertebrate Animal Tissue Form (6B)-to be completed in addition to Form 6A when project involves the use of fresh or frozen tissue, primary cell cultures, blood, blood products and body fluids.

Qualified Scientist Form (2) (when applicable)

The following are exempt from prior review but require a Risk Assessment Form 3: projects involving protists, archae and similar microorganisms, for projects using manure for composting, fuel production or other non-culturing experiments, projects using color change coliform water test kits, microbial fuel cells, and projects involving decomposing vertebrate organisms.

**Hazardous Chemicals, Activities and Devices** (No SRC prior approval required, see full text of the rules.)

Risk Assessment Form (3)

Qualified Scientist Form (2) (required for projects involving DEA-controlled substances or when applicable)

Adult Sponsor's Printed Name

Signature

Date of Review (mm/dd/yy)

Phone

Email

# Student Checklist (1A)

**This form is required for ALL projects.**

12. a. Student/Team Leader: \_\_\_\_\_ Grade: \_\_\_\_\_

Email: \_\_\_\_\_ Phone: \_\_\_\_\_

b. Team Member: \_\_\_\_\_ c. Team Member: \_\_\_\_\_

13. Title of Project:  
\_\_\_\_\_

14. School: \_\_\_\_\_ School Phone: \_\_\_\_\_

School Address: \_\_\_\_\_  
\_\_\_\_\_

15. Adult Sponsor: \_\_\_\_\_ Phone/Email: \_\_\_\_\_

16. Does this project need SRC/IRB/IACUC or other pre-approval?  Yes  No Tentative start date: \_\_\_\_\_

17. Is this a continuation/progression from a previous year?  Yes  No

If Yes:

a. Attach the previous year's  Abstract **and**  Research Plan/Project Summary

b. Explain how this project is new and different from previous years on

Continuation/Research Progression Form (7)

18. This year's laboratory experiment/data collection:  
\_\_\_\_\_

Actual Start Date: (mm/dd/yy)

End Date: (mm/dd/yy)

19. Where will you conduct your experimentation? (check all that apply)

Research Institution  School  Field  Home  Other: \_\_\_\_\_

20. List name and address of all non-home and non-school work site(s):

Name: \_\_\_\_\_

\_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_

Phone/  
email: \_\_\_\_\_

\_\_\_\_\_

21. Complete a Research Plan/Project Summary following the Research Plan/Project Summary instructions and attach to this form.

22. An abstract is required for all projects after experimentation.

# Research Plan/Project Summary Instructions

A complete Research Plan/Project Summary is required for ALL projects and must accompany Student Checklist (1A).

4. All projects must have a Research Plan/Project Summary
  - a. Written prior to experimentation following the instructions below to detail the rationale, research question(s), methodology, and risk assessment of the proposed research.
  - b. If changes are made during the research, such changes can be added to the original research plan as an addendum, recognizing that some changes may require returning to the IRB or SRC for appropriate review and approvals. If no additional approvals are required, this addendum serves as a project summary to explain research that was conducted.
  - c. If no changes are made from the original research plan, no project summary is required.
5. Some studies, such as an engineering design or mathematics projects, will be less detailed in the initial project plan and will change through the course of research. If such changes occur, a project summary that explains what was done is required and can be appended to the original research plan.
6. The Research Plan/Project Summary should include the following:
  - a. **RATIONALE:** Include a brief synopsis of the background that supports your research problem and explain why this research is important and if applicable, explain any societal impact of your research.
  - b. **RESEARCH QUESTION(S), HYPOTHESIS(ES), ENGINEERING GOAL(S), EXPECTED OUTCOMES:** How is this based on the rationale described above?
  - c. Describe the following in detail:
    - **Procedures:** Detail all procedures and experimental design including methods for data collection. Describe only your project. Do not include work done by mentor or others.
    - **Risk and Safety:** Identify any potential risks and safety precautions needed.
    - **Data Analysis:** Describe the procedures you will use to analyze the data/results.
  - d. **BIBLIOGRAPHY:** List major references (e.g. science journal articles, books, internet sites) from your literature review. If you plan to use vertebrate animals, one of these references must be an animal care reference.

Items 1–4 below are subject-specific guidelines for additional items to be included in your research plan/project summary as applicable.

