

# Rules and Regulations

## General

1. Original work- Projects must represent original work done by the student(s); Students will be judged only on research completed since the last CSEF and conducted over a maximum period of 12 months. Display boards should show the current year's work only. Continuing research must include previous year's abstract(s) and research plan(s), in a separate file.
2. A research plan and other forms as specified by the International Science and Engineering Fair (ISEF) are required for all projects. The Connecticut Science & Engineering Fair Research Plan must be submitted to the fair's scientific review committee with your registration form. Projects involving life science research and hazardous procedures require approval prior to the start of research. See: <http://ctsciencefair.org/registration/research-plan>
3. High school students may compete in only one International Science and Engineering Fair (ISEF) affiliated fair except when proceeding to a state fair from an affiliated regional fair as a finalist.
4. Projects involving firearms, including BB and pellet guns, are not permitted at the Connecticut Science and Engineering Fair.

## Project Display

Connecticut Science & Engineering Fair requires that every project be displayed according to the same standards and in a fashion that assures the safety of the participants. Project display components are uploaded to the CSEF website for preliminary judging. Read and follow the display rules carefully.

There are 3 **required** components and 3 **optional** components for uploading for preliminary judging:

Required components	Optional Components
<ul style="list-style-type: none"><li>• Abstract (<i>submitted in advance by March 1</i>)</li><li>• Scientific poster</li><li>• Photograph</li></ul>	<ul style="list-style-type: none"><li>• Research paper, research plan, and/or bibliography</li><li>• Laboratory notebook</li><li>• 1-minute supportive project video</li></ul>

## At the Fair

1. Students must be present:
  - Online for preliminary judging. Times will be assigned.
  - In-person for finalist judging. Times will be assigned.
  - On Saturday if selected as a Finalist or Special Award winner. The only exceptions are for religious observances and such exceptions as approved by the Fair Director. Email requests to [director@ctsciencefair.org](mailto:director@ctsciencefair.org)
2. Cell phone use during judging is strictly prohibited and may result in disqualification.

3. An abstract describing the student's work, procedures, data, results, and conclusions is required.
4. A research report describing the student's work, procedures, data, results, and conclusions is optional. The report must be a clean copy. Graded Reports are not permitted.
5. A laboratory notebook with details of student work is optional, but highly encouraged.
6. Equipment (e.g., computers, oscilloscopes, video display terminals, playback devices, spectrographs) is optional and will be allowed during preliminary judging if integrated into the 1-minute video (see guidelines below).

## Required Components

### Required component #1: Abstract

An abstract is a brief, written explanation of the research project. The abstract contains a succinct description of the project's purpose, the procedures followed, the data collected, and the conclusions reached. This must all be accomplished in 250 words or less.

Every project at the Fair is required to have an abstract submitted as part of registration and on the project display board. In submitting the abstract, you are attesting that the nature of the work and your involvement is accurately described. If some portion is not your work, it should not be part of your abstract unless you cite the assistance. It is OK to receive help with the project but that help must be acknowledged.

Suggested components of an effective abstract:

**Purpose of the Experiment.** An introductory statement of the reason for investigating the topic of the project.

A statement of the problem or hypothesis being studied.  
**Procedures Used.** A summarization of the key points and an overview of how the investigation was conducted. An abstract does not give details about the materials used unless it greatly influenced the procedure or had to be developed to do the investigation.

**Observation/Data/Results.** This section should provide key results that lead directly to the conclusions you have drawn. It should not give too many details about the results nor include tables or graphs.

**Conclusions.** Conclusions from the investigation should be described briefly. The summary paragraph should reflect on the process and possibly state some applications and extensions of the investigation.

For additional abstract guidelines please see:

[www.ctsciencefair.org/student-guide/abstract](http://www.ctsciencefair.org/student-guide/abstract)

## Required component #2: Scientific Poster

(required format: .pdf, .jpg, .png, .tif)

If you are creating a digitally-generated poster, convert to PDF prior to uploading. If you are creating a physical poster, photograph it lying flat. Do NOT photograph standing upright with side panels in - judges will be unable to properly view it, and may miss an important part of your project!

The purpose of the display is to show the results of an experiment, not to conduct the experiment. Rely on your display board and report to communicate the results and capture the judges' attention. Use written reports, tables, graphs, and photographs to show equipment details, its operation, and your results. Refer to display and safety regulations below for details.

### Display Hints

#### Purpose of the Display

The purpose of the display is to describe your research work to the judges. The preliminary round of judging is your most important hurdle to overcome. At least one panel of judges (usually a group of three to five people) and sometimes (if your project is assigned multiple categories) as many as five panels of judges will review your work. Special Awards are judged in addition to the category judging.

Your job in preparing your display is to present the research aspects of your work as clearly and concisely as possible. A great project may escape the judges' attention if key elements are not presented or are buried in the back of a notebook.

