2024 AISES National American Indian Science & Engineering Fair at OSU

Senior & Junior Division Policies, Procedures, and Rules

About NAISEF

About AISES NAISEF at Oklahoma State University

The American Indian Science and Engineering Society's (AISES) National American Indian Science and Engineering Fair (NAISEF) is a Society for Science and the Public (SSP) affiliated science fair and as such is part of the larger SSP fair network. The NAISEF differs from other SSP-affiliated fairs in that it is both an in-person and virtual Science Fair. The NAISEF serves American Indians/Alaska Natives/Native Hawaiians (AI/AN/NH) in grades 5-12. There are two categories for entrants, high school (defined as grades 9-12) and middle school (defined as grades 5-8). Only high school students (grades 9-12) who meet and satisfy the International Science and Engineering Fair (ISEF) rules may go on to participate in the ISEF. See rules at https://student.societyforscience.org/rules-all-projects

Held annually, NAISEF provides an opportunity for students to actively participate in a science-based learning environment and create science projects and conduct scientific research that can be shared with peers, educators, and other Native role models. This national science fair serves as a catalyst for expanding young minds and creating an arena for students to showcase their research and enhance their knowledge around a variety of STEM (science, technology, engineering and mathematics) fields.

Oklahoma State University is a multi-campus public land grant educational system that improves the lives of people in Oklahoma, the nation, and the world through integrated, high-quality teaching, research, and outreach. The instructional mission includes undergraduate, graduate, technical, extension, and continuing education informed by scholarship and research. The research, scholarship, and creative activities promote human and economic development through the expansion of knowledge and its application. The university looks forward to hosting the 2023 NAISEF.

SSP Affiliated Fairs

An SSP-affiliated science fair is a science competition that is a member of SSP's fair network. These competitions exist in nearly every state in the U.S. and more than 75 countries, regions, and territories. The fair network currently consists of 352 fairs within the United States and its territories and 110 international fairs. Fairs affiliate with SSP primarily to bring finalists to the ISEF held each May. For more information about the ISEF, please visit their website at: https://student.societyforscience.org/ISEF-FAQ

Fair Standards

ISEF Rules/SRC:

It is a requirement that affiliated fairs, such as the NAISEF, adhere to the International Rules for Precollege Science Research: Guidelines for Science and Engineering Fairs (ISEF Rules) and that students, teachers and parents are informed about these requirements so that they use ISEF forms from the start of research. Students who do not receive the appropriate approvals or complete the necessary ISEF forms in the proper timeline may not qualify for competition at the ISEF.

The fair director must appoint a Scientific Review Committee (SRC) that consists of a minimum of three members. The SRC must include at least one each of: a) biomedical scientist (e.g., Ph.D., M.D., D.V.M., D.D.S., D.O.), b) science educator, and c) another member who may, but is not required to be, a biomedical scientist or a science teacher. These SRC members must be registered with Society for Science and the Public. Fair directors are required to fill out a form after their fair stating information about the SRC's activities, such as the group's meeting schedule and any problems the SRC encountered during reviews.

Judging and student eligibility
Affiliated fairs must recruit and manage a team of judges to select the projects to advance to the ISEF. The judging process must be transparent and avoid any appearance of partiality or conflict of interest. Projects may be individual or team projects in any combination.
Any student in grades 9 through 12 or equivalent **who has not reached age 20 on or before May 1** of the year preceding the ISEF is eligible.

Each student may enter only one project that covers research done over a maximum, continuous 12-month period between January and May of the current ISEF year. Team projects are limited to no more than three members and at least one member must be AI/AN/NH.

Multiple Science Fair Entries
Participation in other fairs at the local, state, and/or regional fair level is acceptable. Although, students who have been award a spot to ISEF in an ISEF-affiliated state fair, may not compete in NAISEF.

NAISEF Ethics Statement
Scientific fraud and misconduct are not condoned at any level of research or competition. This includes 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 competition in affiliated fairs and the ISEF. The AISES reserves the right to revoke the recognition of a project subsequently found to have been fraudulent.

