



Important Information for Judges

To Our Judges:

Thank you! The success of the Flint Regional Science & Engineering Fair depends on the contributions of time and expertise by local professionals in the science, medical, teaching, and engineering fields who serve as volunteer judges.

You can add great value to the fair by talking to your friends and colleagues about joining us as judges in this important volunteer effort to promote science and engineering education in our community.

On-line judges registration is possible through the FRSF web site:

www.flintsciencefair.org/ Click on the <Judges> button.

Or call: 810-762-9583

Fax: 810-762-9836

Email: director@flintsciencefair.org

While the obvious focus of the Science Fair is on the kids, judges also find this to be highly rewarding experience. It's a great opportunity to meet bright and enthusiastic young people and share your profession and real world experience. You are making a memorable impact on the lives of young people.

Location of the Fair

The FRSF is held each year on the 5th floor of the Campus Center at Kettering University in Flint, Michigan. Here is a web link to a map and directions: <http://www.kettering.edu/node/79>

Parking is available on the south side of the Campus Center behind the Mott Building and Thompson Hall. Mobility impaired and limited general parking is available in front of the Campus Center. This web link is to an interactive map of the campus:

<http://www.kettering.edu/about/campus-map/interactive-map>

Timing

On the weekend of the Fair, we need 80 judges on Friday evening from 7-10 p.m., and 60-70 judges Saturday morning from 8 a.m. to 12 noon. You may volunteer to judge either day or, hopefully, both.

Judges are also encouraged to be available Saturday morning to interview students whose projects were not selected as finalist. These are especially important interviews as you can provide encouragement and e.g. insight as to how to make their project good science, to kids who might otherwise get discouraged.

The Role of the Judge

The role of an FRSF Judge is to evaluate the projects assigned to them and to give each project a score which will ultimately be used to determine which awards that project will receive. Projects are graded on five criteria: Scientific Thought, Thoroughness, Skill, Creative Ability and Clarity. Engineering projects use the same five criteria but the methodology used for engineering projects is different from science projects—see explanation below.

On Friday evening the goal is to have each project reviewed by several judges. Scores are averaged with the top scoring projects being identified as Finalists. Judging forms with criteria, scoring and the projects to be evaluated are provided to each judge. It is important to fill in the ovals completely, and not make stray marks or notes on these judging forms, as they will be optically scanned and tabulated. Students are not present for this portion of the judging.

On Saturday morning, Finalist Students are interviewed by either Teams of multidisciplinary judges or by individual judges depending upon Division. As with Friday evening judging, forms are provided. Scores from these interviews will determine the winners of the Fair. Some judges help with non-finalist interviews after completing their duties as a finalist judge while other judges prefer to focus on non-finalist students (see below).

Projects are assigned to one of three divisions, based upon the student's grade level. Elementary (4th and 5th); Junior (6th, 7th and 8th); Senior (grades 9- 12). The Junior Division is divided into three sub-divisions by subject category: Life Sciences, Physical Sciences, and Earth and Chemical Sciences. All Senior Division projects are judged individually. Group projects are judged as one category regardless of grade level.

Non-Finalist Interviews: On Saturday morning students whose projects were not recognized as a finalist are each interviewed by a judge. In many ways these are perhaps the most important judging interviews as they provide an opportunity to help a struggling student get a better understanding of their topic or how to approach a science or engineering project more effectively--help them understand how to make their project better science next year, etc. These interviews can help students stay engaged in inquiry when they might otherwise get discouraged. Hopefully they are starting a lifelong journey of inquiry.

Evaluation Criteria

- Scientific Thought / Engineering Goals – Was the problem stated clearly and was it limited so that it was possible to attack it? Was there a plan for reaching a solution? Are the variables / constraints clearly defined? Is there enough data to support the conclusion?
- Thoroughness – How completely has the problem been covered in the project? Are the conclusions on a single experiment or several? How much time was spent on the project?
- Skill – Does the student have the laboratory, computation and design skills required to gather data to support the project? Where was the project done? What help did the student have? Was the equipment used built by the student or was it borrowed?
- Creative Ability – Does the project show creative ability and originality in the question asked and the approach to solving the problem? Does the project show creative use of materials and equipment?
- Clarity – Are the statements of the question or problem explored and results on the display? Is all spelling correct? Does the display show the effective use of graphs and pictures? The FRSF emphasizes the use of the Scientific Method/ Engineering Method. Projects should

demonstrate a clear understanding of these concepts through experimentation and the clear presentation of the results.

