

# FOR IMMEDIATE RELEASE

## 2025 TUOLUMNE COUNTY STEAM EXPO & SCIENCE FAIR

### Announces 2025 Competition Winners



**March 20, 2025 — Sonora, California**

The Tuolumne County Superintendent of Schools Office (TCSOS) announced the 2025 TCSOS STEAM Expo & Science Fair winners at the March 19, 2025, awards ceremony. The ceremony followed the exposition of student and community STEAM activities. The evening event celebrated Science, Technology, Engineering, Art, and Math (STEAM) in our schools and community.

The STEAM Expo was open to the public and included many hands-on exhibits from community partners. Exhibitors included the 4-H County Ambassadors helping students to engineer catapults to hit a target. Columbia College's Mad Science Collective led activities on DNA extraction, building motors, and exploring microscopes. The Don't Trash Tuolumne Campaign helped families learn about recycling and how and what to compost. The Stanislaus National Forest had an exhibition counting tree rings and showcasing the forest's animals. The Tuolumne River Trust showed participants how changing landscapes change the flow of water with their augmented reality topographic sand table. Tuolumne Public Health provided the science behind making healthy choices. The Aviation Explorers Program taught the science behind flight with a wind tunnel and a flight simulator. Tuolumne County Arts led visitors on a nature journaling activity. Tricia Dunlap helped participants explore balance using unstable tables. Diana Harford worked with students to design an engineering project using Kiva blocks. Kia Barrieau provided math puzzles and games. Finally, Summerville High senior Hayden Groff worked with students to explore coding and robotics.

Over 100 student projects were submitted from 8 different schools. Students submitted individual, group, and whole-class projects. Some STEAM Expo projects were Rube Goldberg Devices, Science Fiction Writing, Robotics, Engineering, and Scientific Illustrations. In the competitive Science fair, we had 42 projects submitted in Earth Science, Life Science, Physical or Chemical Science, and Engineering Design.

After carefully reviewing the 6th - 12th grade Scientific Inquiry and Engineering design project, judges selected the 2025 winners.

### Engineering Design Projects Award Winners:

#### Honorable Mention

Gracie Lambert

“Pinball Machine - Motocross”

Belleview Elementary

**3rd Place**

Mira DePolo  
“Hawaiian House”  
Pinecrest Expedition Academy

**2nd Place**

Cash Brand  
“The Fishing Line Bridge”  
Pinecrest Expedition Academy

**1st Place**

Carter Hard  
“Wasp House”  
Pinecrest Expedition Academy

**Science Inquiry Projects  
Life Science Award Winners**

**Honorable Mention**

Maverick Imlach  
“Animation”  
Columbia Elementary

**3rd Place**

Cody Opie  
“Testing Bacteria”  
Columbia Elementary

**2nd Place**

Amelia Andrews  
“How Do Different Kinds Of Music Affect Memory?”  
Columbia Elementary

**1st Place**

Madilyn Andrews  
“How Does Stress Affect the Vital Signs?”  
Columbia Elementary

**Earth Science Award Winner**

**2nd Place**

Alaina Carrillo and Reagan Ritts

“Erosion with Sediments”  
Sonora Elementary

**1st Place**

Trevor Flud  
“Can Water Power a Lightbulb?”  
Columbia Elementary

**Physical Science or Chemistry**

**Honorable Mention**

Thomas Andrews  
“What Burns the Longest?”  
Columbia Elementary

**3rd Place**

Delaney Gardiner  
“The Drink "Egg" Speriment”  
Columbia Elementary

**2nd Place**

Caleb Milbourn  
“Stain Wars: The Last Detergent”  
Soulsbyville Elementary

**1st Place**

Garrick Spangler  
“Fire & Ice: Temperature & Magnets”  
Soulsbyville Elementary

**Senior Physical Science or Chemistry**

**1st Place**

Aurie Byer  
“Air Pollutants Caused by Candles”  
Sonora High

The STEAM Spirit Award is an award given to a project that the organizing committee determined to exemplify the integration of STEAM. That award goes to a 7th-grade Student from Columbia Elementary for the “Pre-Treatment Water Project” project by Justice McCulloch.

The Junior Best of Show winner and the Karen Bakerville Smith perpetual trophy went to a Soulsbyville student for their “Fire & Ice: Temperature & Magnets” project by Garrick Spangler.

The Senior Best of Show winner and the Karen Bakerville Smith perpetual trophy went to a Sonora High student for their project “Air Pollutants Caused by Candles” by Aurie Byer.

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**Attachments are available online at:**

<https://drive.google.com/drive/folders/1BNSJUx3l6NHwjTYMUoHZEwmoPz9F6Dp?usp=sharing>

**Please Give Photo Credits to Shannon Oden – TCSOS**

**What Burs the Longest:** Thomas Andrews’ science project, "What Burns the Longest???" from Columbia Elementary drew attention at the 2025 TCSOS STEAM Expo. His experiment tested the burn duration of common fire-starting materials such as wood shavings, dryer lint, crayons, and cotton balls. The engaging visual display and methodical approach earned him an Honorable Mention in the Physical Science category.