Timeline

Online registration	June 1, 2023 – February 26, 2024
Research SRC pre-approval	Monthly until February 26, 2024
Abstract submission due	March 11, 2024
SRC abstract review	March 10 – March 18, 2024
Corrected forms/abstracts due	March 18, 2024
NAISEF Fair Day	April 5-6 2024 at Oklahoma State
Winners announced at Fair	University
Grand Winner(s) attend ISEF	May 11-17, 2024 in Los Angeles, CA

NAISEF Project Registration and Submission Process

Registration
Students must register for this fair online at http://fairs.aises.org. The process is the same for high school and middle school students/teams. Registrations are **considered complete** when all required forms and documents have been completed and uploaded by posted deadlines. For

time/date stamp considerations, the completion date/time is used to determine when the entry was received.

Pre-Registration Work:

1. Review the following two Polices, Procedures and Rules documents with student(s). It will be assumed that the student will be familiar these rules.
   o NAISEF Senior & Junior Division Policies, Procedures, and Rules
   o ISEF International Rules and Guidelines
     https://www.societyforscience.org/isef/international-rules/rules-and-guidelines/
2. Gather contact information for adult sponsor, all team members (if applicable), and all participants' parent/guardian. There can only be up to 3 students total per team.
3. Obtain AISES Membership ID Number of all team members. AISES Membership is required of all team members. Visit http://www.aises.org/membership to become a member or to find current members' AISES Membership ID.
4. Use the ISEF Rules Wizard to determine which forms are required under ISEF Rules - https://ruleswizard.societyforscience.org/
5. Download and print the following forms and documents:
   o ISEF Form 1: Checklist for Adult Sponsors (Required)
   o ISEF Form 1A: Student Check List (Required)
   o Research Plan/Summary: Complete Instructions for the Research Plan/Summary are outlined on the second page of ISEF Form 1A (Required)
   o ISEF Form 1B: Approval Form (Required)
   o ALL OTHER REQUIRED ISEF FORMS: Use the ISEF Rules Wizard to determine which other forms are required under ISEF Rules
   o AISES NAISEF Media & Liability Release: A parent/guardian must sign for EACH team member (Required)
   o ISEF Official Abstract Form: Due March 18, 2024 for Senior Division and Junior Division (Required). *Note: the ISEF Official Abstract Form is due later than the other required forms.
6. Complete, scan, and upload all NAISEF forms and documents individually in PDF format. No other format will be accepted.
7. If you will be registering as a Team: Choose one of the team members to be the Team Leader. There can only be up to 3 students total per team. The Team Leader will register for the entire team and will provide all team member names and other information during the registration process. The Team Leader will be the contact for all correspondence and communication regarding the AISES NAISEF.

To Register:

1. Visit http://fairs.aises.org/apply. The student (or Team Leader if registering for a team) or his/her teacher must **create a new user account** and enter all required information (marked with an asterisk).
   a. **IMPORTANT!** Please provide a valid e-mail address. If the student does not have an email address, the teacher's or a parent's may be provided. All official science fair communications will be sent via e-mail, so PLEASE be SURE that the e-mail address you provide is correct and that the email is checked **regularly**

for email. It is not AISES' responsibility to ensure that a student reads his or her email. It is the student's responsibility.

2. Complete the Application Form.
3. Upload all required documents:
   a. Form 1: Checklist for Adult Sponsor / Safety Assessment Form
   b. Form 1A: Student Checklist / Research Plan
   c. Research Plan/Summary
   d. Form 1B: Approval Form
   e. AISES NAISEF Media & Liability Release: needed for all Team Members, if applicable
   f. Other Team Member Information Form (optional)
   g. Any other required forms, depending on your research and ISEF Rules Wizard results. The Rules Wizard has been designed as a first step to help you determine what forms and approvals are necessary before beginning a science fair project intended for competition at an ISEF-affiliated fair or the International Science and Engineering Fair. This wizard is intended to be a helping tool but cannot account for all specifics and situations of your individual project.

NAISEF SRC and the SRC Review Process

Members of the SRC are made up of a group of adults knowledgeable about regulations concerning experimentation in restricted areas. The SRC is selected per ISEF rules and regulations. There are two SRC Reviews before the Science Fair competition.

