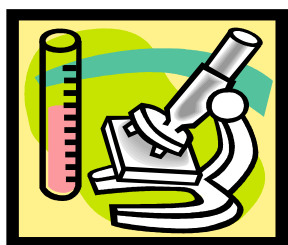


Science and Engineering Fair of Metro Detroit

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61st Annual Science Fair
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Fair co-Directors



Fair Director's Comments

Why enter the Science Fair? That question is frequently asked by students, parents, teachers, and school administrators. And yet, the Science Fair continues to be the single most important event that is directed towards competition of students requiring an experiment or actual project. In 2014, 1,569 projects were entered representing 140 schools and 187 teachers. Over 19% of those entering received a 'Gold' award for their achievements. In the Senior Division (9th-12th), 8 students got an all expense paid trip to the International Science Fair where several received awards (see article later).

The Science Fair competition reinforces the scientific method in completing a

project. The concepts of creating an initial hypothesis, developing an experiment to prove/disprove the hypothesis, keeping a 'log book', and formulating conclusions form a framework for years to come, whether a student chooses a technical field or not. Students learn to develop the art of presenting a concept and 'selling' or explaining that concept to professionals in the field. Furthermore, they can earn the recognition and awards that go with completing a project successfully.

If your school does not participate in the Science Fair, maybe you should consider adding it -- for the students!

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Upcoming Deadlines

- ◆ Affiliation Deadline -12/1
- ◆ SRC/IRB - 12/1
- ◆ Entries Due - 2/9/18
- ◆ Setup -3/13/18
- ◆ Judging-3/14/18

Important Information For This Year's Fair!

- Categories have been revamped! Project categories have changed and are now consistent with the International Categories. There are many new categories, like Robotics, Systems Software, & Bioinformatics! For the Junior Division, the project categories have been reduced and simplified.

- IRB (Institutional Review Board) - Each school that has students doing projects with human subjects (surveys, taste tests, etc), must have a functional IRB. The IRB must review all related projects by Dec 1 and submit its findings to the Scientific Review Committee (SRC).

- SRC Forms have changed this year. Refer to the detailed ISEF Rules on the web site.

- School Affiliation Agreement: Before students can submit entries online ,

the school must complete a 'Science Fair-School Affiliation Agreement'. There are several school options to be configured. **Again this year-** schools may 'self affiliate' via the web site.

- Quota: For the 61st SEFMD, all schools may send up to 61 PROJECTS to the Science Fair.

- Team projects for 6th-8th Grade Junior Division Students (up to FOUR team projects).

- Entry fee structure remains as follows: Schools pay a \$50.00 affiliation fee and affiliate online. Individual projects remain at \$5.00 each, Team projects will be \$15.00 per project. All students must enter on line!

Major Events Calendar

Nov 18, 2017, -
Workshop at Library

Dec 1, 2017 - SRC
Deadline

Feb 9, 2018 - All
entries due ON LINE.

Feb 12 - Teachers
emailed notices

Mar 13 (9AM-7PM)
Project Setup

Mar 14 (8AM-5PM)
Judging

Mar 15 (9AM-7PM)
Public Viewing

Mar 16 (9AM-5PM)
Public Viewing

Mar 16 (5PM-7PM)
Project Removal

Mar 17 (9AM-11AM)
Project Removal

Apr 7
State SF, Fair

May 13-18 ISEF in
Pittsburgh, PA

Grade Levels - Types of Projects

The Science Fair is open to 6th through 12th grade students. A student may compete in one of 12-22 different categories. There are twelve categories for the Junior Division and there are twenty-two categories for the Senior Division. Students in grades 6-12 may also enter a 'team' project (2 or 3 students).

Categories that a student may select include: Animal Sciences; Behavioral &

Social Sciences; Chemistry; Earth and Environmental Sciences; Mathematics; Plant Sciences; and MANY MORE!! A detailed description of each of the categories is located on the web site.

A student should choose his or her project category carefully. Absolutely no changes will be allowed once the entry form is submitted!