**Unstable Table - Tricia Dunlap:** Educator Tricia Dunlap shares a moment of discovery with a young participant during her *Unstable Tables* activity at the 2025 TCSOS STEAM Expo. Using everyday materials like cardboard, buttons, and feathers, participants explored principles of balance, motion, and creative problem-solving in a playful, hands-on setting that blended art and engineering.

**Tuolumne River Trust - Sand Table 1:** Students explore landscape and water flow at the Tuolumne River Trust’s interactive augmented reality sand table during the 2025 TCSOS STEAM Expo. This hands-on exhibit demonstrated how topography and erosion shape watersheds, allowing participants to mold terrain and observe real-time changes through projected elevation mapping—merging environmental science with cutting-edge technology.

**Summerville Senior - Hayden Groff:** Summerville High School senior Hayden Groff showcases a student-built robot navigating a custom-coded color grid at the 2025 TCSOS STEAM Expo. Groff guided participants through the basics of robotics and programming, inspiring future engineers and coders with an interactive demonstration that combined logic, creativity, and a lot of colorful duct tape.

**STEAM Expo1:** Visitors examine award-winning science fair projects during the 2025 TCSOS STEAM Expo, including *The Slime’s Compass: Environmental Navigation in Physarum* and *Music & Mood*, both standout entries in the Life Science category. With projects ranging from microbial intelligence to the psychological impacts of music, the event showcased the depth and creativity of Tuolumne County student researchers.

**Senior Best of Show - Aurie Byer:** Aurie Byer of Sonora High proudly accepts the Senior Best of Show award at the 2025 TCSOS STEAM Expo & Science Fair. Her winning project, *Air Pollutants Caused by Candles*, earned top honors in the Senior Physical Science category and the prestigious Karen Bakerville Smith perpetual trophy for excellence in scientific inquiry.

**Junior Physical Science\_Chemistry Second Place - Caleb Milbourn:** Caleb Milbourn of Soulsbyville Elementary beams with pride after earning 2nd Place in Junior Physical Science/Chemistry at the 2025 TCSOS STEAM Expo & Science Fair. His project, *Stain Wars: The Last Detergent*, impressed judges with its real-world application and creative experimentation in testing stain-fighting solutions.

**Junior Physical Science\_Chemistry First Place - Garrick Spangler:** Garrick Spangler of Soulsbyville Elementary receives First Place in Junior Physical Science/Chemistry at the 2025 TCSOS STEAM Expo & Science Fair for his project, *Fire & Ice: Temperature & Magnets*. Garrick's exploration of how extreme temperatures affect magnetic properties also earned him the Junior Best of Show and the prestigious Karen Bakerville Smith perpetual trophy.

**Junior Life Science 1st Place - Madilyn Andrews:** Madilyn Andrews of Columbia Elementary smiles proudly after winning 1st Place in Junior Life Science at the 2025 TCSOS STEAM Expo & Science Fair. Her project, *How Does Stress Affect the Vital Signs?*, stood out for its thoughtful design, clear methodology, and relevance to everyday health science—earning her top honors in her category.

**Junior Engineering Design 1st Place - Carter Hard:** Carter Hard of Pinecrest Expedition Academy earns 1st Place in Junior Engineering Design at the 2025 TCSOS STEAM Expo & Science Fair for his innovative project, *Wasp House*. Carter impressed judges with his creative approach to structural design and environmental problem-solving, capturing top honors in the Engineering category.

**Junior Earth Science 1st Place - Trevor Flud:** Trevor Flud of Columbia Elementary celebrates his 1st Place win in Junior Earth Science at the 2025 TCSOS STEAM Expo & Science Fair. His project, *Can Water Power a Lightbulb?*, showcased his curiosity and experimental spirit in exploring renewable energy—earning top recognition in the Earth Science category.

**Junior Best of Show Garrick Spangler:** Garrick Spangler of Soulsbyville Elementary proudly holds the Junior Best of Show trophy at the 2025 TCSOS STEAM Expo & Science Fair. His award-winning project, *Fire & Ice: Temperature & Magnets*, earned 1st Place in Junior Physical Science/Chemistry and received the esteemed Karen Bakerville Smith perpetual trophy for exemplifying excellence in student-led scientific inquiry.

**Aviation Explorers Flight Simulator:** A young participant tests their piloting skills using a flight simulator at the Aviation Explorers Program exhibit during the 2025 TCSOS STEAM Expo. With hands-on controls and real aviation charts, students learned about the science of flight, engineering principles, and navigation—all while getting a feel for life in the cockpit.

**Sand Table 2:** Young learners engage with the augmented reality sand table at the Tuolumne River Trust exhibit during the 2025 TCSOS STEAM Expo. As they shaped landscapes and watched colorful elevation data shift in real-time, even the youngest participants explored how natural forces like erosion and water flow shape the world around us.