LA County Science & Engineering Fair

**In-person Fair** Sun., 3/12/2023 and Mon., 3/13/2023 at the **Shrine Expo Hall**

**Virtual Awards Ceremony:** exact March date to be announced

Longest running Science Fair in the West!
Overview of Padlet

• A creative space containing links/downloadable resources for the LA Science & Engineering Fair
  ◦ https://padlet.com/afmaben/403y08fvsedq
Why Do Science/Engineering Fairs?

- Students use **Open-ended Inquiry**
  - Students decide *what* to investigate, *how* to investigate it, *how* to interpret the results they generate and form conclusions or find solutions

- Incorporates most **NGSS SEPs**

- Enhances **collaboration/teamwork**
  - an NGSS instructional shift

- Uses higher-level **communication/presentation skills**
  - Develops confidence

- Fosters a **spirit of scientific inquiry**
Begins with a School Fair

LA County Science & Engineering Fair

Top 13 projects per school can register
Only 3 may be team projects
State Science Fair

Top 1st, 2nd & some 3rd in category per County Fair can enter

International Science & Engineering Fair

- Top 2-7 student projects in the Sr. Division may be selected for international competition!
Choosing a Topic

- Projects should be **student driven**.

- Project ideas *should come from the students*, and the project should be driven by them.

- **Parents** should use their best judgment and provide some guidance, but it is important that **students** consider the project their own.
Choosing a Topic

Step 1 *Library/Online Research*
- Make a list of 5 things that seem interesting to you

Step 2 - Pick a Topic That Matches Your Interests
- NEVER have someone pick it for you! It will seem like work
Choosing a Topic

• Step 3 - **Narrow your topic** so that it involves:
  
  – *Experimentation* **or** *Engineering Design* **or** *Observational Comparisons* **AND**
  
  – *Data collection*

• Should be **specific** enough to make into a problem & a research study
CAUTION!

• Avoid topics that are **too general**: they cannot be made into an experiment

• Instead, make general ideas **more specific**
  (Ex: solving the Ozone hole → compare sunscreens/UV damage)

• Avoid topics that require **unavailable resources for experimentation**
  (Ex: projects that need a cyclotron)
CAUTION!

- Avoid projects that require **too much time**
  - Look at your **overall schedule**, pick a topic that’s **reasonable**

- **Ex:** Reforestation study after fires (takes years) to plant succession on burned/bare ground (3 months)
Still Struggling?

- **Ask the student:** “*What is your passion outside of school? What would you like to do if you had a whole day to do anything you like?*” (sports? video games? sleep? travel?)
  - Ask questions to help students imagine a project idea based on their interests
  - Together, **brainstorm** testable designs
  - Check out “Choosing a Topic-Examples” [https://tinyurl.com/4v5etpvk](https://tinyurl.com/4v5etpvk)
  - *Put your student(s) at ease by being open and approachable* – use personal examples
  - Doing a project of **their own choosing** will seem like *play!*
Sample Timeline

Get an early start (Aug - Oct)
Most school fairs are in early February!

1. Decide on a project 1 week
2. Background research 1 week
3. Hypothesis/project design 1.5 weeks
4. Submit project proposal to teacher for approval before starting experimentation 1 week

Link to 1-page Google doc on Sample Timeline
5. Complete **Online Pre-approval Certification** before starting experimentation with:

- tissues/cell lines (**not at home**)
- human subjects
- live vertebrate animals
- hazardous materials
- microbes (**not at home**)

• Pre-Approval opens **Sept 12, 2022**

*First timers: avoid choosing a project that needs pre-approval(s).*
Sample Timeline

6. Experimentation 4 - 8 weeks
7. Results, analysis 1 - 2 weeks
8. Writing the project report 1 - 2 weeks
9. Create Project Display 2 - 3 days
Sharing Student Research

The LACSEF will be in person this year! We will also discuss how students will upload project elements and interview with judges. *We had 400+ projects judged online last year!*
Teacher’s Role - Facilitator

• To help students create a **workable, scientifically sound experimental design**

• Provide **asynchronous /class time** for students to work on projects

• To set a **reasonable timeline** for completion

• To encourage **creativity** / independent thinking

• To **periodically check** on student progress

• **Collaboratively read/revise** each student project proposal **BEFORE** LACSEF submission

• To arrange for a **public audience and peer review**

**Just like Problem-based Learning!**
Research Rules & Regulations

• All projects must present either an experiment exemplifying scientific practices or a project utilizing the engineering process.

