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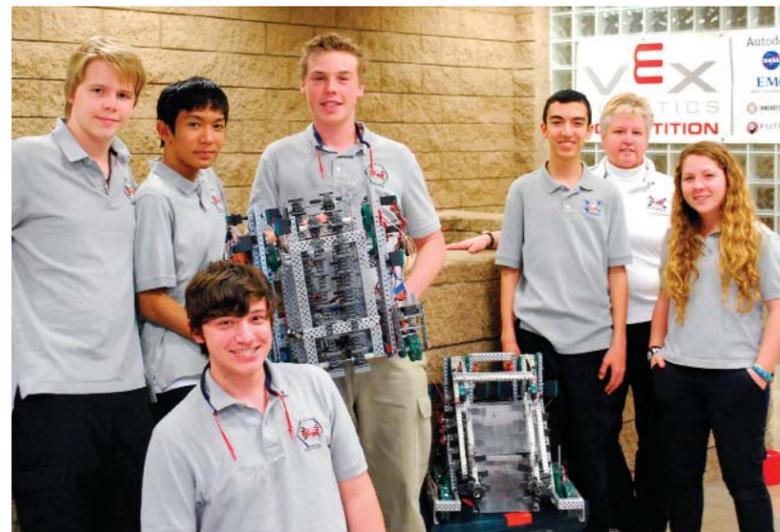
# Grassroots Robotics

by Tom Atwood with Rev. Michael P. Corcoran, S.J.

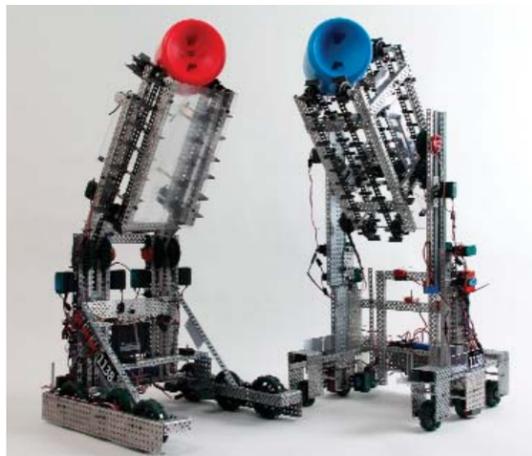
## Eagle Engineering Team #1138 Helps Initiate VEX Robotics Team in Micronesia

As reported Dec. 6 in the Guam News, [www.pacificnewscenter.com/index.php](http://www.pacificnewscenter.com/index.php), "Yap State's two private high schools have announced an innovative new program to serve students with an interest in math and computers. The schools, Yap SDA and Yap Catholic, are each establishing robotics teams for their pupils. These student teams, with support from teachers and other school staffers, will design, build and operate basic robots... Both teams have been equipped with classroom robotics kits from VEX Robotics... The Habele Outer Island Education Fund donated the kits along with teacher guides and the equipment required for using desktop computers to program the robots."

VEX Robotics is blooming in Micronesia! How did this come about? A prominent VEX Robotics team based at the Chaminade College Preparatory high school in West Hills, California, Eagle Engineering Team #1138, is at the root of this story. We contacted the team leader, Chaminade's Robotics Program Director, Nancy McIntyre, to get the details. Nancy is a nationally known robotics education expert. She oversees four VEX Robotics teams (including middle school and high school teams) and four FIRST LEGO teams (she is the FIRST Senior Mentor in southern California); in addition to running the Future Foundation, a 501C3 nonprofit dedicated to supporting robotics education and programs, she leads a MATE underwater ROV team and an aerial robotics team, and has helped host VEX Robotics Competitions all over the world.



Standing from left to right: Nathan Smeltzer, Steven Paqueo, Austin Puetz, Andrew Adalian, Nancy McIntyre, Morgan Montalvo, and kneeling, Thomas Manfredonia.



