Symposia sessions are an opportunity to share information with students, parents, teachers and fair directors, and do not imply endorsement by Society for Science & the Public. No fees have been paid.

MONDAY, MAY 13

8:45 a.m. to 9:45 a.m. | Room: West 101 A/B/C
When Researchers Apply to College
Chris Peterson, Massachusetts Institute of Technology, Cambridge, MA
Brenna Heintz, Swarthmore College, Swarthmore, PA
We will discuss strategies for approaching the (American) college search and admissions process as relevant to young researchers.
Type: Presentation; Audience: Students

8:45 a.m. to 9:45 a.m. | Room: West 106B

Teaching Current Research and Science Literacy with Science News in High Schools Anna Rhymes, Society for Science & the Public, Washington, DC The Society's Science News in High Schools program is offering ways to integrate current research and literacy-base learning into classroom curricula to make science more

approachable and meaningful for students.

Type: Hands-on Workshop; Audience: Fair Directors, Teachers

8:45 a.m. to 9:45 a.m. | Room: West 106C

Funding the Future of YOUR Fair!

Kathleen Bethel, Southern Arizona Research, Science and Engineering Foundation, Tucson, AZ Bruce Makous, Society for Science & the Public, Washington, DC

Identify new sources of funding, design sponsorship invitations and create sample letters that will guarantee donors. You will walk away with everything you need to fund next year's fair and travel to ISEF!

Type: Hands-on Workshop; Audience: Fair Directors, Teachers

10:00 a.m. to 11:00 a.m. | Room: West 101 A/B/C

Judging at Intel ISEF

Bill and Lorna Glaunsinger, Judging Chairs, Intel ISEF 2019, Phoenix, AZ Robert Yost, Intel ISEF, Judging Ombudsman

Join us for a question-and-answer session about judging at Intel ISEF. The presenters will explain their roles to aid students during judging and provide an overview of the judging process for those new to Intel ISEF. (Exact same session to be given at 12:45 p.m. today). Type: Presentation; Audience: Fair Directors, Teachers & Students

11:15 a.m. to 12:15 p.m. | Room: West 106C

Leveraging Your Science Fair Experience: Oh the Places You Can Go!

Maya Ajmera, Moderator, President and CEO, Society for Science & the Public, Washington, DC Life after Science Fair! Bring your questions to a discussion with recent ISEF finalists. Hear about their triumps, college and career choices, and how their science fair experience set them up for success. Panel of four alumni will share stores about their academic and career pathways, the impact of science fairs, and how current participants can leverage the opportunity to further their own academic and professional pursuits. Type: Panel Discussion; Audience: Fair Directors, Teachers & Students

Science Fair

Movie Screening—Free admission with presentation of Intel ISEF badge

Monday, May 13, 2019 AMC Theaters at the Arizona Center 565 N. 3rd Street, Phoenix | 11:00 a.m. and 1:30 p.m.



"A FUNNY AND INSPIRATIONAL OSCAR-CONTENDING DOC." -Scott Feinberg, The Hollywood Reporter

"**THE FUNNIEST MOVIE** OF THE YEAR." -Kevin Fallon, Daily Beast

"ENDLESSLY DELIGHTFUL."

"MELTS YOUR HEART MOST AS SOON AS IT BEGINS." -Monica Castillo, RogerEbert.com

"SUPREMELY ENTERTAINING." -Peter Debruge, Variety

"THE ULTIMATE CROWD-PLEASER."

"UTTERLY WINNING. LIKE 'HOOP DREAMS' FOR TEST TUBES AND GENOMES." -Leah Greenblatt, Entertainment Weekly

"UNFAILINGLY CHARMING." -Teo Bugbee, The New York Times

"LIKE A CHRISTOPHER GUEST MOVIE - **BUT REAL**." -Dino Ray Ramos, Deadline

"A ROUSING SUCCESS."

