Final Educational Activity Report
Cuyahoga Community College
Youth Technology Academy 2005

Without generous support from the NASA Glenn Research Center, Youth Technology Academy would have never been able to accomplish its goals. For the past two years, NASA's Mark Poljak has been supporting the Youth Technology Academy (YTA) at Cuyahoga Community College (Tri-C) as a student mentor and ambassador. Because of this and the fact that NASA stands behind him, YTA accomplished wonderful things for our community and made great strides in the area of technology training, especially Robotics.

Educational Activity and Impact

The Youth Technology Academy goal is to prepare the future workforce of Northeast Ohio. YTA is working with the Cuyahoga Community College staff in developing a FIRST Robotics/Automation curriculum that will prepare students for careers in high-tech jobs. High school students earn college credit toward an associate degree. The program allows students to make use of college resources as they plan, develop, and build their robots for the FIRST competition. This is the only program of this nature in Northeast Ohio, and it has been well received by local civic leaders who have recognized the YTA as the "Best Provider" for our youth in 2004. The YTA program has also been recognized as an "Exemplary Practice" and has received honors from the American Association of Community Colleges (AACC). All this was possible because of the collaboration between NASA, YTA, and area schools.

The YTA draws high school students from 14 inner-city Cleveland schools. In 2004, with the collaboration of Cleveland TechWorks, YTA, and NASA, we were able to expand outside of Cleveland's schools and work with students from Berea, Brush, Cleveland Central Catholic, Cleveland Heights, Midpark, North Royalton, Olmstead Falls, Shaw, St. Edward, St. Ignatius, and Beachwood as well. In summary, the program's reach is as follows:

Number of Schools	Communities	Number of Students
25	10	500

For the past two years, we have been able to build a foundation that should endure for years to come. YTA engages high school students in project learning, job shadowing, and internship experiences that prepare them for careers in the advanced technological workforce. The program is committed to fostering interest in technology among underserved high school populations (including minorities, females, juvenile delinquents, and youth in foster care services) that will continue beyond graduation. YTA concentrations include Entrepreneurialism, Computer Programming, Web Design, Engineering, Precision Machining, and Robotics. ***With NASA support, the YTA has been able to establish itself as the training center for our future workforce.***

One of the most important aspects of the YTA Program is that students, working with Tri-C instructors, NASA engineers, and technicians, begin to build relationships with professionals with whom they might not normally have contact. These professionals serve as role models for students and help them to apply math, science and problem-solving skills in real time to construct a competition-ready robot, allowing them to experience the satisfaction and challenges of an engineering or technical career by working diligently to solve problems that may never have been thought possible to solve.

Transcending school boundaries, YTA is available to all students who are interested and qualified but who may otherwise never get an opportunity to participate because their school does not offer a robotics program. YTA fills an educational void by offering an exciting engineering and technology experience to a greater number of students than have been able to participate in the past.

Our students have been working hard and see the long-term rewards for their efforts. The YTA Team 1270 was a finalist at the 2005 FIRST Robotics Florida Regional and took home second-place honors. Mark Poljak, nominated by the students of YTA Team 1270, received the Woodie Flowers Award at the FIRST 2005 Buckeye Regional competition. This award celebrates effective communication in the art and science of engineering and design.

The YTA Team was also invited, as one of fifty-four teams, to participate in this year's FIRST VEX Robotics tournament representing Cuyahoga Community College and NASA GRC (Team 26), held at the FIRST Robotics National Competition in Atlanta, GA.

Because of our efforts, community colleges from around the country have taken notice and have asked us to become part of the executive board of the RoboEducators, whose mission is to bring technology training to high school students in preparation for the future workforce. We are no longer working alone and unable to see what others are doing; we are now part of a bigger collaboration with the following schools:

Arizona University, Tucson, AZ
California State University, Northridge, CA
Carnegie Mellon University, Pittsburgh, PA
Central Arizona College, Coolidge, AZ
Contra Costa College, San Pablo, CA
Glendale Community College, Glendale, CA
Ivy Tech State College, Kokomo, IN
Wichita State University, Wichita, KA

Furthermore, as a result of these accomplishments, Carnegie Mellon University (CMU) wants to team with Tri-C/YTA to submit a proposal for a $900,000, three year, National Science Foundation grant to educate high school teachers about technology. The teachers would then return to the classroom as ambassadors for inspiring the next generation of scientists, engineers, and technologists.

Recognition

Youth Technology Academy recognizes Mark Poljak for his dedication and enthusiasm that made all our accomplishments possible as well as the following NASA staff that contributed to this year's robotics program: Larry Greer, Greg Schade, Mike Krasowski, Thomas VanNuyen, Chris Conrad, Bob Everett, Ken Guinta, Tim Heineke, Ray Kelley, Joe Kerka, Bob Kohler, Steve Miller, John P. Pokatello, Henry Scott, and Barry Wilson.

A NASA grant in the amount of $25,000 was used to support student participation in robotics competitions. The remaining balance on the grant award is $0. Thank you for your support of this initiative.