CENTRAL • UTAH STEM • FAIR

A program of the BYU-Public School Partnership

All students completing a science fair project in grades 9-12 in the Alpine, Charter School, Jordan, Nebo, Provo, or Wasatch District must complete this form, complying with safety and experimentation rules. Completion of this form does not guarantee advancement to the District Fair or Central Utah STEM Fair. School districts are required to submit student entry forms to Central Utah STEM Fair by March 1, 2018. **Student finalists selected to advance to Central Utah STEM Fair are required to register online at http://cusef.byu.edu by March 1, 2018**. For more information visit http://cusef.byu.edu

Senior Division (9-12 Grade)
Accompanying ISEF Forms Required

(One form required per project)

School Information:

School Name: _____ School District: _____

Supervising Teacher Name: _____ Supervising Teacher email: _____

Student Information:

Team Project: Yes ☐ No ☐ | Number of Participants: 1 ☐ 2 ☐ 3 ☐

Student 1 Grade Level: 9☐ 10☐ 11☐ 12☐

First Name: _____

Last Name: _____

Student 2 Grade Level: 9☐ 10☐ 11☐ 12☐

First Name: _____

Last Name: _____

Student 3 Grade Level: 9☐ 10☐ 11☐ 12☐

First Name: _____

Last Name: _____

Project Category: **Senior Division Category:** (Select the category that best fits your project)

- ☐ Animal & Plant Sciences
- ☐ Behavioral & Social Science
- ☐ Biology & Biochemistry
- ☐ Biomedical, Medicine, & Health Sciences
- ☐ Chemistry
- ☐ Earth & Environmental Science
- ☐ Energy: Chemical & Physical
- ☐ Engineering: Civil & Environmental
- ☐ Engineering: Electrical & Computer Science
- ☐ Engineering: Materials & Mechanical
- ☐ Physics, Astronomy, & Mathematics

Project Approval:

ALL 9-12 Students must complete the following included forms:

Checklist for Adult Sponsor (1)
Student Checklist (1A)
Written Research Plan
Approval Form (1B)

My project involves:

- ☐ Humans (Requires prior approval by an Institutional Review Board (IRB)
  Additional forms required see the following page, Checklist for Adult Sponsor (1) –forms can be found on the Central Utah STEM Fair or ISEF website, https://student.societyforscience.org/forms
- ☐ Vertebrate Animals (Requires prior approval)
  Additional forms required see the following page, Checklist for Adult Sponsor (1) –forms can be found on the Central Utah STEM Fair or ISEF website, https://student.societyforscience.org/forms
- ☐ Potentially Hazardous Biological Agents (Requires prior approval by SRC, IACUC or Institutional Biosafety Committee (IBC)
  Additional forms required see the following page, Checklist for Adult Sponsor (1) –forms can be found on the Central Utah STEM Fair or ISEF website, https://student.societyforscience.org/forms
- ☐ Hazardous Chemicals, Activities and Devices (No prior approval required)
  Additional forms required see the following page, Checklist for Adult Sponsor (1) –forms can be found on the Central Utah STEM Fair or ISEF website, https://student.societyforscience.org/forms
- ☐ None of these – **must complete forms listed above – (1), (1A), Research Plan, and form (1B)**

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
   - ☐ Vertebrate Animals
   - Potentially Hazardous Biological Agents
     - ☐ Microorganisms ☐ rDNA ☐ Tissues

5. ☐ Items to be completed for **ALL PROJECTS**
   - ☐ Adult Sponsor Checklist (1)
   - ☐ Student Checklist (1A)
   - ☐ Research Plan/Project Summary
   - ☐ 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 Institutional Biosafety Committee (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) (have up with potentially hazardous biological agents.)
- ☐ Qualified Scientist Form (2) (required for projects involving DEA-controlled substances or when applicable)

Adult Sponsor's Printed Name	Signature	Date of Review
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.**

REPLACE THIS PAGE WITH YOUR COMPLETE WRITTEN RESEARCH PLAN

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? 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.

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

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 Name _____

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 Name _____

Signature _____ 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 _____

State/National SRC Chair's Printed Name *(where applicable)* _____ Signature _____ Date of Approval _____

NOTE: If you are part of a team, this page must be completed by each student and their parent/guardian.

Display & Size Rules

Project display board can be **no larger** than 30" deep, 48" wide (side to side), and 108" tall.

A display board and journal are the ONLY items allowed for display.

Optional: A small electronic device may be used to display photos or videos for the judges. Video is limited to 1 minute and must be approved by fair personnel.

Central Utah STEM Fair, and the participating school districts, reserve the right to remove any additional items displayed with your project.

Do NOT bring items from your experiment -- take pictures of your experiment and include them on your board OR in your journal.

When creating your display board, do NOT include the following:

1. Living organisms, including plant material
2. Taxidermy specimens or parts
3. Preserved animals – includes embryos
4. Food (empty containers may be secured to the display)
5. Human or animal parts or body fluids
6. Soil, sand or waste samples
7. Laboratory/household chemicals – including water
8. Poisons, drugs, hazardous substances or devices
9. Sharp items – pipettes, glass, syringes, needles
10. Highly flammable display materials (NO matches)
11. Empty tanks that previously contained combustible liquids or gases
12. Batteries with open top cells
13. Photographs of people other than yourself or your family without their written permission (must have signatures from others).
14. Photographs or other visual presentations depicting vertebrate animals in surgical techniques, dissection, necropsies, other lab techniques, improper handling methods, improper housing conditions etc.

Student & Parent/Guardian Signatures

I certify that my science project complies with all of the experimental rules of the Central Utah STEM Fair. I understand that if I have not complied with these rules that my project could fail to qualify for competition. I have also read and I understand the display and safety rules. If I display any of the objects listed above, I am aware that they will be removed and returned at the conclusion of the science fair. If I am selected to participate at the Central Utah STEM Fair, I agree to set up my project **on the appointed day prior to my competition** and I will leave my project on display until the designated time for project tear down. I understand that **I must be present for judging during the designated competition date and time**.

Signature of Student _____ Signature of Parent/Guardian _____ Date _____

Teacher Signature

I have reviewed and approved this student's research plan prior to experimentation and certify that they will comply with all of the experimental rules of the Central Utah STEM Fair in compliance with the BYU-Public School Partnership and Governing Board.

_____

Teacher Signature Date

Central Utah STEM Approval

Completed by Central Utah STEM upon advancement to Fair

_____

Regional SRC Approval

_____

Date

Every effort will be made to protect exhibits from loss or damage. However, since the exhibition of projects is open to the public, the Central Utah STEM Committee, Brigham Young University or the BYU-Public School Partnership school districts cannot and will not accept any liability or responsibility of any nature for any theft, loss or damage to any exhibit or any other property of any SS STEM participant. Accordingly, it is recommended that each participant should secure and guard his/her project and take all prudent precautions to prevent any theft, loss or damage to their project.

For more information please visit our website http://cusef.byu.edu

The Central Utah STEM Fair is presented by the BYU David O. McKay School of Education and the BYU-Public School Partnership