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WORLD BROADCAST PREMIERE THURSDAY MAY 9 8/7c NATIONAL GEOGRAPHIC

ScienceFairFilm.com

12:45 p.m. to 1:45 p.m. | Room: West 101 A/B/C

Judging at Intel ISEF

Bill and Lorna Glaunsinger, Judging Chairs, Intel ISEF 2019, Phoenix, AZ Robert Yost, Intel ISEF, Judging Ombudsman

Join us for a question-and-answer session about judging at Intel ISEF. The presenters will explain their roles to aid students during judging and provide an overview of the judging process for those new to Intel ISEF. (This is the exact same session that was given this morning.)

Type: Presentation; Audience: Fair Directors, Teachers & Students

1:00 p.m. to 2:00 p.m. | Room: West 106B

To Use or Not to Use Calculators to Support Curriculum. That is the Question? *Caren Standfast, Blair Academy, Blairstown, NJ*

This forum will discuss the pros and cons of using calculators to prepare kids for college mathematics. Beginning with understanding the goals of teaching mathematics at high schools, we will discuss best practices behind calculator usage in math. Please bring your calculator!

Type: Hands-on Workshop; Audience: Teachers

2:15 p.m. to 3:15 p.m. | Room: West 101 A/B/C

Navigating Intel ISEF — What You Need to Know to Steer Your Way Through the Week Ingrid Weigand, Austin Science Education Foundation, Austin, TX

Intel ISEF week overview for first time Fair Directors: what to expect each day, deadlines for certain tasks, how to prepare students for judging, events to attend and resources available. Type: Presentation; Audience: Fair Directors

2:30 p.m. to 3:30 p.m. | Room: West 106B

Applying to Highly-Selective Engineering Schools Outside of the United States Stephen Johns, University of Toronto, Canada

Catherine Eames, Imperial College London, United Kingdom

Advice and guidance for school counsellors and students from admissions representatives at two of the worlds' leading engineering schools in Canada and the United Kingdom. Type: Presentation; Audience: Teachers, Students

2:30 p.m. to 3:30 p.m. | Room: West 106C

Protect Your Intellectual Property: Patents, Trademarks, Copyrights and Trade Secrets *Jorge L. Valdes, United States Patent & Trademark Office, Alexandria, VA*

Learn how intellectual property tools (patents, trademarks, copyrights, trade secrets) can help protect your science and engineering projects and help you continue on the path to innovation. (If you cannot make this session, Dr. Valdes will be holding the same session on Wed. at 11:15 a.m.)

Type: Presentation; Audience: Fair Directors, Teachers & Students

3:30 p.m. to 4:30 p.m. | Room: West 101 A/B/C

Best Practices for Incorporating Statistics and Charts in Your Project

Cora Neal, Weber State University, Ogden, UT

This presentation will help students, parents, and teachers learn about how to best incorporate statistical outcomes and charts into your science fair project. Type: Presentation; Audience: Fair Directors, Teachers & Students 3:45 p.m. to 4:45 p.m. | Room: West 106B
Applying to United States Colleges as an International Student
Tiffany Velez, Massachusetts Institute of Technology, Cambridge, MA
Brenna Heintz, Swarthmore College, Swarthmore, PA
In this session, we will discuss admissions strategies for international students considering
U.S. institutions of higher learning.
Type: Presentation; Audience: Students
3:45 p.m. to 4:45 p.m. | Room: West 106C

Judging Day Tips, Tricks, and Help Crafting Your Pitch!

Liz Baker-Bowman, Southern Arizona Research, Science and Engineering Foundation, Tucson, AZ Get advice on judging from an ISEF winner and judge. Leave with a 30 second introducton to start each interview with confidence! Type: Hands-on Workshop: Audience: Students

TUESDAY, MAY 14

8:45 a.m. to 9:45 a.m. | Room: West 106B

Exploring Asteroid Bennu with the OSIRIS-REx Mission

Dathon Golish, University of Arizona, Tucson, AZ

The OSIRIS-REx spacecraft arrived at asteroid Bennu in December, 2018. Since then, we have taken thousands of beautifully detailed images of this previously unexplored asteroid. Come hear and learn about this exciting mission!

