



# Los Angeles County Science & Engineering Fair

## Inspiring Student Discovery & Innovation

1107 Fair Oaks Ave. # 94, South Pasadena, CA 91030

www.lascifair.org

*This is a **fillable PDF**. Please **download** this document to your device and enter your responses in the given boxes. You do not need to complete the form in one sitting. Choose Save to save your progress. Once you complete the form, get it approved by your adult supervisor and site coordinator **BEFORE** you go online to complete the online pre-approval form. You can then copy and paste your responses in the appropriate sections of the online form.*

### Research Plan for Experiments with Tissue, Cell Lines, Organs, or Organ Parts

#### **GUIDELINES FOR TISSUE, CELL LINES, ORGANS OR ORGAN PARTS**

**Students planning research involving the use of tissue, cell lines, organs or organ parts must complete and obtain LACSEF Scientific Review Committee (SRC) approval of certification before starting experiments. Projects will not be accepted in the annual science and engineering fair without approval.**

The following are examples of precautions that must be taken to prevent injury to persons or the environment. No list could possibly foresee all possible hazards, so teachers, parents and students must carefully plan and follow safe procedures specific to each study. The methods and materials section of the project description must contain explicit and detailed statements as to how and where experiments will be conducted.

Human or non-human tissue samples are defined as fresh tissue, organs, human or animal parts, blood, blood products, teeth, cell(s) and established cell lines and tissue cultures, body fluids (i.e. saliva, tears, urine.)

1. Students may conduct research on **human blood**, blood products or other body fluids only if tissues are handled in accordance with standards and guidelines set forth in the [OSHA Laboratory Safety Guidance booklet](#) under the supervision of a qualified scientist..
2. Human blood and blood products (including Student Researcher's own blood) must be documented by a research institution or certified blood test as free of Human Immunodeficiency Virus (HIV) and Hepatitis A, B and C antibodies and antigens prior to the student receiving the tissue. Teeth shall be sterilized and certified free of blood and blood products.
3. When live or preserved tissue samples or parts of human or vertebrate animals are obtained by the student from an institution or Biomedical Scientist, an online verification statement by the adult providing the tissues is required. Students may not be involved in the direct acquisition of these samples from living human or vertebrate animals. Animals may not be sacrificed solely to obtain tissue samples. **Plant tissue, cut hair samples,**

**tissue samples, etc. obtained from commercial businesses, food stores, restaurants, or packinghouses DO NOT NEED TO BE APPROVED.**

4. All bodily fluids shall be treated in the same manner as pathogenic or potentially pathogenic agents as defined in [Biosafety in Microbiological and Biomedical Laboratories](#) (BMBL) published by CDC-NIH.
5. Student researchers who collect specimens of body fluids from human subjects are also required to fill out a Human Subject Research Form (below). Senior category participants also need to complete ISEF Certification Forms [6A](#) and [6B](#).
6. All projects must conform to the [California Education Code Title 2, Division 2, Part 28, Chapter 4, Article 5, 51540](#), the Humane Treatment of Animals.
7. Any project involving human or non-human tissue samples shall have a Research Plan that includes the objectives and goals for the project and a list of the tissues, organs or parts involved in the experiment. The Research Plan shall describe fully the methods and techniques involved in the project including the procurement and disposition of all proposed tissue samples. The Research Plan shall also include the source for the tissue samples, genus, species and common name. The Research Plan shall indicate the date of sample acquisition and be certified by the person providing the tissue sample that the student was not involved in the direct acquisition of the samples from living human or vertebrate animals.
8. The student and Designated Adult Supervisor may consult with the Biomedical Scientist to obtain detailed instructions and guidance in the techniques to be used by the student under the direct continuous supervision of the Designated Adult Supervisor (for research not conducted in the Biomedical Scientist's laboratory). In this instance, the Designated Adult Supervisor will be required to certify the research plan, in writing, jointly with the Biomedical Scientist. The Biomedical Scientist or Designated Adult Supervisor must be in the same locality as the student for the length of the experimental work. A project started in one city may not be continued in another unless an alternate Designated Adult Supervisor, approved by the Biomedical Scientist prior to the continuation of the experimental work, agrees to supervise the project.
9. Arrangements must be made to assure that any proposed procedure is safe before any project proposal is approved. Whenever specialized safety equipment and/or facilities are necessary for a procedure, arrangements must be made in advance. Please contact the LACSEF SRC for questions or assistance at [Pre-approval@lascifair.org](mailto:Pre-approval@lascifair.org)

|                    |  |
|--------------------|--|
| Student Name       |  |
| School             |  |
| Email (non-school) |  |

I certify that I have read and understand the guidelines for tissue line research and safety Precautions as outlined in the [LACSEF Rules and Regulations](#) (check box)

In addition to this plan, I have also completed the following research plan(s) for this project (check all that apply).

Hazardous Material

Human Subject

Microbes

Vertebrates

No other research plan was submitted

**Project Title:**

- Title must be limited to 150 characters (including spaces)

**Problem**

- State in the form of a question

**Objective(s)**

- State what the goal for the project is
- Explain why is it important

## Hypothesis

## Number of Project Team Members

- This refers to the number of students conducting the project, not the number of test subjects.
- There is a maximum number of three students allowed on a project team.

## Tissue and/or Cell Line Description and Source

Describe the type of tissue, cell line, organ or organ parts involved with the experiment. Human or nonhuman tissue samples are defined as fresh tissue, organs, human or animal parts, blood, blood products (including Blood Agar), teeth, cell(s), established cell lines and tissue cultures, Spherical Nucleic Acid (SNA) source material, and body fluids (i.e. saliva, tears, urine) Describe your source exactly (ex: digestive tissue from a crab).

