Richmond STEM Teacher Round Table
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Society of Women Engineers (SWE)
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About Me

• From Media, PA (suburb of Philadelphia)
• Went to Sparta High School in Sparta, NJ
• Lehigh University class of 2016, Integrated Business & Engineering (IBE) Honors Program
  – B.S. IBE Materials Science and Engineering
  – B.S. Materials Science & Engineering
• Internships at Merck and Apple
• Started at DuPont in August 2016 in their Field Engineering Program
  – Site Materials Engineer at Spruance plant, Richmond, VA
Why Engineering?- My STEM Journey

• My parents
• Sophomore year of high school- Chemistry teacher
• Lehigh’s Materials Science & Engineering Dept.
  – Hands-on, lab-based program
  – Incredibly supportive professors
  – Graduated with high honors, member of Alpha Sigma Mu, Tau Beta Pi
DuPont is a Science Company

We work collaboratively to find sustainable, innovative, market-driven solutions to solve some of the world’s biggest challenges, making lives better, safer, and healthier for people everywhere.
Our Businesses and Core Markets

Agriculture
Production agriculture

Performance Materials
Aerospace | Automotive | Packaging | Electrical/Electronics | Construction | Industrial | Consumer

Electronics & Communications
Aerospace | Automotive | Consumer electronics | Displays | Flexographic printing | Inkjet printing | Military | Photovoltaics | Semiconductor fabrication

Nutrition & Health
Food and beverage | Dietary supplements | Child nutrition | Sports nutrition

Industrial Biosciences
Animal nutrition | Detergents | Biofuels production | Grain processing | Food and beverage | Oil and Gas/Energy | Carpet and apparel fiber

Protection Solutions
Construction | Industrial | Automotive | Consumer | Aerospace and aircraft | Military and law enforcement | Oil and Gas/Energy
Kevlar® in Action

Common Threats Addressed

- Cut Protection
- Ballistic Protection
- Tires & Composites
- Aerospace
- Electrical Insulation
- Protective Apparel
- Protective Apparel
- Building Envelope
- Medical Packaging
- Work Surfaces at Home
- Commercial and Public Spaces
- Exterior Cladding & Facades

Common Applications
My Role as a Site Materials Engineer

- Material selection
- Material & chemical compatibility
- Failure analysis
- Work closely with Reliability Engineers, Mechanical Integrity & Quality Assurance Engineers, and Equipment Inspection Group.
- Fast-paced; different every day
- Other STEM roles at Spruance: Principal Investigator (lab), Process Engineer, Manufacturing Technology Engineer, Maintenance and Reliability Engineer, Electrical Engineer, and many more
DuPont Involvement- Local STEM Programs

• Communities in Schools (Richmond and Chesterfield County)

• Chesterfield Education Foundation

• Girls in Science (Science Museum of Virginia)

• Virginia FIRST® Robotics

• Math Science Innovation Center

• Young Professor Grant Nominations

• National Science Teachers Association

• Junior Achievement

*Please reach out to me with any questions about programs we sponsor or volunteer opportunities.
Society of Women Engineers (SWE)

STEM Outreach: How Are We Changing the Conversation?

Attracting and retaining more girls and young women to STEM fields takes the support of parents, teachers, mentors, role models, and professional organizations, with each playing a significant role. From initiatives such as SWENext and FIRST® Robotics to grassroots virtual mentoring programs and revolutionizing the way math is taught, the conversation continues.

http://alltogether.swe.org/2017/01/stem-outreach-changing-conversation/
SWE Outreach Goals

- Hands-on, project-based learning
  - Let’s Do Some Engineering- Chester YMCA
  - Girls in Science Camp-In- Science Museum of VA

- Awareness
  - What does engineering look like?
  - A day in the life of...

- Building confidence
  - Changing the conversation
  - Planting the seed

- Richmond SWE chapter- about one outreach event per month
SWENext & IIBI

**SWENext** is a way to become part of the Society of Women Engineers as a student through the ages of 13-18. Its goal is to connect girls, their parents, and educators.

We are working to plan an event with the SWENexters in the Richmond area to see “Dream Big” at the Science Museum of VA.

**Invent it. Build it.** is an experience designed to encourage girls to choose a career in engineering, working with both students and parents & educators. This event takes place during the annual WE conference—the world’s largest conference & career fair for women in engineering and technology.
SWE Resources

Society of Women Engineers—Richmond Section
Website: http://swe-rva.org
E-mail: swe.richmond@gmail.com

SWE National site:
http://societyofwomenengineers.swe.org/

K-12 Educator Membership:
http://societyofwomenengineers.swe.org/k-12-educator-membership

SWENext site:
http://societyofwomenengineers.swe.org/swenext
Advice for Students

• ANYONE can pursue a career in STEM
  “The language of science knows no race, no gender, no religion. It does not discriminate.” – Anousheh Ansari, Iranian engineer & first female private space explorer, March for Science in Washington, D.C.

• Try many different things.

• “Education is not the learning of facts, but the training of the mind to think.” –Albert Einstein

• Qualities/skills employers are looking for:
  - Problem solving & critical thinking skills
  - Proactive
  - Can work well on teams but can also work efficiently independently
  - Open to change and can adapt quickly
  - Communication skills
  - Welcome challenges
Advice for Educators

• Plant the seed!

• Every student has different needs.

• Change the conversation.
  National Academy of Engineering (NAE) “Changing the Conversation” report:
  https://www.asee.org/public/conferences/20/papers/6684/view

• Recognize the impact you have and use it to inspire.