Type: Presentation; Audience: Fair Directors, Teachers & Students

Today's students are creating tomorrow's success stories.

The visionaries of the future are in school right now, preparing to change the world. GoDaddy is proud to sponsor the 2019 International Science & Engineering Fair to help students make the world they want.



8:45 a.m. to 9:45 a.m. | Room: West 106C

Building Science Fair Culture in an Educationally Diverse Region

Mary Lou Ewald, Auburn University, Auburn, AL

Successes and lessons learned from a five-year National Science Foundation supported initiative to increase the quantity and quality of science fair projects in a region of Alabama with some of the most under-resourced schools in the country. Type: Presentation; Audience: Fair Directors, Teachers

9:30 a.m. to 10:30 a.m. | Room: West 101 A/B/C

Admissions 101: Pursuing Science and Engineering at Highly-Selective Universities Samantha Goldfarb, Columbia University, New York, NY An overview of college education in STEM, expecially at highly-selective universities, plus insight into finding the best "fit" college and translating that into applications.

Type: Presentations; Audience: Teachers, Students

10:00 a.m. to 11:00 a.m. | Room: West 106B

Simplistic Statistics for Secondary Students

Patricia Zalo, Manatee High School, Bradenton, FL

M&M's can be used to provide hands-on activities to introduce four inferential tests: Chi-Square, z-score, t-tests, and Pearson product moment correlation coefficient. Type: Hands-on Workshop; Audience: Fair Directors, Teachers & Students

10:00 a.m. to 11:00 a.m. | Room: West 106C

Regeneron Science Talent Search: A Program of the Society for Science & the Public *Allie Stifel, Society for Science & the Public, Washington, DC* Learn about the nation's oldest and most prestigious STEM competition (and a chance to win

\$250,000). The 2020 application will open June 1, 2019 for rising U.S. high school seniors. Type: Presentations; Audience: Fair Directors, Teachers & Students

11:15 a.m. to 12:15 p.m. | Room: West 101 A/B/C

Communicating Your Science — and Doing It Well!

Janet Raloff, Science News for Students and Society for Science & the Public, Washington, DC Let the professionals from the Society's Science News magazine show you how to write about and discuss your science in such a way that others will understand and care about the message you want to convey.

Type: Workshop, Presentation; Audience: Students

11:15 a.m. to 12:15 p.m. | Room: West 106B

Crash Course: Quantifying Uncertainty and Why It Is Important

Paul Strode, Fairview High School, Boulder, CO

We must learn to embrace uncertainty, understand how to use it, and know its limitations. Learning to calculate uncertainty by hand is the first step.

Type: Hands-on Workshop; Audience: Fair Directors, Teachers, & Students

11:15 a.m. to 12:15 p.m. | Room: West 106C

Rocket-Launching Your Future in STEM: The Best Pro-tips to Make It Happen! Anjali Bhatia, Crimson Education, San Francisco, CA

Learn top tips for applying to your dream universities, focusing on STEM majors, engineering schools, and BS/MD programs + how to position yourself for rockin' careers. Type: Workshop, Presentation; Audience: Fair Directors, Teachers, & Students

Get Involved.

Society for Science & the Public is proud to announce that the International Science and Engineering Fair will be held in Anaheim, California, May 10–15, 2020.



VOLUNTEER, JUDGE, OR INTERPRET

To learn more: student.societyforscience.org/ISEF2020

www.nsa.gov

Congratulations 2019 ISEF Finalists!

NSA is proud to support ISEF as a Special Award Organization and we appreciate your achievements. We are confident in a better future because of the dedication of scientists like yourselves. Please visit our researchers in the expo hall. Good luck and have a great week.

