



Louisville Regional Science & Engineering Fair



ANNUAL REPORT

2023



Returning to In-Person

The 59th annual competition of the Louisville Regional Science & Engineering Fair was held as an **in-person event after a two year pause** for health and safety reasons at the Swain Student Activities Center of University of Louisville on **Saturday, March 4**. This competition is affiliated with the Regeneron International Science & Engineering Fair and the Junior Innovators Challenge sponsored by Thermo-Fischer Scientific.

Hosted by the 100% volunteer Board of Directors, LRSEF 2023 welcomed 22 schools with 335 middle and high school students presenting 294 projects. There were 15 public schools in the event and seven private schools. A total of 215 volunteer judges in teams of two or three interviewed students in two rounds of judging for category awards, while special awards judges met with students throughout the day. LRSEF ensures the safety of the participating students by requesting that all judges and volunteers participate in background checks.

LRSEF 2023 AT-A- GLANCE

22

participating schools

335

middle and high school
students

294

projects presented



Louisville Regional Science
& Engineering Fair

lrsef.org



FUNDS AWARDED

\$14,870



LRSEF 2023: How did it work?

For the primary event held on **Saturday, March 4**, judging interviews took place for **Category Awards of 1st, 2nd, 3rd and 4th place in 21 different STEM categories** at the middle and high school levels. Many categories were sponsored by local companies and donors. Category winners received ribbons and a total of **\$7,050** in cash awards. **GE Best of Fair Awards of \$2,820 and trophies were given to eight projects: three in middle school and five in high school.** The top three schools in both divisions were awarded trophies and **\$1,650** for their STEM programs.

To determine additional winners of over **60 LRSEF Special Awards** sponsored by both local and national organizations, over 50 volunteer special awards judges donated their time to LRSEF. For the five most prestigious special awards, finalists were determined by online interviews via Zoom with top candidates held days prior to the main event. Judges reviewed student-produced Project Materials and videos, then met virtually to choose finalists to be interviewed on the day of the fair. Over 50 other awards were judged only on fair day during personal interviews. Once the judging was complete, a total of **\$3,350** was given to the **100** students winning the 2023 Special Awards.

In all, \$14,870 was awarded to students and teachers achieving excellence in the STEM fields at LRSEF 2023.

LRSEF also sponsored an online T-shirt design contest for any middle or high school student in the fall of 2022. The winning design was featured on a striking 2023 green t-shirt with title sponsor GE Appliances (GEA) logo and given as a gift to all student participants. Every student also received a free back pack, LRSEF lanyard, certificate of participation as well as breakfast and lunch.



WE COULDN'T HAVE DONE IT WITHOUT GENEROUS SUPPORT

LRSEF thanks strategic partners Asia IMPACT and the Science Policy and Outreach Group.

The **Asia IMPACT group** (formerly APAF-Asia Pacific American Forum) is a volunteer affinity group of engineers and STEM professionals at GE Appliances, a Haier company. Since 2014 LRSEF has been is one of the Asia IMPACT (AI) group's nonprofit charity partners. Two members of the AI group serve on the LRSEF Board of Directors. Throughout the year, AI raises funds for LRSEF through sponsored events. Members volunteer in outreach sessions at regional schools and also coordinate the LRSEF Special Awards program. Leading up to the annual fair day, AI recruits volunteer judges for the event, plans the Special Award judging and the Awards Ceremony. At the fair, AI volunteers serve as judges for Category and Special Awards and help with set up and clean up, registration, back of house computer functions. GE Appliances partners host the Awards Ceremony.

The **Science Policy and Outreach Group (SPOG)** at University of Louisville is a graduate student organization with the purpose of connecting STEM researchers with the community and government officials to mutually benefit all. Volunteering at LRSEF is one of SPOG's largest outreach efforts, with members interacting with area students and encouraging them to become involved in STEM fields. For 2023, SPOG President Cassie Woolley served on the LRSEF Board of Directors and co-chaired the Education and Outreach committee. During the school year, SPOG members visit schools in the region to help students and teachers brainstorm project topics for LRSEF. Many SPOG members are involved in research and understand the anxiety students have presenting to judges at LRSEF. Therefore, SPOG wants to ensure that LRSEF participants have additional opportunities to discuss their project on fair day. For LRSEF 2023, SPOG Outreach Director, Erika Figgins, recruited and coordinated 28 volunteer SPOG STEM Ambassadors to talk with and inspire students throughout the day of the fair.



LRSEF 2023 RESULTS



High School

The **2023 Awards Ceremony** was hosted by LRSEF title sponsor **GE Appliances** and held on fair day from 4 to 5:30pm to announce the winners. For the high school division, there were 12 schools participating, nine public schools and three private schools. There were 180 projects presented, 40 were team projects and 106 were solo. Winning schools were 1st Eastern HS, 2nd Ballard HS and 3rd Valley HS.