Research Pre-Approval
Before experimentation, unless a properly signed Form 1C is provided, the AISES SRC reviews and approves those projects involving the following to make sure they comply with the Rules and any pertinent laws:

- Working with humans, animals, PHBAs, and/or hazardous chemicals, activities, or devices
- Working at a Regulated Research Institute/Industrial Setting and/or studies being done at a university as part of a research team
- Continuing any previous research, more than one year old, or started before January of 2023
- Note: Human studies previously reviewed and approved by a properly constituted IRB do not have to be reviewed by the SRC until competition.

SRC pre-approval will be required for the projects that require Forms 1A, 1C, 3, 4, 5A, 5B, 6A, 6B, and 7 by February 26, 2024. The SRC examines project documents for the following:

1. Evidence of literature search
2. Evidence of proper supervision
3. Use of accepted research techniques
4. Completed forms, signatures, and dates
5. Evidence of search for alternatives to animal use
6. Humane treatment of animals
7. Compliance with rules and laws governing human and animal research

8. Appropriate use of recombinant DNA, pathogenic organisms, controlled substances, tissues and hazardous substances and devices
9. Appropriate documents and substantial expansion for continuation projects

After the SRC has reviewed each submitted application package, an SRC review form will be sent to the student via email. The form notifies the student, or team, whether they are approved to proceed with their experiment, approved to with proceed with minor corrections to be made, or not approved to proceed with experimentation unless significant corrections are made and forms submitted again for review.

<u>Before research can begin</u>, students whose projects triggered an SRC review (because their proposed research involves human subjects, vertebrate animals, and potentially hazardous pathogenic agents, including microorganisms, recombinant DNA, and human or animal tissue) have up to 7 calendar days to make corrections and revisions as required by the SRC. After the 7 days have lapsed, the SRC will again review all student submissions that were required to make corrections/revisions to ensure that have brought their application packages into compliance before being approved to submit their research. Students who cannot, or failed to do so, by the 7th day will NOT be allowed to participate further. (Part 2a of ISEF Approval Form 1B) Note: The SRC reviews projects <u>after the research was done and before the online submission of slideshows and videos,</u> if the research was done at a research institution and was preapproved by that institution instead of the affiliated fair SRC (a properly completed ISEF Form 1C was provided when the student initially registered). All documentation from the research institution showing approval of the project must be uploaded during the initial registration process (Part 2b, ISEF Approval Form 1B).

Initial Review

If pre-approval is not needed, according to ISEF forms wizard. The SRC will review monthly until February 24, 2024. The SRC reviews and approves the following submitted documents for all students/teams who enter the NAISEF:

1. ISEF Form 1: Checklist for Adult Sponsors (Required)
2. ISEF Form 1A: Student Check List (Required)
3. Research Plan/Summary: Complete Instructions for the Research Plan/Summary are outlined on the second page of ISEF Form 1A (Required)
4. ISEF Form 1B: Approval Form (Required)
5. ALL OTHER REQUIRED ISEF FORMS: Use the ISEF Rules Wizard to determine which other forms are required under ISEF Rules
6. AISES NAISEF Media & Liability Release: A parent/guardian must sign for EACH team member (Required)

Second Review
The second review of abstracts occurs March 14-18, 2024 after the abstract deadline. The SRC reviews and approves all ISEF forms submitted, particularly the newly submitted Abstract documents. The Abstract forms will be reviewed for compliance. If all is in order and approved, Part 3 of the ISEF Form 1B will be completed by the SRC and the student will be notified that the final project has been approved. Students not approved will be notified.

In-Person Fair Preparation

Exhibition Preparation
The NAISEF is an affiliate of the ISEF and is bound by the rules governing that organization. Exhibits and displays are ruled by the ISEF International Rules and Guidelines and the condensed version sited below.

Exhibit Size: The overall dimensions of the exhibit display are limited to a maximum of 76 cm (30 in) deep from front to back, 122 cm (48 in) wide from side to side, and 274 cm (108 in) high from the floor to the top. The tables are 76 cm (30 in) high, so table exhibits cannot be higher than 198 cm (78 in) measuring from the table top to the top of the exhibit. The display may not extend beyond the front or outside edge of the table.

Abstract: Abstracts should be a maximum of 250-words on one page. The abstract must focus on work done in the current year and should not include: a) acknowledgments or b) work or procedures done by the mentor.