How to Write a Research Plan and/or an Abstract

One of the first steps towards entry is to complete the entry form (via the internet) and write a research plan or abstract about your project. The abstract gives the essence of the information describing your project in a very brief (approximately 250 words) but complete form. An abstract should include the (a) purpose of the experiment; (b) procedures used; (c) data; and (d) conclusions. It may also include any possible research

applications. Only minimal references to previous work may be included. The abstract should not include acknowledgements or work or procedures done by a mentor. **Samples of abstracts (both good and poor) are on the web site.** Check under Entry Form Info - Sample Abstracts. Remember that your abstract is the first part of judging and may determine whether your project will be accepted for further judging at Cobo or not!

Do You Need Additional Forms? Animals? Humans?

Projects that use vertebrate animals, human subjects, human or animal tissue, recombinant DNA, or pathogenic agents require additional forms. These forms may be obtained from the web site. All of these forms must be completed before beginning your project. In addition, the student **must enter online** before submitting the forms.

Senior Division students (grades 9-12)

must submit these forms by Dec. 1 in order to receive approval from the Science Fair's SRC. Projects involving human subjects must first be approved by the school's IRB.

Junior Division students (Grades 6-8) should keep these completed forms in their project notebooks and bring them to the Fair. SRC pre-approval is not needed. School IRB approval is required for work with human subjects.

Enter On-Line via the Internet!

This year all projects must be entered on-line via the internet! The school must first 'authorize' internet entries (on the School Affiliation Form). When students enter on-line, their projects can not be rejected due to 'mechanical' errors (such as omitting a category).

Students may revise their entries up until the deadline and will be notified first regarding acceptance (or rejection)

of their project. Award information is also emailed directly to the students!

Teachers also receive updates as their students send in their on-line entries.

To enter on-line, use the web site and click on 'Entry Form Info'. Note - if your school has not authorized internet entries, a teacher may do so in about three minutes.

Professional Awards in Recognition for Excellence

Various special awards are given at the Fair by technical societies, professional associations and institutions, governmental agencies, and businesses. These are in addition to the many awards given by the Fair itself.

At the 2017 SEFMD, the value of all awards given, including scholarships, was close to \$100,000. The particular awards are varied: plaques, books, certificates, company dinners and recognitions, cash awards and savings bonds. A four week trip is awarded to attend the Weizmann Institute in Israel.

A list of those organizations that provided awards in the past is on the web site under Awards/Winners.

In 2017, Oakland University, Lawrence Technological University, and the University of Detroit Mercy all provided scholarships to the top winners. We anticipate that the universities will continue their support for 2018!

If you know of someone who would like to provide a special award, ask him or her to contact the Science Fair Office.

MSEF/ISEF

The 23rd Annual Michigan Science and Engineering Fair (MSEF) will be held April 7, 2018 at Kettering University, Flint, MI. All Senior Division 1st place winners and some selected 2nd place and 3rd place winners will be invited to participate in the State Fair. These students will be competing for additional state fair awards and scholarships, as well as competing for a place as an ISEF Finalist.

The International Science and Engineering Fair (ISEF) will be held May 13-18, 2018 in Pittsburgh, PA. Six individual Senior Division Projects and one team project are selected at the Metro Detroit Fair to compete at the ISEF. Over \$2 million in awards and scholarships will be presented. The sponsoring teacher is invited to accompany the student to the ISEF on a cost-sharing basis.

Awards at the 2017 SEFMD, MSEF, and ISEF

The following students won awards at the ISEF in Los Angeles in May, 2017, representing Detroit and Michigan:

Clara Wagner, (grade 12) Saginaw Arts & Sciences Academy, 1st award & best of category in Biomedical Engineering, Indus Trip to India, 1st award Air Force Research Academy

Malini Mukherji, (grade 11) Notre Dame Preparatory, 3rd award in Energy: Chemical, American Statistical Association honorable mention

Marlies Michielssen (grade 12) Washtenaw International School & **Shrikant Chand** (grade 11) Detroit Country Day School, 3rd award in Chemistry

Varun Sathyan, (grade 12) Troy Athens High School, Oracle Academy outstanding project

Neha Seshadri (grade 11) Skyline H.S., 4th award in Biomedical & Health Sciences

Madeleine Yang, (grade 10) Detroit Country Day, 4th award in Biomedical Engineering

Rashad Prendergast (grade 12) Cass Technical H.S., 4th award in Earth & Environmental Sciences.

