



**2023-2024
Annual Report
The Fightin' Robotic Owls**

introduction

Founded in 2014, we are in our 10th season of building not just robots, but a community of innovators and future leaders in STEM.

Based out of Bensalem High School in Bensalem, Pennsylvania, Team 5401 was founded in 2014 by Boeing employees Kevin McKay and Andy Windhausen. Our team first participated in the 2015 FRC season *Recycle Rush*, where we won the Highest Rookie Seed and Rookie Inspiration Award at our two District Events. Our team quickly made an impact on the community and grew to new heights, reaching the FIRST World Championship in 2016 and 2017. In 2019, we made it back to Worlds and won the Tesla Subdivision.

In 2019, we started our STEM Ambassador Program in our district elementary and middle schools. We started with 6 FLL teams, one for each of our elementary schools, and two FTC teams at each of our middle schools. During our off-season, students from our team work with FLL and FTC mentors to prepare our FLL and FTC teams for their competitions. Today, we fund and support 10 FLL teams and 3 FTC teams.

We also hosted our first Bensalem District event in 2019. Every year, Bensalem sees around 30 robots and their teams compete in our gymnasium as part of the FRC season. This event is our largest fundraiser and one of the biggest displays of STEM and FIRST in our local community.

Today, our team has over 65 active members, 10 mentors, and an alumni network of over 100 former students. Since 2022, we've started fielding a freshman robot during off-season events in order to engage freshmen and prepare them better for team responsibilities. Our team hopes to continue to grow, and the fact that this season is our 10th serves as a reminder of the importance of sustainable practices to create a sustainable organization.



our mission & values

We enhance students' interest in STEM and business fields by engaging them with experienced mentors that challenge them with real-world situations that build character and foster a lifelong appreciation for teamwork.

We believe that everyone is welcome on this team, no matter their ability or interest they can find it in something we do.

We are not just an after-school club. We are a professional organization and competitive sport, preparing the next generation of engineers, entrepreneurs, and leaders.

We choose to be a self-funded team as to not strain the school district's financial resources. Additionally, we collect no dues from team members because, as a Title I School, we do not want financial constraints limiting participation.

We are committed to promoting and supporting STEM education at all levels both in our school district and in our community as a whole.

We participate in community service and outreach to show our team spirit, introduce others to FIRST, and give back to the community that supports us. We will grow, mentor, and sustain a family of FIRST teams at all levels throughout Bucks County.

Values

Communication

Respect

Inclusion

Safety

Impact





Summer Camp

Now in its 8th year, our free summer camp for kids in grades 7-9 offers an exciting and immersive experience in the world of FIRST Robotics and STEM. Throughout the camp, students engage in hands-on activities, team challenges, and workshops led by team mentors. By the end of the camp, students leave with newfound knowledge, friendships, and a deeper appreciation for the possibilities within STEM fields.

Sensory Initiative

Our sensory initiative at the Bensalem District Event includes our sensory bags and our quiet room. Our sensory bags are for anyone needing something to fidget with, like a pop-it. Our quiet room is a place where people who feel overwhelmed can go to and relax when the competition gets loud and people need a time out from the noise. If they don't want to go to the room, they can also grab headphones from the sensory bags.

STEM Ambassador Program

Our STEM Ambassador Program is an initiative that we created to both mentor and assist the teams we started in our district. Within each of the 10 FLL and 3 FTC teams, we've assigned groups of Team 5401 members to serve as Mentors to the kids. While there, elementary and middle school students receive guidance from their Student Mentors who have a thorough understanding of the FIRST program. This program strives to teach students to learn critical-thinking skills, problem-solve, and take ownership of tasks.

community engagement

team sustainability

Frosh Bot

Our Freshmen members held their own mock kickoff and build season leading up to our off-season competition. Their response to this learning exercise was overwhelmingly positive. This experience, from the robot-building process to actually competing at a competition, engaged students with the team better than our previous strategies. Freshmen were excited to continue to learn and be a part of a team, as reflected by new members making up the majority of the team this year.

Team Wiki

This season, we have created a wiki to help us organize important team information such as team history, project documentation, and technical resources.

Team Handbook

Our handbook is a student-led initiative to create team rules and expectations for membership. It developed out of a necessity to establish rules to formally govern the team. Our team has suffered by not having expectations for students in order to maintain membership in previous seasons. This document is accessible to all students and the public via our website, www.team5401.org/handbook

Training

During the beginning of this school year, the veteran shop members came together and made comprehensive shop guide which outlined general shop safety, as well as detailed instructions on how to use different machinery for new members joining our Fabrication Sub-team. Additionally, members of the Fabrication Sub-team must take an exam to be officially shop certified for the season before working on any parts.

Monday

The team utilizes Monday.com, a project management website, to divide and assign work. Not only does this allow for easy organization and tracking, it also allows students to sign up for tasks they're interested in, boosting team engagement.





Metal, Wood & Electronic Recycling

We save up all of our scrap metal and aluminum to recycle and it is picked up by a metal waste recycler we partner with. We also partner with an e-waste recycler who helps us recycle all of our broken laptops and other electronic waste. Additionally, when taking down our 2023 practice field, our members saw that the wood was still perfectly usable. This led to us reusing the wood pieces to build our 2024 practice field.

Laptop Upcycling

Through the federal government's Computers for Learning Program, we upcycle discarded laptops from various federal agencies and refurbish them. The laptops are then given to all new members of our team, as well to any school or community group that requests them. To date we have upcycled over 300 laptops.

Tree Planting

To reduce consumption of single use plastic water bottles at our Bensalem District Event, we are encouraging participants and spectators to bring their own reusable water bottles. On the event maps we will be highlighting the reusable water bottle filling stations near the gym & cafeteria. Additionally, since these stations monitor the amount of water bottles saved over time, we will be working with the Arbor Day Foundation to have one tree planted for every 100 water bottles saved during the duration of our district event.

Reusable Totebags

Last year, we started selling reusable tote bags branded with the teams name and logo. This was done to not only raise money for our team but also to reduce the use of single use plastic bags, which contribute to pollution and harm marine life.

environmental sustainability

fundraising & financials

Sponsors

Our current sponsors for the 2023-2024 season are:

Boeing
Dow Chemical
Raytheon
DoD STEM
Comcast
Gene Haas Foundation
Neshaminy Creek Brewing Company

To date, they have donated over \$21,000 to the team.

Financial Management

To keep track of our finances and make sure we have accurate financial books & records, the team uses Quickbooks.

Rocking Robots Fundraiser

Our largest fundraiser of the year was held in February at Neshaminy Creek Brewing Company. Friends and families came out to the brewery to support the team. The event consisted of raffle baskets, a movie screening, and a showcase of last year's robot, Bucky. This was also a great opportunity to demonstrate our team to members of the community.

Dine-to-Donates

Over the course of the *CRESCENDO* season, we started participating in restaurant night fundraisers that we call our Dine-to-Donate Program. So far, we have hosted four Dine to Donate Nights by partnering with 4 local restaurants in our community. These fundraisers mutually benefited both our team, by gaining a percent of total profits earned on that day, and the restaurant hosting our event by attracting and profiting off of new customers.

Online Store

Through Tee Spring, our team has launched an online store full of team branded merchandise. Each item is designed by members of the team and the team earns revenue from the sale of each item.

