

WPAFB E.O.

NEWSLETTER

May 2025

WHAT'S HAPPENING?

ISEF - International Science Engineer
Fair

SEMEDS

DAF LEGACY: Good News Story

FIRST LEGO League: Registration
Opens

WHAT'S COMING UP?

LEGACY Craftsman Camp

STARBASE



The United States Air Force again served as a Special Award Organization (SAO) at this year's Regeneron International Science and Engineering Fair (ISEF), highlighting the AF's commitment to fostering the next generation of science, technology, engineering, and mathematic talent.

As a SAO, the Air Force joined dozens of prestigious institutions, corporations, and government agencies in recognizing outstanding student research projects that demonstrated exceptional scientific merit and innovation. The Air Force's participation underscores the critical importance of STEM education to national security and technological advancement.

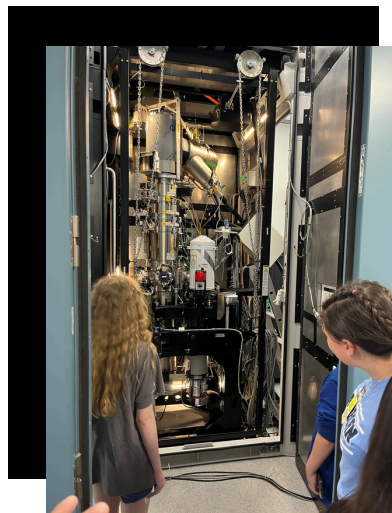
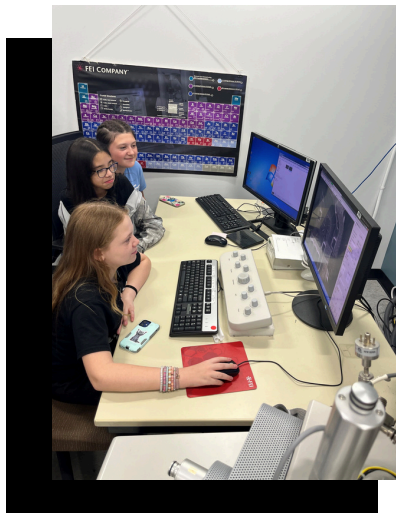
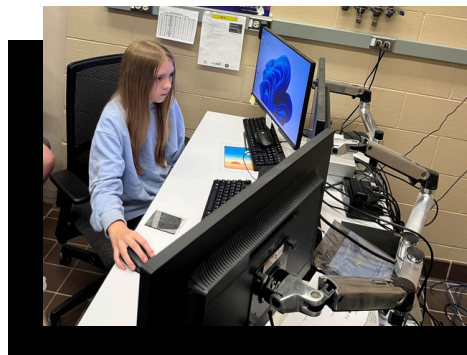
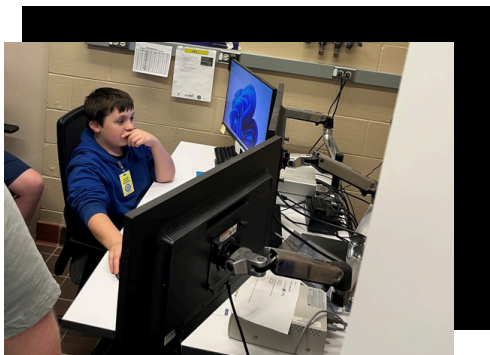
ISEF, organized by the Society for Science, brings together over 1,800 high school students from more than 80 countries and territories to compete in the world's largest international Pre-College science competition. Students present original research projects across 22 scientific categories, from aerospace and defense to robotics and intelligent machines.

The Air Force's special awards recognize projects that demonstrate excellence in areas relevant to the service, such as aerospace, cybersecurity, material science, etc. Winners receive monetary prizes, certificates, and trophies.

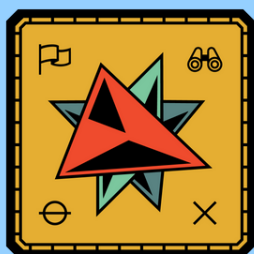
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E.O. MAY PROGRAM HIGHLIGHTS



Students from Fairborn Middle School enjoyed using scanning electron microscopes, which allowed them to zoom in on bugs, metals, computer chips, and more. For more information about the SEMEDS program, please visit our website: [WPAFB Educational Outreach Office - SEMEDS](http://WPAFB.EducationalOutreachOffice-SEMEDS)



UNEARTHED

Registration for the 2025-2026 FIRST AGE season is now open! This year's theme explores archaeology, but with a high-tech twist. Join us as teams unearth ancient mysteries and design innovative solutions to robot game challenges and real-world problems. FIRST LEGO League Explore and FIRST LEGO League Challenge teams will uncover ancient inspiration for the UNEARTHED season, while FIRST Tech Challenge teams will dig deep to meet the challenges of the DECODE season.

