

LA REGION 1 SCIENCE AND ENGINEERING FAIR

The 2024 Regional Fair will take place this year on February 27 – 29, 2024 at the Bossier Parish Civic Center. The Regional Fair welcomes students from Bossier, Caddo, DeSoto, Red River, and Webster Parishes to participate.

Fair Entry

- All projects entering our fair must have placed at a school science fair.
- All projects entering our fair must be registered by their school sponsor/teacher.
- All projects must submit an entry form (linked in Teacher Information) along with an individual participant entry fee of \$25. **Team projects will have a \$25 fee per student.
- All projects must complete and submit the appropriate ISEF Project Registrations Forms through our z-Fairs submission portal. [La Region 1 Science and Engineering Fair](#)
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Divisions

- A – Grades 4-5 (Elementary)
- B – Grades 6-8 (Middle)
- C – Grades 9-12 (Senior)

Schedule of Events:

Tuesday, February 27, 2024	Project Set Up**	2:00 – 6:00 pm
Wednesday, February 28, 2024	Judging	9:00 – 11:30 am
	Lunch	11:30 am – 12: 30 pm
	Judging	12:30 – 3:00 pm
	Public Display	4:30 – 6:30 pm
Friday, February 29, 2024	Public Display	8:30 – 10:00 am
	Awards Ceremony	10:00 – 11:00 am
	Project Pick Up	11:00 am – 12:00 pm

Teacher Information:

Welcome Teachers/Sponsors!

Teachers/mentors will need to create an account in our z-Fairs Site in order to access to all paperwork submitted by your students (if they select you as their teacher). It also allows us to contact you with updates and questions.

[La Region 1 Science and Engineering Fair](#)

To get started, you will first need to select the **"Create Account"** tab above to create your z-Fairs account. Make sure your school is listed. If your school is not already listed, select **"Register Another School"**. You will be asked for your school's contact information (address, phone number, and website) and whether or not the school will be paying for the student registrations. Once your school is listed you can proceed to the **"Teacher"** registration tab.

If you are already registered, please check to be sure that your school and contact information is accurate.

To review your students' paperwork, go to the "My Students" tab in your teacher account. Here you'll be able to see if any students had issues with specific paperwork. Under "Review", you'll be able to correct any paperwork.

Students entering the fair are required to submit the following:

- LA Region 1 Entry Form into the fair along with \$25 entry fee
- [2024 La Region 1 Entry Form-Fillable.pdf](#)
- Project ISEF Registration forms (students will create their own z-Fairs accounts)

You may send all of your student entry forms along with one cumulative registration fee check to:

LA Region I Science & Engineering Fair BPC: Natalie Hendrix
6220 East Texas St.
Bossier City, LA 71111

Project Registration

Project Registration paperwork will again be submitted through this z-Fairs platform.

On-line project registration opens **Dec. 15, 2023**

Deadline for entry forms is **Friday, February 2, 2024. All entry forms arriving after this date must be approved by the Director and will be charged an additional \$10.00 late fee. **

Number of Exhibits Allowed From Each School

- Division A (Elementary: grades 4-5) 10 projects and 2 team projects
or up to 12 individual projects
- Division B (Middle: grades 6-8) 20 projects and 5 team projects
or up to 25 individual projects
- Division C (Senior High: grades 9-12) 20 projects and 5 team projects
or up to 25 individual projects

If your school does not follow the above grade pattern, please contact the Fair Director to determine into which division to place your science fair student.

Schools may send more than the allotted number of projects if the Fair Director has been notified and space is available. Only 10 projects selected by the school sponsor may compete for the sweepstakes from each school. Fair Sponsor must make on the entry form if the participant is competing for sweepstakes award number of participants to compete for sweepstakes:

Number of participants to compete for Sweepstakes Awards:

- Each Elementary School - 10
- Each Middle School - 10
- Each Senior High School – 10

Team Projects

1. There is no longer a special category called Team. Each team project will compete within its category along with the individual projects in that category.
2. A team project can consist of only two members.
3. Each member of the team must keep a log of work that he/she contributes.

