STEM FAIR

Science
Technology
Engineering &
Math

March 6, 2024

UC Merced

Winning Projects will advance to California State Science and Engineering Fair!

STEM
MERCED COUNTY

MERCED COUNTY
Office of Education
NURTURE • SERVE • LEAD
Steve M. Tietjen, Ed.D.
County Superintendent of Schools

Rules and Regulations

WHO CAN APPLY?

Individuals or Teams up to 3 members
Students in Grades 5-12

WHAT IS PROVIDED?

Rectangular Table
Electrical Power (on first come, first served basis, requested in advance)
Lunch (for project teams only, requested in advance)

REQUIREMENTS

PROJECT DATA SHEET

Project and Student Information
Special Needs/Requests
Due by February 16, 2024

ABSTRACT

Objective or Goal
Materials and Methods
Results
Conclusion
Abstract must be available for viewing with your project

SUMMARY AND QUESTIONS

Prepare an oral summary of the important points in your project. Judges and spectators may ask for your summary and it should be no longer than 60 seconds. Be prepared to answer questions about your project.

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Display Information

1. Display size limitations:

Maximum width	Maximum depth	Maximum height
4 feet (122 cm)	2.5 feet (76 cm)	6.5 feet (198 cm) (table) 9 feet (274 cm) (floor)

2.(a) Projects displayed on tables are the preferred standard. Projects which require floor access may utilize Fair tables for a portion of their display, but the entire display must still fit within the width and depth limitations specified above. Projects with floor displays may be placed out of numerical sequence and possibly away from other projects in the same subject category. (b) All projects must fit within these prescribed space limitations. This includes elements of the project that may extend or protrude. Displays which are admitted, but are later augmented to exceed the space limitations will be disqualified until brought into conformance. Using the aisle between projects as additional display space, even temporarily during interviews, is cause for disqualification.

3. Students must be present at their display during the judging period or the project will not be judged. For team projects, a minimum of one-half of the authors must be present before judging will be allowed.

4. The student's original laboratory notebook must be present for inspection during judging. However, it is advised that this notebook be on display only during the actual judging period.

5. Display Safety Concerns:

-All project displays must adhere to all laws for public safety. Lasers must be appropriately shielded. Projects must sustain their own weight.

-No hazardous materials may be exhibited at the project display. This includes, but is not limited to, acids, unsecured glassware, mercury (including glass thermometers), hazardous microbes, carcinogenic and radioactive materials, open flames, and unsealed foodstuffs which may attract pests. For these items, the substitution of illustrations or photographs is encouraged. Materials in violation of this rule will be marked and must be removed by the participant before judging will be allowed. The judgment of the Directors of Judging is the final authority on permissible materials. -The Merced County Science Fair will disqualify any project deemed unsafe.

6. Displays may not contain any living organism. This prohibition includes all animals, plants, and studied collections of microscopic life forms such as bacteria, fungi, and molds. The display of preserved animals is not permitted. Projects may not display photographs of procedures detrimental to the health and well being of vertebrate animals. Photographs of surgical procedures may not be exhibited.

7. Projects requesting electrical power will be provided first come, first served. You must bring your own UL approved three prong grounded extension cord. The Science Fair does not provide extension cords. No gas or water outlets are provided.

8. A project display at the County Science Fair need not be identical to the display at the School or District Fair. The display may be altered to improve the presentation or to incorporate the results of research subsequent to the School or District Fair.

9. All projects must clearly distinguish between the work of the student participant and the work of others. Students participating in a research opportunity in industry, a university, hospital, or institution other than their school, must display only their research. Such students must have the principal research director complete the Professional Research Opportunity Support form specifying the assistance received and the role and contributions of others in the project. A copy of this form must be submitted as part of the application. The original must be included in the project notebook at the project display for inspection by the judges.

10. Awards won in previous competitions may not be displayed or announced.

11. Participants are not permitted to distribute any items to the judges.

IMPORTANT: LOSS OR DAMAGE Valuable equipment, such as computers, may be part of the display only if the student participant accepts full responsibility. It is advised that valuable materials (e.g. computers, research notebook) be on display only during the actual judging period. The Merced County Office of Education/Merced County STEM Fair assumes no responsibility for loss or damage to any project or project part.

