

2024 ACAP Science Fair Guidelines

The ACAP Science Fair, sponsored by the Association of Chinese American Physicians (ACAP), is an annual nationwide research/scientific competition in biomedical field for middle and high school students. The ACAP Science Fair is open to students conducting research in the following fields: biology, microbiology, immunology, physiology, molecular biology, biochemistry, toxicology, and other medical specialties. Participants are asked to submit their research results to ACAP science fair committee to compete for prizes.

These rules and regulations are developed to provide the guidelines for submission of application documents, compliance with relevant governmental rules and laws to protect the rights and welfare of the student, researcher, and human subjects, to protect the health and well-being of vertebrate animal subjects, to address environmental concerns, and to support safe laboratory practices. It also provides the timeline and detailed information regarding the selection of finalists.

Students and sponsoring teachers/researcher should take the time to review these guidelines, prior to submitting the application, and be aware of the application deadline, and/or event dates. Any questions or concerns should be directed to ACAP staff by emailing to admin@acaponline.org.

1. Registration for Competition and Submission of Application Documents

- 1). All eligible participants must register for the competition online at <http://www.acaponline.org/sciencefair>. Once registration is completed and successful, an email confirmation will be sent to the participant.
- 2). After registration, participants can download required forms and need to fill them out carefully.
- 3). Before emailing the documents, please be sure that all forms must bear required signature and be dated.
- 4). Required forms and documents include:
 - a) Student's CV
 - b) Student Information containing student, School and research project information.
 - c) Abstract submission form.
 - d) Mentor's information and approval form.
- 5). All completed forms and documents with signature should be submitted online or emailed to admin@acaponline.org before the deadline. Mailed copy or hand-delivery is not acceptable.

2. Important Dates and Deadlines

- 1) Application deadline: September 15, 2024, Midnight (or by 11:59 PM)
- 2) Semi-finalists announcement: September 30, 2024.

- 3) Semi-finalists oral presentation: ACAP Science Fair on Saturday October 19, 2024, 10:30am.
- 4) Award ceremony: ACAP Annual Gala on October 20, 2024, 6pm.

3. Rules and Regulations

ACAP Science Fair adopts the Rules and Regulations stipulated by the major local and nationwide scientific competitions including New York City Science and Engineering Fair (NYCSEF) and the Intel ISEF (see references).

1) Ethics Statement

Scientific fraud and misconduct are not condoned at any level of research or competition. Such practices include plagiarism, forgery, use or presentation of other researcher's work as one's own and fabrication of data. Fraudulent projects will fail to qualify for ACAP Science Fair.

2) Eligibility/Limitations

- a) Any student in 6 to 12 grade or equivalent, enrolled in a public, private, who has not reached the age of 21 on, or before, January 1 of the event year is eligible to participate in ACAP Science Fair.
- b) Eligible students must hold grade B or higher in their scholastic performance.
- c) Each student may enter only one project summarizing data collection or research findings.
- d) A research project may be a part of a larger study done by professional scientists, but the project presented by the student may only be their portion of the complete study.

3) General Requirements

- a) All students applying to ACAP Science Fair must adhere to all the rules and guidelines as set forth in this document.
- b) All projects must adhere to the Ethics Statement above and local, state, county, and US Federal laws, regulations, and permitting conditions.
- c) Introduction or disposal of nonnative species, pathogens, toxic chemicals or foreign substances into the environment is prohibited. See <http://www.anstaskforce.gov/Documents/ISEF.pdf>.
- d) Before experimentation begins, an Institutional Review Board (IRB) or Scientific Review Committee (SRC) must review and approve projects involving human subjects, vertebrate animals, and potentially hazardous biological agents.

- e) Every student must complete the ACAP Science Fair online registration or application and submit required documents by online or email. The school teacher and the adult sponsor should review and approve the application.
- f) A qualified scientist or Mentor is required for all studies involving potentially hazardous biological agents, DEA-controlled substances, more than minimal risk in human subjects and for all vertebrate animal studies.
- g) All original signed forms, certifications, and permits must be available for review by the ACAP Science Fair Scientific Review Committee.

4) Student Research Abstract

Student's research abstract must be submitted online, in addition to the other documents. The Abstract should include a regular title with no more than 20 words and a short title with up to eight words.

The abstract is an informative summary of the significant content and conclusions of the paper. The abstract should not exceed 500 words and should be written in the past tense. The abstract does not include any references to tables or figures or cited literature and does not include detailed descriptions of systems, equipment, or processes.

The abstract should be structured with distinct, labeled sections of Introduction, Materials and Methods, Results, and Conclusions and Discussion.

a) Introduction

The introduction provides a brief, historical background, identifies problems, and proposes a hypothesis.

b) Materials and Methods

The materials and methods should be written in paragraph form. Step listings will not be accepted. It should be brief but comprehensive. This section does not contain any results.

c) Results

The results section summarizes the data in narrative form with verbal elaboration to make data coherent, encourage comparison, indicate relationships, and simplify complicated information. This section does not contain ALL of the raw data collected but should highlight the data relevant to the study; does not contain any guesses, conclusions, or interpretations based on the data.

d) Conclusions and Discussion

The discussion section provides an interpretation of results and how it relates to the original hypothesis and project rationale. This section offers possible explanations of the findings and provides recommendations for further study and for improving experimentation.

