



WPAFB Educational Outreach



INSPIRING STUDENTS IN STEM

K-12 STEM ENQUIRER

April 2023

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Spring Job Shadow Day

The first Job Shadow Day since October 2019 was a big success! Job Shadow students are high school juniors and seniors who are interested in STEM career fields. 110 students spent the day at Wright-Patterson AFB shadowing 57 volunteer mentors and co-mentors. Some of the STEM career fields represented included Meteorology, Engineering, Financial Management, C-17 Aircraft Component Fabrication, and Biomed.

The next Job Shadow Day will be in the fall. The date will be posted as soon as it is confirmed. Stay up-to-date by visiting our [website!](#)

Students and Mentors check in with the Educational Outreach Office at Carney Auditorium in the NMUSAF.

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Join us next month...

International Science and Engineering Fair



Spring Job Shadow Day cont'd.

GRILL parachute training VR simulator.



GRILL F-16 style cockpit simulator.



Students with their Mentor from the Aerospace, Electrical and Mechanical Engineering division.



View from twin towers on Area B.



Suited up for a clean room tour.



Radiation Recycling Program.



Students stop for a photo with their Mentor at AFRL/RQS.



X-ray computed tomography of a kit-kat bar in the Ceramics Branch of the AFRL Materials & Manufacturing Directorate.



Biomed Engineer mentees.



WRIGHT-PATTERSON AFB

FIRST[®] Championship

Sixteen Ohio *FIRST*[®] teams were among the 974 teams from 59 countries who gathered in Houston last week to compete at *FIRST* Championship, an international championship event in which teams demonstrated their teamwork, innovation, and robotics skills. *FIRST* Championship concluded Saturday, April 22 with a celebration of excellence on display. These teams excelled in far more than robot design and programming - they are innovators, problem solvers, collaborators, and *Gracious Professionals*! The competition was fierce, the innovation was inspiring, and the spirit of *Coopetition*[®] and collaboration was remarkable.

We are proud of all sixteen Ohio teams who qualified to compete on this international stage, as qualification is no small feat. We are also thrilled to celebrate with those who won awards at this level! Please join us in celebrating the World Championship accomplishments of these amazing young Ohioans!

Ohio Award Winners:

- *FIRST*LEGO[®] League: **2751 Lego Legion** from Cincinnati won *Innovation Project Finalist* and finished ranked 11th out of 108 teams on the robot game
- *FIRST*Tech Challenge: **6133 The NUTS!** from Cincinnati won *Control Award* and qualified for the robot game finals in their division
- *FIRST*Tech Challenge: **16449 Juniper Robotics** from Cincinnati won *Design Award Finalist* and qualified for the robot game finals in their division
- *FIRST*Robotics Competition: **2399 Fighting Unicorns** from Shaker Heights won *Team Spirit Award* in their division
- *FIRST*Robotics Competition: **7460 Avi and Friends** from Sylvania won *Team Spirit Award* in their division

Learn more about *FIRST* Championship, including a full list of award winners, [here!](#)



FTC Team The NUTS!



FTC Teams Oxymorons and Juniper posing together



FIRST[®] Championship cont'd.

DOD STEM sponsored FRC Team Avi and Friends



DOD STEM sponsored FRC Team Lakota Robotics.



FIRSTLEGO[®] League Team Lego Legion



FIRST[®] Championship cont'd.



FIRST Championship - Houston 2023

Please join us in celebrating these teams and individuals for qualifying for FIRST Championship 2023!



FIRST LEGO League:

2751 Lego Legion (Cincinnati)

FIRST Tech Challenge:

6133 The "NUTS!" (Cincinnati)

7324 Oxymorons (Akron)

16449 Juniper Robotics (Cincinnati)

Dean's List Finalist:

FTC: Vindhya Ganti

FTC: Shriya Parthasarathi

FTC: Max Masri

FRC: Arwen Zhang

FRC: Katie Cotelleso

FIRST Robotics Competition:

120 Youth Tech Academy Red Dragons (Cleveland)

144 The R.O.C.K. (Cincinnati)

325 Respawn Robotics (Cincinnati)

695 Bison Robotics (Beachwood)

1038 Lakota Robotics (Middletown)

2399 The Fighting Unicorns (Shaker Heights)

4028 The Beak Squad (Cincinnati)

4145 WorBots (Worthington)

5667 The Digital Eagles (New Albany)

7460 Avi and Friends (Sylvania)

9075 Lunar Robotics (Wapakoneta)

9097 MachBusters (Cincinnati)

Woodie Flowers Award Finalist:

Christopher Dickey (695 Bison Robotics)

Bob Weekley (1038 Lakota Robotics)



PRESENTED BY **Qualcomm**

Summer of WOW!