Required Forms: All required forms and appropriate certifications must have been submitted to, and approved by, the SRC. *All required forms, certifications, and permits must be available for review.* Keep a copy of all forms in the project data book.

Display and Safety Regulations
Be familiar with the items that can or cannot be displayed according to the ISEF International Rules and Guidelines 2024 at:
        https://sspcdn.blob.core.windows.net/files/Documents/SEP/ISEF/2024/Rules/Book.pdf

Exhibitors will be responsible for knowing what is prohibited from display, it will be assumed that the student will be familiar these rules.

Virtual Fair Preparation and Submission

Slideshow
Students, upon completion of their projects, may upload their Science and Engineering Fair Slideshows via the AISES NAISEF website by **noon Pacific time on March 18, 2024**. Log into the same account used to register at: http://fairs.aises.org/.

Students must upload a slideshow (e.g. MS Office PowerPoint) with no more than 25 slides. The slideshow must address the following and, in the order, listed:

1. *Question/Proposal:* Describe the question that you are investigating and your hypothesis, or the problem that you are going to try to solve and the outcome that you expect.
2. *Research:* An account of the research that you have done into your chosen category, and how this has influenced your Project.
3. *Method/Testing and Redesign:* Describe in detail how you carried out your experiment or tested your solution.
4. *Results:* Your data and observations gathered during your experiment or testing, presented clearly with a description of any patterns or trends.

5. *Impact:* Here you describe what impacts and/or practical implications your project may have in the larger world or what impact continued research could have for the world or your community.
6. *Conclusion/Report:* An explanation of how your experiment or testing answers your question, or why it fails to do so, and whether or not the outcome was as you expected.
7. *Bibliography, References, and Acknowledgements.*

The slide show may include photos, charts, graphs, graphics, etc. **If the slideshow contains photos, all ISEF Rules regarding photos must be followed.**

Virtual Interview - Judging
Virtual participants will be scheduled for a 20-minute phone or video conference interview on , 2020 from 1:00 to 3:00 p.m. Please be on-time and ready for interviews at your allotted time.

All projects are reviewed by three judges on day of fair, April 6, 2024. Judges begin by reviewing all relevant materials, slideshows, and forms submitted by students/teams online. Then, judges meet via phone or video conference with the students/teams for a virtual interview.

Students and teams receive scores from both the review of submitted materials and the interview portion of the judging process. Only the student or team members (all must be present) can address the judges during the interview conference call. No other people in the room may speak to the judges or students during the interview portion of the call.

NAISEF Science & Engineering Fair – April 5-6, 2024 at Oklahoma State University

AISES in partnership with Oklahoma State University will host the 2024 NAISEF. This fair differs from other affiliated fairs in that it is both an in-person and virtual fair. Space may be limited for virtual presentations so register early. Fair winners in the Junior and Senior division will receive awards and two Grand Award winners from the Senior Division will also receive assistance to attend the ISEF in Los Angeles, CA from May 11-17, 2024.

In-Person Exhibit Check-In and Set-Up
Exhibit check-in and set-up will take place on both Friday, April 5th and Saturday, April 6th . Check-in and set-up will be on Friday, March 31st from 1:00-5:00 p.m. *subject to change* and Saturday, April 5th from 8:00-9:00 a.m. Check-in will close on Saturday, April 1st at 9:00 a.m. All exhibits must be checked-in before set-up is allowed. All exhibits must be set up no later than Saturday, April 1st at 9:00 a.m.

Exhibitors should come prepared with tools and other equipment to set up and repair their displays. These items will not be supplied by Science Fair personnel. After exhibit is completely set up, it is the responsibility of the exhibitor to find a Project Checker to review and approve their display. A project will not be eligible for judging unless the approval sticker is properly displayed. Nothing may be added to the exhibit after it has been approved by the checker.

NAISEF and its affiliates are not responsible for lost, stolen, or damaged equipment or supplies to any project while on display during the Fair. This includes set-up and tear-down times.

