



Thermo Fisher Scientific Junior Innovators Challenge (JIC), a program of Society for Science

Official Entry Rules 2024/2025 Academic Year

I. Eligibility Requirements

1. To enter the competition, a student must have competed at a Thermo Fisher JIC-affiliate science fair occurring between November 1, 2024 and June 1, 2025 and been named by the fair as a Thermo Fisher JIC nominee in the list submitted to the Society for Science (the Society).
2. A nominee must be a student enrolled in grades 6-8 and must have participated at an affiliated fair within the United States or a US territory.
3. Individual and team projects are eligible. Teams can have a maximum of three students and each team member must complete their own application. See Section IV: Team Projects for more information.
4. Former finalists who receive nominations may reapply, as long as they did not receive a 1st or 2nd place STEM award, *Broadcom Coding with Commitment*[®] Award, DoD STEM Talent Award, The Lemelson Foundation Award for Invention, Robert Wood Johnson Award for Health Advancement, or the Thermo Fisher Scientific ASCEND Award.
5. Research conducted and presented at the science fair must have been properly supervised and approved according to the guidelines set forth by the Thermo Fisher JIC-affiliate fair and must be in compliance with all local, state, and national laws and regulations. See Section VI: Science Fair Paperwork for more information.
6. Each nominee's project must only include a maximum of one year's research and cannot have been previously entered in a Society-affiliated fair or the Society's national middle school STEM research competition without meeting the continuation criteria. For more information on continuation projects see Section VI.
7. Children of (i) Thermo Fisher Scientific officers, directors or anyone acting in a de facto officer role, (ii) Thermo Fisher JIC evaluators and judges, and (iii) Thermo Fisher Scientific employees with the title of vice president and above; are not eligible to enter the Thermo Fisher JIC.

II. General Requirements for Nominated Students

1. Each nominee may submit only one entry.
2. Each nominee must enter the Thermo Fisher JIC with the same project that earned that student a nomination at their Society-affiliated fair.
 - a. Students may include additional data in their Thermo Fisher JIC application **only** if data was collected using the same methods as in their nominated project between the time of their nomination and submitting the application.
3. Each nominee is required to complete ALL sections of the online application, which includes uploading the following required documents (you will be prompted to do so within the application). **Additional supplemental uploads or links to external sites are not permitted in the application, other than to cite references (optional).**
 - a. **Permission Form** (available online)
 - b. **Visual Aid** — See Section V. for more information.
 - c. **Fair Paperwork** (as applicable)— See Section VI for more information.
4. Each member of a team nominated must complete an individual application and must work independently on all application questions. For more information on Team Projects, please see Section IV.
5. All entries must be received by June 11, 2025. The Thermo Fisher JIC application will open for nominees on February 1, 2025.

III. Ethics Statement

Student researchers, as well as adults who have a role in their projects, are expected to maintain the highest ethical standards. These include, but are not limited to:

- **Integrity.** Honesty, objectivity, and avoidance of conflicts of interest are expected during every phase of the research. The project should reflect independent research done by the student(s) and be free of fraudulent data and/or plagiarism and represent only one year's work.
- **Legality.** Compliance with all federal, country, state and local laws is essential. All projects must be approved by a Scientific Review Committee (SRC), and when necessary, must also be approved by an Institutional Review Board (IRB), Institutional Animal Care and Use Committee (IACUC), and/or Institutional Biosafety Committee (IBC).
- **Respect for Confidentiality and Intellectual Property.** Confidential communications, as well as patents, copyrights, and other forms of intellectual property must be honored. Unpublished data, methods, or results may not be used without permission, and credit must be given to all contributions to research.
- **Stewardship of the Environment.** It is the responsibility of the researcher(s) and the adults involved to protect the environment and its organisms from harm. All projects involve some amount of risk. Everyone is expected to recognize the hazards, assess the risks, minimize them, and prepare for emergencies.
- **Animal Care.** Proper care and respect must be given to vertebrate animals. The guiding principles for the use of animals in research includes the following "Four R's": Replace, Reduce, Refine, Respect. See Section VI to ensure compliance with the rules.
- **Human Participant Protection.** The highest priority is the health and well-being of the student researcher(s) and human participants. See Section VI to ensure compliance with the rules.
- **Potentially Hazardous Biological Agents (PHBAs).** It is the responsibility of the students and adults involved in the project to conduct and document a risk assessment, and to safely handle and dispose of organisms and materials. See Section VI to ensure compliance with the rules.

Scientific fraud and misconduct are not condoned at any level of research or competition. This includes plagiarism, forgery, use or presentation of other researchers' work as one's own and fabrication of data. Fraudulent projects will fail to qualify for competition in Thermo Fisher JIC. Society for Science reserves the right to revoke recognition of a project subsequently found to have been fraudulent.