5. **Human participants research:**
  - a. **Participants:** Describe age range, gender, racial/ethnic composition of participants. Identify vulnerable populations (minors, pregnant women, prisoners, mentally disabled or economically disadvantaged).
  - b. **Recruitment:** Where will you find your participants? How will they be invited to participate?
  - c. **Methods:** What will participants be asked to do? Will you use any surveys, questionnaires or tests? If yes and not your own, how did you obtain? Did it require permissions? If so, explain. What is the frequency and length of time involved for each subject?
  - d. **Risk Assessment:** What are the risks or potential discomforts (physical, psychological, time involved, social, legal, etc.) to participants? How will you minimize risks? List any benefits to society or participants.
  - e. **Protection of Privacy:** Will identifiable information (e.g., names, telephone numbers, birth dates, email addresses) be collected? Will data be confidential/anonymous? If anonymous, describe how the data will be collected. If not anonymous, what procedures are in place for safeguarding confidentiality? Where will data be stored? Who will have access to the data? What will you do with the data after the study?
  - f. **Informed Consent Process:** Describe how you will inform participants about the purpose of the study, what they will be asked to do, that their participation is voluntary and they have the right to stop at any time.
6. **Vertebrate animal research:**
  - a. Discuss potential ALTERNATIVES to vertebrate animal use and present justification for use of vertebrates.
  - b. Explain potential impact or contribution of this research.
  - c. Detail all procedures to be used, including methods used to minimize potential discomfort, distress, pain and injury to the animals and detailed chemical concentrations and drug dosages.
  - d. Detail animal numbers, species, strain, sex, age, source, etc., include justification of the numbers planned.
  - e. Describe housing and oversight of daily care
  - f. Discuss disposition of the animals at the termination of the study.
7. **Potentially hazardous biological agents research:**
  - a. Give source of the organism and describe BSL assessment process and BSL determination.
  - b. Detail safety precautions and discuss methods of disposal.
8. **Hazardous chemicals, activities & devices:**
  - Describe Risk Assessment process, supervision, safety precautions and methods of disposal.
  - Material Safety Data Sheets are not necessary to submit with paperwork.

## Approval Form (1B)

A completed form is required for each student, including all team members.

### 4. To Be Completed by Student and Parent

#### a. Student Acknowledgment:

- I understand the risks and possible dangers to me of the proposed research plan.
- I have read the Intel ISEF Rules and Guidelines and will adhere to all International Rules when conducting this research.
- I have read and will abide by the following Ethics statement

Student researchers are expected to maintain the highest standards of honesty and integrity. Scientific fraud and misconduct are not condoned at any level of research or competition. Such practices include but are not limited to plagiarism, forgery, use or presentation of other researcher's work as one's own, and fabrication of data. Fraudulent projects will fail to qualify for competition in affiliated fairs and the Intel ISEF.

---

Student's Printed Name

---

Signature

---

Date Acknowledged (mm/dd/yy)

(Must be prior to experimentation.)

**b. Parent/Guardian Approval:** I have read and understand the risks and possible dangers involved in the Research Plan/Project Summary. I consent to my child participating in this research.

---

Parent/Guardian's Printed Name

---

Signature

---

Date Acknowledged (mm/dd/yy)

(Must be prior to experimentation.)

### 5. To be completed by the local or affiliated Fair SRC

(Required for projects requiring prior SRC/IRB APPROVAL. Sign 2a or 2b as appropriate.)

**a. Required for projects that need prior SRC/IRB approval BEFORE experimentation (humans, vertebrates or potentially hazardous biological agents).**

The SRC/IRB has carefully studied this project's **Research Plan/Project Summary** and all the required forms are included. My signature indicates approval of the **Research Plan/Project Summary** before the student begins experimentation.

---

SRC/IRB Chair's Printed

---

Signature

---

Date of Approval (mm/dd/yy)  
(Must be prior to experimentation.)

OR

**b. Required for research conducted at all Regulated Research Institutions with no prior fair SRC/IRB approval.**

This project was conducted at a regulated research institution (**not home or high school, etc.**), was reviewed and approved by the proper institutional board before experimentation and complies with the Intel ISEF Rules. **Attach (1C) and any required institutional approvals** (e.g. IACUC, IRB).

---

SRC Chair's Printed

---

Signature

---

Date of Approval (mm/dd/yy)

### 6. Final Intel ISEF Affiliated Fair SRC Approval (Required for ALL Projects)

#### SRC Approval After Experimentation and Before Competition at Regional/State/National Fair

I certify that this project adheres to the approved **Research Plan/Project Summary** and complies with all Intel ISEF Rules.