- 4.** Each high school and middle division school will be allowed to send up to five team projects in addition to the allowed number of individual projects or up to 25 individual projects.
- 5.** Each elementary school division school is allowed to send two team projects in addition to the individual projects or up to 12 individual projects.
- 6.** All ISEF rules, regulations, and paperwork apply to teams as they would for individual projects.
- 7.** Team projects from Division B and C, that place 1st or 2nd at the regional fair will be eligible for State competition.
- 8.** A senior team project will be eligible for International (ISEF) competition if it places first overall.

Student Information

Registration Information:

On-line project registration **opens Dec. 15, 2023.**

Registration will be completed using our z-Fairs site: [La Region 1 Science and Engineering Fair](#)

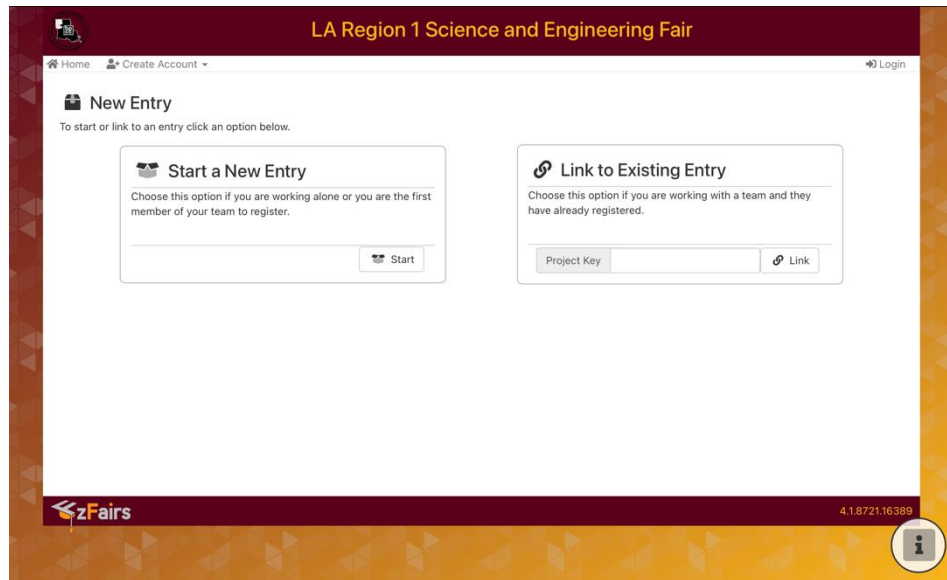
Registration Steps:

