

Changing the Conversation

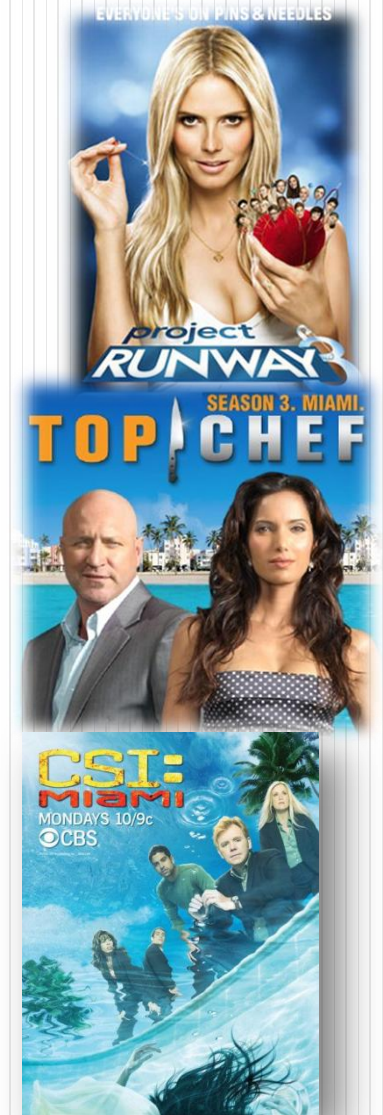
Effective Messaging to Pre-college and First-Year Students

****Adapted from WEPAN National Conference 2008 presentation
by Jacquelyn Sullivan****

Ana Dison, Women in Engineering Program
Didey Muniz, Women in Engineering Program
Sara Sanchez, Equal Opportunity in Engineering Program

Why is it Important?

- Engineers are needed to lead the U.S. in technology and innovation
- Prestige of profession remains in the middle well below medicine, nursing, science and teaching
- Data show adults and teens do not know what engineers do
- Women, African Americans, Hispanics and Native Americans vastly underrepresented in the field



-
- How would you describe engineering to an elementary or middle school student?
A high school student?
 - What perceptions did you have about engineering in high school?
 - What made you select engineering as a major in college?

National Academy of Engineering (NAE) Report

Changing the Conversation: Messages for Improving Public Understanding of Engineering

http://www.nap.edu/catalog.php?record_id=12187

Youth today...

- Teens have limited understanding of engineering or engineers
- Want well-paying jobs that make a difference
- See engineers as helping people, but not directly
- See engineers as desk jockeys, disconnected from people
- Few teens (<15%) describe us as nerdy or boring

****WEPAN National Conference 2008 presentation by Jacquelyn Sullivan****



Adults think...

Scientists more than engineers:

- Save lives
- Care about protecting the environment
- Improve the quality of our lives
- Sensitive to societal concerns
- Inclusive of women and minorities
- Care about the community

Boys vs. Girls

Boys (more than girls) think engineering is a great profession.

- African American boys (more than girls) think **salary extremely important** to job choices
- African American girls want a **job that makes a difference**
- Hispanic girls (more than boys) think engineers are **nerdy and boring**
- Hispanic boys are more likely to believe engineering has a **positive effect on people's everyday lives**

Engineering Messages Recommendations

- Stop reinforcing the images of ‘nerdy and boring’
- Stop focusing on math and science as the needed inputs and instead focus on the outputs, career opportunities, and making a difference in the world
- Use the word **create**, not build
- Use **images of people**, not things: especially avoid using gears and mechanical looking things



Engineering Messages Recommendations

- Use the following five words in describing engineering: **discovery, design, imagination, innovation, contribution**
- Describe engineers as creative problem solvers, essential to health, happiness and safety
- Emphasize that engineers shape the future

Help Us Send the Right Message!

Working in groups of 4-5, you have 10 minutes to create a slogan, commercial or top ten list of why engineering is great.

Each group will share what they created.

Engineer Your Life (www.engineeryourlife.org)

Engineer Your Life™
Dream big. Love what you do.

A guide to engineering
for high school girls

Why Engineering?
Meet Inspiring Women
Find Your Dream Job
Making It Happen

For Counselors & Parents
For Engineers
For Middle School Girls
(see engineergirl.org)

Engineer Your Life

Why Engineering?

Ten great
reasons
why you'll
love it

ASK an Engineer! >

- 1 ▶ *Love your work, AND live your life too!*
- 2 ▶ *Be creative.*
- 3 ▶ *Work with great people.*
- 4 ▶ *Solve problems, design things that matter.*
- 5 ▶ *Never be bored.*
- 6 ▶ *Make a big salary.*
- 7 ▶ *Enjoy job flexibility.*
- 8 ▶ *Travel.*
- 9 ▶ *Make a difference.*
- 10 ▶ *Change the world.*

What IS
an engineer?

Tips for Engaging Pre-College Students

- Be personal and passionate
- Make it interactive with a hands-on activity
- Explain why your major matters
- Fill a gap with academic and career advice (not necessarily UT admissions information) instead focus on:
 - Importance of advanced math/science classes, summer opportunities and soft skills (team work, communication, etc.)
 - Obstacles you have overcome & learning how to persevere
 - Rewards of your future career (salary, travel, etc.)

Volunteer Opportunities

- Outreach events including:
 - Un Sabado Gigante in Engineering (*EOE, Sat. Nov. 14, 2009*)
 - Introduce a Girl to Engineering Day (*WEP, Sat. Feb. 20, 2010*)
 - Explore UT (*Sat. March 6, 2010*)
 - E-Week Events (*Feb. 14-20, 2010*)
- SEEK (Student Engineers Educating Kids)
www.utseek.org
- Austin Children's Museum Engineering Saturdays & Science Sundays
www.austinkids.org
- UT Volunteer & Service Learning Database
www.UTvolunteer.org
- Cockrell School of Engineering Outreach Facebook Group
www.facebook.com/group.php?gid=77020177089

Pre-College Resources

- Engineer Your Life – engineer profiles, training materials (<http://www.engineeryourlife.org>)
- Design Squad – reality TV series with engineering challenges, hands-on activities (<http://pbskids.org/designsquad/>)
- FETCH! – reality TV series with engineering challenges, hands-on activities (<http://pbskids.org/fetch/>)
- Cyberchase – cartoon series with math, science and engineering challenges and activities (<http://pbskids.org/cyberchase/>)
- Zoom into Engineering – hands-on activities (<http://pbskids.org/zoom/>)
- Try Engineering – engineering profiles, hands-on activities (<http://www.tryengineering.org/>)

What are the
misconceptions
first-year students
have about engineering?

What would be your responses?

- I won't be a good engineer because I'm not doing well in calculus, physics, etc.
- Engineering is too hard...I don't want a job where I'll be doing physics all day.
- Engineering is very focused. I have other interests in music, art, sports, etc.