The FRSF emphasizes the use of the Scientific Method or the use of the Engineering Method. Both methods, with ISEF judging criteria, are described in more detail here: <https://student.societyforscience.org/judging-criteria-intel-isef>

Conflicts of Interest

A potential conflict of interest arises when a judge is personally acquainted with a student they will be judging. This acquaintance can be a family member, or a professional relationship (mentoring, teaching, etc.) It is the responsibility of the individual judge to notify the FRSF Board of any potential for conflict of interest at the earliest possible time (ideally on the Judge Application Form) so that we can eliminate the conflict.

About The FRSF

Flint Science Fair, Inc. is a non-profit (501 c 3) organization supporting the promotion of science, technology, engineering and mathematics for students in 4th through 12th grades from Bay, Genesee, Lapeer, Midland, Saginaw, Shiawassee, St Clair and Tuscola Counties. Our mission, as stated in the FSF By-Laws is: "...to stimulate an active interest among young people in the several fields of scientific study and to give public recognition to talented students by sponsoring and promoting expositions of science projects developed and built by students and awarding prizes and scholarships to students who create and display outstanding projects." Flint Regional Science Fair is the current name of the annual exposition sponsored by FSF.

Awards and Recognition

We award scholarships, gift cards, prizes and awards to all the top entries in each division and category. Last year awards, including ISEF trips totaled nearly \$28,000.

ISEF--Each year FRSF sends five students, all-expenses paid, to the annual INTEL International Science and Engineering Fair (ISEF). Three Senior Division winners are sponsored to compete in ISEF and two freshmen/sophomore students are sponsored to attend ISEF as Observers. In 2011 two FRSF winners both won 1st Place and Best in Category at ISEF, and in 2013 and 2015 one FRSF winner won 3rd Place at ISEF and several students won special awards at ISEF. Senior Division Finalists are nominated to compete in the Michigan Science & Engineering Fair.

MASTERS-- Up to 10% of students in grades 6 through 8 become eligible to apply for the SSP Broadcom MASTERS (Math, Applied Science, Technology and Engineering for Rising Stars) Middle School Program (formerly Discovery Channel Young Scientist Competition) in Washington. We are pleased that FRSF has produced 12 semi-finalists and 4 finalists in this prestigious competition in recent years.

In the end, it is the judges that provide the most lasting impressions of the FRSF, providing encouragement for our community's scientists and engineers of tomorrow.

Thank you for volunteering to be a critical part of this year's Flint Regional Science Fair.
Interview Discussion Sample Topics on Page 4

Some interview discussion topics

Your best tool in judging is your ability to ask questions. Be sensitive to what the student knows. There are some questions all students should be able to answer, including variations on:

- How did you come up with the idea for this project?
- What did you learn from your background search?
- How long did it take to conduct the experiments?
- How many times did you conduct the experiment?
- How many samples does each data point represent?
- Did you take all data under the same conditions?
- How does your apparatus or prototype (equipment/instrument) work?
- When did you start this project?
- What is the next experiment to do in continuing this study?
- Where did you get your subjects (bacteria, plants, etc.)?
- What skills did you acquire to do this project?
- Which are your controls? Which are your variables? (Science projects)
- What are the constraints in your proposed solution? (Engineering projects)
- What alternative solutions did you explore? (Engineering projects)
- How did you determine the sample size to be used?
- What help did you get from others (teachers, family, etc.)?
- What is the most important thing you learned?
- What would you do differently if you redid the experiment?
- Could you have...?
- What if you had...?
- What application does this project have to your/my life?
- Are there any important areas that we have not covered?
- Do you have any questions for me?

Note: These are suggestions to keep the dialog going. You may find other questions to be more useful in specific interviews.