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CIESE announces winners of Build IT Student ROV Competition

Middle and high school students took part in underwater robotics competition on May 28

HOBOKEN, N.J. — The Center for Innovation in Engineering and Science Education at Stevens Institute of Technology hosted 36 middle and high schools from New Jersey for an all day symposium and competition on May 28. All of the schools were part of the Build IT program, where they learn science and engineering concepts by building and operating underwater robots using LEGOS. Each school brought a team of five students who competed to see whose underwater Remotely Operated Vehicle (ROV) could retrieve balls from the bottom of the pool and return them to a goal the fastest. The teams' designs were judged on most Innovative Design, Fastest ROV, and ROV Champion.

All participating students received a Build IT t-shirt, as well as a tour of the Stevens campus, a visit to a research lab, and the opportunity to hear a panel of recent graduates discuss their careers in engineering. The students were also addressed by Stevens President Harold J. Raveche and Provost George P. Korfiatis.

The middle school winner for Innovative Design and Fastest ROV was Linwood Middle School (North Brunswick). Linwood Middle School also took second place ROV Champion, with Lincoln Park Middle School (Lincoln Park) in third place and Great Meadows Middle School (Great Meadows, Warren County) in first. Vernon Township High School (Vernon Township , Sussex County) won the Innovative Design Award and Lincoln High School (Jersey City) won the Fastest ROV award. Marine Academy of Science & Technology (Sandy Hook), Technology High School (Newark), and Westfield High School (Westfield , Union County) won first through third ROV Champion, respectively, for the participating high schools.

Seventy-two teachers from 36 geographically, socio-economically and academically diverse schools throughout New Jersey and New York City participated. Overall, approximately 2,600 students from the participating schools and districts will be impacted through this project.

About the Build IT Program

Build IT is a new, innovative research project sponsored by the National Science Foundation, under the Information Technology for Students and Teachers (ITEST) program. The program's goal is to catalyze student interest and achievement in engineering, science and information technology. Through the design, construction, programming and testing of underwater robotic vehicles, students will learn the iterative design process. Build IT emphasizes the pedagogical approach of discovery-based learning and collaborative teamwork, and will give students practical experience in systems thinking.

Appealing to a target audience of middle and high school students, Build IT employs an innovative design challenge — building submersible robots from LEGO and other parts that can perform a series of increasingly complex and sophisticated underwater tasks. The aquatic environment presents unique challenges that require students to problem-solve using successively deeper levels of science understanding, the iterative design process, teamwork and communication, and information technology.

Designing a robot to explore under the water is a stimulating task to many students, from middle school students through adult learners. A large part of the fascination is due to the variety of challenges involved, with success depending on broad spectrum of knowledge and skills in three different fields — science, engineering and information technology. In addition, the motion of an underwater vehicle, with six degrees of freedom, is more complex than any terrestrial vehicle design students may have encountered in typical robotics projects.

About Stevens Institute of Technology

Founded in 1870, Stevens Institute of Technology is one of the leading technological universities in the world dedicated to learning and research. Through its broad-based curricula, nurturing of creative inventiveness, and cross disciplinary research, the institute is at the forefront of global challenges in engineering, science, and technology management. Partnerships and collaboration between, and among, business, industry, government and other universities contribute to the enriched environment of the Institute. A new model for technology commercialization in academe, known as Technogenesis®, involves external partners in launching business enterprises to create broad opportunities and shared value.

Stevens offers baccalaureates, master's and doctoral degrees in engineering, science, computer science and management, in addition to a baccalaureate degree in the humanities and liberal arts, and in business and technology. The university has a total enrollment of 2,040 undergraduate and 3,085 graduate students, and a worldwide online enrollment of 2,250, with a full-time tenured/tenure-track faculty of 140 and more than 200 full-time special faculty. Stevens' graduate programs have attracted international participation from China, India, Southeast Asia,

Europe and Latin America. Additional information may be obtained from its web page at www.stevens.edu.

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