

Arizona Students Awarded \$141,500 in Scholarships and Prizes at SARSEF Events in February and March

Students from across the state competed at SARSEF events last month to be encouraged, recognized, and awarded for their work.



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(Tucson, AZ) In March, SARSEF events provided students the opportunity to be recognized and rewarded for their work in science and engineering. Many received cash prizes for their achievements.

The 69th SARSEF Regional Science and Engineering Fair showcased the work of 5,264 students, pre-kindergarten through high school, from across Southern Arizona. \$124,000 in awards and scholarships were given out to students as well as teachers who went above and beyond to support their students' work.

Grand awards were determined by over 200 volunteer judges who reviewed projects and interviewed students in order to determine the winners.

"The most exciting part of my project was molding the bioplastic into the plastic cutlery, especially the spoons!" says Julianna Serna, Yuma, AZ, who won top awards in both of SARSEF's major STEM competitions this year. "We utilized a silicone mold used to make chocolate spoons, and while I was pouring the bioplastic formula into the molds, I felt like a cook who was doing some sort of dessert; the entire process was very fun."

Serna made a bioplastic from the waste of corn and algae. By using these natural ingredients, Serna's bioplastic will help decrease plastic pollution. Her motivation was to help the environment and create a bioplastic that is stronger than normal plastic, degrades and melts faster and fights bacteria.

Nine high school students will continue on to compete at the Regeneron International Science and Engineering Fair in Los Angeles in May:

- Auhona Shil (University High School, Tucson, AZ) - *Unraveling the Achilles' Heel of Human Tumors: Moving Towards Inducing Mutational Meltdown by Deciphering the Most Deleterious Mutational Processes*
- Finnegan McGill (Tanque Verde High School, Tucson, AZ) - *A-BiRD: Automated Bird Recognition Device — Revolutionizing Ornithological Research for Global Bird Conservation*
- Humberto Gil Villalobos and Michael Castro (Harvest Preparatory Academy, Yuma, AZ) - *Pest Buster!: Biodegradable Weed Barrier Infused with Grape Skin and Turmeric Extracts: Year 2 Study*
- Jimmy Kwon (BASIS Tucson North, Tucson, AZ) - *Cardboard Packaging Reduction by RGB-D Vision System and Deep Learning*
- Julianna Serna (Harvest Preparatory Academy, Yuma, AZ) - *Applications of Engineered Novel Solid and Liquid Bioplastic From Waste Corn Cobs and Invasive Algae- Year 3 Study*
- Katherine Lam (University High School, Tucson, AZ) - *Novel TMOS-Based Synthesis and Purification of Perovskite Nanoparticles For Biosensing Applications*
- Maritza Roberts (BASIS Tucson North, Tucson, AZ) - *Germination Characteristics and Metal Tolerance of *Atriplex lentiformis* and *Atriplex canescens* Seeds Under Zinc Stress*
- Sohini Mallick (University High School, Tucson, AZ) - *The Function of p53 in Intestinal Epithelial Wound Healing*

For the first time in five years, SARSEF is also sending two top 8th graders to ISEF as student observers. Noemi Celani (Emily Gray Middle School, Tucson, AZ) and Alexis Batres (R Pete Woodard Jr High School, Yuma, AZ) won the top middle school project awards at the SARSEF Fair, winning the SARSEF Excellence in Research and SARSEF Board of Directors Community Impact Award, respectively, which includes an all-expenses paid trip to ISEF.

Earlier this year, SARSEF hosted another STEM research competition - the Arizona Regional Junior Science and Humanities Symposium (AZ JSHS). The program is a high school oral presentation competition promoting original research and experimentation in science, technology, engineering, and math and publicly recognizes students for outstanding achievement. This year, the event was held in Yuma for the first time in its history and included

34 oral presenters as well as 11 poster presenters from across Arizona. \$17,500 in awards and scholarships were given out to students who won top prizes at the virtual event as determined by 15 volunteer judges.

Sohini Mallick, who attends University High School was an ISEF Finalist at the SARSEF Fair, also received third place at the AZ Junior Science and Humanities Symposium.

"Science is mostly problem-solving. During whatever project you are doing, you will face many challenges, and you might even have to start over again. But instead of feeling frustrated, think about it as a way to look at the problem from a new perspective you may not have considered, and stay consistent until you can solve the problem," Mallick advises. "Science is also a collaboration of multiple ideas. Discuss your project with other people to gain their insights on it, because they may look at your project from a different aspect and provide you with solutions you may never have thought of, or give you new ideas to expand your project even more."

Mallick studied the germination of a bean seed over time in different light and temperature conditions, looking at how our bodies create a barrier to protect us from harmful bacteria.

Five students will attend the National Junior Science and Humanities Symposium in May in Albuquerque, New Mexico: Finnegan McGill (Tanque Verde High School), Julianna Serna (Harvest Preparatory Academy), Sohini Mallick (University High School), Brad Wu (Arizona College Prep High School, Chandler, AZ), and Caleb Liu (Hamilton high School, Chandler, AZ).

At the end of this month, thirteen teams of Arizona students will compete in Racing the Sun, an engineering program for high school students that design, build and race solar-powered go-karts with the help of volunteer mentors. It is another opportunity for Arizona students to be honored and recognized for their hard work, innovative minds, and commitment to science and engineering!

To learn more about SARSEF programs and how students, teachers, and families can get involved, visit sarsef.org or email director@sarsef.org.