San Diego STEM Teacher Roundtable

Center for Excellence in Education
DeVry University San Diego Campus
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My STEM Journey – Part A

- Rutgers College (NJ) - BA Physics
- UCSD - PhD Physics
- General Atomics/General Atomics Aeronautical Systems, Inc. - since 1982
  - Scientist/Engineer/Technical lead
  - Program manager/Engineering manager
  - Design, develop, fabricate advanced materials and coatings
  - Interact with
    - Electrical/mechanical/systems/materials/antenna/quality engineers
    - Technicians, finance, legal/patent, business development, program managers

Physics provides an excellent background for a diverse career
GA is a Diverse Technology Company 
Requiring Many Skills

Predator® Unmanned Aerial Vehicle (UAV)

EM² high-efficiency compact modular reactor

Inside DIII-D fusion energy facility

Electromagnetic Aircraft Launch System (EMALS)

TRIGA® research reactor

LYNX® radar system
Advice for students interested in STEM

- What do industry, employers, and hiring experts expect of STEM graduates in terms of skills, knowledge, and attitudes
    - Technical skills and knowledge
    - Communication skills
    - Professional/workplace skills

- My 15-point guide to success
  - [http://www.aps.org/units/fed/newsletters/spring2013/industry.cfm](http://www.aps.org/units/fed/newsletters/spring2013/industry.cfm)
    - Continually expand the depth and breadth of your knowledge and skills.
    - Stay uncomfortable with what your skills and knowledge are
I’ve been inspired and educated by great books and essays

- **Richard Feynman**
  - *Surely You’re Joking Mr. Feynman*
  - [http://www.fotuva.org/feynman/what_is_science.html](http://www.fotuva.org/feynman/what_is_science.html)
  - [http://caltech.es.library.caltech.edu/51/2/CargoCult.htm](http://caltech.es.library.caltech.edu/51/2/CargoCult.htm)

- **Stephen Jay Gould**
  - Essays: [http://www.stephenjaygould.org/library.html](http://www.stephenjaygould.org/library.html)
  - Books: *Full House, Wonderful Life*

- **Dava Sobel**: *Longitude, Galileo’s Daughter, The Glass Universe*

- **Life’s Matrix** by Philip Ball

- **Blink** by Malcolm Gladwell

- **The Invention of Nature** by Andrea Wulf

- **Silent Spring** by Rachel Carson
Opportunities for your students’ futures

- **Graduate students in science and engineering**
  - Tuition is typically waived
    - Teaching assistant
    - Research assistant
  - You get paid to go to graduate school/obtain your PhD!

- There are programs specifically aimed at assisting under-represented groups in obtaining graduate degrees
Opportunities and Resources

- GASSSSS program supports GA scientists/engineers to engage in K-12 outreach
  - Up to $500 in funding to purchase materials
- Many education resources
  - [http://www.sci-ed-ga.org/education-resources](http://www.sci-ed-ga.org/education-resources)
- Tours of the GA Fusion facility
Encourage Students to Follow Their Interests

- General Atomics education outreach: started 1992
- My involvement led to enriched life
  - Deeper understanding of science
  - Interactions with great people
  - Fascinating topics
  - Outlet for creativity
  - Local, state, national impact

Many possible education roles for industrial scientists/engineers
My STEM Journey - Part B: Impacting K-Graduate STEM Education ... where ...
... fun things can happen ...
...even to you!
Thank you!