#### What to Upload

Judges are looking for a description of what you set out to do, how you did it, special apparatus that you might have developed, your data, your interpretation of your data, results, and conclusions. For many projects all of this can be displayed using a poster display with key references, previous work, and a research report to provide details that are too complex for the backboard. Some projects, such as those dealing with computer software, will need special treatment to convey the importance of the work without having the computer present. The test is whether you can get your point across to an audience. The fact that you used a computer to model a process or compile your results does not mean that you need the computer at the fair to make your point. Of course, if your result is the operation of software that you developed, then you need to show typical results, pictures of computer screens, a description of the code that you wrote, etc. If a model that you built is important to telling the story, then you might choose to display it. Photographs of delicate specimens and your experimental setup, will enhance your story.

**Please note:** For 2023, Preliminary judging will be virtual and finalist judging will be in-person.

#### In-person Display Space

Everyone gets the same space allocation and not an inch more, no matter what. Only table space is provided. Your project must not be higher than 78 inches when measured from the table top. The width is limited to 48 inches and the depth to 30 inches. Size includes anything that you leave at the fair. If your display needs a brace, or an easel, the space that these items occupy is included in the size measurement. Prior to the fair, set up your project at home and check the dimensions. We are serious about the size limitations, so you should work out any problems in advance.

#### In-person Display Construction

The overall size (within fair restrictions) is up to you. Big displays don't necessarily mean good projects. Use whatever space it takes to tell your story. There are ready-made inexpensive backboards for sale. Again, the choice is yours. Some schools have reusable backboards, check and see. You can purchase very nice backboards. Your display must be free-standing! There are no walls to lean your display against and if you plan on propping it up against the display behind you, forget it!

#### In-person Lettering

Determine the size of your lettering based on reading distance. Three feet is typically reading distance for a display. Some type size suggestions are:

- Project Titles, 2 inches high
- Subtitles, 0.5 inches high and
- Lettering, 0.25 inches high.

Make your title clear and easy to read. Avoid type styles that may be hard to read. Fonts that have shadows or outlines may seem like a great idea but they are harder to read than simple lettering. Computer generated lettering is easy and economical. The title lettering should be at least 2 inches high. Press-on letters work too.

#### What to include in virtual and in-person displays

There are few formal requirements for the display contents. It is up to you. Ideas are presented here to help get you started.

#### On the Backboard

- **Project purpose** or, if it is an engineering project, state the **goals**.
- **Background** or introduction describing briefly what has been done previously by others.
- **Experimental plan or procedure**. For engineering projects provide design analysis, calculations, drawings, as appropriate.
- **Results**. Best handled with brief summaries (leave the lengthy details for your notebook or research report with a footnote on the backboard for where the judges should look). Graphs of data are best and are easier to interpret than tables full of numbers. A picture is really worth a thousand words.

- **Conclusions.** Summarize your important findings.
- **Discussion and applications.** A few words about ideas that you plan to explore (provided you're planning to continue the work) might be interesting. Applications of your work, especially if they are not obvious might be really exciting.
- All **graphics** and **photographs** must be labeled to cite the source of the material: yours or from a reference. Give information so the reader can locate the material for himself.

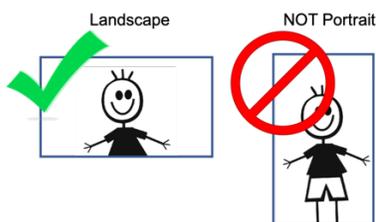
### What NOT to Include in your Display

- **Props.** Photographs are acceptable. You may wish to include a short demonstration in the optional video.
- **Hazardous Materials.** All chemicals should be left home. For more detail, please read the rules and regulations one more time.
- **Do Not Show Your Name, School Name your Display Board.** Your name and school can appear on your official CSEF abstract, journals, and report. Pictures of you working on your project are permitted.

### Required component #3: Photograph of student

(required format: .jpg, .png)

Have someone take a photograph of you or take one yourself, preferably conducting research. The photograph should include your entire face and is required to be taken in **landscape**, not portrait format. While the photograph may be of you with your poster, a candid shot conducting research is preferred.



## Optional Components

### Optional Component #1: Research paper, research plan, and/or bibliography

(required format: pdf)

Provide a copy of your research paper, plan, and/or your bibliography. We do not have a required format for reference pages. Appropriate formats like APA and MLA are all acceptable.

### Optional Component #2: Laboratory notebook

(required format: .pdf)

Scan a copy of your laboratory notebook or journal. You may include, but are not limited to, handwritten notes, annotated articles, data, additional graphs not on the poster, or photographs. If you maintain a digital notebook or journal that is also acceptable. Judges will be looking for evidence of authentic work to help them understand how you worked through your project.

### Optional Component #3: 1-minute Supportive Project Video

(required format: link only)

You may include a link to a 1-minute video that highlights the most significant findings of your research. This could provide you with an opportunity to describe one of more of the following:

- Demonstrate the function of your engineering invention
- Showcase the environment where you conducted your research, and, if pertinent, your contributions to the work
- Highlight the most significant results of your research
- Highlight the progression of your research from previous work in the related field

Put in simpler terms, think of this video as an opportunity to make that 1-minute sales pitch to a group of investors that simply wants to know about the problem that you addressed, and what you did to solve it. Your video does not replace your poster, research paper, or notebook, but rather is supportive of those materials, and provides you with the opportunity to (self) explain the significance of your work to the judges. This video should NOT attempt to recap all of your research, since it is such a short period of time.

