

Robotics wraps up successful season

By Melissa Domen

During spring break from April 24 through April 27, Allentown High School's Redbird Robotics went to Detroit, Mich. for the 2019 FIRST World Championship. The Redbird Robotics Team 1807 is a member of FIRST Robotics Organization. FIRST stands for For Inspiration and Recognition of Science and Technology. The mission of FIRST is to inspire students to find interests in engineering, technology, and communication, and to teach students about leadership. Redbird Robotics consists of 50 innovative students grades 9-12.

Students with passions in science, technology, engineering, mathematics, media and business come together to design, build, program, fund and market an industry-sized robot, while also making a positive impact on the community through outreach.

Leading up to the World Championship, there were many events that took place. First, on January 5, students learned the rules of this year's competition game. The competition was called Destination: Deep Space. All participating teams had six weeks to develop a game strategy, design, prototype, create, and test a robot for the competitions. In addition, each year, participating teams have to create a new business plan and engineering journal. The business plan describes how the team is organized and operates, community outreach events, and marketing and financial plans. The engineering journal contains the design and describes the major components of the robot. The business plan and engineering journal are used when students are interviewed by judges during competitions.

To complete this task, Allentown has three sub-teams (Mechanical, Programming, and Business) that work together to help build one robot. The Mechanical team designs, builds, tests, and maintains the robot. The Programming team writes the code that moves the robot and assists the build team in testing the robot. The Business team applies for grants, obtains sponsors, manages social media accounts, prepares for awards and organizes outreach events.

At competitions, members who are not actively working on the robot, must "scout" other teams. Members carefully watch other teams for their strengths and weaknesses. Data from scouting becomes crucial after the qualification matches at competitions. After several qualification matches, the top teams must choose other

teams to be part of their alliance for playoff matches. It is important that teams choose the best alliance partners that complement their skill sets.

Before qualifying for the 2019 FIRST World Championship, Team 1807 attended four competitions. The team first went to a competition in Horsham, Penn. on March 2-3. At this event, Redbird Robotics made it to the finals and received the Industrial Design Award.

Next, the group went to a competition in Tabernacle, NJ on March 23-24. Again, Redbird Robotics made it to the finals. The team also received the Excellence in Engineering Award.

After that, the team went to a competition in Bensalem, Penn. on March 30-31. At Bensalem, Redbird Robotics again received the Industrial Design Award, and was the District Event Winner.

At this point, Redbird Robotics qualified for the Mid-Atlantic District Championship at Lehigh University in Bethlehem, Penn. on April 4 through April 6. At this event, the team made it to the semifinals and received the Excellence in Engineering Award.

By the end of the Mid-Atlantic District Championship, Redbird Robotics was ranked third out of 132 teams in the Mid-Atlantic District. Because of this team's high ranking in the Mid-Atlantic District, Redbird Robotics qualified for the 2019 FIRST World Competition. Only 408 teams out of 3,790 teams were invited to this final competition in the league.

To transport the robot to the local competitions throughout New Jersey and Pennsylvania, the tools and robot are brought by



COURTESY OF MILLIE WATT

The robotics team traveled to Detroit, Mich. to compete in the World Championships. It is pictured here outside of Ford Field, the venue where the competition took place.

a single trailer the day before the competition. However, the robot was packaged and shipped by FedEx from Allentown to the 2019 FIRST World Championship in Detroit. FedEx is a FIRST sponsor that helped all teams around the world bring robots to Detroit.

On Tuesday, April 23, the team left Allentown High School on a 12-hour bus ride for Detroit, Mich. The following morning, the students toured the famous Henry Ford Museum before arriving at the Cobo Center in the afternoon to prepare for the competition. At the Cobo Center, students had time to visit the FIRST Innovation Faire, attend conferences, and participate in practice matches for the competition.