### EAGLE ENGINEERING TEAM #1138

When we asked Nancy how the Eagle Engineering team had helped develop a VEX Robotics program in Micronesia, she quickly ushered in half a dozen of the Eagle Engineering team members to address their respective roles in the Micronesia program. Eagle Engineering, incidentally, is a 50+ mem-

ber team that has helped create international teams in England, New Zealand, Japan and other countries in recent years (please see the group photo to identify the students who offered the comments noted below).

In 2008, Eagle Engineering began sending textbooks from all academic disciplines to Micronesia to help build up resources for two new high schools. Eagle Engineering sent the texts to Father Corcoran, director and principal of Yap SDA and Yap Catholic high schools on the island of Guam. Corcoran used the texts to build libraries for the schools. The book program was launched by former Chaminade student Amelia Weiss, a team alumni who is now at the University of California, Berkeley majoring in marine biology and engineering.

In the last year, Eagle Engineering began creating instructional videos for the Micronesian students, as well. These

## VEX Takes Root In Micronesia

Photos & story by Rev. Michael P. Corcoran, S.J.

Yap Catholic High School is new (less than 5 months old) and has very limited resources. So, we are extremely grateful for the support we have received from Eagle Engineering Team #1138 from Chaminade high school in West Hills, California, Nancy McIntyre, Team 1138's mentor and leader, and the Habele Foundation to start up our robotics program. Many of our students are unfamiliar with computer technology and robotics is a new arena for them. We have two computers and a single internet connection at our school.

The instructional videos created for us by Team 1138 from Chaminade have been very helpful for our students. Not only have the videos created confidence and a desire for competition, but they have also helped provide very practical advice on how to proceed with building, programming, and testing robots. The very first week of working with actual VEX robots, our students showed tremendous excitement about the program, and that excitement has grown.

VEX Robotics is bringing a variety of benefits to our students. By involving two of the high schools here in Yap, this year's robotics competition will likely encourage more interaction between the schools. We are hoping that it will lead to friendly competition in other areas such as speech & debate and athletics, as well.

Our school currently has five teachers. I teach two classes and serve as director and principal of the school. Another Jesuit priest, Father Mulreany, teaches full time. Our newest staff member, Mr. Casey, is one of our robotics coaches. We have a volunteer teacher,



YCHS faculty: Father Mulreany, Shmayla Paul, Miss Jane Casey, Father Corcoran and Mr. Tim Casey.



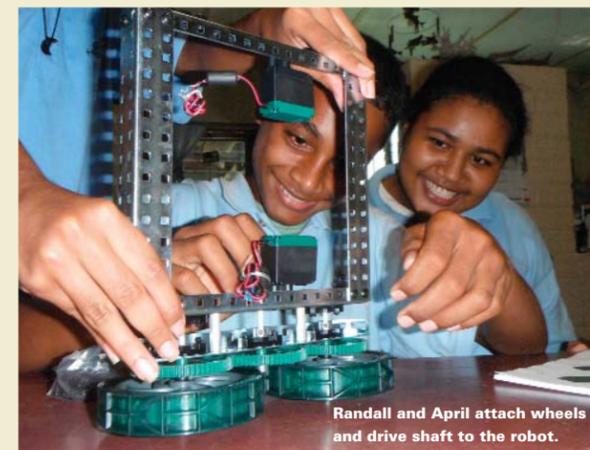
Kevin, Jamie, and Randall show off the team's progress.

Miss Casey, who teaches full time and lives with a local host family. Our fifth, and only paid teacher, is Shmayla Paul who is originally from Pakistan. She is our second robotics coach.

Over the next two years, we will expand our school to include junior and senior classes. We are also in the process of building a new campus for which we are planning a separate science facility that eventually will be the home of our robotics program. If we can secure funding, we would love to have even more of our students involved in the program, perhaps eventually being able to travel off island for competitions—such as the VEX Robotics World Championship in the United States.