Guidelines for creating your video:

1. Maximum length is 1 minute.
2. The CSEF website will only accept a **link** to the video: the video can be created as you wish, but must reside on the Internet (i.e., YouTube, Google Drive). If you upload to Google Drive, ensure that the video is set for view by "anyone with the link." Videos that are not accessible will not be viewed.
3. Do NOT speed up (to shorten) a video, so that it is 1 minute long. These videos will simply be disregarded by the judges when reviewing your project materials.

# Display and Safety Regulations

## Not Allowed at Project

1. Living organisms including plants, animals, microbes
2. Taxidermy specimens or parts
3. Preserved vertebrate or invertebrate animals
4. Human or animal food
5. Human/animal parts or body fluids (for example, blood, urine)
6. Plant materials (living, dead, or preserved) which are in their raw unprocessed, or non-manufactured state.
7. Laboratory/household chemicals including water (Exceptions: water integral to an enclosed apparatus; crystals grown by you, displayed in a sealed case, and removed after final judging)
8. All hazardous substances or devices (For example, poisons, drugs, controlled substances, firearms, weapons, ammunition, reloading devices, Class 3 and 4 lasers)
9. Dry ice or other sublimating solids
10. Sharp items (for example, syringes, needles, pipettes, knives)
11. Flames or highly flammable materials
12. Batteries with open-top cells
13. Awards, medals, business cards, flags, endorsements and/or acknowledgments (graphic or written) unless the item(s) are an integral part of the project
14. Photographs or other visual presentations depicting vertebrate animals in surgical techniques, dissections, necropsies, or other lab procedures
15. Active Internet or e-mail connections as part of displaying or operating the project at the CSEF.
16. Prior years' written material or visual depictions on the vertical display board.
17. Overlapping panels or pages on the backboard are not permitted. Supporting detailed information should be contained in a data book or as part of the research report.
18. Glass or glass objects unless deemed by the Display and Safety Committee to be an integral and necessary part of the project (Exception: glass that is an integral part of a commercial product such as a computer screen)
19. Any apparatus deemed unsafe by the Display & Safety Committee (e.g., large vacuum tubes or dangerous ray-generating devices, empty tanks that previously contained combustible liquids or gases, pressurized tanks).

## Allowed at Project BUT with the Restrictions Indicated

1. Photographs and/or visual depictions if:
  - a. They are not deemed offensive or inappropriate by the Display and Safety Committee.
  - b. They have credit lines of origin ("Photograph taken by..." or Image taken from..."). If all photographs being displayed were taken by the participant or are from the same source, one credit line prominently and vertically displayed is sufficient.

- c. They are from the Internet, magazines, newspapers, or journals and credit lines are attached. (If all photographs/images are from the same source, one credit prominently and placed on the backboard is sufficient.)
  - d. They are photographs or visual depictions of the participant.
  - e. They are photographs of human subjects for which signed consent forms are at the project or in the booth.
2. Soil, sand, rock and/or waste samples only if permanently encased in a slab of plastic or a sealed container.
  3. Any apparatus with unshielded belts, pulleys, chains, or moving parts with tension or pinch points may not be operated.
  4. Class 2M lasers:
    - a. May be operated only by the fair participant.
    - b. May be operated only during finalist judging.
    - c. Must be labeled with a sign reading "Laser Radiation: Do Not Stare Into Beam"
    - d. Must have protective housing that prevents physical and visual access to beam.
    - e. Must be disconnected when not operating.
  5. Class 3 and 4 lasers may not be operated.
  6. Any apparatus producing temperatures that will cause physical burns must be adequately insulated and only operated during finalist judging.

## Electrical Regulations

1. Bare wire and exposed knife switches may be used only in circuits of 12 volts or less.
2. All electrical connectors, (e.g., wiring, switches, extension cords, fuses) in high voltage circuits (over 12 volts) must be UL-listed and must be appropriate for the load and equipment. Connections must be soldered or made with UL-listed connectors. Wiring, switches, and metal parts must have adequate insulation and overcurrent safety devices (such as fuses) and must be inaccessible to anyone but the fair participant. Exposed electrical equipment or metal that is liable to be energized must be grounded or shielded with a grounded metal box or cage to prevent accidental contact. There must be an accessible, clearly visible on/off switch or other means of disconnect from the power source. Maximum is 500 watts, 120 volts A.C.
3. Finalists requiring 120 volt A.C. electrical power must provide a UL-listed 3-wire extension cord which is appropriate for the load and equipment.

## Only Table Top Displays are Allowed

### Maximum Size of Display

- 30 in. (76 cm) deep
- 48 in. (122 cm) wide
- 78 in. (198 cm) high from table

For Questions Regarding Display Rules  
Contact Mr. Bob Harris: [display@ctsciencefair.org](mailto:display@ctsciencefair.org)