Students may not use ChatGPT or other AI tools to answer any questions within the Thermo Fisher JIC application (project essays, creative essays, etc.). Use of such tools for student research projects is permitted and MUST be properly cited.

The student and parent or guardian agree to this ethics statement by signing the permission form found in the application.

IV. Team Projects

1. Each nominated team member who wants to enter must complete the Thermo Fisher JIC application individually to be eligible to go to the next phase of the competition.
 - a. Applications from teammates MUST BE written independently and any essay or written response CANNOT be identical, other than an abstract/project summary.
 - b. Responses in the Project Information (Part 3) section of the application may contain similar information as they describe the shared project but should reflect each student's own understanding of their project.
 - c. Teammates may submit the same data, charts, graphs, and visual aid.
 - d. Teammates must describe each member's role in working on the research project in Part 3 of the application.
2. Members of a team project may enter even if their teammate(s) do not wish to enter.
3. Team applications are judged individually and consider factors in addition to the project summary. Therefore, it is possible that one team member may be named a Top 300 Junior Innovator or a finalist and the other member(s) may not be.

V. Visual Aid Guidelines

Each nominee is required to submit a Visual Aid as a part of the application. The Visual Aid is for nominees to show any visuals related to their research to support the findings of the project. Visual Aids must follow the guidelines below:

1. The Visual Aid **must be no more than 2 pages**, sized 8.5x11 inches each, and uploaded in the online application as a PDF.
2. You do NOT need to include your name and project title in your Visual Aid.
3. This visual aid should only include figures, charts, tables, photos, and/or other graphics that represent your methodology, data collection, data analysis, and/or findings. Choose the most important visuals an evaluator or judge would need to understand your project.
4. The visual aid should NOT be a digital poster or photograph of a physical project board. You should NOT include a summary of your background, methods, data analysis, etc., since you have already described them in the application.
5. Text on the visual aid should be minimal and limited to titles and short captions.
6. Portrait or Landscape orientation are both acceptable.
7. The following are **not allowed** within your visual aid:
 - a. Active hyperlinks or QR codes to websites with additional information about your project.
 - b. Any videos or audio embedded within the Visual Aid PDF.
 - c. Any identifiable photographs of yourself and/or any human participants. Photographs where faces are blurred or digitally covered in some way are acceptable.
8. We **recommend** the following guidelines for formatting your visual aid (these are NOT requirements):
 - a. Limit visuals to 3-4 per page so that all visuals can be seen clearly at 100% zoom.
 - b. Keep titles and captions short.
 - c. All text should be easily readable when viewing the entire page at once. Use a font size that is readable at 100% zoom.
9. **Citations:** All graphics, charts, images, graphs, photographs, drawings, etc. should be cited in your Visual Aid. Please follow the guidelines below:
 - a. Citations should be provided alongside the graphic or in a vertically displayed reference list within the Visual Aid using a numbered list that matches each citation to the graphic with the same number.
 - b. All graphics that are created by the student should be properly cited individually using statements such as “Photo taken by Student,”; “Image created by Student”; “Graph created by Student”; “Data Table created by Student”; “Logo created by Student.” **Do NOT include your name in these citations.**
 - c. All graphics not created by the student should be properly cited individually with the source. If the graphic was obtained via the Internet, then a URL must be provided. This applies even if the license under which the graphic was obtained does not require credit or citation.
 - d. See <https://www.societyforscience.org/isef/international-rules/display-safety-rules/> for examples of proper citations if needed.

VI. Science Fair Paperwork

Visit [societyforscience.org/isef/international-rules](https://www.societyforscience.org/isef/international-rules) to view the full official International Rules & Guidelines that we ask all middle school fairs to implement and follow. Some projects, including those involving human participants (including the use of surveys and testing devices), vertebrate animals and potentially hazardous biological agents, require pre-approval and evidence of Scientific Rules Committee (SRC), Institutional Review Board (IRB), and/or Institutional Animal Care and Use Committee (IACUC) approval before experimentation begins.

