

PRESENTATION TALKING POINTS

(FOR ENGINEERS)

SLIDE I—TALKING TO HIGH SCHOOL GIRLS ABOUT ENGINEERING

- 1. Welcome participants to the Engineer Your Life Workshop.
- 2. Introduce yourself and share why you are involved with Engineer Your Life (EYL).
- 3. Announce length of training and other logistics such as break times and locations for bathrooms, water fountains, and emergency exits.

SLIDE 2—PROJECT OVERVIEW

- 1. Share with your participants that the overarching goal of the EYL project is to break down stereotypes about engineering and encourage girls to consider it as a career option.
- 2. The project is aimed at reaching college-bound girls, their parents, counselors, educators, and engineers. EYL has created multiple resources that have been designed to work in conjunction with the outreach activities that the engineering community is currently using.
- 3. Tell attendees that during the course of this workshop you'll be showcasing the project resources—Web site, print materials, and ways to get involved.

SLIDE 3—PROJECT HISTORY

In 2004, more than 55 engineering organizations formed a coalition to examine the question: "Why are academically prepared girls not enrolling in engineering degree programs?" The hypothesis has always been that when girls began taking math and science in high school at the same rate as boys, they would also begin enrolling in

engineering degree programs and a gender balance would be achieved. And yet, by 2004, girls were taking upper level math and science courses in high school at the same rates as boys, but they were not enrolling in engineering degree programs. Why not?

SLIDE 4—RESEARCH

- 1. In 2004, the EYL project conducted original qualitative consumer research with our target audiences (high school girls, counselors and teachers, and engineers) to determine general attitudes and behaviors about engineering.
- 2. Before the training, download the full *Extraordinary Women Engineers Final Report* from the *What Girls Think About Engineering* section of the engineeryourlife.org Web site and review. We recommend that you view the video of Kito Robinson presenting this research, also on the Web site.
- 3. Review with attendees the goals of the research and explain that for the next several minutes you'll be discussing the findings.

SLIDE 5—WHAT DO HIGH SCHOOL GIRLS THINK?

- I. Review the bullets listed on the slide.
- 2. Talk about the meaning of "love" for a young person. For example, while the average adult might love sushi, for a young person, love is associated with strong passion and overwhelming feelings. It is a very strong word.

SLIDE 6—WHAT HIGH SCHOOL GIRLS WANT

I. Review what EYL researchers found out from the girls in the study. Do these match your audience's beliefs about or experiences with high school girls?

SLIDE 7—WHAT ENGINEERS TELL YOUNG PEOPLE

- I. Read this slide to your audience.
- 2. Surprisingly, it is us—the engineering community—that is contributing to their limited understanding of engineering.

SLIDE 8—DISCONNECT

I. Our current messages that emphasize "the necessity of superior math and science skills" as well as the notion that engineering is "a challenging and stressful career"—have little relevance to high school girls.

SLIDE 9—COMPELLING ENGINEERING MESSAGES

- 1. Now that the coalition understands what girls thought about engineering and what they wanted, they enlisted a market research firm to develop and test various career messages that would motivate girls to consider engineering.
- 2. This effort is was undertaken in collaboration with a larger, ongoing initiative sponsored by the National Academy of Engineering's Public Understanding of Engineering program.
- 3. The four messages listed here tested strongest amongst high school girls and boys. (While girls are the main target of the EYL campaign, the coalition didn't want to create resources that would be off-putting to boys.)

SLIDE IO—ENGINEERING MESSAGES IN ACTION

- Tell your audience that you'll spend the next couple of slides discussing how to use these messages in their outreach efforts. But first, show them a video of one of the women engineers featured on the EYL Web site. Ask them to listen for the messages as they watch the video.
- 2. Download a video of your choice from the Web site.

SLIDE I I—HOW WE CAN INSPIRE GIRLS?

- I. Girls will respond to engineering if it's presented as creative, enjoyable, personally fulfilling, and making a difference in the lives of others. Young women also react positively to personal stories about what life is like as an engineer. If you're able to convey your own personal excitement about engineering and can communicate what life and work are like as an engineer, you'll have an engaged and curious audience of young women.
- Review the messages and remind your attendees that the messages used on Engineer Your Life are meant as broad guidelines to help them formulate their own individual way of talking to girls.
- 3. Discuss with them how they can take the spirit of the messages and make them their own.

SLIDE 12—INSPIRING GIRLS

- So what about the math and science requirements?
 Once you've told girls why you're passionate about engineering, and after you've convinced them it's worth considering as a profession, it's time to fill them in about the math and science requirements. But, as the engineer on this slide has done, put it in context.
- 2. "[Math] is the basis of engineering, but you don't have to love it. You just have to be able to do it."
 - -Judy Lee, Mechanical Engineer
- 3. For a young woman in the process of deciding what she wants to do with her life, these messages will resonate, offering her a clear, direct sense of how engineering might match her own dreams.
- 4. For more messages that inspire girls, see Why Engineering? Ten Great Reasons section of the engineeryourlife.org Web site.

