

# WPAFB EDUCATIONAL OUT REACH

"Inspiring student interest in all fields of STEM to build our nation's future scientific and technical workforce."

AUGUST 2024

ISSUE #30



## Wright-Patterson AFB Educational Outreach

# K-12

WPAFBSTEM.com

# STEM

## THE E.O. MISISON:

Attract, inspire, and develop student awareness and excitement in all fields of STEM, aviation, and aerospace in order to develop our nation's future scientific and technical workforce to meet future defense technological challenges.

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## LOOKING AHEAD:

1. FTC KICK-OFF
2. *FIRST* Webinars
3. SEMEDS Trainings
4. LEGACY
5. Volunteer Spotlight



AIR & SPACE  
STEM Outreach

# FIRST LEGO LEAGUE: KICK OFF



## FLL KICK OFF HIGHLIGHTS:

On August 10, dozens of local team members and their coaches joined us at Wright State University's College of Engineering and Computer Science to kick-off the 2024-2025 SUBMERGED season! Teams had an opportunity to learn about this year's robot game missions with Ohio's Head Referee, Richard Storrick. This year, teams will be researching ocean exploration and trying to solve the real-world problems that exist for people as they explore and use oceans. Guest speakers joined us from NOAA, University of Dayton, and Bowling Green State University to discuss this project with the teams. To encourage FIRST LEGO League team members and their parents to think about high school robotics, team members from local high school teams 21865 Fe2O3 and 3311 Innovators were volunteering on-site letting the younger kids drive and manipulate their robots. It was an exciting event and a great way to start the new season!

For more information about the SUBMERGED challenge, visit this page:

[WWW.FIRSTINSPIRES.ORG](http://WWW.FIRSTINSPIRES.ORG)





# STARBASE CLASSES BEGIN



After a short break from a busy summer camp season, STARBASE Wright-Patt is now in full swing for the 2024-25 school year. Fifth graders from Mound and Jane Chance elementary schools from Miamisburg City Schools joined those from Beaver Creek City Schools Valley and Shaw elementary schools in kicking off a 5-week STEAM adventure. This week students were introduced to the Engineering Design Process with a Sphero robot project in which they were tasked with designing either a land vehicle that could traverse over sand and rocks or a water vehicle that could propel across water using the Sphero as its motor. After exploring key molecules and compounds needed for life to exist with the Happy Atoms app, students participated in a metric measurement escape room to assist a flight crew in refilling oxygen tanks, and, finally, used Rene Descartes Cartesian coordinate system to map out images on a new planet's surface to assist researchers in locating points of interest.

Needless to say, over 400 students were kept very busy with STEAM this week at STARBASE Wright-Patt! We can't wait to see what the next 4 will bring...stay tuned!

# DAYTON DRAGONS AMERICAN CELEBRATION NIGHT



FANS WERE ABLE TO DRIVE THE ROBOT AND GRAB THE ROBOT TO COMPLETE THEIR TASK!



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The WPAFB Education Outreach Office partnered with the Air Force Research Laboratory (AFRL) and participated in the Dayton Dragons American Celebration Night on August 24. This event is part of the season-long Hometown Heroes Program. The Dragons celebrated the local military community and honored all of those who defend our freedoms both locally and abroad.

Before the game, fans visited the plaza where they could visit various military related booths, military vehicles, and had an opportunity to learn from and interact with those currently serving.



# E.O. VOLUNTEER SPOTLIGHT: COLONEL SNYDER

AUGUST 2024

## WE APPRICIATE YOU!



**Colonel Snyder**

### 1. Tell us a little bit about you!

I like to think of myself as “mild-mannered engineer by day... husband & dad always”. I have an amazing family (wife & 4 kids) who graciously put up with my enthusiasm for designing & building things, particularly Lego these days. My other favorite pastimes are typically outdoor activities -- mountain biking, hiking, riding a great roller coaster, or simply taking the kids to the park.

### 2. Can you tell us a bit about your background and how you became interested in STEM?

I’ve always loved designing & building. I dabbled in building my own mini-golf course in 4th grade (don’t ask how that turned out). That grew into treehouses, hay forts, elaborate high school “themed pranks”, robotics, and eventually engineering in the Air Force. Much of my career has revolved around Test & Evaluation – a huge highlight was attending USAF Test Pilot School – and my favorite work is always when I’m closest to the discovery process.

### 3. How long have you been volunteering with the EO?

A co-worker told me about the WoW program soon after I returned to Wright-Patt (the 3rd time) & I started to volunteer right away. That was 6 years ago – time really flies!

### 4. What inspired you to start volunteering in STEM education?

As our kids reached elementary school age, I quickly “answered the call” when it came to helping with math & science homework (I tried to leave the English & history to my wife Laura!) I enjoyed the challenge of breaking concepts down into teachable segments, & when I found that the Wizards of Wright (WOW!) program gave me the opportunity to do that on a larger scale with tangible hands-on lessons, I jumped right in.

### 5. Can you share a memorable experience or moment from your time volunteering with us?

One of my most favorite moments is the end of the “Bridges” lesson when the kids realize they get to cross the structure they just worked together to build. Their excitement is epic & often very loud, and everyone scrambles to be at the front of the line... until I bring up the topic of testing and the possibility of the first person finding a defect in the final assembly as they attempt to cross. I really enjoy seeing some of the kids shrink towards the back of the line at that point! Of course, then I quickly bring up the topic of structural fatigue failure...



# E.O. VOLUNTEER SPOTLIGHT: COLONEL SNYDER

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## **6. What do you find most rewarding about volunteering in STEM education?**

The kids are always so excited and thankful to have a guest speaker in their classroom – there aren't too many places that give you a consistent warm welcome like that! Plus, when the kids really get involved in the lesson and someone has their "aha" moment when a concept finally clicks for them, that's extremely rewarding to see.

## **7. How do you think volunteering with the EO benefits your own personal and professional growth?**

Teaching a lesson is such a great way to make sure you know a topic (at least the solid basics) before standing in front of a big group of kids and asking them, "Do you have any questions?" at the end of the lesson. Although the lessons are always so well put together, it's a fun challenge to brush up on the subjects – and it's a good way to stretch yourself by taking on some topics that may not be your first choice to teach.

## **8. Can you share any success stories or achievements from the students you've worked with?**

I absolutely love working with the FIRST Lego League program, & I was blessed to coach a team of our kids plus several of their friends from church (go Taco Bots!). The times they made it to the State competition were exciting – and humbling to see the incredible teams that make it to that event. Even though they never moved beyond State, they still have fond memories of their Lego League days and some Lego building & coding skills – that's quite rewarding to see.

## **9. How do you envision the future of STEM education, and what role do volunteers play in that vision?**

Some kids naturally gravitate towards STEM, but I think it's the ones who are hesitant or think "that's too hard for me" that we're really trying to reach. If we can give them enough "aha" moments and show them that success in STEM is entirely within their reach, we can make a difference in some students' lives. But that likely doesn't happen in one lesson... it takes multiple exposures to different topics, which takes a small army of volunteers, but it's all worth it.