Stop by our Symposium on Thursday, May 16, 3:30 p.m. to 4:30 p.m. | Room: 106C "Meet NSA's Executive Director"

The Storage Tek Automated Cartridge System (ACS) National Cryptologic Museum

WEDNESDAY, MAY 15

8:45 a.m. to 9:45 a.m. | Room: West 106B

The Science Behind Crime Scene Analysis

Melissa Beddow, Grand Canyon University, Phoenix, AZ Come find out how various scientific disciplines are used in gathering information from evidence found at crime scenes! Type: Hands-on Workshop; Audience: Fair Directors, Teachers & Students

8:45 a.m. to 9:45 a.m. | Room: West 106C

Teaching Students to Think Like Scientists

Paul Strode, Fairview High School, Boulder, CO

Teaching students to think like scientists requires transforming the traditional science classroom into a place of constant inquiry and analysis. Here's how I do it! Type: Presentation; Audience: Fair Directors, Teachers & Students

9:45 a.m. to 10:45 a.m. | Room: West 101 A/B/C

SRC — 2020 Rules and Guidelines

Intel ISEF 2019 Scientific Review Committee

Meet with members of the Intel ISEF Scientific Review Committee to learn of changes in the 2020 International Rules and Guidelines. A Q&A period will follow. Type: Presentation; Audience: Fair Directors, Teachers & Students

10:00 a.m. to 11:00 a.m. | Room: West 106C

Outreach and Equity Programs at Society for Science & the Public

Caitlin Sullivan, Society for Science & the Public, Washington, DC Learn about the Society's Research Teachers Conference, Advocate Grant Program, STEM Action and Research Grants, and Science News in High Schools. Type: Presentation; Audience: Fair Directors, Teachers

11:15 a.m. to 12:15 p.m. | Room: West 101 A/B/C

Protect Your Intellectual Property: Patents, Trademarks, Copyrights and Trade Secrets *Jorge L. Valdes, United States Patent & Trademark Office, Alexandria, VA*

Learn how intellectual property tools (patents, trademarks, copyrights, trade secrets) can help protect your science and engineering projects and help you continue on the path to innovation.

Type: Presentation; Audience: Fair Directors, Teachers & Students

11:15 a.m. to 12:15 p.m. | Room: West 106B

Using Science Coach in Your Fair to Increase 6th-12th Grade Project Quality and Quantity Jill Malcom, Science Coach, Saint Louis, MO

Implementing the non-profit Science Coach program equips, trains, and compensates teachers to coach 6th - 12th grade students to complete high-level research projects. Type: Presentation; Audience: Fair Directors, Teachers



Sponsor of the Broadcom MASTERS® and founding member of the National STEM Funders Network & STEM Learning Ecosystems, Broadcom Foundation is proud to host the President's Breakfast honoring

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AFFILIATED SCIENCE FAIR DIRECTORS

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11:15 a.m. to 12:15 p.m. | Room: West 106C

Using Comprehensive Outreach to Grow Your Fair's Size, Quality, and Impact

Brooke Meyer, Southern AZ Research, Science and Engineering Foundation, Tucson,AZ Use comprehensive educational outreach as the tool to grow your community's fair! You will evaluate your settings and look for ways to nurture science and engineering involvement of students, teachers and parents. The value of using a "Whole-Package" approach will be discussed.

Type: Presentation; Audience: Fair Directors, Teachers

1:00 p.m. to 2:00 p.m. | Room: West 106C

Intel ISEF Display & Safety Rules

Diane Hecht, Chair, Intel ISEF 2019 Display & Safety Committee

Come join the Display & Safety Committee to dicuss infractions encountered this year as well as changes to the rules and guidelines for 2020. Bring your questions for the committee to answer.

Type: Panel Discussion; Audience: Fair Directors, Teachers

2:00 p.m. to 2:30 p.m. | Room: West 106B

Competency-Based Instruction and Assessment in a High School Research Course *Kim Hoehne, Minnetonka High School, Minnetonka, MN* Learn how competency-based skills spawn development, feedback, and assessment,

shifting ownership of learning to students and creating a growth-mindset within a high school research course.