## Animal Species Used:

- Plant tissue, cut hair samples, tissue samples, etc. obtained from commercial businesses, food stores, restaurants, or packinghouses do not need pre approval.
- If using human tissue from somebody other than yourself, you will need to also submit a Human Consent form found at the end of this document.
- If non-human, provide the species or common name of the animal.

## Source

- Animals may not be sacrificed solely to obtain tissue samples.
- When live or preserved tissue samples or parts of human or vertebrate animals are obtained by the student, from an institution or Biomedical Scientists, an online verification by the adult providing the tissues is required.

- Student researchers who collect specimens of body fluids from human subjects are also required to fill out a Human Subject Research Form (below). Senior category participants also need to complete ISEF Certification Forms [6A](#) and [6B](#).
- Student researchers who collect specimens of body fluids from human subjects are also required to fill out a Human Consent form that is found at the end of this document.
- Describe the source for the tissue, cell line, organ or organ parts.
- Identify exactly where you are getting the tissue or cell line.

**Collection Procedure**

- Students may not be involved in the direct acquisition of these samples from living human or vertebrate animals.
- Describe how the tissue, cell line, organ, or organ parts will be collected.
- Describe the procedure in detail.

**Experimental Location**

- Name the location where the majority of the project will take place: both sampling and experimentation. Provide the name and the address.

**Reason**

- Explain the reason why you require these tissues for your project.
- Justify your need for these tissues or cell lines - how will your investigation add to scientific knowledge?

**Detailed Procedures****Student Procedures**

- Describe the procedures to be performed by the student.
- List the step-by-step procedures that the student alone will perform. The student and Designated Adult Supervisor may consult with a Biomedical Scientist to obtain detailed instructions and guidance in the techniques to be used by the student under the direct continuous supervision of the Designated Adult Supervisor (for research not conducted in the Biomedical Scientist's laboratory).

**Supervisor Procedures**

- Describe the procedures to be performed by the supervising scientist/adult supervisor.
- Include the procedures for acquiring samples from living human or vertebrate animals, anesthesia, surgery, specialized staining or preservation of material, etc.
- The Biomedical Scientist or Designated Adult Supervisor must be in the same locality as the student for the length of the experimental work.

**Disposal Methods**

- Describe the disposal method(s) to be used for any hazardous materials, in detail. Arrangements must be made to assure that any proposed disposal method is safe.
- List the SPECIFIC disposal method(s) in detail, including locations (provide name and address of the vendor). Whenever specialized safety equipment and/or facilities are necessary for a disposal method, arrangements must be made in advance.

## Safety Precautions

- Describe in detail all safety precautions and equipment you will be using.
- All body fluids shall be treated in the same manner as pathogenic or potentially pathogenic agents as defined in [Biosafety in Microbiological and Biomedical Laboratories](#) (BMBL), published by CDC-NIH and follow standard tissue, cell line, organ or organ parts research practices in the BMBL, and provide a copy of the institution's safety procedure, which should be emailed to [Pre-approval@lascifair.org](mailto:Pre-approval@lascifair.org) with the student's name and school written IN THE SUBJECT LINE.
- Research with known pathogenic or potentially pathogenic agents may NOT be conducted at home.
- Human blood and blood products (including Student Researcher's own blood) must be documented by a research institution or certified blood test as free of HIV and Hepatitis antibodies and antigens prior to the student receiving the tissue.
- Teeth shall be sterilized and certified free of blood and blood products.
- Student researchers who collect specimens of body fluids from human subjects are also required to fill out a Human Subject Research Form (below). Senior category participants also need to complete ISEF Certification Forms [6A](#) and [6B](#).

## COVID-19 Risks

Due to the special circumstances brought on by the COVID-19 pandemic, it is strongly recommended that ALL students include in their risk assessment how they will mitigate the spread of the disease while conducting their experiment. Such mitigations may be found at: <https://www.societyforscience.org/isef/covid-policy/>



**Bibliographic References**

- Provide bibliographic references for your project.
- References should be written in APA format
- At least one reference must be from a source other than the internet.
- Junior Division projects require at least three references.
- Senior Division projects require five references.

Reference 1

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Reference 2

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Reference 3

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Reference 4

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Reference 5

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**Certification References**

Please provide the email addresses for the people who will be serving in the following roles in your experiment. An email will be sent to each address with a link for the person to certify your project. You can see what [qualifications](#) each person needs on our website.

| <b>Teacher/Advisor</b> |  |
|------------------------|--|
| Name                   |  |
| Email Address          |  |
| Qualifications         |  |

| Biomedical Scientist |  |
|----------------------|--|
| Name                 |  |
| Email Address        |  |
| Qualifications       |  |

| Tissue Provider |  |
|-----------------|--|
| Name            |  |
| Email Address   |  |

| Designated Adult Supervisor |  |
|-----------------------------|--|
| Name                        |  |
| Email Address               |  |
| Qualifications              |  |

By checking this box, I certify that the experimental procedures used in this project follow the rules and regulations of the LACSEF. I also certify that the procedure followed will ensure that neither the procedures nor the materials constitute any known danger and that all microorganisms, pathogenic or non-pathogenic, will be handled and disposed of as if pathogenic. I understand that this form must be approved and signed by all parties BEFORE the project can begin, and I will comply with all regulations.

**If your project involves humans in any way, you need to complete the Human Subjects Form [at this link](#):**