Virtual Check-In and Set-Up
NAISEF Fair Director will print all necessary documents and slides for each virtual participant and set up documents before Saturday, April 6th from 7:00-8:00 a.m. After the exhibit is completely set up, it is the responsibility of the Fair Director to find a Project Checker to review and approve displays. A project will not be eligible for judging unless the approval sticker is properly displayed. Nothing may be added to the exhibit after it has been approved by the checker.

Protocols
All projects dealing with humans, non-human vertebrate animals, pathogenic agents, controlled substances, recombinant DNA (rDNA) or human and animal tissue must have the appropriate forms and certificates (protocols) on file with the Science Fair office. These forms must be signed and dated in accordance with ISEF regulations. **Exhibitors who fail to present the proper protocols will be disqualified.**

Judging
- **Category** award judges are drawn from the industrial, professional, scientific, and engineering communities from around the state. They are formed into committees, one for each category in each division. Each committee is responsible for determining the winners in a category.
- **Special** award judges may be selected by AISES and OSU. Not all projects may be judged. AISES and OSU may limit judging topics to specific interests. All students MUST be in attendance.

Overall, judges look for well thought-out research. They look at how significant the project is in its field, as well as how thorough the student was. Was something left out? Did the student start with four experiments and finish only three? Judges evaluate (1) how well a student followed the scientific method; (2) the detail and accuracy of the research notebook; and (3) if tools/equipment were used in the best possible way.

Judges applaud those students who can speak freely and confidently about their research. They are not interested in memorized speeches; they simply want to *talk* with the student about the research to see if the student has a good grasp of the project from start to finish. Besides asking obvious questions, judges often ask questions outside the normal scope to test insight into the research such as "What didn't you do?" and "What would be your next step?"

Judging begins at 9:00 a.m. on Saturday *without* the exhibitors at their exhibits. Each exhibit is judged initially by three category-award judges. After the scores for the three judges are combined, the judging committee meets and reviews the exhibits and their scores. Special award judges follow their own criteria to determine their awards. During this time students may engage in STEM activities or a campus tour, hosted by OSU.

Judges interview exhibitors from 9:00 a.m. to 12:00 p.m. In-person participants please be at your exhibit promptly. Virtual participants please be on time and ready for phone interviews at your allotted time. **Only the student or team members (all must be present)** can address the judges during the interview conference call. No other people in the room may speak to the judges or students during the interview portion of the call. The initial scores and the results of the interviews form the basis for the final determination of winners at the second caucus.

The length of the interview period will depend on the committee, except for virtual participants. Virtual participants will have up to 20 minutes for their interview. Exhibitors should remain at their exhibits throughout the judging interview periods for special and grand award judging. ***Although not all student exhibitors will be re-interviewed,*** it is necessary for them to remain at their exhibit until 12:00 p.m.

Exhibit Take Down
Exhibit tear-down is from 4:00 p.m. to 5:00 p.m. Student exhibitors must have their name tag to enter the Exhibit Hall to tear down. **Exhibits may not be taken down before 4:00 p.m. on Saturday, no exceptions!** *Any exhibits and equipment remaining after 5:00 p.m. will be discarded.*

Awards Ceremony
There will be an awards ceremony on Saturday from 5:00 to 6:00 p.m. Names of winners will not be available to exhibitors or the public until they are announced at the awards programs.

There are two possible types of awards presented at NAISEF, special awards and category awards.
- **Special awards** may be provided by industries, businesses, professional organizations, universities, and the branches of the Armed Forces. They may include plaques, cash awards, saving bonds, merchandise, and scholarships.
- **Category awards** include first, second and third place, and honorable mentions in each division and potentially different categories.

In the Senior Division, the top exhibitor in science and the top exhibitor in engineering become ISEF qualifiers. Their awards include travel assistance for the students and their sponsors to attend and exhibit at ISEF. Team projects are also eligible to receive Grand Award status; however, funding will have to be share among the team members. Two additional Grand Award winners are designated alternates to ISEF. If an ISEF qualifier is unable to attend the ISEF, the Alternate would become an ISEF exhibitor.

On Saturday evening, immediately following the Senior Division Awards Ceremony, a meeting will be held for all ISEF qualifiers, alternates, their sponsors, and parents. Winners will be honored, and plans will be finalized for the trip to the ISEF in May. It is important that everyone who will be a part of the NAISEF delegation to ISEF attend this meeting.