• Detailed regulations for
  – project pre-approval
  – safety procedures
  – school/student entries
  – log books, documentation
  – display requirements &
  – judging can be found on Padlet for now

Rules and Regulations for the 2022-23 LACSEF
COVID Protocols

Due to the special circumstances brought on by the COVID-19 pandemic, LACSEF students conducting projects that use human participants should include any potential for exposure to COVID-19 as a potential risk if participating in the study and how the student researcher is going to mitigate that risk. Examples of such mitigations include (but are not limited to):

- Consider virtual or online options and avoid in-person projects.
- Requiring all participants to wear a face covering and maintain 6 feet social distance while participating in the study.
- Requiring participants to wash their hands before and after participating in the study.
- Disinfecting materials being used by participants.

ISEF Covid Protocols pages:
GROUP 1 Experimental Design (Science Projects): Pre-Experimentation

**SCIENTIFIC PROBLEM** (as a question)

**TOPICS TO RESEARCH** (things to know more about) DON’T ADDRESS because of time

1. 
2. 
3. 
4. 

**INDEPENDENT VARIABLE** The variable that you choose to test (time, pH, soil types, temps, materials, etc.)

Independent Variable I will be testing:

<table>
<thead>
<tr>
<th>Items/amounts/concentration of the Independent Variable to be tested</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ex: water at pH 3</td>
</tr>
</tbody>
</table>

**DEPENDENT VARIABLE** The variable that responds to changes in the experiment; what you will measure when you test your Independent Variable.

I will be measuring:

with the following units:

**HYPOTHESIS** I think (cause) because (effect)

**CONTROL GROUP** (will not be tested, used for comparison)

**VARIABLES THAT WILL BE CONTROLLED** List all the variables will stay the same during the experiment:

1. 
2. 
3. 
4. 

**PROCEDURES** Methods to conduct the experiment, repeatable (number of trials, sample size, time, etc.)

1. 
2. 
3. 
4. 
5. 

**MATERIALS NEEDED** (be specific)

1. 
2. 
3. 
4. 
5. 
6. 
7. 
8. 

**EXPERIMENTAL SET-UP** (describe or label/sketch your design)
Experimental Design (Science Projects): Pre-Experimentation

**SCIENTIFIC PROBLEM** Slide 3 (as a question)

**TOPICS TO RESEARCH** (things to know more about)
1. 
2. 
3. 
4.

**INDEPENDENT VARIABLE** Slide 6 The variable that you choose to test (time, pH, soil types, temps, materials, etc.)

Independent Variable I will be testing:

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Ex: water at pH 3</td>
<td>Ex: water at pH 5</td>
<td>Ex: water at pH 7</td>
<td>Ex: water at pH 9</td>
</tr>
</tbody>
</table>

**DEPENDENT VARIABLE** Slide 6 The variable that responds to changes in the experiment; what you will measure when you test your Independent Variable.

I will be measuring: with the following units:

**HYPOTHESIS** Slide 5 I think (cause) because (effect)

**CONTROL GROUP** Slide 7 (will not be tested, used for comparison)

**VARIABLES THAT WILL BE CONTROLLED** Slide 7 List all the variables will stay the same during the experiment:
1. 
2. 
3. 
4.

**PROCEDURES** Slides 8-9 Methods to conduct the experiment, repeatable (number of trials, sample size, time, etc.)

1. 
2. 
3. 
4. 
5. 
6. 

