



WPAFB Educational Outreach



INSPIRING STUDENTS IN STEM

K-12 STEM ENQUIRER

January 2023

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Job Shadow Day 2023

After a 3-year hiatus, Job Shadow Day is BACK!! Scheduled for **Friday, April 21st** the day will start at the National Museum of the United States Air Force where students will meet their mentor. Mentors then take students on Base for a day of activities which may include job site visits, introduction to colleagues, facility tour, showcasing a special project and more!

High School Juniors and Seniors can sign-up at the end of March. Spots are limited and students are selected on a first come, first served basis. Visit our [website](#) to stay up-to-date!

****The Education Outreach office reserves the right to cancel events due to surges in COVID-19 cases, changes in, or elevation of health protection conditions—HPCONs. We will attempt to give as much notice as possible if a cancellation occurs. As a WPAFB organization, we must adhere to DoD, DAF, and/or WPAFB guidelines.****

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Join us next month...

TechFest Dayton @ Sinclair



LEGACY in the News



Former LEGACY Apprentice (Leadership Experience Growing Apprenticeships Committed to Youth) and current SMART Scholar, Lorean, attended and presented at the International Mechanical Engineering Congress and Exposition Conference. Her presentation shared her research conducted during a summer 2021 LEGACY internship with the Turbine Engine Fatigue Facility.

Her research was focused on *Developing A Consistent Resonance-Induced Fatigue Testing Method On Novel Freely Supported Specimens*. “I learned how to use a Fatigue testing machine known as the ‘Free-Free’ to test thin, additively manufactured specimens to create a modular and reliable setup for the ‘Free-Free’”. Prior to her research, there was a lack of modularity and reliability in experimental tests. Her goal was to improve this, which accomplished by successfully testing four specimens and producing reliable results from the “Free-Free” that matched previous in-house results from other fatigue testing methods.

Lorean said, “My research pulled on theories and concepts from classes like system dynamics, vibrations, circuitry, and fracture and failure from a material science standpoint. It was rewarding to see a connection between the concepts I’ve been learning in the classroom and in my research in the lab.”

Lorean added, “I am excited to have had this opportunity which would have not been possible without the encouragement of my mentor, Dr. Onome Scott-Emukapor, and the LEGACY team! I have the privilege of also being on two additional papers in the following year with my mentors and colleagues from the Turbine Engine Fatigue Facility, from the research I conducted this summer [2022]. These papers will be submitted to the ASME Turbo Expo Conference.”

Lorean will graduate next autumn from the Ohio State University with her B.S. in Mechanical Engineering and will return to the Turbine Engine Fatigue Facility as a researcher under the SMART program and begin her graduate coursework.

“I’m thankful for all the support and opportunities I received and earned during my time with the LEGACY program. I look forward to the future in an exciting career and a network of supportive individuals who have been mentoring and guiding me with my career since I was sixteen” Lorean shared.

FLL Challenge Teams

FIRST LEGO League Challenge teams across Ohio have been competing in-person, vying for recognition, awards, and the opportunity to qualify for the State Championship.

January competitions were hosted by the Sylvania STEM Center, Dublin Robotics Boosters, and Loveland Robotics Boosters and the teams have been incredibly impressive! They spent their season identifying and solving problems related to energy use, developing and practicing teamwork skills, and designing, building, and programming robots. These young students are innovative and passionate problem solvers!

If you're in the Dayton area and want to see top FIRST LEGO League teams in action, 27 area teams will be competing at the National Museum of the United States Air Force on February 4 and 5. We'd love to see you there!



First Tech Challenge is ENERGIZED!

In the month of January, FTC has completed four State qualifying tournaments. Teams from across Ohio came together to compete in this year's game, POWERPLAY, presented by Raytheon Technologies. The level of competition is impressive! The teams had a great time competing against each other, but also, cheering each other on! Thank you to our January tournament hosts: Kirtland High School, Miami University, Walnut Hills High School, and Van Wert High School.

Congratulations to the teams who have advanced to the State Championship so far!

| Team # | Team Name |
|--------|-----------------------|
| 8642 | 8 to Automate |
| 21865 | Fe2O3 |
| 8120 | Electric Hornets |
| 10464 | The Bionic Tigers |
| 6418 | NDCL Robotics |
| 16657 | We Did Start the Fire |
| 20744 | 21 Karat |

| Team # | Team Name |
|--------|------------------|
| 5040 | Nuts & Bolts |
| 6133 | The "NUTS!" |
| 8719 | Quantum Leap |
| 16449 | Juniper Robotics |
| 5501 | VW Robotics |
| 12802 | We Will Bot You |
| 7324 | Oxymorons |

| Team # | Team Name |
|--------|--------------------|
| 11187 | AZTECHS FTC |
| 14261 | Wreck Less |
| 18275 | SubZero |
| 7136 | Higgs Bosons |
| 17978 | Robo Kai (Fenwick) |
| 4969 | Robot-X |
| 18386 | Parallax Robotics |

(Photos below were taken at the tournament hosted by Kirtland HS.)



First Tech Challenge is ENERGIZED! *cont'd.*

Good luck to the teams competing in February at the Kent State Qualifier, Wapakoneta Qualifier, and Sylvania STEM Center Qualifier!



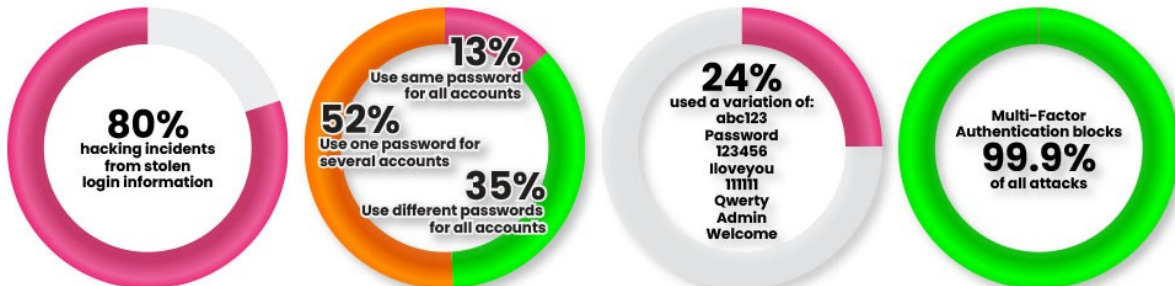
(Photos below were taken at the tournament hosted by Miami University.)



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Employee Spotlight

Name: Kim Stultz (contractor)

Program: SEMEDS, Job Shadow Day, Science Fair Judges, Metric Database, and Website updates

Years with the EO office: I'm the original employee of WPAFB EO and I'm about to celebrate my 30th work anniversary.

What do you enjoy most about your role in the EO office? My coworkers. I have the best coworkers/friends. We have a great team.

What is your favorite aspect of working with students in STEM? Getting students excited about STEM and watching them grow.

What accomplishment are you most proud of in the EO office? Growing the Job Shadow Day program was a huge accomplishment. The program started with 25 spots for student participants and has grown to over 200 participants, twice a year.

If you were stranded on an island, what three things would you bring? I would bring a book (anything by Nicholas Sparks), Diet Mountain Dew and my dogs.