1. First, access our site using the link above and select your fair division.

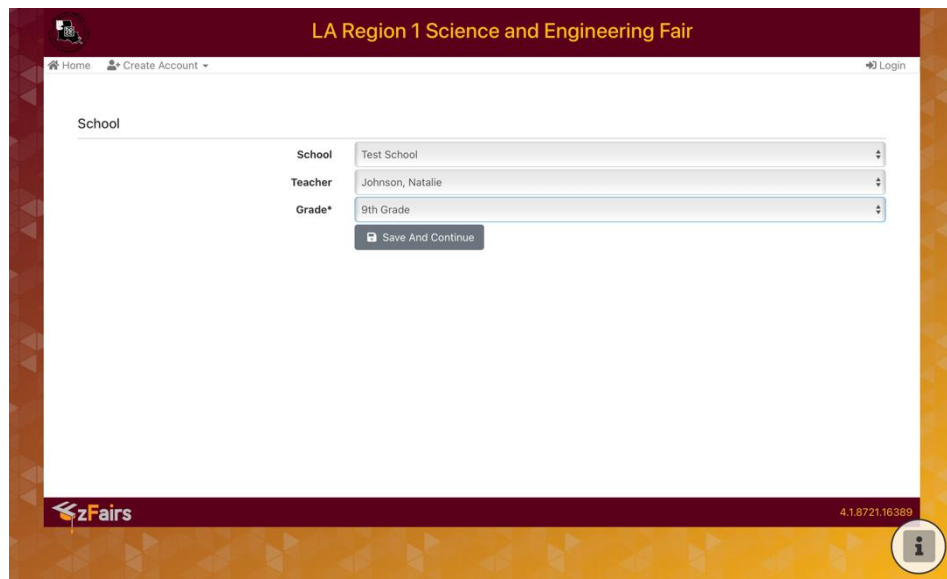


The screenshot shows the website for the LA Region 1 Science and Engineering Fair. The page has a dark red header with the site name. Below the header, there is a navigation bar with 'Home' and 'Create Account' tabs. The main content area is white and contains a welcome message, a logo for Louisiana Region 1 Science & Engineering, and registration dates: 'Registration opens: Dec. 15, 2023' and 'Registration deadline: Feb 1, 2024'. There is a 'Login' section with fields for 'Username' and 'Password', a 'Login' button, and social media links for Google, Windows, and Facebook. A 'Sign-Up Now' section has fields for 'First Name', 'Last Name', and 'Email', and a 'Create Account' button. The footer includes the 'zFairs' logo and the phone number '41.8721.16389'.

2. Next, select the **"Create Account"** tab above and then the **"Student listing"**. You will need to create your student login and complete the form for registration. You will be able to come back to your registration to add additional information and upload your forms and project documents.
3. Once your account is verified via your email, you will start the project entry .
 - A. Start a New Project Entry for your student OR link your student to their teammate. NOTE: The Student Leader of the team will need to be registered first and have a New Project Entry created. Once created, the entry will generate a Team Key to use to link the other team members.



- B. Make sure that the school, teacher, and grade is correct for the participant.



- C. Fill out the information for your student's project. This step includes Project Title, Category, Description, Project/Research Plan, and Project Abstract. NOTE: Ensure the Category is correct.

LA Region 1 Science and Engineering Fair

Home Create Account Login

School Entry

Entry Info

Title* Back to the Future: Time Machine Construction

Category* Engineering Technology: Statics and Dynamics

Studies that focus on the science and engineering that involve movement or structure. The movement will be a result of forces; the structure will be stable due to the equilibrium of forces.

Sub-Category select

Will this be a Team Project

Project Images Add File 0 of 6 files

Save & Continue

zFairs 4:1.8721.16389

D. Complete the ISEF Questionnaire for your registered student.

LA Region 1 Science and Engineering Fair

Home Create Account Login

School Entry ISEF Forms Questionnaire

Read and answer each of the following questions carefully. This will determine which ISEF forms will be added to your project dashboard. These forms will help you to provide the proper information for the SRC to review. NOTE: (Potentially) hazardous is defined as involving risk beyond those of normal everyday life.

This work is the continuation of a previous project or the progression of a previous research topic.

This research involves human participants for surveys, feedback, data collection, prototype testing, etc.

This project uses vertebrate animals for experimentation or observation.

Work on this project has occurred at a site other than home, school, or a field site (either virtually or in-person). (Ex: Regulated Research Institution, Industrial Setting, etc.)

This project includes the use of potentially hazardous biological agent: Microorganisms

This project uses (potentially) hazardous microorganisms or biological agents. (Ex: bacteria, fungi, parasites, viruses, viroids, prions, rDNA)

This project uses cells and/or tissue from humans or vertebrate animals. (Ex: fresh/ frozen tissue, primary cell lines, tissue cultures, blood, blood products, and/or body fluids)

This project includes the use of frozen tissue, primary cell cultures, blood, blood products, and/or body fluids. Note: student blood research allowed only if a medical professional handles the blood and provides you with the data.

This project uses (potentially) hazardous chemicals, activities, equipment, or devices. (Ex: lab grade chemicals, climbing onto the roof of a house, launching rockets, explosives, radiation, lasers, high voltage, etc.)