---

Regional SRC Chair's Printed Name

---

Signature

---

Date of Approval (mm/dd/yy)

---

State/National SRC Chair's Printed Name  
(where applicable)

---

Signature

---

Date of Approval (mm/dd/yy)

# Regulated Research Institutional/Industrial Setting Form (1C)

This form must be completed AFTER experimentation by the adult supervising the student research conducted in a regulated research institution, industrial setting or any work site other than home, school or field.

Student's Name(s) \_\_\_\_\_ Title of Project \_\_\_\_\_

## To be completed by the Supervising Adult in the Setting (NOT the Student(s)) after experimentation:

(Responses must be on the form as it is required to be displayed at student's project booth; please do not print double-sided.)

The student(s) conducted research at my work site:

6. Did you or your proxy (e.g. graduate student, postdoc, employee) mentor or provide substantial guidance to the student researcher?

Yes  No

a. If no, describe your and/or your institution's role with the student researcher and his/her project (e.g. supervised use of equipment on site without ongoing mentorship and sign below.

b. If yes, complete questions 2–5.

7. Is the student's research project a subset of your ongoing research or work?

Yes  No

Use questions 3, 4 and 5 to detail how the student's project was similar and/or different from ongoing research or work at your site.

8. Describe the independence and creativity with which the student:

a. developed the hypotheses or engineering goals for the research project

b. designed the methodology for his/her research project

c. analyzed and interpreted data

(Continued on next page)

## Regulated Research Institutional/Industrial Setting Form (1C) Continued

Student's Name(s) \_\_\_\_\_

9. Detail the student's role in conducting the research (e.g. data collection, specific procedures performed). Differentiate what the student observed and what the student actually did.

10. Did the student(s) work on the project as part of a group?

If yes, how many individuals were in the group and who were they (e.g. high school students, graduate students, faculty, professional researchers)?

Yes       No

I attest that the student has conducted the work as indicated above and that any required review and approval by institutional regulatory board (IRB/IACUC/IBC) has been obtained. Copies are attached if applicable.

I further acknowledge that the student will be presenting this work publicly in competition and I have communicated with the student research regarding any requirements for my review and/or restrictions of what is publicized.

Supervising Adult's Printed Name

Signature

Title

Institution

Date Signed (must be after experimentation) (mm/dd/yy)

Address

Email/Phone

## Qualified Scientist Form (2)

May be required for research involving human participants, vertebrate animals, potentially hazardous biological agents, and hazardous substances and devices. Must be completed and signed before the start of student experimentation.

Student's Name(s) \_\_\_\_\_ Title of Project \_\_\_\_\_

### To be completed by the Qualified Scientist:

Scientist Name: \_\_\_\_\_

Educational Background: \_\_\_\_\_ Degree(s): \_\_\_\_\_

Experience/Training as relates to the student's area of research: \_\_\_\_\_

Position: \_\_\_\_\_ Institution: \_\_\_\_\_

Address: \_\_\_\_\_ Email/Phone: \_\_\_\_\_

1) Have you reviewed the Intel ISEF rules relevant to this project?  Yes  No

- a. Human participants
- b. Vertebrate animals
- c. Potentially hazardous biological agents (microorganisms, rDNA and tissues, including blood and blood products)
- d. Hazardous substances and devices

6. Will any of the following be used?

- Yes  No
- Yes  No
- Yes  No
- Yes  No

7. Will this study be a sub-set of a larger study?  Yes  No

8. Will you directly supervise the student?  Yes  No

a. If no, who will directly supervise and serve as the Designated Supervisor? \_\_\_\_\_

b. Experience/Training of the Designated Supervisor: \_\_\_\_\_

### To be completed by the Qualified Scientist:

I certify that I have reviewed and approved the Research Plan/Project Summary prior to the start of the experimentation. If the student or Designated Supervisor is not trained in the necessary procedures, I will ensure her/his training. I will provide advice and supervision during the research. I have a working knowledge of the techniques to be used by the student in the Research Plan/Project Summary. I understand that a Designated Supervisor is required when the student is not conducting experimentation under my direct supervision.

