

Sacred Heart University

From the Selected Works of Antoinette P. Bruciati

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Antoinette D. Bruciati, *Sacred Heart University*



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The scene on Friday morning, at Sacred Heart University's University Commons wasn't typical for a college campus. On February 12, 2010, about 90 eager and attentive students in fourth, fifth and sixth grades from Bridgeport's Hall School and Region 16, which is composed of students from the towns of Beacon Falls and Prospect, were on the floor, focused on small electronic robots and performing robotics-themed lessons and activities.

Friday's field trip to Sacred Heart was part of D.I.S.C.O.V.E.R. the Future with Robotics, a state-funded grant that aims to foster collaboration between students from urban and suburban schools and is being conducted by Sacred Heart University's [Isabelle Farrington School of Education](#) professors [Maria Lizano-DiMare, Ed.D.](#), and [Antoinette Bruciati, Ph.D.](#), in conjunction with educators from the Hall School and Region 16's Laurel Ledge and Community schools. The students from the respective schools were divided into two groups of 90, with the first group making their visit to Sacred Heart on February 5.

In creative partnerships, students designed, built and programmed their own working robots. The activities and assessments are based on the Robots Teach Math Curriculum® developed by Dr. Bruciati, who is a recognized expert in the field of educational robotics and has been a recipient of numerous international awards and grants.

Dr. Bruciati is a long-time educator with over 25 years of pre-kindergarten through grade 12 classroom experience along with years of teaching in higher education. She said the curriculum they're teaching the students is aligned with mathematics strands that are assessed through the Connecticut Mastery Test, which will be conducted throughout the state next month. Embedded inquiry-based learning tasks are also included that enable students to develop data collection and analytical skills. Throughout the school year, hands-on project-based activities encourage students to make discoveries about one another, their communities and the world in which they live.

"As responsible educators, we must prepare students for future employment in a rapidly changing world," said Dr. Bruciati. "The integration of robotics technologies into the pre-kindergarten through 12 core curriculum can help students acquire essential 21st-century skills such as the ability to use information to solve a problem, complete a collaborative task, or communicate new information clearly to others."

She added that robotics-themed lessons and activities have shown to increase student engagement and interest in STEM – science, technology, engineering and mathematics -- disciplines especially for girls and at-risk or under-served populations.

"Educators who use state standardized assessment results as the basis for selecting or creating their own robotics-themed assessments can leverage the ability of robotics technologies to improve standardized test scores and reduce math anxiety among students," said Dr. Bruciati,

who serves as the coordinator of educational technology at Sacred Heart's Isabelle Farrington School of Education.

In her role, Dr. Bruciati is responsible for the instructional design, delivery and management of Sacred Heart's Educational Technology Certificate program.

The field trip wasn't all work for the youngsters -- the students were given a guided tour of the Sacred Heart University campus and met with faculty, staff and undergraduate students to get a taste of college. SHU's beloved mascot "Big Red" rallied pioneer spirit and delivered crowd-pleasing excitement by making an appearance both days and through "robot bowling," students explored the relationship between robotics, fractions and data collection. Adding a component of art to the mix and aligning it to their curriculum, Sophia Gevas, director of Sacred Heart's Gallery of Contemporary Art and Roxanne Faber-Savage, educator, introduced the students to the current gallery exhibit on "The Art of Sustainable Architecture."

The visit from the students also provided SHU's undergraduate teacher candidates with field experience by working directly with youngsters from culturally diverse settings, both from urban and suburban areas. Though just a few courses into the 5-year education Master's program at Sacred Heart University, Heather Gambacorto has learned volumes about technology in the classroom through Project D.I.S.C.O.V.E.R.

"I think what I have learned the most during this program is that technology is so prevalent in our world and very important when teaching children and helping them to expand their knowledge," said Ms. Gambacorto, a junior from New Jersey. An aspiring educator, Ms. Gambacorto hopes to integrate technology in her own classroom because she believes it makes disciplines such as math or language more engaging and fun for students.

"As I watched these children on Friday, I realized that they knew things that I would never have known when I was their age. They knew all about saving energy through solar panels and even when it came to the robots, they knew how to work it when I didn't even know how to turn it on."