

Robotics Collaborative Project Assists Globally

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The RoboSpartans robotics team of New Hartford, recently added another large scale effort to their many outreach projects. They've teamed up with EnablingtheFuture.org/e-NABLE, a volunteer group of over 7,000 engineers and "makers" from around the World who use 3D Printers to create prosthetic hands for those in need. The team spearhead an ongoing collaborative effort that recently completed a first round of creating over a dozen prosthetic hands for 3rd World countries. The RoboSpartans gathered over a dozen of their fellow FIRST Tech Challenge teams with 3D Printers from 9 states and 2 countries to create hand parts. Once created, the prosthetic elements were shipped to the RoboSpartans and turned over to a class of engineering students at SUNY Polytechnic Institute for inspection, testing and assembly. The RoboSpartans then ship completed units to hospital field teams heading out to impoverished areas of the World. The team currently has over a dozen hands ready to ship to the next field unit designated by e-NABLE. Once the prosthetics are shipped, the RoboSpartans will request photos to send back to participating teams and engineering students.

The RoboSpartans first met with e-NABLE representatives while participating in the National Maker Faire in June 2015. Since then, the team completed an approval process to be a listed supplier of "helping hands". They completed the process in order to be part of a matching project where individuals in need around the World and even closer to home can be paired with the team to create customized hands. The team's large scale project has been documented in order to provide other teams and colleges a template for future projects. Teams that have participated to date include: error404 and MohonBots from New York State, the Tuxedo Pandas and Lord of the Bricks from Virginia, got robot? from Illinois, the Brownouts form Alabama, the Thunderbolts from Michigan, the LazyBotts from Minnesota, e-Lemonators and Team RISE from Florida, the Droids from Maryland, the Robot Squad from Texas and the Trinity-Baconeers from Australia.

"Pairing fellow teams with e-NABLE seemed a perfect fit," said RoboSpartan Coach Bob Payne. "e-NABLE established a relationship with one of our team sponsors, 3D Systems, Inc, a 3D Printer manufacturer. 3D Systems partnered with FIRST, [Will.I.Am](#) and Coca Cola to giveaway over 1,600 EKOCYCLE 3D Printers to FIRST teams last year. We knew teams around the World had printers and a desire to give back. It was just a matter of creating a way for them to get involved easily during their competition season," Payne added. As an adjunct instructor at SUNY Poly, Payne enlisted students in his Production and Operations Management class to take on testing, inspecting and assembly of the prosthetic parts. "By having engineering students involved, we reduced team input to something manageable between competitions and helped college students get real World experience with a truly important project. We've made connections with teams willing to replicate what we've done and added a new college contact in Budapest, Hungary," according to Payne. The effort was so successful that Payne's Spring semester class at SUNY Poly will be repeating the process with additional FIRST Tech Challenge teams.

The RoboSpartans use their thriving FTC TEC Network Google Community of over 150 teams along with multiple websites, social media accounts and demonstrations to get the word out about e-NABLE and the need for 3D Printed prosthetic parts. As they continue to build on their established outreach, the team has also reached milestones in robotics this season. They won the two top prizes, the Inspire Award and Winning Alliance Captain Award at both the Excelsior Region's local qualifier in Sauquoit the Championship at SUNY Poly. This was the team's first season competing locally after organizing and hosting the area's local qualifiers in 2013 and 2014. Their success this year gained them an invitation to the East Super Regional Championship, where the top 72 teams from Maine to Virginia will compete for spots in the World Championship. The RoboSpartans strategically mapped out their season as they try for another shot at the World Championship in April 2016. They've planned accordingly, increasing the capabilities of this year's robot and doubling their community outreach and fundraising efforts.

The RoboSpartans, participating in their final season as a FIRST Tech Challenge robotics team, is made up of high school students from New Hartford and Utica, along with home schooled students. More information on the RoboSpartans can be obtained through the website: www.RoboSpartans.org.

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