Qualified Scientist's Printed Name \_\_\_\_\_

Signature \_\_\_\_\_ Date of Approval (mm/dd/yy) \_\_\_\_\_

### To be completed by the Designated Supervisor when the Qualified Scientist cannot directly supervise.

I certify that I have reviewed the Research Plan/Project Summary and have been trained in the techniques to be used by this student,

Designated Supervisor's Printed Name \_\_\_\_\_

Signature \_\_\_\_\_ Date of Approval (mm/dd/yy) \_\_\_\_\_

Phone \_\_\_\_\_ Email \_\_\_\_\_

## **Risk Assessment Form (3)**

**Must be completed before experimentation.**

Student's Name(s) \_\_\_\_\_

Title of Project \_\_\_\_\_

**To be completed by the Student Researcher(s) in collaboration with Designated Supervisor/Qualified Scientist:** (All questions must be answered; additional page(s) may be attached.)

6. List all hazardous chemicals, activities, or devices that will be used; identify microorganisms exempt from pre-approval (see Potentially Hazardous Biological Agent rules).
  
7. Identify and assess the risks involved in this project.
  
8. Describe the safety precautions and procedures that will be used to reduce the risks.
  
9. Describe the disposal procedures that will be used (when applicable).
  
10. List the source(s) of safety information.

**To be completed and signed by the Designated Supervisor (or Qualified Scientist, when applicable):** I agree with the risk assessment and safety precautions and procedures described above. I certify that I have reviewed the Research Plan/Project Summary and will provide direct supervision.

Designated Supervisor's Printed Name \_\_\_\_\_

Signature \_\_\_\_\_

Date of Review (mm/dd/yy) \_\_\_\_\_

Position & Institution \_\_\_\_\_

Phone or email contact information \_\_\_\_\_

Experience/Training as relates to the student's area of research \_\_\_\_\_



# Human Informed Consent Form

**Instructions to the Student Researcher(s):** An informed consent/assent/permission form should be developed in consultation with the Adult Sponsor, Designated Supervisor or Qualified Scientist.

This form is used to provide information to the research participant (or parent/guardian) and to document written informed consent, minor assent, and/or parental permission.

- When written documentation is required, the researcher keeps the original, signed form.
- Students may use this sample form or may copy ALL elements of it into a new document.

If the form is serving to document parental permission, a copy of any survey or questionnaire must be attached.

Student Researcher(s): \_\_\_\_\_

Title of Project: \_\_\_\_\_

I am asking for your voluntary participation in my science fair project. Please read the following information about the project. If you would like to participate, please sign in the appropriate area below.

Purpose of the project:

If you participate, you will be asked to:

Time required for participation:

Potential Risks of Study:

Benefits:

How confidentiality will be maintained:

If you have any questions about this study, feel free to contact:

Adult Sponsor/QS/DS: \_\_\_\_\_ Phone/email: \_\_\_\_\_

## Voluntary Participation:

Participation in this study is completely voluntary. If you decide not to participate there will not be negative consequences. Please be aware that if you decide to participate, you may stop participating at any time and you may decide not to answer any specific question.

By signing this form I am attesting that I have read and understand the information above and I freely give my consent/assent to participate or permission for my child to participate.

## Adult Informed Consent or Minor Assent

Date Reviewed & Signed:  
(mm/dd/yy)

Research Participant Printed Name:

Signature:

## Parental/Guardian Permission (if applicable)

Date Reviewed & Signed:  
(mm/dd/yy)

Parent/Guardian Printed Name:

Signature:

# Vertebrate Animal Form (5A)

Required for all research involving vertebrate animals that is conducted in a school/home/field research site.  
(SRC approval required before experimentation.)

Student's Name(s) \_\_\_\_\_

Title of Project \_\_\_\_\_

## To be completed by Student Researcher:

6. Common name (or Genus, species) and number of animals used.
7. Describe completely the housing and husbandry to be provided. Include the cage/pen size, number of animals per cage, environment, bedding, type of food, frequency of food and water, how often animal is observed, etc. Add an additional page as necessary.
8. What will happen to the animals after experimentation?
9. Attach a copy of wildlife licenses or approval forms, as applicable
10. The Intel ISEF Vertebrate Animal Rules require that any death, illness or unexpected weight loss be investigated and documented by a letter from the qualified scientist, designated supervisor or a veterinarian. If applicable, attach this letter with this form when submitting your paperwork to the SRC prior to competition.

## To be completed by Local or Affiliate Fair Scientific Review Committee (SRC) BEFORE experimentation.

### Level of Supervision Required for agricultural, behavioral or nutritional studies:

Designated Supervisor REQUIRED. Please have applicable person sign below.

Veterinarian and Designated Supervisor REQUIRED. Please have applicable persons sign below.

Veterinarian, Designated Supervisor and Qualified Scientist REQUIRED. Please have applicable persons sign below and have the Qualified Scientist complete Form (2).