The Society accepts Regeneron ISEF forms or your local affiliated science fair’s equivalent forms to document approval. All forms must be signed and dated. Below are examples of research requiring pre-approval:

- **Human participant** studies of any kind (including the use of surveys & testing of Inventions, Apps, prototypes, testing on parents/guardians and/or family members) require IRB pre-approval.
 - An Institutional Review Board (IRB), is a committee that must evaluate the potential physical and/or psychological risk of research involving humans. This IRB is intended to be formed at the school level. An IRB must consist of a minimum of three members including the following:
 - An educator
 - A school administrator (preferably principal or vice principal)
 - A medical or mental health professional. This person must be knowledgeable about and capable of evaluating the physical and/or psychological risk involved in a given study.
 - None of these individuals may be the adult sponsor, direct supervisor, qualified scientist or related to the student.
 - Visit <https://www.societyforscience.org/isef/international-rules/roles-and-responsibilities-of-studentsand-adults/#IRB> for more information on setting up an IRB
- **Vertebrate Animals** (including pets): Vertebrate animals, as covered by these rules, are defined as 1) all nonhuman vertebrates (including fish) at hatching or birth; 2) live nonhuman vertebrate mammalian embryos or fetuses; 3) tadpoles; 4) bird and reptile eggs starting three days (72 hours) prior to hatching
 - Exception: Because of their delayed cognitive neural development, zebrafish embryos may be used up to seven days (168 hours) post-fertilization and not be considered a vertebrate. However, regardless of time of treatment, survival past the 7 days must be considered a vertebrate animal and the entire study is subject to all of the rules for vertebrate animal studies.
- **Potentially Hazardous Biological Agents (PHBA's)**: PHBAs include potentially hazardous microorganisms (including bacteria, viruses, viroids, prions, rickettsia, fungi, and parasites), recombinant DNA (rDNA) technologies or human or animal fresh/frozen tissues, blood, or body fluids.)
 - *Culturing of microorganisms of any kind at home is strictly prohibited, including the use of commercially available kits (this includes the collection and culturing of microorganisms from the environment; e.g. soil, household surfaces, skin)*
- **Hazardous Chemicals, Activities, or Devices**: Hazardous activities are those that involve a level of risk above & beyond that encountered in the students every-day life. Hazardous chemicals, devices include substances and devices that are regulated by local, state, country, most often with restrictions of their use by minors (including DEA controlled substances, prescription drugs, alcohol & tobacco, firearms, explosives, radiation, and lasers)
 - The use of hazardous chemicals and devices and involvement in hazardous activities require direct supervision by a direct supervisor except those involving DEA-controlled substances which require supervision by a Qualified Scientist.
 - Student(s) should conduct a risk assessment (e.g. ISEF Form 3) in collaboration with their Adult Sponsor prior to experimentation in which they consider safety precautions, proper supervision and as applicable proper disposal of any substances to not harm the environment.
 - The use of hazardous chemicals & devices and involvement in hazardous activities require direct supervision by a trained and/or experienced adult. This person may be a Qualified Scientist, Direct Supervisor, Adult Sponsor, and/or parent/guardian. See <https://www.societyforscience.org/isef/international-rules/roles-and-responsibilities-of-students-and-adults/> for definitions of these roles.
- **Continuations**: Projects that build on prior research must document (ISEF form 7 or similar form) that the additional research is a substantive expansion from prior work (e.g., testing a new variable or new line of investigation). Repetition of previous experimentation with the same methodology and research question, even with an increased sample size, is an example of an unacceptable continuation.

Visit societyforscience.org/isef/international-rules to view the official International Rules & Guidelines and for more information on projects requiring preapproval.

Projects that do not have the necessary approvals and/or signed, dated paperwork to show appropriate safety measures may fail to qualify for competition. The Science Fair Paperwork section in the application will walk you through what, if any, paperwork to submit, based on your research. If you completed science fair paperwork for your local affiliated fair but no longer have copies, please request copies to submit in the application. If you did not complete any paperwork for your research project, OR if your local affiliated fair cannot provide copies of your paperwork, you will be required to upload a letter signed by the adult that approved your project (e.g., teacher, fair director). This letter must include what you worked with (human participants, animals, microorganisms, hazardous chemicals/devises, etc.), what approval process was conducted, dates of approval, as well as what safety measures you took while conducting your research.

VII. Thermo Fisher JIC Application – Additional Information

To open an application, visit <https://thermofisherjic.smapply.org/>. See below for helpful information about opening your application:

- You will need to enter your fair password (given to you by your fair director) to create an account.
- You may use your own email address or a parent/guardian's email address to open an account. We recommend that you do NOT use a school email address, especially if you lose access to it in the fall.
- Once you have opened your application, you may save your work and return as many times as you wish until June 11, 2025.

After opening an application, you will receive emails from Society for Science staff with resources to assist you in completing your application. After the application deadline (June 11), we will send each entrant that has completed the application a Thermo Fisher JIC t-shirt. Please allow 4-6 weeks for delivery.

IF YOU HAVE ANY QUESTIONS, PLEASE CONTACT US AT: JIC@SOCIETYFORSCIENCE.ORG