This project uses controlled/regulated substances and/or devices. (Ex: alcohol, tobacco, prescription drugs, drones, firearms, etc.)

Save & Continue

To access specific paperwork downloads, please visit:

<https://www.societyforscience.org/isef/forms/>

OR

[Isef.app](#)

4. Upload completed student forms in the paperwork tab.

NOTE: The main paperwork required for ALL projects are:

- Form 1: Checklist for Adult Sponsor
- Form 1A: Student Checklist Form
- 1B: Approval Form Official Abstract Form
- Research Plan – typed summary of project
- *Additional forms may be required depending on your project.

Please visit the [ISEF Rules Wizard Questionnaire](#) for the complete list of forms regarding your specific project

Display and Safety

Please follow ISEF Display and Safety Guidelines found at <https://www.societyforscience.org/isef/international-rules/display-safety-rules/>

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

- Project Exhibit Size—All Elementary, Middle, and Senior
 1. Project exhibit size is limited to 30 inches in depth on display tables; 48 inches in width and 108 inches measured from the floor level.
 2. The weight of the project should not exceed 80 pounds.
- Additional Display Requirements:
 1. Attach your original official abstract.
 2. Attach —Safety Committee Checklist for Rules and Safety*
 3. Attach —Scientific Review Committee Checklist*
 4. Display project during public visitation in order to be eligible for awards. Wednesday from 4:30 - 6:30 p.m. and Thursday from 8:30 a.m.-10:00 a.m. (Project only—student need not be present.)
**these forms are obtained during project set-up.*

Note: There will not be electricity provided for the Exhibits. Exhibitors should check battery life on all computers and electronics that will be used during the time of judging.

All projects displays must include:

- Research Plan
- Abstract of 250 words maximum

The following are NOT allowed at your displayed project

1. Living organisms, including plants
2. Soil, sand, rocks, cement, waste samples
3. Taxidermy specimens
4. Preserved vertebrate or invertebrate animals
5. Human or animal food
6. Human/animal parts or body fluids
7. Plant materials
8. All chemicals including water
9. All hazardous substances or devices
10. Items that have been in contact with hazardous chemicals
11. 3-D printers
12. Dry ice
13. Sharp items
14. Flames or highly flammable materials
15. Batteries with open-top cells or wet cells
16. Glass or glass objects
17. Any other apparatus deemed unsafe by SRC or Display and Safety Committee

Reminders on Pre-Approval projects:

All projects involving Human Subjects, Vertebrate Organisms, or Potentially Hazardous Biological Agents MUST get pre-approval by your institutional Review Board (IRB) and/or our regional Scientific Review Committee (SRC) before starting the project.

Please remember that projects in which microbes are grown (except baker's yeasts) MUST be conducted in a BSL-2 facility under the supervision of an individual with an advanced degree in microbiology or extensive knowledge and experience in microbiology.

RULES FOR SCHOOLS

What follows is a synopsis of the ISEF rules. For the full rulebook, go to [https:// student.societyforscience.org/international-rules-pre-college-research](https://student.societyforscience.org/international-rules-pre-college-research)

- Not sure what forms your need? For more information about the required forms, please use the [ISEF Forms Wizard](#).
1. All projects must have
 - Checklist for Adult Sponsor (1)
 - Student Checklist (1A)
 - Research Plan
 - Approval Form (1B)
 - Other ISEF forms as needed due to the nature of the project
 2. Abstract of 250 words maximum, 2 copies
 3. If team project, each member must submit Approval Form 1B

Adult Sponsor: teacher, parent, professor, or scientist in lab where student is working; should have close contact with student doing project.

Qualified Scientist: holds a doctoral/professional degree in student's area of research; Qualified Scientist and Adult Sponsor may be the same person.

Designated Supervisor: adult directly responsible for overseeing student experimentation.

