STEM Careers Partnerships: How Business Partnerships Can Be Used to Engage Students in STEM Careers

Project Opening Doors: An AP mathematics and science strategy to prepare under-represented students for college success and STEM careers

Judy Resnick
Executive Director CBIA Education Foundation and Principal Investigator (Cohort 7)
Who Are We?

- Connecticut Business & Industry Association - largest CT business organization (10,000 members)
- Leading voice for policies that promote economic growth
- CBIA’s Education Foundation (non-profit affiliate of CBIA) – Mission: To develop a skilled workforce in Connecticut
CBIA/NSF ITEST

• Use problem-based learning to engage and motivate students
• Increase enrollments in Advanced Placement
• Involve STEM professionals as mentors and role models
• Connect classroom learning to STEM careers – “relevance”
Our Partners
The Cyber-Challenge Wiki

A collaborative online project where students use technology to communicate and compete to solve industry problems!

Video Game Producer

Design our Future Engineers

Cyber-Challenge Winners from 2011

1st Place Winners

East Hartford High

2nd and 3rd Place Winning Teams

Learn About STEM Careers

How can I find out what I need to know?

Click here to find out!
CBIA Education Foundation
Career Exploration

http://www.cbia.com/edf/

http://www.getintoenergyct.com

CONNECTING
Employers
Students
Teachers

http://www.getintoenergyct.com
To view all the profiles in the DVD series
http://www.cbia.com/edf/CareerPathways.htm
Connecting to Business

• Building Business-Education Partnerships

• Reach out to chambers of commerce, business and trade associations
• Understand the “WIFM” and common goals
• Identify individual champions
• Facilitate the process (eliminate bureaucracy)
Desiree Cika, Senior Director, Business Technology Pfizer Worldwide Research and Development

Desiree is a Senior Director in information technology at Pfizer’s drug discovery and development center in Groton. She is a member of the Connecticut leadership team. Desiree has a Bachelor’s of Science degree in chemical and materials engineering from the University of Connecticut and a Master’s degree in computer science from Rensselaer Polytechnic Institute. She has over 25 years experience in pharmaceuticals and engineering.
About Pfizer

Who We Are and What We Do
The world’s premier biopharmaceutical company.
Applying innovative science to improve health and well-being throughout the world.
Proud to be part of an industry that has helped treat, cure and eradicate life-threatening diseases
We are ...

Working together for a healthier world
From Advil to Zithromax...

Our medicines, vaccines, consumer and nutritional products help billions of patients.
Pfizer and the Community

- Pfizer is committed to encouraging students to pursue careers in Science, Technology, Engineering and Math.
- Pfizer has sponsored community programs over the past 2 decades:
  - SMART: Science and Math are Really Terrific, volunteering within local school districts
  - SAMJAM: Science and Math Jamboree, hundreds of scientists hosting thousands of middle school students
  - SMART kits: science kits-to-go
  - Summer internships and co-ops
- Pfizer has partnered with the Connecticut Business and Industry Association over the past several years, including participation in the Cyber-Challenge.
Pfizer and CBIA
Cyber-Challenge Collaboration

• Cyber-Challenge questions help develop the scientific method and provide real world challenges
  - Diabetes
  - Antibiotics
  - Vaccines
• Hosting students in industry setting
• Scientists visiting high schools
• Science teacher externship
  - Lab tours
  - Industry experience connecting back to the classroom
• Update of our science kits
For the Sake of... our Future Scientists

- Inspiring the next generation of scientists
- Inspiring our own scientists
- Personal experiences
  - Continue our legacy of community involvement
  - International Year of Chemistry (2011)
    100th anniversary of the Nobel Prize awarded to Madame Marie Curie—an opportunity to celebrate the contributions of women to science
  - Finding personal inspiration
- Industry seeks students with:
  - Technical/Functional ability*
  - Acts Decisively/Accountability*
  - Grows Self/Self Aware
  - Change Agile
  - Peer relationships*

*Cyber-Challenge helps develop these skills
**Education:**
Bucknell University 2008
Bachelors Mechanical Engineering
Minor in Physics
Edison Engineering Development Program (EEDP) Graduate 2010

**Work History:**
Started 2007 at GE as a technology intern
Full time hire into the EEDP Program 2008
- Residential Products
- Industrial Circuit Breakers
- Innovation
- Equipment Project Manager
Current role as lead technology support on GE’s $70MM Busway product line
DFSS / DMAIC Six Sigma Green Belt Certified
1 European Patent Granted
7 Patents pending
A new P&L focused on integrated solutions that enable customers to benefit from the efficiency and reliability of electric powered systems and processes.

- Digital Energy
- Industrial Solutions
  - Lineage Power
What products do we make?

**Components**

**Circuit Breakers**
- IEC/NEMA Air Circuit Breakers
- IEC/NEMA Molded Case Circuit Breakers

**Residential & Controls**
- IEC & NEMA Circuit Breakers
- IEC & NEMA Controls
- NEMA Enclosures

**Equipment**

**NEMA Equipment**
- Low Voltage Switchgear
- Motor Control Centers
- LV Switchboards, LIS
- Lighting & Power Panels
- Busway

**IEC Equipment**
- Low Voltage Switchgear
- Medium Voltage Switchgear
- Busway

**Electronics Systems**
- Trip systems
- Entellisys Switchgear
- Variable frequency drives
- Electronic controls
- AFCI Circuit Breakers
Typical electrical distribution network

High Volt. (60 - 500kV)
- Power Transformer
- Transformer

Medium Voltage (1 - 100kV)
- Busway
- Switchboard
- Low Voltage Switchgear

Low Voltage (220V - 1kV)
- Circuit Breakers
- Contactor
- Disconnect Switch
- Panelboard

From Utility

High Voltage (>60kV)
Medium Voltage (4kV - 60kV)
Low Voltage (480V)
Low Voltage (240V)
GGE Involvement in CBIA Cyber-Challenge

- Challenge youth with unique problems
- Foster excitement for math and science
- Allow students to grow with both questions and hands on experiments
Personal involvement in CBIA Cyber-Challenge

- Hope to inspire students to challenge themselves
- Make Engineering more tangible and thus more realistic to students as a future path
- Rewarding to see students learn and grow