**MATERIALS NEEDED** (be specific)

1. 
2. 
3. 
4. 
5. 
6. 
7. 
8. 

**EXPERIMENTAL SET-UP** Slide 10 (describe or label/sketch your design)
Experimental Design (Engineering Projects): Pre-Experimentation

ENGINEERING DESIGN PROBLEM Slide 3 (state the problem that is to be solved)

ENGINEERING DESIGN CRITERIA/REQUIREMENTS Slide 5 (requirements that the solution of the problem must have)
1.  
2.  
3.  
4.  

ENGINEERING DESIGN CONSTRAINTS Slide 5 (time, money, materials that must or may not be used, etc.)
1.  
2.  
3.  
4.  

TOPICS TO RESEARCH (gather science, tech info, look for similar solutions) DON'T ADDRESS because of time
1.  
2.  
3.  
4.  

BRAINSTORM and list all POSSIBLE SOLUTIONS for the problem Slide 7
1.  
2.  
3.  
4.  

SELECT A SOLUTION TO BE TESTED Slide 7 (select a solution from the list above to design, build and test)
The Solution I will test:

DESCRIBE or DRAW AND LABEL a picture of your model or prototype to be tested Slide 10

PROCEDURES Slides 8-9 I will follow to build and test the model or prototype (step-by-step, repeatable)
1.  
2.  
3.  
4.  
5.  
6.  

MATERIALS (list the materials needed to build the model/prototype)
1.  
2.  
3.  
4.  
5.  
6.  
7.  
8.  

Comparing Design Processes

Modeling NGSS “Nature of Science!”
Ask a Question (science) or Define a Problem (engineering)

• A creative process

Ex: What is the effect of fertilizer on plant growth?

More Precise: “Which AMOUNT of fertilizer causes the greatest increase in plant growth?” is a narrower focus.

“Which wind turbine design will be the most efficient at the least cost?”
Conduct Background Research

• Before generating a hypothesis or proposed engineering solution:
  – Conduct background research to understand the scope of the study/design.
  – Use this research to determine both the dependent and independent variables of the study/design.
Science: Create Hypothesis

- **Must be testable**

Does it show **Cause & Effect**?

- If we do this... **then** this will happen...

- Ex: If 10 ml fertilizer per L of water is added to the bean plants, **then** the bean plants should grow taller than any other bean plants

- It is **objective**?

- Is it CLEAR?

Engineering: Criteria/Constraints

- **Important Details/Constraints** that your proposed solution must meet to succeed

  - **Compare** YOUR idea with existing similar designs

  - What are their **key features**?

  - Will the cost **justify** the invention or re-design?

  - Do you need to work in a team for **safety**?
Beginning Experimental Design

• Identify the **Independent Variable (IV)**
  – What is the variable that you will purposefully change during the project?
  – *Ex:* Amount of Fertilizer
  – *Ex:* different building materials

• Identify the **Dependent Variable (DV)**
  – What variable will be measured, in response changes in the IV?
  – *Ex:* Plant height, from base to highest leaf where it attaches to the stem.
  – *Ex:* average cost/efficiency
Science: Define the Groups

Name the **Control** Group
- What is the experimental group you will use for comparison?

*Ex: Plants with no fertilizer added*

Name the **Variables to Control**
- List everything that will be kept the same in the experiment

*Ex: Brand of fertilizer, level of light, species of plant, time & amount of watering, type of soil & container*

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Engineering: Propose Solutions

Brainstorm possible **solutions**
- Comparison of costs, weight, efficiency against similar designs

*Ex: water purifier at 1/2 the cost/weight*

Select a **solution to be tested**.