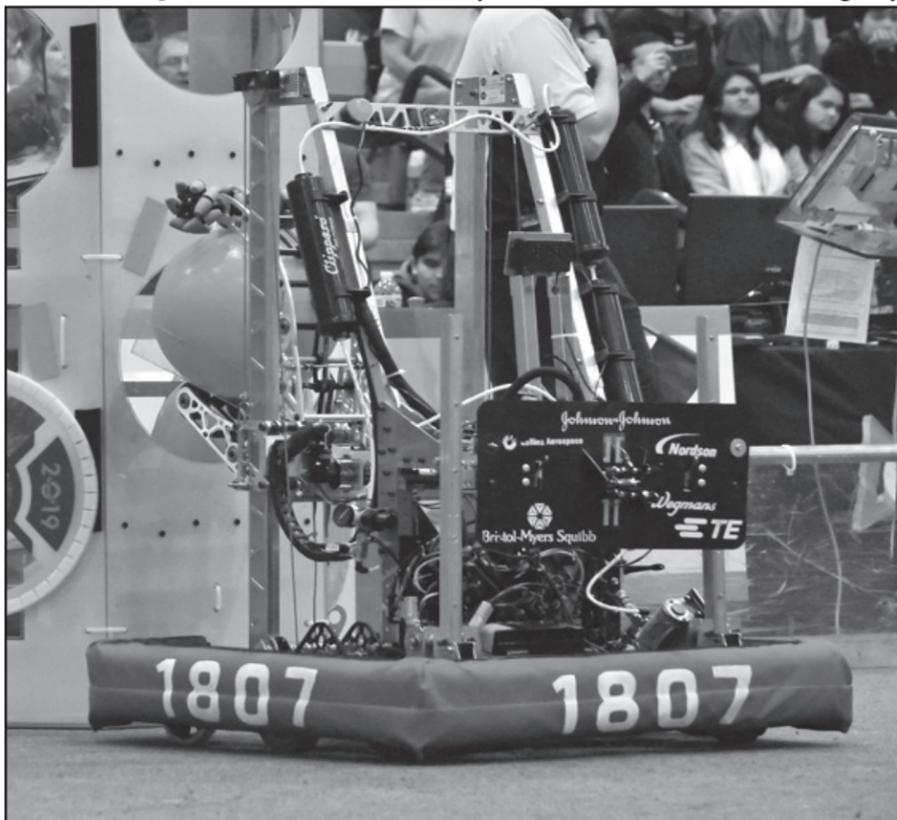
On Thursday, April 25, the 3-day 2019 FIRST Competition began. FIRST is divided into 4 different age levels: FIRST Lego League Jr. (Kindergarten to 4th Grade), FIRST Lego League (4th Grade to 8th Grade), FIRST Tech Challenge (7th Grade to 12th Grade), and FIRST Robotics Competition (9th Grade to 12th Grade). FRC 1807 Redbird Robotics competes as an FRC (FIRST Robotics Competition)

team. Teams from all divisions of FIRST, and all parts of the country and world came to the 2019 FIRST Competition in Detroit. Some of the international teams came from India, Israel, Chile, Canada, Netherlands, Indonesia and China.

This trip was an amazing opportunity to meet members of other teams to network and share ideas. All of the FRC teams were randomly divided up into six fields, all competing at the same time. The field that Redbird Robotics competed on was called the Curie Field.

The Redbird Robotics made it to the quarterfinals on Saturday, April 27. AHS ranked 15th out of 68 teams on the Curie Field of the Cobo Center in Detroit. Participating in the 2019 FIRST World Championship was an unforgettable experience for everyone on the team.

The team worked many exhausting hours this season to get the furthest it has ever placed since their start in 2006. The team looks forward to planning for next season, striving to make advancements, and hoping to continue the success they had this season.



COURTESY OF MELISSA DOMEN

Allentown High School's Team 1807 robot was one of the best in the world. Every year, the robots are tasked to perform multiple actions, including placing, lifting, and sometimes climbing.