Affiliated Fair SRC: minimum of 3 persons

- Biomedical scientist with earned doctoral degree
- An educator
- At least one other person (someone from LSU Med)
- Veterinarian is recommended

HUMAN PARTICIPANTS PROJECTS

Studies exempt from preapproval from IRB (institutional review board) or human participants' paperwork include:

1. Data review studies – data taken from publicly available sources
2. Behavioral observations in public places where
 - a. Researcher has no interaction with subjects

- b. Researcher does not manipulate the environment
- c. Researcher does not record any personal identifying data

Other studies: require IRB pre-approval and may require written consent from all subjects include:

1. Students participating in physical activities
2. Surveys, questionnaires, tests
3. Researcher is subject of research
4. Testing of researcher designed invention or concept
5. Projects in which subjects are not anonymous
6. Behavioral studies in which
 - a. Researcher has modified the environment
 - b. Study occurs in non-public place
 - c. Subjects are not anonymous

**Must complete Human Participation part of Research Plan and evaluate and minimize risks to subjects.

**Research must comply with FERPA and HIPPA laws.

**Researcher must have approval by IRB before beginning project

**Participants must give informed consent if 18 years of age or older and/or have parental permission if younger than 18 or unable to give consent. IRB determines if verbal or written consent is needed.

Student researcher may observe and collect data of medical procedures and medication administration under direct supervision of medical professional. Student researcher may NOT publish or display information in a report that identifies human participants directly or indirectly by identifiers without written consent of participants.

Forms Required:

1. Checklist for Adult Sponsor (1)
 2. Student Checklist (1A)
 3. Research Plan
 4. Approval Form (1B)
 5. Human Participants Form (4)
 6. Regulated Research Institution Form (1C)
 7. Qualified Scientist Form (2)
- } When applicable

Level of Risk Assessment for Human Participants

Physical: Greater than minimal risk includes:

- Exercise greater than in everyday life
- Ingestion, tasting, smelling, or application of substance – IRB determines risk level
- Exposure to potentially hazardous substance

Psychological: Greater than minimal risk includes:

- Activity that could result in emotional stress (surveys/questionnaires, viewing stimuli) [ex: sexual or physical abuse, divorce, low self-esteem, depression, anxiety, violent or disturbing video images]

Level of Risk Assessment for Human Participants

Risk Groups (IRB will determine if special protections are warranted)

1. Pregnant women
2. Developmentally delayed persons
3. People with diseases (cancer, asthma, diabetes, AIDS, dyslexia, CV disorders, psychiatric disorders, learning disorders)
4. Economically or educationally disadvantaged persons
5. Minors, prisoner, students receiving disability services

“Under FDA regulations, an IRB is an appropriately constituted group that has been formally designated to review and monitor biomedical research involving human subjects. In accordance with FDA regulations, an IRB has the authority to approve, require modifications in (to secure approval), or disapprove research. This group review serves an important role in the protection of the rights and welfare of human research subjects.

Appropriate steps are taken to protect the rights and welfare of humans participating as subjects in the research. To accomplish this purpose, IRBs use a group process to review research protocols and related materials (e.g., informed consent documents and investigator brochures) to ensure protection of the rights and welfare of human subjects of research.” [From FDA website](#)

VERTEBRATE ANIMAL RULES

Encourage students to use alternatives to animal research!!

Vertebrate animals include:

1. Live vertebrate embryos or fetuses
2. Tadpoles
3. Bird and reptile eggs within 3 days of hatching
4. All vertebrates (including fish) at hatching or birth (**Zebrafish embryos are not considered vertebrate animals until 7 days post-fertilization.)

All vertebrate animal studies must be reviewed and approved before experimentation. SRC must include a veterinarian.

Behavioral studies of animals are exempt from prior SRC approval if:

- There is no interaction with animals being observed, and
- No manipulation of the environment, and
- Study complies with all state and federal laws and regulations.

