BUILDING MEANINGFUL PARTNERSHIPS THROUGH STEM EDUCATION

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TECHNOLOGY EDUCATION PROGRAM
J.R. LANGEVIN CENTER FOR DESIGN, INNOVATION
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RHODE ISLAND COLLEGE
• **Education (Gov.’s Workforce Board)**

**Challenge:**

• Few Educational Programs Exist to Support Manufacturing

**Challenge:**

• Few Educational Programs are Teaching About Manufacturing

**Challenge:**

• Lack of Hands-on Experience Among Applicants

**Challenge:**

• Current Job-seekers Lack Basic Skills Needed to Perform on the Job
THE RHODE ISLAND CLIMATE

• 4.5% unemployment rate – N.E. Average is about 4.7%;
• There are 1,513 Small Manufacturing Businesses;
• Just under 40,000 workers are engaged in manufacturing;
• The majority (73%) of businesses employ 5 – 25 employees;
• Skilled and work ready employees are hard to find.
WORKING WITH BUSINESS TO IDENTIFY FUTURE NEEDS

- Investing in RI Innovation Partnership Grants (2)
- New England Small Business Association
- RI Economic Development Corporation
- RI Manufacturing Association
- R.I. STEM Center at RIC
- R & D Technologies
- Commerce RI
- Tech-Collective
NEW VIEW OF STEM AND TECHNOLOGY & ENGINEERING EDUCATION

- Identify the “High Growth” industries of the RI economy;
- Identify the “High Paying” industries of the RI economy;
- Tailor programs to meet the needs of these industries;
- Use digital and electronic technology, an environment where students are very comfortable, to make design and manufacturing a promising vocation for anyone who is interested in using high-tech equipment.
THE LANGEVIN CENTER

Dedicated in October 2015

The J.R. Langevin Center for Design, Innovation, and Advanced Manufacturing offers new courses and equipment access to build enduring partnerships with the Technology Education program, local manufacturers, and teachers and their students.
Access and training on advanced technology creates opportunities for economic development, economic status, and innovation:

• Building solid bridges between the world of work and trainers in order to match skills to the needs of the industry – manufacturing in this case

• Continuous workplace training and lifelong learning enables industry and workers to adjust to an increasingly rapid pace of change.
Techniques we used to attract support and build partnerships with local and regional manufacturers:

- Program Approved by Businesses;
- Career Exploration (Internship);
- Workforce Readiness Skills;
- Work with Professional Studies Program;
- Management – Leadership Courses;
- Computer Literacy
- Upper Level Math and Science
COLLABORATION EFFORTS

• Collaboration techniques used in the Center to bring industry, teachers, and our students together to work on real manufacturing problems;
INTERDISCIPLINARY PROJECTS

Approaches we used to develop STEM interdisciplinary projects that inform students and teachers about advanced manufacturing opportunities in Rhode Island.
The Center as an Appealing Place to Learn About and Use New Technology

- STEM in The Middle w/Tech Collective
- RI Manufacturers’ Day Open House
- RI Manufacturers’ Symposium
- SBANE Presentations
- TSA Competitions
- TECH Expo
The Struggle to Find Employable Workers

As design and manufacturing companies in the State of RI, the development of the Design, Innovation, and Advanced Manufacturing Center has become a showcase for design systems and advanced technology training;

- The programs are for teaching and non-teaching majors and attracts workforce members who want a bachelor’s degree;
- Foundation skills necessary to enter the technical workplace. (TE&E content)
- Cross-disciplinary studies in order for students to amass critical thinking and problem-solving skills.
WHO WE WORK WITH

• Strengthening our partnerships among RI industries, education communities, non-profits and professional organizations:
  • R&D Technologies
  • LifeSpan Medical Imaging
  • International Yacht Restoration School
  • Surgeon to Surgeon Medical Device
  • Electric Boat
Collaboration Among Center’s Manufacturing Partners

- Center participants collaborate with center industrial partners using equipment that will give them the ability to learn techniques that are transferred to classrooms or manufacturing sites.
TEACHERS AT THE CENTER

• School teachers who participate in Center activities will significantly impact student learning about using and synthesizing STEM skills to solve technical problems;

• Teachers are at the Center of our recruiting efforts;

• Seeing more interest in Externships;

• Due to participation in workshops and pre-service training, students and teachers working on the new equipment can return to their schools as change agents within their school systems;

• More outreach opportunities for teachers.
The addition of the equipment has helped us become competitive when seeking grants that encourage STEM research and those that help improve the quality of undergraduate Math, Science, Engineering Education, and Technology Education.