5) **The Sponsoring Science/Research Teacher**

The Sponsoring Science/Research Teacher is responsible for overseeing the student(s) participation in all aspects of the research project, from the planning phase through the competition phase. The Sponsoring Science/Research Teacher must be an adult or instructor from the applicant's school. The Sponsoring Science / Research Teacher is required to review all paperwork submitted to ACAP Science Fair by his/her student(s) and sign the Signature Page acknowledging that he/she reviewed the submitted project application. Information concerning student's application status will also be communicated to the Sponsoring Science/Research Teacher.

6) **The Mentor**

A Mentor is a qualified scientist who must have a solid background in science and should possess an earned doctoral/professional degree in the area that directly relates to the student's area of research. However, a master's degree with equivalent experience and/or expertise in the student's area of research is acceptable when approved by a Scientific Review Committee (SRC). The Mentor must be thoroughly familiar with the local, state, and federal regulations that govern the student's area of research.

The mentor may be a teacher, parent, university professor, or scientist in whose lab the student is working and should have close contact with the student during the course of the project. If a student has been mentored by a Mentor in another city, state or country, the student should have worked locally with a designated supervisor who has been trained in the techniques the student uses. The Mentor is responsible for ensuring the student's research is eligible for entry in this competition. The Mentor is responsible for working with the student to evaluate any possible risks involved in order to ensure the health and safety of the student conducting the research and the humans or animals involved in the study. The Mentor must have made sure that: a) experimentation is done within local, state, and federal laws and the ACAP Science Fair rules and guidelines; b) that forms are completed by other adults involved in approving or supervising any part of the experiment; and c) that criteria for the Qualified Scientist adhere to those set forth below. The Mentor must be familiar with the regulations that govern potentially dangerous research as they apply to a specific student project. These may include chemical and equipment usage, experimental techniques, research

involving human or vertebrate animals, and cell cultures, microorganisms, or animal tissues. The issues must have been discussed with the student when completing the project. Some experiments involve procedures or materials that are regulated by state and federal laws or may not be appropriate for precollege students. If not thoroughly familiar with the regulations, the Mentor should have helped the student enlist the aid of another Qualified Scientist. The Mentor and the sponsoring school Science/Research Teacher may be the same person, if that person is qualified as outlined above.

7) The ACAP Science Fair Scientific Review Committee

The ACAP Science Fair Scientific Review Committee (CSRC) is a group of qualified individuals who are responsible for the evaluation of student research, certifications, research results, and compliance with the rules and pertinent laws and regulations. Qualified individuals may be scientists in the biomedical field, physicians, and teachers. The Committee members are appointed by ACAP annually. A member will be disqualified if he/she has personal (i.e, relatives) or financial or mentoring relationship with any participants. The Committee members also serve as the judges for the competition.

8) Evaluation of Student's Research and Selection of Awardees

a) Selection of semifinalists

Semifinalists will be selected based on the evaluation of the abstracts submitted. The following two aspects will be considered in the evaluation: :

- (a) Scientific Achievement/Accomplishment (How well did the student(s) successfully meet the technical and scientific requirements for his/her project)
- (b) Merit / Individual Accomplishment (How well did the student(s) carry out the project according to his/her ability?).

The Committee will score the abstracts judging the creative ability, scientific thought and goals, thoroughness, understanding, and clarity of the students when referring to the research project they are presenting. Those include, but not limited to:

- (a) How much does this project build upon or add to current knowledge in this area, topic, or field?
- (b) How logical was the experimental design?
- (c) Did the research methods directly address the research problem?
- (d) How thorough was the analysis of available data?
- (e) How much initiative did the student have in carrying out the research project?
- (f) How creative were the student's solutions to the research problem?

(g) What was the overall comprehension of the topic and supporting information?

(h) Was the student able to discuss the project clearly?

The final score is the average of the scores provided by each committee member. The selection and rank of participants is based upon the final score of each student received. Top 30 to 50% of the participants will advance to the Semifinal Round.

b) Selection of Awardees

Each member of the Committee will anonymously score each semifinalist's oral and poster presentations as well as the related experimental records.

9) Prizes

a) Presidential Award prize (ACAP Presidential Award): One recipient, \$2,000 scholarship (50% of scholarship, or \$1000, goes to the High School where student is enrolled).

b) Outstanding Award prize (the Second Prize): Two recipients, \$1000 scholarship (50% of scholarship, or \$500, goes to the High School where student is enrolled).

c) Excellent Prize (the Third Prize): Three recipients, \$500 scholarship (50% of scholarship, or \$250, goes to the High School where student is enrolled).

d) Honorable Mention: Five recipients, \$100 scholarship each (half of scholarship, or \$50, goes to the High School where student is enrolled).

e) Junior Prize for Middle School Participants: One recipient, \$1,000 scholarship (50% of scholarship, or \$500, goes to the Middle School where student is enrolled).

f) Participation Certification: Each non-awardee participant will be granted with a Participation Certificate.

10) Announcement of Awardee and the Award Ceremony

The finalists or awardees will be announced and posted on the ACAP website and the notification will be sent to the student and the school by email. The awardees are required to attend the award ceremony, which will be held at the ACAP Annual Scientific Gala at New Mulan, 136-17 39th Ave, Queens, NY 11354, on October 20, 2024.

4. Legal Statement

ACAP is the sole authority to interpret this guideline and reserves right to modify or

change its content, terms and conditions, and all relevant information without prior notice. This guideline is subject to change annually.

5. References

1. New York City Science and Engineering Fair (NYCSEF) and the Intel ISEF Rules and Guidelines.
2. <http://www.anstaskforce.gov/Documents/ISEF.pdf>