Type: Presentation; Audience: Teachers

2:30 p.m. to 3:30 p.m. | Room: West 106C

How to Write an Effective Letter of Recommendation Chris Peterson, Massachusetts Institute of Technology, Cambridge, MA Serena McCalla, iResearch Institute, Jericho, NY We will provide advice on how to write an effective, compelling letter of recommendation on behalf of a young researcher specific to the college admissions context. Type: Presentation; Audience: Teachers

3:00 p.m. to 4:00 p.m. | Room: West 106B

Intel ISEF Scientific Review Committee — SRC Project Review

Intel ISEF Scientific Review Committee

Meet with members of the Intel ISEF Scientific Review Committee to discuss project review by local and regional SRC's and to review "sample" projects. English and Spanish speaking members will be in attendance. Preference given to those who have not previously attended. Type: Workshop; Audience: Local & Regional SRC Members

THURSDAY, MAY 16

8:45 a.m. to 9:45 a.m. | Room: West 106C

Supporting Students with the Regeneron Science Talent Search Application Process Allie Stifel, Society for Science & the Public, Washington, DC

This session will advise teachers and mentors on how to support high school students with the Regeneron STS process, review upcoming changes to the official rules and application, discuss promotional efforts, and demonstrate the new Rules Wizard. A previous session (Tuesday at 10:00 a.m.) will provide an overview of the Regeneron STS program; this is a follow-up session for adults.

Type: Presentation; Audience: Fair Directors, Teachers

Visit the Intel ISEF 2019 Commons

Phoenix Convention Center | West Hall 2

Discover and interact with top universities and other great organizations that can help guide your future in STEM.

Hours are:

Sunday, May 121:00 p.rMonday, May 139:00 a.lTuesday, May 148:00 a.Free continental breakfast will be served.

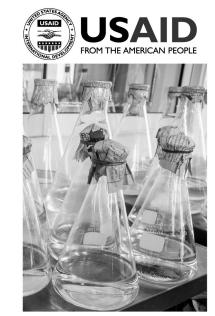
1:00 p.m.	.–5:00 p.m.
9:00 a.m	.–4:00 p.m.

8:00 a.m.–9:30 a.m.









USAID Science for Development Awards

The USAID Science for Development Awards will recognize Intel ISEF participants with First (\$5,000), Second (\$3,000), and Third (\$2,000) place awards in the following categories, for a total of \$40,000 in awards:

Categories:

- I. Global Health
- 2. Energy & Water for All
- 3. Digital for Development
- 4. Humanitarian Assistance

USAID is the world's premier international development agency and a catalytic actor driving development results. USAID's work advances U.S. national security and economic prosperity, demonstrates American generosity, and promotes a path to recipient self-reliance and resilience.

Stop by our Symposium on Thursday, May 16, 11:15 am-12:15 pm, Room 106C "Science and Technology: A Powerful Tool for International Development"

9:00 a.m. to 10:30 a.m. | Room: West 106B

Taste of STEMAZing and #STEMontheCheap

DaNel Hogan, Pima County School Superintendent's Office, Tucson, AZ From \$40 games you can "hack" for less than a dollar to wack-a-pack science, the physics ring and chain trick, the best nature of science activity of all time, and more! Get a taste of how The STEMAZing Project is empowering teachers to engage students using inexpensive materials for rich learning experiences. Each participating educator will walk away with new ideas and resources to further cultivate the STEM minds of their students! Type: Hands-on Workshop; Audience: Teachers

10:00 a.m. to 11:00 a.m. | Room: West 101 A/B/C

Expanding Access to Ecology and Evolution Science Fair Projects Using Traditional and Digital Museum Collections

Alexis Mychajliw, La Brea Tar Pits & Museum, Los Angeles, CA

Museum collections harbor thousands of natural experiments. We will explore how teachers can partner with local museums and how students can study digitized collections remotely. Type: Presentation; Audience: Teachers, Students

10:00 a.m. to 11:00 a.m. | Room: West 106C

Broadcom MASTERS: Society for Science & the Public's National Middle School Science and Engineering Competition

Raeva Ramadorai, Society for Science & the Public, Washington, DC Learn about the Society's national middle school competition in this general information session. Former Finalists will answer questions and share advice. Type: Presentation; Audience: Fair Directors, Teachers & Students

11:15 a.m. to 12:15 p.m. | Room: West 106B

Modeling Science Research Methods with Simple Things: Engaging Students from the Start!

