



CONTACT:

Angela Hemingway, 208.332.1726, angela.hemingway@STEM.idaho.gov

Tony Harrison, 208.332.1726, tony@COMMposition.biz

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Timberline and Nampa Christian students earn top honors at 4th annual Western Idaho Science & Engineering Fair

BOISE, Idaho (March 18, 2020) — Student projects from Boise’s Timberline High School and Nampa Christian High School earned Best in Fair at the 2020 Western Idaho Science and Engineering Fair, and one from Treasure Valley Math and Science Center garnered Fair Runner Up. They were among 59 projects that 70 students from six Treasure Valley schools presented at the fourth annual event, which the Idaho STEM Action Center staged March 6 at Boise State University.

Best in Fair winners

“Constructing a Multi-rotor Compatible Water Sampling Apparatus and Associated Water Quality Analysis System” by Nicola Medapalli and Jimin Ryu, sophomores at Timberline, earned one of two Best in Fair awards. In addition, Medapalli and Ryu earned a Category Gold award and one of three Stockholm Junior Water Prizes.

Nampa Christian senior Tavian Robertson’s “Quarks” garnered the other Best in Fair award, as well as the Best in Category award in Engineering, Math, and Computer Science. Robertson also received a Category Gold award and several special awards, including the Mu Alpha Theta Award, an Office of Naval Research Award, and a U.S. Air Force Award.

On top of serious bragging rights, the Best in Fair winners will represent Idaho at the Regeneron International Science and Engineering Fair in May.

Fair Runner Up

Treasure Valley Math and Science Center senior Cecelia Wheeler earned Fair Runner Up for her project “How Does Chlorine in the Pool Affect Athletes’ Sense Of Smell?” She also won Best in Category in Animal, Biomedical, and Microbiological Sciences, a Category Gold award, and an Office of Naval Research Award.

Five strands, many awards

Students in ninth through 12th grades throughout Western Idaho were eligible to submit entries in five categories: Animal, Biomedical, and Microbiological Sciences; Behavioral and Social Sciences; Earth, Environmental, and Plant Sciences; Engineering, Mathematics, and Computer Science; and Physical Sciences.

Emmett High School students captured the three remaining Best in Category awards:

- “Where’s the Eggs?” by Emmett High School junior Emily Patterson earned a Best in Category in Behavioral and Social Sciences and a Category Gold award. Patterson was also named the fair’s official observer at Regeneron ISEF in May. The STEM Action Center selects observers for the international fair so they can apply what they learn to their state fair entries the following year and share insights with fellow students.
- “Testing Natural Products” by Emmett High School senior Tenney Kunka earned a Best in Category in Earth, Environmental, and Plant Sciences and a Category Gold award.
- “Bovine Gamma Globulin Concentration in Milk Types” by Emmett High School senior Aubrie Overton earned a Best in Category in Physical Sciences and a Category Gold award.

Judges honored six more projects with Category Gold awards: “Use of DNA Barcoding Analysis to Determine Advertising Integrity of Commercially Packaged Alaskan Cod (*Gadus macrocephalus*),” an Animal, Biomedical, and Microbiological Sciences entry by Emmett High School junior Goldie Mumford; “Accessible Athletic Performance Enhancement,” an Animal, Biomedical, and Microbiological Sciences entry by Vision Charter School sophomores Rylee Baird and Daphne DeWitt; the Behavioral and Social Sciences entry “Does Color Affect the Perception of Flavor?” by Emmett High School junior Elisabeth Castenada; “Increased CO₂ Effects on Butterflies,” an Earth, Environmental, and Plant Sciences entry by Emmett High School senior Hannah Tooley; “Utilizing Seebeck Generators to Power a Prosthetic Limb,” an Engineering, Math, and Computer Science entry by Nampa High School senior Jacob Kratz; and “Testing Honey Sugar Add Ins,” a Physical Sciences entry by Emmett High School senior Jaidin Alexander.

The STEM Action Center also presented 19 projects with Category Silver awards and an additional 22 special awards from the American Meteorological Society, American Psychological Association, ASM Materials Education Foundation, Association for Women Geoscientists, Genius Olympiad, the U.S. Agency for International Development, the Idaho Academy of Science and Engineering, NASA, the National Oceanic and Atmospheric Administration, the Office of Naval Research, Ricoh, the Society for In Vitro Biology, the Stockholm International Water Institute, the U.S. Air Force, the U.S. Metric Association, and the Yale Science and Engineering Association.

Emmett High School earned the Top School award for the second consecutive year. The award is calculated based on total projects and total category awards, including Silver, Gold, Best in Category, and Best in Fair. Biology teacher Robin Wilson coached Emmett High School’s participants, which earned three of the five Best in Category awards, seven of the 12 Category Golds, and 11 of the 19 Category Silvers.

Nampa Christian High School math teacher Nikki Roddenburg was named WISEF's top-performing educator.

A group of local experts from an array of STEM-related fields served as judges.

One of three regional fairs

WISEF is one of three regional science fairs the STEM Action Center stages statewide each spring. The Coeur d'Alene Resort hosted the Northern Idaho Science and Engineering Fair March 13, and Idaho State University hosted the Eastern Idaho Science and Engineering Fair in Pocatello Feb. 28. The Best of Fair winners from those events and select observers will join the top WISEF prizewinners at the international science fair courtesy of the STEM Action Center.

Ensuring economic prosperity

According to STEM Action Center executive director Dr. Angela Hemingway, competitions like the Idaho Science and Engineering Fairs are important to the state's future, because they offer students opportunities to engage in original research projects aligned with their interests and meet and learn with other motivated students in their area.

"The quality of the research presented at Idaho STEM competitions is impressive and the work our students are doing is competitive at the international level," Dr. Hemingway said. "The technical skills gained from participating in these events, as well as the ability to communicate results, think deeply and critically about issues, and solve real-world problems, will serve our students well as they transition into the workforce."

In addition to facilitating critical and creative thinking, problem solving, innovation, and collaboration, she said STEM skills are needed for 17 of Idaho's 20 fastest growing jobs and that STEM jobs pay more than twice as much as non-STEM jobs.

"The state anticipates 20 percent job growth in STEM careers — including health care, computing, engineering, and advanced manufacturing — by 2026," Dr. Hemingway said. "Currently there are nearly 86,000 STEM workers statewide, and the Idaho Department of Labor predicts we may have 105,000 STEM jobs by 2026 — a 19,000-job increase in just six years from now. It is critical we build the STEM talent pipeline now so Idahoans have the knowledge and skills required to fill these high-demand STEM jobs now and in the future."

She said these jobs will represent about \$7 billion in personal income and about \$352 million in tax revenue if Idaho's workforce is poised to fill them.

About the Idaho STEM Action Center

The Idaho STEM Action Center was created in 2015 because Idaho citizens are not entering the STEM pipeline fast enough to meet current and future Idaho workforce needs. Its goals are to increase access to STEM opportunities, align education and workforce needs, and amplify awareness of STEM throughout Idaho. The organization is working with industry, government, educators, and students to develop new resources and support high-quality professional-development opportunities to foster a STEM-educated workforce that ensures Idaho's continued economic prosperity.

Visit STEM.idaho.gov for more information, and visit <https://STEM.idaho.gov/support-us/foundation> to make a tax-deductible donation to the Idaho STEM Action Center Foundation, a 501(c)(3) nonprofit organization, to enhance the investment the state has made in Idaho's STEM community. Contributions provide greater access to STEM camps for children, student competitions, and many other life-shaping programs.

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