All teachers are invited to participate in The Summer of WOW! - there will be multiple opportunities to learn about the program and resources and a chance to use materials to become comfortable with them.

All events will be held at SOITA—1205 E. Fifth St, Dayton, OH 45402

For questions/additional information, email [Angel Callahan](mailto:Angel.Callahan) or call 937-938-4868.



FREE WORKSHOPS!

WOW! is once again partnering with SOITA and CET to offer free workshops for K-4 and 5-8 educators! Participants will learn more about the WOW! program, experience some WOW! lessons geared specifically for your students, and enjoy hands-on experiences with tech devices like Ozobots, Finch Robots, Sphero Bolts, and Sphero Indis.

Don't miss these popular workshops!

5th-8th Grade Teacher Workshop July 12-13 | 9:00 AM - 3:00 PM

K-4th Grade Teacher Workshop July 17-18 | 9:00 AM - 3:00 PM

Registration opens May 1, visit <https://bit.ly/soitawow23>



★ ★ ★ NEW THIS YEAR! ★ ★ ★

Teacher Open House!!

July 14 | 9:00 AM - 3:00 PM

This is an unstructured day for you to have your WOW! questions answered.

- *Come anytime during the day.
- *Stay for as long as you'd like.
- *Learn about the lessons that fit your curriculum.
- *Look through the lesson binders.
- *See/Use the materials that come with our lessons.
- *Learn about our WOW! resources.
- *Learn about WOW! materials you can borrow.
- * See/Use the materials that you can use with your own lessons.

Registration is not required.

Teacher Open Lab Day!!

July 27 | 9:00 AM - 3:00 PM

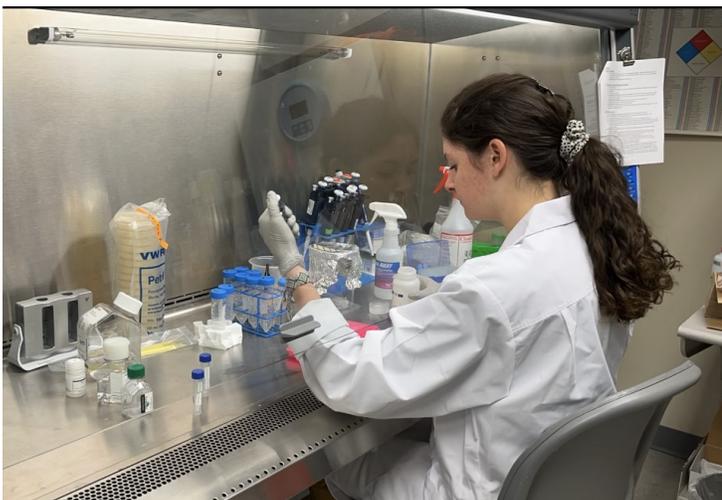
This is an unstructured day for you to gain more experience with the WOW! Tech Devices.

- *Come anytime during the day.
- *Stay for as long as you'd like.

Materials available: Ozobots, Finch Robots, Sphero Indis, Sphero Bolts, Cubelets, Little Bits, Makey-Makeys

- *Help will be on hand!
- *Registration is not required.

LEGACY in the News



LEGACY Apprentice (Leadership Experience Growing Apprenticeships Committed to Youth), Kate Guiberson, is a published author through the work that she did with the LEGACY program at the United States Air Force Academy, located in Colorado Springs, CO. The article uses the data that she worked on in her first year as a LEGACY Jr. Apprentice.