For more information about FIRST LEGO League and FIRST Tech Challenge, visit firstinspires.org or reach out to our office!

LEGACY GOOD NEWS STORY



Jr. Apprentice, Isaiah, has been a part of the Department of Air Force's Leadership Experience Growing Apprenticeships Committed to Youth (LEGACY) program since the Age 14 Craftsman Camp. For two consecutive summers, he attended STEM-focused Craftsman Camps and has worked as a Jr. Apprentice at Wright Patterson AFB the past two summers.

During Craftsman camps, he enjoyed the Sumo Robot activity. In this activity, students design, build, solder, and code to create a working robot. Students then compete in a challenge where they work to push the other robots out of a ring with the winner being the last robot standing in the ring. "I started LEGACY at 14 so I participated in two craftsman camps. I really enjoyed the problem solving and critical thinking skills that it called upon. It was enjoyable to me to have challenges and learn to overcome them, like the sumo robot. I had never done anything like it before so having to create a practical design and then build something was really fun," said Isaiah.

Last summer, he and his mentor, Kara Combs, worked with Large Language Models (LLM). His role was to test the LLM's analogical thinking skills using The Ratterman dataset and then evaluate how they performed. The work that Isaiah did last summer was incorporated into a journal paper that was recently published. The journal paper, "Evaluating the Trade-off Between Analogical Reasoning Ability and Efficiency in Large Language Models" was published in the journal IEEE Transactions on Cognitive and Developmental Systems.

In March, Isaiah had the opportunity to attend the 50th Dayton-Cincinnati Aerospace Sciences Symposium (DCASS) sponsored by the American Institute of Aeronautics and Astronautics (AIAA) at Sinclair Community College. Ms. Combs mentioned the symposium to Isaiah, and he submitted a 500-word abstract from which he was accepted. "When the DCASS announcement was made, I immediately reached out to Isaiah about participating. Isaiah is a bit more on the reserved, shy side, so I knew this was an opportunity to help him get more comfortable in these types of scenarios. He was excited to participate and diligently worked on his presentation in addition to his normal school schedule and extracurriculars. That level of commitment is hard to find, but if anyone was up to the challenge, I knew Isaiah would be. He did an excellent job during his presentation, and I'm already looking forward to working with him this following summer!" added Combs.

"Writing the abstract was probably the hardest part for me as I have never had to write a professional summary of my work," Isaiah added. Ms. Combs worked with Isaiah through a series of meetings to assist him with the abstract and provided him with an audience for feedback on his presentation during a test run. This was his first time outside of LEGACY presentations that he has presented in front of an audience. "I highly encourage my interns to present at DCASS because they can practice their communication skills at a new level. The ability to convey technical information in a way that is understandable for a new audience is such an important but overlooked skill. At these conferences, you practice "both" sides of the communication skills; creating a slide deck practices your written skills and then the presentation itself involves your verbal presentation skills. Up through this point, most audiences that students have spoken to may have been their classmates, parents, or a judging-panel; however, here, their audience is full of world class researchers, excited to learn new things from the next generation," said Combs.



LEGACY GOOD NEWS STORY CONTINUED:



"Kara has been an amazing mentor, and very helpful. She also has provided many opportunities for me. Last summer, I had no clue what I wanted to do (to some extent I still do not) so she helped me by introducing me to as many people as she could. I was able to talk with two aerospace engineers for an hour or two, Dr. Camberos who was a key piece in the symposium, a former dean of AFIT, and many more people," Isaiah added. "Throughout last summer, she noticed my strengths and weaknesses and probably knows them better than me. She gave me projects to improve my weaknesses," he added. "Coding is something that I was interested in, and she assigned me a coding bootcamp to help me learn to code and develop my skills. The presentation at the symposium helped me with presenting, creating presentations, and tons of other skills I didn't even realize. Kara also provided an interesting project which helped me to get invested into what we were doing and made working feel a lot easier. She also helped me get volunteer hours at TechFest which was a fun experience," said Isaiah.

"The best part of LEGACY is all the people I have met through the program like my mentor Kara and all of the opportunities it has led to like the symposium. It has challenged me and helped me create skills that I will use for my future employment," Isaiah added.

After high school graduation, he plans to enroll in college. Isaiah stated, "I do not know what for yet, but LEGACY is helping me to discover what I like or dislike to work on."

