# LRSEF 2022 Virtual Fair Annual Report

The Louisville Regional Science & Engineering Fair 58th annual competition affiliated with the Regeneron International Science & Engineering Fair and the Broadcom MASTERS program was held as **a virtual event for the second time in its history** due to the ongoing health and safety concerns with the COVID-19 pandemic in 2021/22.

Hosted by the 100% volunteer Board of Directors, LRSEF was held on **Saturday, March 5, 2022, via Zoom technology** with **20 schools participating and 293 middle and high school students presenting 253 projects.** There were 10 public schools in the event and 10 private schools. A total of 185 volunteer judges in teams of three interviewed students in three rounds of virtual judging. LRSEF ensures the safety of our participating students by requested that all judges and volunteers participate in background checks.

**LRSEF 2022: How did it work virtually?**

To determine winners of over 60 LRSEF Special Awards sponsored by both local and national organizations, **online judging was conducted by over 50 volunteer judges** the week before the main event. They reviewed student-produced Virtual Project Materials and videos, then met virtually to choose the winners. For the five most prestigious special awards, finalists were determined, and online personal interviews were held via Zoom with top candidates. Once the judging was complete, **$2,335** was earmarked to give to the 85 students winning each 2022 Special Award.

For the primary event on **Saturday March 5,** online judging interviews via Zoom took place for **Category Awards of 1st, 2nd, 3rd and 4th place in 21 different STEM categories** at both the middle and high school levels. Many categories were sponsored by local companies and donors. Over 185 volunteer judges were coordinated in teams of three to meet with students in virtual interviews to learn about their projects.

Category winners received ribbons and a total of **$8,521** in cash awards donated by generous local sponsors. New this year was a 4th place winner receiving only a ribbon, but this added more winners to the day. **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 cash for their STEM programs.

**In all, $16,580 was awarded to students and teachers achieving excellence in the STEM fields at LRSEF Virtual Fair 2022.** This is a significant accomplishment for all during a challenging year when many LRSEF students were juggling both working independently from home with other days of being back in school.

For 2022, LRSEF sponsored an online T-shirt design contest for any middle or high school student in the fall of 2021. The winning design was featured on a striking 2022 black t-shirt with title sponsor GE Appliances (GEA) logo and given as a gift to every student participant. Most were distributed in advance of the online judging day and many of the students chose to wear the t-shirts during their Zoom interviews.

**LRSEF 2022 by the numbers:**

A very special online **broadcast from GE Appliances Monogram Hall** was held on Monday evening, March 7 hosted by GEA/LRSEF volunteers to announce the winners of LRSEF 2022. **Over 1,000 people around the region tuned in to hear the results.** In April, all awards were delivered to each school by teams of LRSEF Board volunteers.

**For the high school division,** there were 10 schools participating, with 174 projects presented. Of these, 64 were team projects and 110 were solo. **The total number of high school students was 177.** Winning schools were 1st Eastern HS, 2nd Ballard HS and 3rd Central HS.

The following top five high school students were named **GE Best of Fair, their projects were promoted to the Regeneron International Science & Engineering Fair** held virtually and in person in May 2022:
Nishu Anekere, Harrison Gover, Sahil Krishnani - Gatton Academy of Science & Mathematics,
Karthik Nadimpally - Ballard High School,
Sarisha Lohano, Bella Norman - Gatton Academy of Science & Mathematics,
Veenasravani Pendyala - North Oldham High School,
Suchita Tipirneni - Ballard High School.

LRSEF was also **honored to award the First Build Innovation Awards** of $750 to support post-secondary education to the team of Anekere, Gover and Krishnani from Gatton and to Logan Lewis of Central HS. Amazon Innovation Award went to Tanner Asian of Ballard HS.

**For the middle school division** there were 10 schools participating with 119 projects presented. Of these, 114 were solo and five were team projects with **116 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.

**The top three projects were named GE Best of Fair** and were presented to:
Julia Keeney - Saint Francis of Assisi, Maylin Kidwell - Noe Middle, Ifrah Shaik - Nur Islamic School.