The top five high school students were named GE Best of Fair and their projects were promoted to the Regeneron International Science & Engineering Fair held in Dallas, Texas in May:

- Carson Baker, Ballard High School
- Muhilan Balasubramaian, Ballard High School
- Kirthik Nadimpally, Ballard High School
- Divya Naidugari, Gatton Academy of Science & Mathematics
- Gabriel Nowaskie, Gatton Academy of Science & Mathematics

LRSEF was also honored to give the **First Build Innovation Awards** of \$750 to support post-secondary education to Krithik Nadimpally of Ballard High School and Conner O'Bryan of Saint Xavier High School. The Amazon Innovation Awards sponsored by a grant from the Kentucky Science & Engineering Fair went to Javier Alcantara of Ballard High School and Anas Bousrih of Nur Islamic School of Louisville.

LRSEF 2023 RESULTS



Middle School

For the middle school division there were 10 schools participating with six public schools and four private schools. There were 148 projects presented, 142 were solo and six were team projects with **155 total middle school students** in the event. Winning schools were 1st Saint Francis of Assisi, 2nd Nur Islamic School and 3rd J. Graham Brown Middle School.

These top three projects were named GE Best of Fair:

- Annika Chadha – Noe Middle,
- Ester Line – Saint Francis of Assisi
- Ifrah Shaik – J. Graham Brown Middle School

Also, 15 middle school scientists were named as nominees for the Thermo Fisher Scientific Junior Innovators Challenge (JIC) national competition and two outstanding projects received special national awards. Meredith Elder of Saint Francis of Assisi was named Lemelson Early Inventor and Maylin Kidwell of Noe Middle School was awarded the Department of Defense Leadership Prize. The Amazon Innovation Awards, supported by a grant from KYSEF went to Nevaeh Peterson and Mariah Peterson of Saint Francis of Assisi.



LRSEF at KY-SEF

LRSEF promoted 93 winning students to compete in the 21st annual **Kentucky Science and Engineering Fair (KYSEF)** held at Eastern Kentucky University on Saturday, March 25, 2023. **Being promoted by a regional fair is the only way students can compete at KYSEF.** LRSEF middle school students swept the Physical Sciences Best of Fair including Annika Chadha and Maylin Kidwell, from Noe Middle and Penelope Harris from St. Francis of Assisi.

On that day, **33 of the 93 students won Category Awards at KYSEF.** LRSEF students won eleven 1st place awards, eleven 2nd place awards and eleven 3rd place awards. Eight different schools were represented among the LRSEF Category winners at state, St. Francis of Assisi, Noe Middle and Nur Islamic, as well as Ballard HS, Male HS, North Oldham, Valley HS, and Saint Xavier. In the middle school competition, LRSEF students won top awards in 20 of the 21 categories, with St. Francis of Assisi winning all three awards in the Cellular Category. Fifteen students from LRSEF won Special Awards, including six additional LRSEF students named as Junior Innovators Challenge nominees.

Regeneron International Science & Engineering Fair (ISEF) Dallas, TX in May 2023

LRSEF promoted **five high school projects to the annual ISEF competition**, including one female and four males from two different high schools. (See LRSEF 2023 Results) Each participant received a grant to support their registration, all expenses and travel to Dallas for the week-long competition. LRSEF also supported Ballard HS Science Department Chair Glenda Jones as our chaperone. Four students from LRSEF made the trip to ISEF with TEAM KY, which included 21 students and seven teacher/chaperones from across the Commonwealth.

A Regeneron ISEF-affiliated science fair (such as LRSEF) is a research-based, high school competition that is a member of Society for Science & the Public's affiliated fair network. This year, ISEF featured 1,600 young scientists representing 49 states and 64 countries. Top finalists are honored during a Special Awards ceremony and a Grand Awards ceremony with Category awards ranging from \$500 to \$5,000. At these events students hear the announcement of the top prize of \$75,000. More than \$9 million was awarded to the finalists, who were evaluated based on their projects' creativity, innovation, and level of scientific inquiry.

LRSEF is proud to announce one 2023 ISEF winner: For PHYS014 — *Quarkonium Dynamics in Phase Space*, **Gabriel Nowaskie**, from The Carol Martin Gatton Academy of Mathematics and Science won a Third Award of \$1,000 in Physics.



New Middle School Competition

This year, LRSEF was honored to become a part of the new national competition for middle schoolers called **Junior Innovators Challenge** (JIC) sponsored by Thermo Fischer Scientific (this program was formerly sponsored by Broadcom Foundation and known as Broadcom Masters). The online application asks questions about student's science or engineering fair project and understanding of science and engineering in everyday life.

Fifteen LRSEF students were eligible to submit applications by the June deadline to be officially in the 2023 national competition. For LRSEF, **11 students completed the applications and two additional LRSEF students nominated from KYSEF also applied**. These 13 students received t-shirts, bumper stickers, and other prizes. The entries will be judged during the summer and 300 finalists will be announced in September. From these projects, **30 winners with their parent/guardian will win an all-expense-paid trip to the national finals** in Washington, DC (October 28 – November 2) to compete for more than \$100,000 in awards and prizes and showcase their projects.



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