Research projects must not:

- o Cause animals pain or distress
- o Cause illness or unexpected weight loss
- o Cause animals to die
- o Use toxic substances (alcohol, acid rain, pesticides, heavy metals, etc)
- o Use conditioning with aversive stimuli, mother-infant separation or induced helplessness
- o Study pain
- o Predator/vertebrate prey studies
The study must be terminated immediately if and when any of the above conditions exist.

**Experimental design with greater than 18 hour food or fluid restriction must be justified. **Animals cannot be taken from or released into the wild without approval from wildlife officials. (Fish can be taken from wild only if released into the wild unharmed.)

**Animals must be properly cared for at all times. If illness or emergency occurs, veterinary care must be obtained. Student researcher must stop experimentation if death or unexpected weight loss (more than 15% control animal group) occurs.

**Livestock or fish raised for food using standard practices may be euthanized by qualified adult.

Forms required for Vertebrate Animal Projects:

1. Checklist for adult sponsor (1)
2. Student Checklist (1A)
3. Research Plan
4. Approval Form (1B)
5. Vertebrate Animal Form (5A) or 5B
6. Qualified Scientist Form (2) When applicable

Animal Studies Conducted in a Regulated Research Institution (research institution licensed to use animals)

- Institutional Animal Care and Use committee must approve project before it begins
- Research must be conducted under a principal investigator
- Student researchers cannot euthanize animals
- Animals must not be subjected to pain or distress without use of approved pain meds
- Research into diet or drugs of unknown effect is permitted until an animal shows signs of distress

Forms for animal studies in Regulated Research Institution:

In addition to above 6 forms,

1. Regulated Research Institution Form (1C)
2. PHBA Risk Assessment Form (6A) for tissues and body fluids
3. Human and Vertebrate Animal Tissue Form (6B) for tissues and body fluids

Potentially Hazardous Biological Agents (PHBA)

Includes:

- Microbes
- Recombinant DNA methods
- Human or animal tissues, blood, body fluids

Studies exempt from prior SRC approval (and need no additional forms):

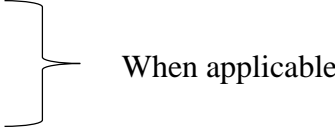
1. use of bakers' or brewers' yeast (no recombinant studies)
2. use of *Lactobacillus*, *Bacillus thuringensis*, nitrogen fixers, oil-eating bacteria, and algae-eating bacteria introduced into their natural environment but NOT cultured
3. mold growth on food if experiment terminates at first sign of mold
4. mushrooms and slime molds

5. use of *E. coli* K-12 in study done at school (no recombinant studies)

Studies exempt from prior SRC approval but requires Risk Assessment Form 3:

- a. use of protists, archaea, and similar microbes
- b. manure used for composting or fuel production – NOT being cultured
- c. use of coliform water test kits
- d. forensic studies involving decomposition of vertebrate animals
- e. study of microbial fuel cells

All other studies involving PHBA are not exempt from prior SRC approval and need these forms:

1. Checklist for Adult Sponsor (1)
 2. Student Checklist (1A)
 3. Research Plan
 4. Approval Form (1B)
 5. PHBA Risk Assessment Form (6A)
 6. Regulated Research Institution Form (1C)
 7. Qualified Scientist (2) ***
 8. Risk Assessment (3)
 9. Human and Vertebrate Animal Tissue Form (6B)
- 
- When applicable

***** Requires PhD in microbiology or MS with years of experience in area of student's research.**

Other Rules to Remember:

- Cannot culture microbes at home.
- Cannot genetically engineer bacteria with multiple antibiotic resistances.
- Studies of MRSA, VRE, KPC must be done in BSL-2 facility with prior SRC approval.
- Plant pathogens may be studied but not cultured at home; Do not release them into the home or garden environment.
- Culturing of human or animal wastes is a BSL-2 activity.
- Cannot use BSL-3 or BSL-4 organisms.

