

**Keira Passantino and Sophie O’Donohoe win the 2025 Arkansas Soybean Science Challenge Junior Division Award at the Northwest Arkansas Regional Science Fair**

Keira Passantino, 13, and Sophie O’Donohoe, 14, 8th graders at St. Vincent De Paul Catholic School, Rogers, AR, won the Soybean Science Challenge Junior Division award at the 2025 Northwest Arkansas Regional Science Fair held at UofA Fayetteville on March 7.

Keira and Sophie will split the $200 cash award provided by the Arkansas Soybean Promotion Board. Their science project titled “Galactic growth, soybean space,” also placed second in plant sciences.

Sean Grom, Keira and Sophie’s teacher, won the $100 Soybean Science Challenge Junior Division Teacher-Mentor Award. Grom stated that the Soybean Science Challenge is a great way to learn about agriculture today. “The Soybean Science Challenge provided an opportunity for my students to apply the scientific method to a relevant industry in Arkansas while fostering critical thinking, problem-solving, and teamwork. Additionally, it allowed them to explore STEM careers in agriculture, an essential industry in our state. Through their participation, they gained a deeper understanding of agriculture, sustainability, and the role of soybeans in Arkansas’ economy. Keira and Sophie developed research skills, learned to analyze data, and improved their ability to communicate scientific findings. More importantly, they gained confidence in their ability to conduct meaningful research and saw firsthand how science can be applied to solve real-world problems,” he replied.

Keira and Sophie were thrilled to win the 2025 Junior Division Soybean Science Challenge. “We think it was very cool as we put a lot of effort into the project. We felt like all our hard work paid off,” they stated.

The part of the Soybean Science Challenge Online Course Keira liked the best was the use of soybeans for fuel. “I think it’s very interesting that soybeans are used as part of biofuel,” she explained. Sophie agreed. “The online course included all the things soybeans are used for, like tofu and fuel sources, and that was so interesting to me,” she replied.

Mr. and Mrs. Passantino were thrilled to see Kiera win. “We are so proud of her! We believe her participation in the Soybean Science Challenge has changed her perception of a career in agriculture as she has learned so much about the workings of agriculture in Arkansas,” they replied. Karen O’Donohoe, Sophie’s mother, was also excited by the team winning. “Keira and Sophie were the very first award recipients of the science fair. There were so many wonderful projects there that day, so we didn’t know what to expect. When the speaker from the Soybean Challenge began to announce the winner, we heard one or two words - enough to know it was our girls - and all the participants from our school exploded out of their chairs, cheering wildly! It was so much fun, and I was so glad that they had the opportunity to experience that,” she explained.

“The Soybean Science Challenge provides an opportunity for Arkansas junior high and high school students to participate in scientific research that can impact the State of Arkansas as well as the world. Soybean Science Challenge student researchers learn about this important commodity crop and its many uses including feeding the world, development of biofuels and sustainable products. The Soybean Science Challenge helps students develop an understanding of the challenges and complexities of modern farming,” said Dr. Julie Robinson, Professor, and director of the program.

“The goal of the Arkansas Soybean Science Challenge is to engage students in “real- world” education to support soybean production and agricultural sustainability,” said Gary Sitzer, a former member of the Arkansas Soybean Promotion Board. “The program also rewards scientific inquiry and discovery that supports the Arkansas Soybean Industry.”

The Arkansas Soybean Science Challenge was launched in January 2014 for 9-12th grade science students and in 2021, added grades 6-8 for the Junior level award. Students who successfully completed the online course were eligible to have their original soybean-related research projects judged at the 2025 ISEF-affiliated Arkansas Science and Engineering Fairs.

Information on the 2025-2026 Arkansas Soybean Science Challenge will be available in summer 2025. For more information, contact Dr. Julie Robinson at [jrobinson@uada.edu](mailto:jrobinson@uada.edu) or Keith Harris at [krharris@uada.edu](mailto:krharris@uada.edu), or Diedre Young at [dyoung@uada.edu](mailto:dyoung@uada.edu).

The Cooperative Extension Service is part of the University of Arkansas System Division of Agriculture.

**Keira Passantino and Sophie O’Donohoe, St. Vincent De Paul Catholic School, Rogers, Arkansas**

**Teacher: Sean Grom**

**Category: Plant Sciences**

**Title: Galactic growth, soybean space**

**Abstract:**

With upcoming Mars missions, including plans for unmanned spacecraft launches in 2025, the possibility of growing crops on Mars is an important area of research. This experiment aimed to determine whether soybeans, a vital agricultural crop, could grow and survive in a Martian soil simulant under controlled conditions. The hypothesis was that while soybeans could grow in Martian soil simulant, they would not thrive as well as those grown in regular potting soil. To test this, soybeans were planted in two different soil conditions: a Martian soil simulant (experimental group), consisting of ⅛ cup of lava rock, ¼ cup of sand, and ⅛ cup of clay, and standard potting soil (control group). The plants were watered and observed over a two-week period. Results showed that soybeans grown in the Martian soil simulant had an average growth of 0.9 cm, while those in regular soil grew approximately 1.6 cm on average. Additionally, soybeans in the Martian soil simulant appeared wrinkled, stunted, and more vulnerable.

Two girls holding signs posing for the camera

AI-generated content may be incorrect.![A person holding a certificate

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Northwest Arkansas Regional Science Fair Junior Division winners Keira Passantino and Sophie O’Donohoe, and teacher-mentor, Sean Grom