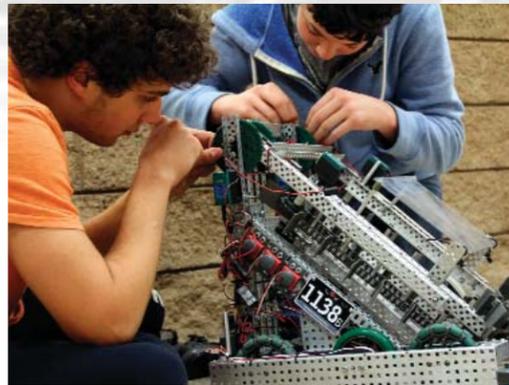
### STUDENT FEEDBACK

Randall sees robotics as "challenging, because it takes skills, hard work, and much teamwork to create a robot." Jamie added, "It is very hard work. We must pay great attention to the instructions so we don't make any mistakes and have to take it apart again." Jonah calls building a robot "hard and complicated work." April shared, "I like to put things together. And I like working on a team with other people." These students are learning skills that can easily be transferred to other areas of their lives. They are learning and thoroughly enjoying themselves at the same time. Mr. Casey is glad that "the robotics program helps kids put into practice the science that they are learning in the classroom."



Randall and April attach wheels and drive shaft to the robot.

[Editor's Note: You Can Help! Organizations or individuals who would like to contribute resources to help the burgeoning Micronesian VEX Robotics teams attend the VEX Robotics World Championships this year or next should contact Father Corcoran S.J., at: [mpcorcoransj@hotmail.com](mailto:mpcorcoransj@hotmail.com), phn: 011-691-350-2148. The 2012 VEX Robotics World Championship will be held at the Anaheim Convention Center in Anaheim, California, April 19 -21. More than 550 teams, and more than 10,000 students and attendees from more than 20 countries across the globe are anticipated to attend!]



Eagle Engineering team members wrenching on a VEX robot.

## WE BUILD FOR A BETTER TOMORROW

Morgan Montalvo, who has been involved with VEX for six years and is team president this year, offered the team's motto: "We Build for a Better Tomorrow." She noted that their motto is consistent with various service projects the team is involved in, and commented that she did organizational work for the team and helps the team with CAD software (Autodesk

Inventor). Morgan was quick to observe that the VEX Robotics Kits and game parts will significantly help the Micronesian students, as they are better STEM learning tools than just the library of books alone. "Because their principal, Father Corcoran, is a trained engineer, he understands why it is so important to get his students involved in VEX Robotics both in the classroom and as an extra-curricular competition."

Morgan recapped Eagle Engineering's outreach to Micronesia: "We researched the newest school in Yap and contacted them, mainly through email—this is how we got to know them. We initiated contact with Father Corcoran, sent books, and more recently videos. So far, we have created two videos. The first was an Introduction to Robotics video, which broadly addresses what you need to know when you are starting a VEX team. It explains introductory robotics, and, specifically, VEX Robotics Competition—how the competition is laid out, and details about the seasonal games. Our second video was an Introduction to Programming, which Thomas has contributed greatly to. It shows the students how to use easyC, a programming software we use to program our VEX robots. We are currently working on the third video, which is about brainstorming. We plan a total of five.

"Recently, with funding from Habele, we shipped the Micronesian students two VEX Robotics kits, a VEX playing field and last year's game elements—for Roundup. So they have Roundup tubes and goals to practice and compete with. The two high schools involved will be playing together to learn how all of this works."