For Region 1 Science and Engineering Fair, all cultured unknown microbes are considered BSL-2 and such studies must be conducted in a BSL-2 facility and BSL-2 guidelines followed.

Projects Involving recombinant DNA (rDNA):

- If microbe is BSL-1, study can be conducted at school under supervision of Qualified Scientist.
- All studies with BSL-2 organisms must be done in Regulated Research Institution and approved prior to experimentation.

These studies are not treated as

PHBA:

- 1 Plant tissue
- 2 Plant and non-primate cell lines
- 3 Fresh or frozen meat, meat by-products, pasteurized milk, or eggs obtained from food stores, restaurants, or packing houses
- 4 Hooves, hair, nails, feathers
- 5 Teeth that have been sterilized
- 6 Fossilized tissue or specimens
- 7 Prepared fixed tissue

Other considerations:

- Human and non-human primate cell lines must be utilized in BSL-1 or BSL-2 labs
- Use of human or wild animal blood is a BSL-2 study and must follow OSHA, 29 CFR subpart Z regulations.
- Human breast milk and unpasteurized animal milk is BSL-2 study.
- Human body fluids where sample can be identified with specific person must have IRB review and approval and informed consent.

Project in which student uses his/her own body fluids (if not cultured):

- Is BSL-1
- May be done at home
- Must have IRB review if study is effect of experimental procedure on student researcher (ex: change of diet and blood sugar levels, etc)
- Must have SRC approval before experimentation.

Hazardous Chemicals, Activities, or Devices

Forms required:

1. Checklist for Adult Sponsor (1)
 2. Student Checklist (1A)
 3. Research Plan and Approval Form (1B)
 4. Regulated Research Institution Form (1C)
 5. Qualified Scientist Form (2)
- } When applicable

6. Risk Assessment Form (3)

Hazardous chemicals, activities, or devices studies include:

- Prescription drugs
- Alcohol and tobacco
- Firearms and explosives

**Students can not give prescription drugs to human participants.

**Veterinarian must supervise student administration of prescription drugs to vertebrate animals.

**Designated Supervisor is responsible for acquisition, use, and disposal of alcohol or tobacco used in study.

**Adults can produce wine or beer in home using process that meets TTB regulations. Students can design and conduct research involving legal production of wine or beer (under direct parental supervision).

**Studies are permitted in which minute quantities of ethanol are produced.

**Students can distill alcohol for fuel or other non-consumable use if study is

- a) Done at school, and
- b) A TTB permit and school permit have been obtained.

**Students may conduct a project using firearms and explosives when the study is done with direct supervision of a Designated Supervisor who complies with all state, local, and federal laws.

Hazardous Chemicals: The Risk Assessment includes the chemical's

- Toxicity, reactivity, flammability, and corrosiveness
- Refer to MSDS
- Include proper disposal of chemical

Hazardous Devices: Need Risk Assessment Form Examples of devices deemed hazardous include:

- NMR
- Ultra-centrifuge
- High vacuum equipment
- High temperature ovens and oil baths

Radiation: non-ionizing; Risk Assessment needed when student or subject exposure exceeds normal amount in everyday life

- Microwave waves
- UV rays

- Radiofrequency waves
- Infrared rays

Lasers: Classified I-IV based on safety

Radioisotopes: Exposure can not exceed 0.5 mrem/hr or 100 mrem/year

Not Allowed at Project:

1. Living organisms, including plants
2. Soil, sand, rocks, cement, waste samples
3. Taxidermy specimens
4. Preserved vertebrate or invertebrate animals
5. Human or animal food
6. Human/animal parts or body fluids
7. Plant materials
8. All chemicals including water
9. All hazardous substances or devices
10. Items that have been in contact with hazardous chemicals
11. 3-D printers
12. Dry ice
13. Sharp items
14. Flames or highly flammable materials
15. Batteries with open-top cells or wet cells
16. Glass or glass objects
17. Any other apparatus deemed unsafe by SRC or Display and Safety Committee