

Summary

The Air & Space Forces Association, Wright Memorial Chapter (AFA WMC), supports STEM education that impacts individual development, workforce readiness, and national progress. Encouraging STEM education at the K-12 level fosters a pipeline of future scientists, engineers, and inventors who contribute to technological advancements and economic prosperity. Our targeted support ensures that students of all backgrounds have the chance to develop skills that lead to upward mobility and lifelong success.

In the following article, Carl “Shof” Shofner, AFA WMC’s VP for Aerospace Education, chronicles his visit to the Beavercreek Robotics Club and how they used the STEM grant we provided – and it’s a pretty compelling story of how our grant can have such a major impact.

These grants would not be possible without the amazing support of our corporate and AFA WMC corporate community sponsors – an exceptional group of businesses listed on our [AFA WMC Website](#).

Enjoy!

STEM Grants – Having a Positive Impact

by Carl “Shof” Shofner

The Air & Space Forces Association, Wright Memorial Chapter is a proud sponsor of the Beavercreek High School robotics club (note our emblem prominently placed in the middle of their T-shirt). We joined as a sponsor in 2024 when club adult leaders reached out to us. Normally, we target socioeconomically disadvantaged schools, and none of us would argue that Beavercreek falls into that category. But in looking at their story, how persistent they were, how thankful they have been for our donation, their enthusiasm, and opening their doors for us to volunteer, I believe this is a good investment.

The story of the Beavercreek High School robotics club is that up until about 2023 the robotics team was supported by the school. This was, and is, a nationally ranked team. Due to changes in the rules the school could no longer fund the program and it had to become a parent supported club. The parents successfully pivoted to a parent run, sponsor supported program and they continue to excel at the national level.

I have been invited twice to support their scrimmage nights and each time I got a definite jolt of adrenaline from watching these students and participating as a judge. It really is fun and inspiring to see these students work together, want to be there and use their STEM skills.

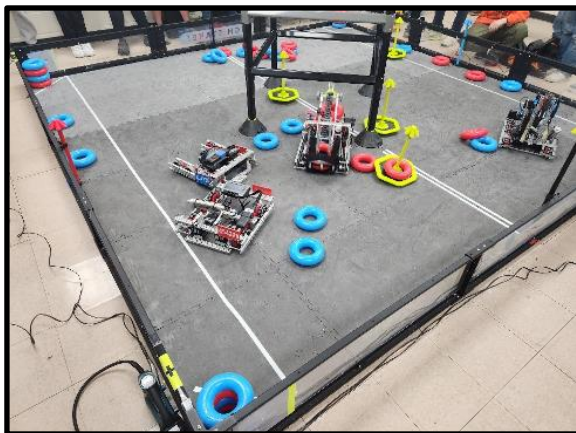


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The way scrimmage nights happen (they are every couple of weeks and are helping the teams to get ready for regional and state competitions) anywhere from 10-16 teams show up (male teams, female teams, co-ed teams, freshmen, senior and mixed teams) with their robots they've tweaked since the last competition. Keep in mind the teams start the year with a kit of parts; no designs, just a kit of wheels, metal "beams," pneumatic pumps, wires, nuts, bolts, you get the idea. AND, they are given the rules for the competition. That's about it. The teams have to start designing their robots to accomplish the task. Understandably the first competition is pretty rough, as only the most savvy, veteran designers are marginally successful. But that's the beauty, other teams get to look at each other's designs and through trial and error improve their designs. Over the course of weeks the designs tend to migrate toward each other and the focus is on skill of driving their unique design.



BHS - Arena/robot set-up before it



BHS - Once the competition is

In this year's competition the robots are supposed to pick up red and blue plastic rings in the picture and put them on green, black and red stanchions (see pictures). All while 3 other robots are in the arena doing the same thing. They get points for how many rings they get on the stanchions and more when they move stanchions to designated multiplier areas. Oh, did I mention there is also a 30 second autonomy phase where the robots are on their own, driven only by the pre-programmed instructions the students coded before the scrimmage. There are 14 matches

each scrimmage, but these are all just practices for the real deal. At the two scrimmages I've been to I was an inspector making sure the robots followed a set of assembly guidelines (a job I learned with less than 5 minutes of training). In the second scrimmage I was a scorer using an app on my phone to tally up the rings and render a final score.

Come join us, it is a lot of fun and they appreciate volunteers.

CONGRATS to Beaver Creek H.S. for their support of students, STEM, and the Robotics Team!