## CONCLUSION

The comments by these students, and the VEX Robotics expansion work they have done on a global scale, show that Eagle Engineering is a very creative, highly orga-

nized and highly motivated team. With many of the students involved in VEX Robotics for several years, it is no wonder that this team received the very first "Excellence" Award to be handed out to a middle school team. This was at the inaugural VEX Robotics World Championship, held at Cal State Northridge five years ago. Eagle Engineering has earned a variety of additional awards in VEX Robotics Competitions—including many VEX Excellence Tournament Champions, and has won awards in categories such as Design, Amaze, and the Driver Challenge. Nancy proudly notes that "last year at the VEX World Championship we were a divisional Excellence Award selection, and we were an FRC 2008 and 2011 LA Regional Chairman's Award team." She continues, "Eagle Engineering has qualified to compete at every VEX Robotics World Championship to date: Year one at CSUN in Northridge, years two and three at the Dallas, year four in Florida, and this year at the 2012 VEX Robotics World Championship in April at the Anaheim Convention Center.

We take our hat off to Nancy McIntyre, who says with a grin, "My 'little bunch of ringers' have been doing this longer than any other high school team out there!" Her dedication to her students and to VEX Robotics over a period of years has made a difference for all of the students who are part of Eagle Engineering, and it's now making a big difference for students in Micronesia, and at other venues around the globe.

## Links

**Autodesk Inventor,**  
[http://resources.autodesk.com/msd/Autodesk\\_Inventor](http://resources.autodesk.com/msd/Autodesk_Inventor)

**Eagle Engineering Team #1138 website,**  
<http://eagleengineering.freehostia.com>

## VIDEOS

**Brainstorming Techniques,**  
[www.youtube.com/watch?v=dQZ5MH-rIPA&list=UUMVghCer8sSuWNauBylyq0Q&index=1&feature=plcp](http://www.youtube.com/watch?v=dQZ5MH-rIPA&list=UUMVghCer8sSuWNauBylyq0Q&index=1&feature=plcp)

**Introduction to Programming,**  
[www.youtube.com/watch?v=YTKAllbyn-c&feature=plcp&context=C316a310UDOEgsToPDskKutLfrA\\_TLd0q6GdLxj0S](http://www.youtube.com/watch?v=YTKAllbyn-c&feature=plcp&context=C316a310UDOEgsToPDskKutLfrA_TLd0q6GdLxj0S)

**Introduction to Robotics,**  
<http://youtu.be/hLZsXbcLLug>

**Motorola Mobility Fdn Empowerment Grant-Team 1138 Eagle Engineering,**  
[www.youtube.com/watch?v=nFb5OtesB04](http://www.youtube.com/watch?v=nFb5OtesB04)

**Team 1138 YouTube Channel,**  
[www.youtube.com/user/EagleEngineering/videos](http://www.youtube.com/user/EagleEngineering/videos)

**VEX Robotics Design System,**  
[www.vexrobotics.com](http://www.vexrobotics.com), (903) 453-0800

For more information, please see our source guide on pageXX.

videos cover robotics basics, programming and more. In recent months, the team sent two VEX Robotics Starter Kits to the students, as well as a VEX game playing field and game elements. From the beginning, the Habele Outer Island Education Fund, a philanthropic foundation, provided funding for Eagle Engineering to make this outreach possible.

## EAGLE ENGINEERING GOES TO WORK

The instructional videos, available on YouTube (link to videos at article end) were produced under the supervision of Andrew Adalian, a "video guru" on the team and a lead VEX Robotics programmer. Andrew shot video interviews with fellow students, used footage of competitions and used screen recording software with voice overlays to create the videos.

Eagle Engineering organized its outreach to Micronesia by dividing up the work. Steven Paqueo, in VEX Robotics for six years, manages the team's website, <http://eagleengineering.freehostia.com>, and Autodesk award submissions for it. Austin Puetz, a junior who has been working with VEX for four years, is a lead builder on the team. Thomas Manfredonia, in VEX Robotics for three years, is the business manager for the team, and is a skilled programmer. Thomas reported that this kind of project was not new to Eagle Engineering: the team has years of experience starting teams in multiple international venues. Nathan Smeltzer, a junior who has been involved in VEX Robotics Competitions since he was in 6th grade, explained to Robot how the Habele Foundation has significantly expanded its funding in the course of the three year program, making it possible to equip the Micronesian students with robots and game parts.