Pascale Creek Pinner, Hilo Intermediate School, Hilo, HI

Come have some fun with hands-on solar energy experiments! See how simple investigations can be used to help students design their own science fair experiments. Type: Hands-on Workshop; Audience: Teachers, Students

11:15 a.m. to 12:15 p.m. | Room: West 106C

Science and Technology: A Powerful Tool for International Development Emmanuella Delva, U.S. Agency for International Development (USAID), Washington, DC Join the U.S. Agency for International Development as they share how to support innovators in contributing their COOL IDEAS to solving challenges around the globe! Type: Presentation; Audience: Fair Directors, Teachers & Students

1:30 p.m. to 2:30 p.m. | Room: West 101 A/B/C

Research Ethics Training for Rising Researchers

Eman Ghanem, Sigma Xi, The Scientific Research Honor Society, Research Triangle Park, NC It's vital that researchers across disciplines are trained in responsible conduct of research. Learn the principles of research ethics and examine case studies on the topic. Type: Hands-on Workshop; Audience: Teachers, Students

1:30 p.m. to 2:30 p.m. | Room: West 106B

Ocean Modeling, Climate Change, and Supercomputers

Mark Petersen, Los Alamos National Laboratory, Los Alamos, NM Ocean models are used for short-term weather forecasting and long-term climate research. Come learn how the laws of physics are recreated in computer programs that run on the world's largest supercomputers, in order to produce realistic simulations of the earth's climate.

Type: Presentation; Audience: Students

2:00 p.m. to 3:00 p.m. | Room: West 106C

Cord Blood Stem Cell Therapies as Potential Treatment for Chronic Spinal Cord Injury

Charis Ober, Save the Cord Foundation, Tucson, AZ

Dr. Wise Young, M.D., Ph.D., Neuroscientist

Wise Young, M.D., Ph.D., world renowned neuroscientist, discusses his ground-breaking regenerative medicine research and clinical trials using cord blood stem cells to potentially treat spinal cord injury.

Type: Presentation; Audience: Fair Directors, Teachers & Students

2:45 p.m. to 3:45 p.m. | Room: West 106B

Are Mushrooms the New Plastic?

Kate Anderson, Beyond Benign, Inc., Wilmington, MA

Explore how green chemistry principles are being used to invent the next generation of high performing, cost effective and safe materials from mushroom mycelium. Type: Hands-on Workshop; Audience: Teachers, Students

3:00 p.m. to 4:00 p.m. | Room: 101A/B/C

From Exploration to Publication

Eman Ghanem, Sigma Xi, The Scientific Research Honor Society, Research Triangle Park, NC Publishing scientific research is a challenging process. Learn how to convert your project into a manuscript and where to submit it for publication.

Type: Hands-on-Workshop; Audience: Fair Directors, Teachers & Students

3:30 p.m. to 4:30 p.m. | Room: West 106C

Meet NSA's Executive Director

Harry Coker, Jr., National Security Agency (NSA), Fort Meade, MD

Mr. Coker will present information about his professional background including his current role as NSA's Executive Director. He will describe NSA's mission and link the Agency's academic outreach effort to events such as Intel ISEF. Type: Presentation; Audience: Students

4:00 p.m. to 4:30 p.m. | Room: West 106B

Are PAID Internships and Fellowships in Your Future?

Pascale Creek Pinner, Hilo Intermediate School, Hilo, HI

Learn about the amazing opportunities for STEM teachers and students offered through the federal workforce development programs (Department of Energy-DOE, National Science Foundation-NSF) and through the national labs.

Type: Presentation; Audience: Fair Directors, Teachers & Students