Rashad Prendergast was also the recipient of the trip to the Weizmann Institute of Science in Rehovot, Israel.

CONGRATULATIONS to all of these students!!

Judging - 3 Phases

1-Entry Form

- is received on time
- is completed correctly
- is a project-not a book report
- complies with SRC/IRB pre-approvals (if necessary)

2-Judging - Preliminary Round

- At Cobo Center
- Interviews (Sr)
- Interviews (Jr Teams)
- Stand alone (Jr)

3-Judging - Final Round

- Selection of ISEF Finalists (Sr)
- Selection of Jr Grand Awards

Scoring/Judging

- 10%-Research Question
- 15%-Design/Methodology
- 20%-Execution
- 20%-Creativity
- 35%-Presentation
 - 10%-Board
 - 25%-Interview

Entry Fees:

School Affiliation Fee:

\$50/school (discounted to \$25 if paid before 12/1 and affiliated online)

Individual Projects

\$5/project

Team Projects:

\$15/project

Project Displays - Size Matters!



Our 'virtual' office is:

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Fax:
(248) 479-0383

E-mail:
SF2018@sefmd.org

We're on the Web!
www.sefmd.org
OR
www.sciencefair.info

All projects entered and accepted for display at the SEFMD must follow certain "Display and Safety" guidelines (detailed on the web site). Briefly, the most critical items are:

1. Display must stand on its own.
2. Must not exceed size restrictions:
Jr Div - 36" x 108" x 24" (w/h/d)
Sr Div - 48" x 108" x 48" (w/h/d)
3. Certain items are not allowed on

displays, including live material, cultures, fungi, chemicals, dry ice, food (human or animal), etc. (see web site)

4. Displays should not include valuables (make use of photographs instead).
5. Display must be **completely** set up during project setup and approved by a Display & Safety Committee member.
6. No electricity will be available.
7. Anything potentially hazardous to the public is **prohibited**.

Sponsors and Press Releases

Although there is a nominal \$5.00 entry fee per individual project (and \$15.00 entry fee for team projects), the majority of the cost of the science fair is borne by individual and corporate sponsors.

For a complete list of the sponsors for the fair, please look at the web site under 'sponsors'.

Periodically, news releases are issued regarding the science fair and individual projects and are posted on the web site.

Weizmann Institute of Science Award by Rashad Prendergast

Throughout these past four weeks (July 2017), I've had so many new positive experiences I never would have imagined prior to this program. This summer has been completely fulfilling academically, culturally, and socially. In the laboratory, I had the opportunity to study in the department of immunology. My research project involved the study of the role of autoimmune regulators in the DNA damage response. I learned many new things about the immunology field and concluded the program with a paper and oral presentation. But through observing my mentor and collaborating with my lab partners, I have also learned about the nature of scientific research and curiosity. I know what I have learned this summer will greatly benefit me as I embark on the next chapter of my life, in the fall, at the University of Michigan - Ann Arbor.

Academics aside, I have also gotten the chance to experience Israel as a country. I had never been to Israel before this, so the program was a series of new sights from the Dead Sea to the Old City of Jerusalem to the beautiful Negev desert. I learned so much about the Israeli history and culture. My favorite part of the program was by far the six-day desert excursion where we spent one night under the stars and woke up at 4:30 a.m. every day for a new exciting hike. The hike up Masada was the most amazing because we made it up in time for the sunrise. I have experienced many things, but this program is by far one the best experiences of my life.

Lastly, the most rewarding aspect of this program was the friendships formed during the four weeks. I got to meet individuals from 16 different countries, each with their own amazing story to tell. Almost every night was spent learning about someone's culture or background and by the end of the program I felt that I had a family of 80 members. I know the friendships I've made in this program will be long-lasting, and I'd like to think that this is not the last time I will see everyone. The International Summer Science Institute was a once in a lifetime experience that I will never forget, and I encourage anyone with the opportunity to go to take it.

[To see some of Rashad's pictures, go to the science fair website.]