Elementary & Junior Division (grades 5-8) Projects Only

The Arizona Science and Engineering Fair (AzSEF) follows all Intel International Science and Engineering Fair (ISEF) rules and guidelines, as an affiliated fair through the Society for Science and the Public.

All projects involving Human Subjects, Vertebrate Animals, and/or Potentially Hazardous Biological Agents MUST obtain project approval by an Institutional Review Board (IRB) or Scientific Review Committee (SRC) prior to starting the project. Failure to obtain prior approval will result in disqualification at AzSEF. If your school does not have an IRB or SRC contact azsefsrc@azscience.org for assistance.

In the lower grades, where the projects may be less complicated, teachers, parents, or family friends will often say that it is "OK for a project to proceed", especially if the test subject is a family pet or if the human subjects are family or friends. However, this is incorrect. All projects competing at any level involving humans or vertebrates must receive prior approval from an IRB or SRC.

All such projects, no matter how innocent they may appear, must be reviewed by an SRC/IRB committee, prior to starting the project. We have created a special SRC form that is easy to complete and will be quickly reviewed. For those who are unsure if they need project approval by the SRC or IRB contact azsefsrc@azscience.org. It is important that a school IRB or SRC comply with the Intel ISEF Rules & Guidelines, and also take into consideration any and all district policies regarding safety of the student, subjects, and property involved. Failure to comply with such guidelines will result in disqualification at AzSEF.

**Mold & Bacteria projects**

Mold - bread mold projects may be allowed at home ONLY if the study is stopped as soon as the mold is seen (i.e. as soon as mold starts to grow, the bread is thrown away).

Bacteria - research with unknown microorganisms (e.g. swabs from surfaces at school or home, shoes, mouths, etc.) can be treated as a Bio Safety Level (BSL)-1 study under the following conditions:

a) Organism is cultured in a plastic petri dish (or other standard non-breakable container) and sealed. Other acceptable containment includes two heavy-duty (2-ply) sealed bags.

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1 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 a fume 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.
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.

If a culture container with unknown microorganisms is opened for any purpose, (except for disinfection for disposal), it must be treated as a BSL-2 study and involve BSL-2 laboratory procedures. Please review Intel ISEF rules for additional information and specifics regarding the type of bacteria that can be grown in a BSL-1 setting, etc.

Additionally, the following types of studies are exempt from prior SRC review and require no additional forms:

- Studies involving baker’s yeast and brewer’s yeast, except in rDNA studies.
- Studies involving Lactobacillus, Bacillus thuringiensis, nitrogen-fixing, oil-eating bacteria, and algae-eating bacteria introduced into their natural environment. (Not exempt if cultured in a petri dish environment.)
- Studies of mushrooms and slime molds.
- Studies involving E. coli k-12 which are done at school and are not recombinant DNA studies.

The following information will need to be submitted as part of your form:

- **Written statement of the problem or question being addressed.** Explain why you are doing this study. This should include a justification statement and an explanation of why other alternatives are not used (especially if humans or animals are used).
- **Detailed description of the methods, procedures and safety processes to be used.** This must include chemical concentrations, drug doses, number of experiments to be run, etc.
- **Bibliography/References** should include at least three sources (i.e., peer review journal articles, books) from your library and Internet search.
  - o If you plan to use animals, an additional reference regarding animal care must be included.
  - o Web sites used as references should have a brief justification for why they are being considered as a trusted source. Crowd-sourced and community managed sites (e.g. Wikipedia, etc.) may not contain accurate or up-to-date information.

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2 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.
• **Signatures** of parent(s)/guardian(s), teacher, and/or sponsors of the student(s) conducting research. For teams with multiple team members, a signature is required from each student’s parent/guardian.

**What specific items do SRC members consider in reviewing a project?**

- Evidence of library/literary search (*Internet, Journals, Books, etc*)
- Evidence of proper supervision
- Use of accepted research techniques
- Completed forms, signatures and dates
- Evidence of search for alternatives to animal use
- Humane treatment of animals
- Compliance with rules and laws governing proper care and housing of animals
- Appropriate/safe handling and use of recombinant DNA, potentially pathogenic organisms, tissues and hazardous substances, devices and activities
- Adequate documentation of the substantial expansion of continuing projects

**How do I know if my project has been approved?**

- You will receive email confirmation that your project submission has been received.
- Project submissions that require additional information will receive email feedback from the AzSEF SRC.
- If no additional information is needed you will receive email feedback that your project proposal is approved and you are ready to begin experimentation.
- PLEASE ALLOW APPROXIMATELY 2 WEEKS FOR FEEDBACK.