Name the **Variables to Control**
- List everything that will be kept the same during prototype testing

*Ex: amount of force, thickness of structural material, number of trials, length of study*
Design the Study

• Determine the **number of trials or group sample sizes** needed for validity (more is better)
  
  – **Ex:** 5 bean plants for each concentration, 5 bean plants for the control

  – **Ex:** 10 trials for efficiency for each of 5 different building insulation materials
Design the Study

• Write the Materials & Methods (Procedure)
  – Don’t number steps; use paragraph form
  – Make them everything clear & repeatable

• Use diagrams or a flow chart if needed
Draw Your Set-up

Design and **sketch or describe the experimental or prototype set-up**, with **labels**

*Set-up at beginning of experiment (each concentration group = 5 plants)*
Method of Data Collection

- Take samples **randomly**
- Make sure there is a way to **show patterns/trends** in the data

Use a Log Book

- **Bound notebook**
- A **diary**, detailing **all activities**
  - Kept **in ink**, with no erasures
  - **Cross out** errors with a single line
Conduct the Experiment

• **Receive approval**, conduct the experiment
  – Collect data in a table, with SI units.
  – Handle living specimens carefully
  – Don’t contaminate samples
  – Record errors

• **Data Analysis**
  – Show any calculations
  – Make a labeled, graph
  – show trends
Objectively Analyze Data

- **Common Statistics**
  - Mean (Average)
  - % Error
  - Standard Deviation
  - Chi Square
  - T-tests
  - Diversity Indices
  - *Any statistical tests appropriate to your grade level*

*See PPT on “Statistics for Research” for details*
Come to a Conclusion

- **Summarize results** and explain how the **independent variable** (the “cause”) affected the **dependent variable** (the “effect.”)
  - Include an **Error Analysis**: what happened and how it may have affected your results
- **Conclusion**
  - **Brief** summary of your findings
  - **Was your hypothesis validated by the data** or was your design a success?
  - **Why or why not?**
Refine and Retest

• If there is time, **improve on the design**

• **Re-test!**

Report the Findings

• **Share your research** with others through **peer review** and/or virtual judging interviews
How to Create Award-Winning Displays

Details on “Science Fair Displays” on Google Drive/Padlet
Mandatory Sections

- Abstract
- Introduction
- Materials & Methods
- Results
  - Data Tables
  - Graphs
  - Observations
- Discussion
- Conclusion (optional)
- Name/school on back

Displayed on table:
- Log Book/Journal
- Research Report w/References
- Acknowledgements (optional)
Have Your **Log Book** Present

- A "journal", detailing **all** activities: cross-out, don’t erase changes
- Include actual data
- Additional relevant materials

Include a **Formal Report**

- ALL reports should be **typed**
- Follow format and sequence

Log Books should be hand-written and 2-3 key pages scanned for 2022

Link to [Log Book description/details](#)

Link to [Writing Reports PPT](#)
Display Regulations

• **Display fits** within the prescribed space

• Uses a **title descriptive of your study**
  – Subtitles may be used for clarification

★ **NO** photos showing **human subject faces** other than the student researcher.

• **NO** live animals or plants on display

• **NO** tissues or microorganisms on display (*use pictures or a model instead*)

• **NO** photos which show procedures **hurtful to animals**.
Remember...

- No matter how fancy & eye-catching the display...

★ It can’t take the place of solid, well-documented and analyzed research!
Research Report Writing

Comprehensive Presentation on all aspects of the Formal Report, Graphing, Data Analysis, Citations and References are on the full “Research Report Writing” Google Slides and also on Padlet

*** A connection to Common Core ELA
STATISTICS for Research

Comprehensive Presentation on all aspects of statistical analysis for MS/HS projects are on the full “Statistics for Research” Google Slides, also on Padlet.

• Includes Statistical Analysis

• Appropriate statistics with slides for student practice
  – Mean (Average)
  – % Error
  – Standard Deviation
  – Chi Square
  – T-tests
  – Diversity Indices
  – Non-parametric stats

*** A connection to Common Core MATH
LA County Science & Engineering Fair

In-person Fair Sun., 3/12/2023 and Mon., 3/13/2023 at the Shrine Expo Hall

Virtual Awards Ceremony: exact March date to be announced

Comprehensive Presentation on all aspects of the fair itself is on Padlet: https://tinyurl.com/2jjfnh34
GOALS

• Opportunities to apply **creativity** and **critical thinking** to solve problems beyond the classroom.