STEM CONTACT: Adrienne Nau, 209-381-5971 anau@mcoe.org
Events Contact: Stacie Arancibia, 209-381-5910 or sarancibia@mcoe.org

Merced County STEM Fair Science Fair Categories
Grades 5-10

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Aerodynamics/Hydrodynamics (Junior Division)	Studies of aerodynamics and propulsion of air, land water and space vehicles; aero/hydrodynamics of structures and natural objects. Studies of the basic physics of fluid flow.
Alternative Energy (Junior Division)	Studies of power generation using alternative energy technologies such as solar cells.
Applied Mechanics & Structures	Studies concerning the design, manufacture, and operation of mechanisms, including characteristics of materials, dynamic response, and active/passive control. Testing for strength and stiffness of materials used to provide structural capability; studies and testing of structural configurations designed to provide improved weight and force loading or stiffness capabilities.
Behavioral & Social Sciences	Studies of human psychology, behavior, development, linguistics, and the effects of chemical or physical stress on these processes. Experimental or observational studies of attitudes, behaviors, or values of a society or groups within a society, and of the influences of society on group behavior. Includes gender and diversity studies, anthropology, archaeology, and sociology. Studies may focus on either normal or abnormal behavior. Senior Division only: includes studies of cognition.
Biochemistry/Molecular Biology	Studies at the molecular, biochemical, or enzymatic levels in animals (including humans), plants, and microorganisms, including yeast. Studies of biological molecules, e.g., DNA, RNA, proteins, fats, vitamins, nutrients.
Chemistry	Studies in which chemical properties of nonbiological organic and inorganic materials (excluding biochemistry) are observed. Some studies involving physical properties are appropriate, including phase changes, crystal structures and formation, intermolecular and intramolecular forces.
Computational Systems & Analysis	Studies that focus primarily on the development or use of computational systems for applications in the biological, physical, or engineering sciences, such as analyzing big data, modeling and simulations, autonomous navigation, and bioinformatics.
Earth & Atmospheric Sciences (Junior Division)	Studies in geology, seismology, physical oceanography, marine geology, coastal processes, atmospheric physics and chemistry, meteorology, and climatology including measurements, models and the effects of climate change.
Electronics & Electromagnetics	Experimental or theoretical studies with electrical circuits, computer design, electro-optics, electromagnetic applications, and antennas.
Environmental Engineering	Projects which apply technologies such as recycling, reclamation, restoration, composting, and bioremediation which could benefit the environment and/or the effects of pollution on the environment.
Environmental Science	Projects surveying, measuring, or studying the impact of natural and man-made changes on the environment. Examples include floods, fires, biohazardous spills, acid rain, earthquakes, air pollution, and water pollution.
Materials Science (Junior Division)	Studies of materials characteristics and their static (not in motion) physical properties. Includes measurements and comparisons of materials durability, flammability, and insulation properties (thermal, electrical, acoustic, optical, electromagnetic, etc.).
Mathematical Sciences	Studies of mathematics (e.g., algebra, geometry, logic) and computer science (e.g., artificial intelligence and the design, improvement, or optimization of algorithims, computer languages, operating systems, or software architecture.)
Microbiology (General)	Studies of genetics, growth, and physiology of bacteria, fungi, protists, algae, or viruses. Includes surveys of bacterial contamination. (Medical) Studies of prevention, diagnosis, and treatment of infectious diseases caused by pathogenic bacteria, fungi, or viruses. Includes all antimicrobial studies except testing of commercial antimicrobials
Microbiology (Senior Division) (Medical)	Includes projects described within the category Microbiology (General). Studies of prevention, diagnosis, and treatment of Infectious diseases caused by pathogenic bacteria, fungi, or viruses. Includes all antimicrobial studies except testing of commercial antimicrobials.
Physics & Astronomy	Studies of the physical properties of matter, light, acoustics, thermal properties, solar physics, astrophysics, orbital mechanics, observational astronomy, planetary science, and astronomical surveys.
Plant Biology	Studies of the genetics, growth, morphology, or physiology of plants. Studies of the effects of fertilizers on plants.
Product Science (Physical) (Junior Division)	Comparison and testing of commercial off-the-shelf products for quality and/or effectiveness for intended use in real-word consumer-oriented applications. This category is reserved for experimental methods involving non-biological, physical sciences and processes

Adapted from the California State Science and Engineering Fair

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