**What if my project doesn’t involve Human Subjects, Vertebrate Animals, and/or Potentially Hazardous Biological Agents?**

- If your project involves another potentially hazardous material, or you are not sure if something you are doing is hazardous, please submit your project form to azsefsrc@azscience.org for SRC approval before research begins.
- If your project does not involve any of the areas of concern listed above, you may proceed with your project with proper scientist/teacher/adult approvals.

**What do I need to bring if I become an Arizona Science and Engineering Fair finalist?**

- All Junior Division students are required to bring completed, approved, and signed AzSEF forms with them at check-in, and will be required to display approved forms at their project to be eligible for judging.
- Elementary students are required to bring completed, approved, and signed forms or project plans (AzSEF, School, etc.) with them at check-in, and are encouraged to display approved forms at their project.

**Questions? Email** [azsefsrc@azscience.org](mailto:azsefsrc@azscience.org)
Teachers and Parents: Students in grades 5-8 must use this form if their project involves: Human Subjects, Vertebrate Animals, Hazardous materials and/or Potentially Hazardous Biological Agents. AzSEF SRC preapproval is required before experimentation can begin. Print this form and submit as scanned pdf or word document to azsefsrc@azscience.org or fax to (602) 716-2098.

Be sure that all school/district safety guidelines and protocols are followed before submitting to AzSEF SRC and before starting your project.

Student's Name
___________________________________________________Grade_____  
Student's Name
___________________________________________________Grade_____  
Student's Name
___________________________________________________Grade_____  
Adult working with Student(s): ______________________ Email: _________________
Teacher's Name: _________________________________ Email __________________
School: _________________________________________ School Phone: _____________
School Address, City, Zip:  ________________________________________________

Project Title:  ______________________________________________________________

This project involves:
___Human Subjects* (includes surveys, observations, ingestion, etc.)
___Vertebrate Animals  ___Hazardous Chemicals
___Potentially Hazardous Biological Agents  ___Other

*If human subjects are involved, please check that you have attached the following:
___Informed Consent Form  ___Copy of Survey (if applicable)
1. What problem are you studying? Why did you decide to investigate this problem?

2. How will you investigate this problem? List all the steps in detail (your methods or procedures; additional sheets may be added).
3. Why is this the **best** way to study the problem (versus NOT using humans, vertebrates, potentially hazardous biological pathogens, etc.)?

4. Tell us how you will stay safe and keep everyone/everything else safe.

5. Write down 2-3 references (articles, books, etc.) used to learn about this topic from your library and Internet search. If you plan to use animals, an additional reference regarding animal care must be included.

6. Where will the project be completed? Check one or more:

   ____Research Institution       ____School       ____Field       ____Home
By signature, I verify I have read and understand the rules for the Arizona Science and Engineering Fair, and am approving my student(s) to be involved with the proposed project, and will do my part to oversee the safety of the student(s) and all subjects (human or animal).

Parent or Guardian Signature __________________________________________ Date __________

Printed Name________________________________________________________________________

Teacher or Sponsor Signature __________________________________________ Date __________

Printed Name________________________________________________________________________

If team project, parents of other team members:

Parent or Guardian Signature __________________________________________ Date __________

Printed Name________________________________________________________________________

Parent or Guardian Signature __________________________________________ Date __________

Printed Name________________________________________________________________________

FOR AzSEF SRC/IRB OR SCHOOL IRB USE ONLY

Preapproval:  

___Not Approved, please revise using following comments:

___Conditionally Approved, please revise using following comments, but no resubmission is required:

___Approved

IRB/SRC Chair name: ____________________________ date: ________ email: ____________________________

IRB/SRC Chair Signature: ____________________________

IRB/SRC Secondary: ____________________________ date: ________ email: ____________________________

IRB/SRC Secondary Signature: ____________________________