• **Publicly recognize** achievements

• Opportunities for professional leaders to **network** with students & educators

• Promote **school-community cooperation** in developing scientific potential and communication skills
Non-Discrimination Policy

• The Los Angeles County Science and Engineering Fair is an equal opportunity for all events, regardless of age, ancestry, color, disability (mental and physical), gender, gender identity, sexual orientation, medical condition, national origin, race and religious creed. Judges & volunteers bear the responsibility to act as guardians and custodians of the students during their volunteering. Their familiarity with the students’ special sensitivities is imperative to the overall Science Fair effort to achieve an equal opportunity for all environment, free of discrimination.
Who Can Enter?

- Awards and scholarships in **36 categories** ranging from Biology to Engineering to Zoology

- Open to **Grade 6-12** students attending LA County Public, Charter or Private Schools or are **home-schooled**.

- Must compete in a **local school or district science fair** in order to qualify for regional competition **OR** be sponsored/mentored by a **research institution**
Team Projects

• No more than **THREE** people per team
  – Why does this *need* to be a *team* project?
  – Every team member should have a **unique contribution** to the project and be able to justify their participation.
Key Fair Regulations

1. Projects **MUST** be **PRE-SCREENED** by the teacher!

2. Projects involving **tissues/cell lines, microbes, human subjects, vertebrate animals, hazardous chemicals** must have **LACSEF online pre-approval**

3. Adhere to **all** federal, state, and local **laws**

4. Work of the entrant and **work of others** is clearly distinguished

5. A clear, concise **3 - 4 min video** explaining the project has to be uploaded for the **Judges to see** before interviewing.
Fair Categories

*** See LACSEF Project Category details PPT for more info
https://tinyurl.com/netr58pr

- 21 Junior Project categories
- 15 Senior Project categories
SR Science Fair Categories

- Animal Biology
- Animal Physiology
- Behavioral/Social Sciences
- Biochemistry & Molecular Chemistry
- Chemistry
- Earth/Space Science
- Ecology
- Engineering Applications
- Engineering Research
- Environmental Management
- Mathematical/Computer Science
- Microbiology
- Pharmacology
- Physics
- Plant Biology & Physiology
JR Science Fair Categories

- Animal Biology
- Animal Physiology
- Behavioral Social Science - Human
- Behavioral Social Science - Non-Human
- Biochemistry & Molecular Chemistry
- Chemistry - Applied
- Chemistry - General
- Earth/Space Science
- Ecology
- Engineering Applications
- Engineering Research
- Environmental Management
- Materials Science
- Mathematical/Computer Science
- Microbiology
- Pharmacology
- Physics - Aerodynamics & Hydrodynamics
- Physics - Electricity & Magnetism
- Physics - General
- Plant Biology & Physiology
- Product Science
ONLINE Registration

- Every LA County Middle School and High school receives a notice for entry to the LA County Science Fair in **August**.

- **To be a Site Coordinator**, you must be an adult designated by the site or district administrator, or a lab researcher at a sponsoring institution. When you enroll your school online, you will have to **include your position** at your school.

- **ONLINE Registration** for the **Site Science Fair Coordinator** and **School** or Sponsoring Institution opens **August 22, 2022** to **January 23, 2023**.