The SRC has carefully reviewed this study and finds it is an appropriate study that may be conducted in a non-regulated research site.

### Local or Affiliate Fair SRC Pre-Approval Signature:

\_\_\_\_\_  
SRC Chair Printed

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date of Approval (must be prior to experimentation) (mm/dd/yy)

### To be completed by Veterinarian:

I have reviewed this research and animal husbandry with the student before the start of experimentation.

I have approved the use and dosages of prescription drugs and/or nutritional supplements.

I will provide veterinary medical and nursing care in case of illness or emergency. (Fees may apply.)

\_\_\_\_\_  
Printed Name

\_\_\_\_\_  
Email/Phone

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date of Approval (mm/dd/yy)

### To be completed by Designated Supervisor or Qualified Scientist when applicable:

I have reviewed this research and animal husbandry with the student before the start of experimentation and I accept primary responsibility for the care and handling of the animals in this project.

I will directly supervise the experiment.

\_\_\_\_\_  
Printed Name

\_\_\_\_\_  
Email/Phone

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date of Approval (mm/dd/yy)

## Vertebrate Animal Form (5B)

Required for all research involving vertebrate animals that is conducted in at a Regulated Research Institution.

**IACUC approval required before experimentation. Form must be completed and signed after**

Student's Name(s) \_\_\_\_\_

Title of Project \_\_\_\_\_

Title and Protocol Number of IACUC Approved Project \_\_\_\_\_

### To be completed by Qualified Scientist or Principal Investigator:

7. Species of animals used: \_\_\_\_\_ Number of animals used: \_\_\_\_\_

8. Describe, in detail, the role of the student in this project: animal procedures and related equipment that were involved, oversight provided and safety precautions employed. (Attach extra pages if necessary.)

9. Was there any weight loss or death of any animal? If yes, attach a letter obtained from the qualified scientist, designated supervisor or a veterinarian documenting the situation and the results of the investigation.

10. Did the student's project also involve the use of tissues?

No  
 Yes; complete Forms 6A and 6B

11. What laboratory training, including dates, was provided to the student?

12. **Attach a copy of the Regulated Research Institution IACUC Approval.** A letter from the Qualified Scientist or Principal Investigator is not sufficient.

#### Qualified Scientist/Principal Investigator

Printed Name

Signature

Date (mm/dd/yy)

# Potentially Hazardous Biological Agents Risk Assessment Form (6A)

Required for research involving microorganisms, rDNA, fresh/frozen tissue (including primary cell lines, human and other primate established cell lines and tissue cultures), blood, blood products and body fluids.

SRC/IACUC/IBC approval required before experimentation.

Student's Name(s) \_\_\_\_\_

Title of Project \_\_\_\_\_

**To be completed by the QUALIFIED SCIENTIST/DESIGNATED SUPERVISOR in collaboration with the student researcher(s). All questions are applicable and must be answered; additional page(s) may be attached.**

## SECTION 1: PROJECT ASSESSMENT

6. Identify potentially hazardous biological agents to be used in this experiment. Include the source, quantity and the biosafety level risk group of each microorganism.
7. Describe the site of experimentation including the level of biological containment.
8. Describe the procedures that will be used to minimize risk (personal protective equipment, hood type, etc.).
9. What final biosafety level do you recommend for this project given the risk assessment you conducted?
10. Describe the method of disposal of all cultured materials and other potentially hazardous biological agents.

## SECTION 2: TRAINING

3. What training will the student receive for this project?
4. Experience/training of Designated Supervisor as it relates to the student's area of research (if applicable).

## SECTION 3: For ALL MICROORGANISMS, CELL LINES and TISSUES – To be completed by the QUALIFIED SCIENTIST or DESIGNATED SUPERVISOR - Check the appropriate box(es) below:

Experimentation on the microorganisms/cell lines/tissues used in this study will NOT be conducted at a Regulated Research Institution, but will be conducted at a (check one) \_\_\_\_\_ BSL-1 or \_\_\_\_\_ BSL-2 laboratory. This study has been reviewed by the local SRC and the procedures have been approved prior to experimentation.

Experimentation on the microorganisms/cell lines/tissues used in this study will be conducted at a Regulated Research Institution and was approved by the appropriate institutional board prior to experimentation; institutional approval forms are attached.