Also, 14 middle school scientists were named as winners of the Broadcom MASTERS national competition and two outstanding projects received special national awards. Drew Ashley of Saint Francis of Assisi was named Lemelson Early Inventor and Maxwell Griffin of Sacred Heart Model School was awarded the Department of Defense Leadership Prize. Amazon Innovation Awards went to Ester Line and Hayden Ramsey of Saint Francis of Assisi and Octane Hinojosa of Montessori School of Louisville.

**LRSEF student results at state fair (KYSEF):**

LRSEF promoted 94 winning students to compete in the 20th annual **Kentucky Science and Engineering Fair (KYSEF)** held virtually on Saturday, March 26, 2022. **Being promoted by a regional fair is the only way students can compete at KYSEF.** On that day, 38 of the 94 students won Category Awards at KYSEF. LRSEF students won sixteen1[st] place awards, thirteen 2nd place awards and nine 3rd place awards. Eight different schools were represented among the LRSEF winning students at state.  LRSEF students brough home **four KYSEF Best of Fair** awards, including Annika Chadha and Maylin Kidwell, from Noe Middle, Maxwell Griffin from Sacred Heart Model School and Sahil Chhabra from Gatton Academy of Science and Mathematics. Sahil was then included in the TEAM Kentucky delegation to the international science fair.

Seventeen students from LRSEF won Special Awards, thus a total of 45 awards were earned by LRSEF students, this means nearly half of the LRSEF delegation were recognized. Nine additional LRSEF students were named as Broadcom MASTERS. One student, Octane Hinojosa from Montessori of Louisville won the Amazon Innovation Award at the state level.

**Regeneron International Science and Engineering Fair (ISEF) May 2022:**

LRSEF promoted **five high school projects to the annual ISEF competition,** including four females and four males from three different high schools. (See above) Each participant could choose to enter the virtual competition or travel to Atlanta for the in-person fair. The two teams from Gatton and student from North Oldham chose to compete online, while the two students from Ballard HS attended the in-person event. LRSEF also supported two teachers with travel grants to attend ISEF: Science Department Chair Glenda Jones from Ballard and Keri Meador, LRSEF Co-Science Fair Director from Central HS chaperoned at the weeklong event. The 2022 TEAM KY included 26 students, including nine from LRSEF.  Overall, the competition featured over 1,800 young scientists representing 49 states and 64 countries across the world.

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. Category awards range from $500 to $5,000. **Historically held in person, 2022 marks the only time in its more than 70-year history** that the competition took place both virtually and in person. Top finalists were honored during a Special Awards ceremony and a Grand Awards ceremony.  At these events students hear the announcement of the top prize of $75,000. In total, more than $8 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 two ISEF winners from the 2022 team:** Winning a 2nd place award of $2,000 in Embedded Systems from The Carol Martin Gatton Academy of Mathematics and Science in Bowling Green, were the team of Nishu Anekere, Harrison Grover and Sahil Krishnani for "Pollution Detection Using Autonomous Drone Hardware and Software." An ISEF Special Award of $750 for Cellular & Molecular Biology from the Air Force Research Laboratory was given to Vennasravani Pendyala of North Oldham High School for "The Sensory Potential of Synaptopodin within the Dorsal Ganglion."

**LRSEF nominated 14 students for this middle school STEM Competition:**

Broadcom MASTERS® (Math, Applied Science, Technology, and Engineering for Rising Stars) has been offered by the Society for Science since 2010.The online application asks questions about student's science or engineering fair project and understanding of science and engineering in everyday life.

**Fourteen LRSEF students were eligible to** submit applications by the June deadline to be officially in the 2022 national competition. All applicants received a t-shirt, bumper sticker, and other prizes. Nationally there were 1,807 entries that were judged during the summer and 300 finalists were announced on in September including **five Finalists from Kentucky**. LRSEF student Annika Chadha from Noe Middle School was named a Finalist.

From these 300 student projects, **30 winners with their parent/guardian won an all-expense-paid trip to the** national finals in Washington, DC to compete for more than $100,000 in awards and prizes and showcase their projects. LRSEF has been fortunate to have two national winners of Broadcom in the past few years, but in 2022 there were no winners from Kentucky.