- **LACSEF Fee & Waiver form**
Before beginning, please **MAKE SURE TO CLICK ON** and **carefully read** the new Pre-Approval General Info [https://www.lascifair.org/pre-approval/pre-approval-general-info](https://www.lascifair.org/pre-approval/pre-approval-general-info) and the **sub-pages** on regulations for projects involving:

- **tissue/cell lines**
- **human subjects**
- **live vertebrate animals**
- **hazardous materials and/or**
- **Microbes**

**View** [PPT presentation](#) on the Pre-Approval process

**FAQs** **specifically targeted problem areas for approval**
The 4 Steps to Submitting a Pre-approval Proposal

1. Site Coordinator **enrolls school online** (opens Aug 22, 2022)

2. Student logs into **online registration** ([https://app.lascifair.org/](https://app.lascifair.org/)) and enters his/her information. *(Pre-approval opens Sept 12, 2022)*

3. Student **receives password** by email within 48 hrs.

4. Student **logs back** into online registration system and enters proposal
When in Doubt, Pre-approve!

• There is **nothing worse** than having a student try to register their project and find out that it needed pre-approval **AND IT’S REJECTED.**
  – The Pre-approval process *ends* before Student Registration *begins*. **There are no exceptions.**
  – Make sure that you and the students have carefully read all the pages on ALL 5 categories of pre-approval.
    • If it involves human subjects (a student cannot perform experiments/surveys on themselves), it needs pre-approval….period.
    • Hazardous materials can be iffy - be careful!
    • Alternatives can be experiments on plants or invertebrates or simple engineering.
• **WHEN IN DOUBT, SUBMIT A PRE-APPROVAL!!**
Once students have submitted a project for pre-approval, Site Coordinators and teachers need to keep track of the status of student submissions.

- You can see what has been submitted,
- what is awaiting verification from supervisors,
- what has been denied and pending resubmission,
- and what has been denied a second time.

You need to go into the student submissions to see what needs to be fixed so you can advise the student.

This helps prevent projects from being denied by LACSEF because students not fix their proposals.
For New Student Researchers

As a first-time participant, we suggest **you avoid projects that would require certification(s)**.

*Let’s discuss the following…*

- Work on a virtual human survey of a hot topic
- Design/build a new water filtration system
- Work with plankton and a hand lens
- A behavioral experiment with a pet at home
- Test the efficiency of insulation products
- Do surveys of wild bird behavior
- Compare organic, safe cleaning agents

*Let’s see an example of a [Certification Form for Humans](#)*
Research Plan for Submission

**Does NOT include results:** experimentation can continue until last day to upload digital components for judging

- **Objective/Problem/Hypothesis** *(include evidence of search for alternative to vertebrate animals)*
- **Materials:** *(detailed)*
- **Bibliographic References** *(a minimum of 3 references, not exclusively Internet)*:
- **Procedure/Research Techniques**
  - Provide a clear and detailed description/outline of proposed procedure, including equipment to be used, safety measures, and disposal of hazardous chemicals.
- **Risk Assessment:** detail any possible risks
- 2-3 more pages of information, digitally verified by return email from Supervising Adults
HAZARDOUS MATERIALS RESEARCH PLAN

To be completed by the Student Researcher in collaboration with Designated Supervisor/Qualified Scientist:

**Objective(s):**

**Problem:** (in the form of a question)

**Hypothesis:** (If applicable): (IF I do this... THEN this will happen...)

**Procedure/Experimental Techniques:**

**Hazardous Materials List:** Identify the hazardous chemicals, activities or devices that will be used, in detail.

**Hazardous Materials Source:** Describe the source for your materials. (Full detail is required.)

**Student Procedures:** Describe the procedures to be performed by the student.

**Supervisor Procedures:** Describe the procedures to be performed by supervising scientist/adult supervisor.

**Risks and Safety Precautions:**

**Risks:** Identify and assess the risks involved (for activities, devices or chemicals).

**Safety Precautions:** Describe the safety precautions to be taken during procedures *(be specific for each hazard involved).*

**Safety Information Sources:** List the source(s) of safety information.

**Disposal Methods:** Describe the disposal method(s) to be used for hazardous materials.

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Example:

Certification Online Template (both Jr/Sr)

Enter online registration webpage here

https://app.lascifair.org

Complete before going online to submit proposal
Senior Division Forms are same as Intel ISEF forms

Have to be brought to the fair, with signatures

ISEF Forms
Use these forms to document adherence to the International Rules
**Student Online Registration**

- Student online registration opens in **Dec 19, 2022** at:  
  [https://www.lascifair.org/student-project-registration/](https://www.lascifair.org/student-project-registration/)

- Site Science Fair Coordinators must submit online student verification information and **ADHERE TO ALL DEADLINES**.