Origin of cell lines: \_\_\_\_\_ Date of IACUC/IBC approval \_\_\_\_\_

Experimentation on the microorganisms/cell lines/tissues used in this study will be conducted at a Regulated Research Institution, which does not require pre-approval for this type of study. The SRC has reviewed that the student received appropriate training and the project complies with Intel ISEF rules.

## CERTIFICATION – To be SIGNED by the QUALIFIED SCIENTIST or DESIGNATED SUPERVISOR

The QS/DS has seen this project's research plan and supporting documentation and acknowledges the accuracy of the information provided above. This study has been approved as a (check one)  BSL-1/  BSL-2 study, and will be conducted in an appropriate laboratory.

QS/DS Printed Name \_\_\_\_\_

Signature \_\_\_\_\_

Date of review (mm/dd/yy) \_\_\_\_\_

## SECTION 4: CERTIFICATION – To be completed by the LOCAL or AFFILIATED FAIR SRC

The SRC has seen this project's research plan and supporting documentation and acknowledges the accuracy of the information provided above.

SRC Printed \_\_\_\_\_

Signature \_\_\_\_\_

Date of review (mm/dd/yy) \_\_\_\_\_

## Human and Vertebrate Animal Tissue Form (6B)

Required for research involving fresh/frozen tissue (including primary cell lines, human and other primate established cell lines and tissue cultures), blood, blood products and body fluids. If the research involves living organisms please ensure that the proper human or animal forms are completed. **All projects using any tissue listed above must also complete Form 6A.**

Student's Name(s) \_\_\_\_\_

Title of Project \_\_\_\_\_

### To be completed by Student Researcher(s):

4. What vertebrate animal tissue will be used in this study? Check all that apply.

- Fresh or frozen tissue sample
- Fresh organ or other body part
- Blood
- Body fluids
- Primary cell/tissue cultures
- Human or other primate established cell lines

5. Where will the above tissue(s) be obtained. If using an established cell line include source and catalog number.

6. If the tissue will be obtained from a vertebrate animal study conducted at a research institution attach a copy of the IACUC certification with the name of the research institution, the title of the study, the IACUC approval number and a of IACUC approval.

### To be completed by the Qualified Scientist or Designated Supervisor:

- I verify that the student will work solely with organs, tissues, cultures or cells that will be supplied to him/her by myself or qualified personnel from the laboratory; and that if vertebrate animals were euthanized they were euthanized for a purpose other than the student's research.

#### AND/OR

- I certify that the blood, blood products, tissues or body fluids in this project will be handled in accordance with the standards and guidance set forth in U.S. Occupational Safety and Health Act, 29CFR, Subpart Z, 1910.1030 - Blood Borne Pathogens.

Printed Name \_\_\_\_\_

Signature \_\_\_\_\_

Date of Approval (mm/dd/yy)  
(Must be prior to experimentation.)

Title \_\_\_\_\_

Phone/Email \_\_\_\_\_

Institution \_\_\_\_\_

# Continuation/Research Progression Projects Form (7)

Required for projects that are a continuation/progression in the same field of study as a previous project.

*This form must be accompanied by the previous year's abstract and Research Plan/Project Summary.*

Student's Name(s) \_\_\_\_\_

**To be completed by Student Researcher:** List all components of the current project that make it new and different from previous research. The information must be on the form; use an additional form for 2016–2017 and earlier projects.

| Components                              | Current Research Project<br>(2018-2019) | Previous Research Project Year: |
|-----------------------------------------|-----------------------------------------|---------------------------------|
| 1. Title                                |                                         |                                 |
| 2. Change in goal/<br>purpose/objective |                                         |                                 |
| 3. Changes in<br>methodology            |                                         |                                 |
| 4. Variable studied                     |                                         |                                 |
| 5. Additional<br>changes                |                                         |                                 |

Attached are:

2017–2018 Abstract and Research Plan/Project Summary

I hereby certify that the above information is correct and that the current year Abstract & Certification and project display board properly reflect work done only in the current year.

\_\_\_\_\_  
Student's Printed Name(s)

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date of Signature (mm/dd/yy)

## NOTES



The Intel International Science and Engineering Fair encourages students to tackle challenging scientific questions and develop the skills needed to solve the problems of tomorrow.

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The Society for Science & the Public is a champion for science, dedicated to expanding scientific literacy, effective STEM education and scientific research.

Founded in 1921, we are a nonprofit 501(c)

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To learn more about the Intel International Science and Engineering Fair, visit:  
[student.societyforscience.org/intel-isef](http://student.societyforscience.org/intel-isef)

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