In 2021, Kate began her internship working with the Biotechnology Immersion Program as a beta-tester for the activities students would be doing in the following weeks. During the course of her internship, her mentor, Dr. Jordan Steel, offered Kate an opportunity

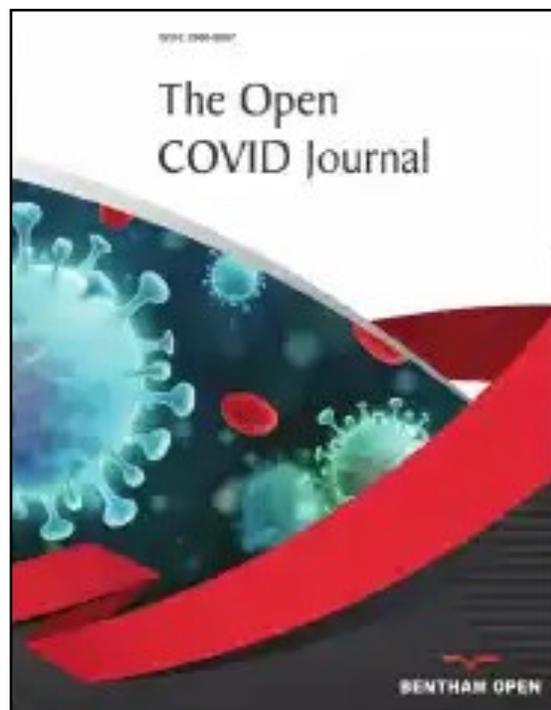
to work on his COVID research project. Kate has always been interested in genetics and she jumped at the opportunity to participate. She began researching genes and creating visual models to find trends in gene expression as a way of potentially identifying affected individuals even before they show symptoms. “My greatest contribution to the paper was the data I worked with,” said Kate.

The article titled “Identifying Host Cell Gene Expression Modulation as Potential Markers for SARS-CoV-2 Infection” was submitted during her 2022 summer internship, returned in January for edits, and published in March of 2023 in *The Open Covid Journal*. To check out Kate’s publication, [click here!](#)

Kate worked with Dr. Steel for two summers and when asked about Kate he said, “I loved having Kate work in the lab. She is a very hard worker and was self-motivated to get things done quickly and efficiently. Due to the ongoing COVID pandemic, we had a lot of samples that needed to be tested. Kate jumped in and quickly got to work running PCR and analyzing and organizing the data.”

When asked about being a published author, Kate stated, “Publishing this work was a goal that Dr. Steel discussed with me from the very beginning of the project; I am thrilled it finally has reached that point! Dr. Steel’s support and encouragement was indispensable throughout this entire process, and I am very appreciative of his commitment to keeping me in the loop and enabling me to gain such valuable experience in both researching and in the lab.”

Dr. Steel added that Kate, as a high school student, was able to pick up Cadet Soferr’s senior project and help finish up the experiments. “Kate was a pleasure to work with and is a fantastic scientist! I am grateful for the LEGACY program and pipeline that enabled Kate to work for two consecutive summers with me at the Air Force Academy.” Kate’s hard work, persistence and commitment to the project allowed the team to collect enough data *(cont’d next page)*



LEGACY in the News cont'd.

for publication. “It was a pleasure to work with such a brilliant arising scientist. Kate has great potential and can be a leader in biomedical and STEM research for many years to come!”

Kate is currently a freshman at Boston college majoring in math with a minor in Hispanic studies. On campus, she enjoys participating in faith and service-based activities and the community she has formed within the biology department.



Employee Spotlight

Name: *Megan Carroll (contractor)*

Title: *FIRST® LEGO® League Explore Project Manager*

Department: *WPAFB Educational Outreach Office*

Years with the EO office: *2 years*

What do you enjoy most about your role in the EO office? *Everyone in the office is incredibly supportive. Even though we all run different programs, everyone is always willing to jump in and lend a hand.*

What is your favorite aspect of working with students in STEM? *I knew very little about robotics before starting in this position. I love seeing what the kids are learning at such a young age!*

What accomplishment are you most proud of in the EO office? *I am most proud of coming into the office during the pandemic and having to learn about running my program. All of our programs were remote, so it was a learning curve when I first started. I was able to get my program back up and running all while increasing our team count.*

If you had one superpower, what would it be and why? *I would like to be able to teleport. Getting anywhere you want, whenever you want would be awesome!*