- Site Science Fair Coordinators will be notified of approval/rejection of submitted Student Research Plans. **Check “Important Dates”** for specifics.
Student Online Registration

A 3 - 4 min video about your project, 2-3 key logbook pages and a PDF version of your research report must be uploaded to the LACSEF student registration site for the judges:

Detailed instructions for submission will be on the project registration site in January, 2023
Have students fill out all pages of the Google Slide “Scratch Sheet” also on Padlet and review the answers before entering online. (Site will be live Dec. 19, 2022)

Part 1 - Registering Your Information

To register, go to www.app.lascifair.org

1. Move cursor/mouse to “Click here to register a new account”—CLICK

2. Select “Student” from the pull-down menu; click CONTINUE

**REGISTER - STUDENT PROFILE INFORMATION:** This section must be completed by a student submitting an “Individual Project” entry and ALL MEMBERS of a “Team Project.” ALL MEMBERS OF THE TEAM MUST COME FROM THE SAME SCHOOL. A Site Coordinator must oversee the work his or her students do; this is not possible if a student attends another school.

3. **School:** Select your school from the pull-down menu
   
   (Be very careful and select the correct school name; check with your School Site Science Fair Coordinator as to the correct school name that is registered in the Science Fair database).

4. **Grade:** Type your grade level using the correct number (6, 7, 8, 9, 10, 11 or 12)
   Select your grade level

5. **First Name:** (Use appropriate upper and lower case letters when typing)

6. **Last Name:** (Use appropriate upper and lower case letters when typing)

7. **Address:** Type your complete HOME ADDRESS; include Apt. #, if appropriate

8. **City:** (Use appropriate upper and lower case letters when typing)
Notification

• Site Science Fair Coordinators will be notified of approval/rejection of submitted Student Research Plans.

  – Periodically check the website Dashboard and follow-up with your students to ensure all verifications and revisions are completed.
Monitoring Your Dashboard

- Once students have submitted a project for pre-approval, Site Coordinators and teachers **need to keep track of the status of student submissions.**
  - You can see what has been submitted,
  - what is **awaiting verification** from supervisors,
  - what has been **denied and pending resubmission,**
  - and what has been **denied a second time.**

- You need to go into the student submissions to **see what needs to be fixed** so you can advise the student.

- *This helps prevent projects from being denied by LACSEF because students not fix their proposals.*
General Fair Schedule

Day 1
Sun. March 12
• Registration & Set up
  ○ Interactive Exhibits
  ○ Public Open House

Day 2
Mon. March 13
• Interviews & Judging
  ○ Interactive Exhibits
  ○ Project Removal (immediately after judges release a group)

Day 3
Wed. March 15
• Special Awards Judging (Via Zoom, after school)
  ○ By appt only; students will be notified on Tues, March 14

Virtual Awards presentation
After Fair, date TBA
○ (YouTube Live - info will be on Website, Facebook)

Check https://www.lascifair.org for dates, locations and events.
The Day of the Fair

- Have **good directions** to the site
- Bring **money** for parking & food
- Arrive **early**
- Know where to **register**
The Day of the Fair

- Bring a **book or tablet** for waiting time
- Bring a **camera** to snap friends’ projects
On-Site Registration
Interviews and Judging

Details on Judging will be finalized by Jan, 2023

Download "Judging-Interviews LACSEF" in Google Drive

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**Procedure**

- Inside: filter paper, 12 mg of powder, & 1 more filter paper
- 20 trials per solution: 10 with the cups cleaned; 10 with the cups uncleaned
Interview Tips

- **Clothing**: Neat, preferably business style – it shows your respect for the judges.
Your Interview

- **Rehearse Your Presentation**
  - You will more composed if you are prepared.

- **Do your BEST!**
  - Be calm, confident and professional.
  - Know what you are talking about and you will do fine!!!
Judging Tips

• **Courtesey**: the judges will tell you when they are ready for you to begin. After your presentation, they may wish to see 3D Models or equipment you used.

• **Be Positive**
  – Be calm, confident and professional.
  – You’ve done the very best you could!

Download "Interview Tips & Tools" in Google Drive
First Impressions

- **Introduce** yourself to each judge but **in a pandemic**, **DO NOT shake hands**: nod to them and smile.

- **Courtesy**: If able, **stand** when judges come to your exhibit and remain standing until they leave.
What Judges Expect from Students

- **Enthusiasm!** An interview can be fun!
- **Pride** in your projects and accomplishments
- Give as much information as possible, **BUT**…
  - Be able to explain your projects clearly and concisely
- To be able answer appropriate to level and age
The Judges Will Want To Know:

• **How** was your project **topic selected**?

• Did you **receive help** and if so, how much?

• What has been **previously known** about the project’s general subject area?

• What would the you **do if there were additional time** to spend on the project?

• **What have you learned** through the investigation?

• If this project was continued, what would be **next step(s)**?
Judging Standards-Science

- **Creativity**
  - Originality, uniqueness of approach

- **Scientific Thought**
  - Depth of study and effort in using scientific procedures to solve a clearly defined problem

- **Thoroughness**
  - Study is complete within the scope of the problem.
Judging Standards - Science

• **Special skills**
  – Construction or equipment use; computational and design skills

• **Clarity**
  – Clearly explained orally and through the display.
  – Project notebook is well organized, neat and accurate.
  – Sources of ideas, data and assistance are clearly identified
Judging Standards-Engineering

• **Engineering/Math/Computer Creativity**
  – Concepts used ingeniously, new viewpoint or interpretation of results

• **Analytical Methods**
  – Depth of study and effort, clarity, refining

• **Presentation**
  – Good visuals, clear explanations

• **Background**
  – Appropriate literature search, special skills evident, detailed notebook
Judging Standards-Teams

• Team Aspects
  – Why is this a team project?
  – Do all understand objectives & outcome?
  – Unique contributions of team members?

• Good Science Aspects
  – Creativity, scientific thought, thoroughness, skill, clarity

• Research Notebook
• Quantitative Analysis
• Qualitative Analysis
Exhibit Hall Open to the Public

Student projects can be viewed after judging
Project Removal

- **Take down projects promptly** when judging and/or Open House are finished.
- **Students/Site Coordinators** will be notified when take-down will begin.
- **All projects must** be removed by **5:00 pm**
- **No storage space:** uncollected projects go in the **trash**
Virtual Awards Ceremony

Details to be announced in January, 2023:

Check the website and Padlet frequently!
Awards (Virtual 2023)

ALL students should plan to be present!

- Students compete for **first, second, third place** and **honorable mention medals**

- **Special awards** and scholarships provided by the business community.

- **First, second** and some **third place** winners **MAY** qualify to compete in the **California State Science Fair**.

- Decision of the judges is **FINAL**
International Science & Engineering Fair

• Top 2-7 student projects in the Senior Division may be selected for international competition!
Supporting Videos

Developed by Mr. Michael Horton, Asst. Principal, Western Center Academy, Hemet, CA

https://www.youtube.com/watch?v=-nlHdkp9Lpc

https://www.youtube.com/watch?v=aEM4HdJUzDs

https://www.youtube.com/watch?v=XGjII_S1VIM

https://www.youtube.com/watch?v=0YH7gnGoXaw