SLIDE 13—PROJECT RESOURCES

- Anchoring the EYL campaign is the www.engineeryourlife.org Web site. Review the four audiences for the project—girls, parents, counselors, and engineers. Tell participants that the main site will give girls, parents, and counselors a better understanding of what life and work are like for engineers.
- 2. The site also provides resources counselors can use to advise students. Tell your audience that you will be reviewing these resources as they can also be used by engineers.
- 3. The site also has a section specifically for engineers. This section offers tips and information about how to talk to girls about engineering and many ways to get involved with this project.

SLIDES 14—HOME PAGE REVIEW

- 1. Slides 14-22 present an overview of the EYL website. While a live Internet connection is preferable, we've provided these static slides as a backup and guide for how to go through the site.
- 2. The site covers four main areas:

A. Why Engineering?

Imagine having both the passion to make a difference in the world and the technical know-how to achieve it—that's what engineering is all about. Learn more about engineering and the ten great reasons to become an engineer.

B. Meet Inspiring Women

Get a glimpse into the lives of twelve engineers who love what they do. Watch their videos and read their stories.

C. Find Your Dream Job

Explore all the jobs related to engineering, whether it's creating cutting-edge animation for Hollywood or protecting the planet by developing state-of-the-art recycling systems.

D. Making It Happen

Get advice, tips, and resources on engineering degree programs and hear from some current students.

3. It also has additional information for counselors and for engineers.

SLIDE I5—WHY ENGINEERING?

- I. Review the list with your participants.
- 2. When testing this site with high school girls told us how much they loved the site, but they still wanted to know "What is an Engineer?" Read your group this definition:

Engineers use their imagination and analytical skills to invent, design, and build things that matter. They are team players with independent minds who ask, "How can we develop a better recycling system to protect the environment, design a school that can withstand an earthquake, or create cutting-edge special effects for the movies?" By dreaming up creative and practical solutions, engineers are changing the world all the time.

SLIDE 16—MEET INSPIRING WOMEN

1. This section features 12 young engineers who are all doing things girls may not think of as a typical engineering career. Like Shaundra Daily who developed software that lets high school girls express their emotions or Emily Wren who is using her engineering degree to work in international business. Each profile tells the woman's story, presents photos, and offers other tidbits to give girls a glimpse into what life

and work are like for engineers in language that speaks to a girl's dreams of her future.

SLIDE I7—MEET DANIELE LANTAGNE

I. Meet Daniele. She grew up in rural Washington state during a time when logging companies and environmental activists were bitterly contesting issues regarding the fate of endangered wildlife and some of the last pristine, old-growth forests in America. By the time she was a teenager, Daniele was a committed environmentalist, and she knew what she wanted to do with her life: protect the planet. She realized that to really make a difference she needed the technical knowledge that engineering provided: "I would have the skill set to be both an engineer and a scientist, and could also be an environmentalist." She also knew that with a professional degree in environmental engineering came respect: "If I wasn't qualified to do the technical work, I wouldn't be listened to as much."

SLIDE 18—FIND YOUR DREAM JOB

 In this section, visitors can explore all the jobs related to engineering, whether it's creating cutting-edge animation for Hollywood or protecting the planet by developing state-of-the-art recycling systems.

SLIDE 19—FIND YOUR DREAM JOB: CIVIL ENGINEERING

I. Depending on how much time you have, you may want to explore a couple of the different areas. This slide can serve as placeholder. Feel free to choose which field you would like to highlight. In each area you'll learn about a different field, types of jobs and projects, salary ranges, and meet more engineers.

SLIDE 20—MAKING IT HAPPEN

 This section of the site offers girls tips for how to explore engineering, prepare for college, research different programs, and scholarships and financial aid information.
 All of the information in this section is also available in downloadable pdf documents to use when advising students about engineering.

SLIDE 21—MEET LINDSAY PERRY

1. In the Making it Happen section, you will also meet three young women who are currently studying engineering. One is Lindsay Perry, a Senior at UMass Amherst. Right now she is:

"I'm doing a six-month co-op as an industrial engineer at Walt Disney World, learning how Disney forecasts their staffing needs throughout the company by using mathematical models in different software. I'm absolutely blown away by how amazing it is. I'm extremely

excited because I became an engineering student so that I could work in the amusement industry, and this co-op is opening doors to that goal."

SLIDE 22—FOR COUNSELORS AND PARENTS

- I. Remind your participants that school counselors and parents play a big role in helping kids navigate the their future.
- The first part of this section helps them get more comfortable and familiar with engineering, while also providing resources they (and you) can use to advise girls about engineering
- 3. Review the pdf resources:
 - a) Take Engineering For a Test Drive. Contains helpful suggestions for ways kids can explore engineering in practical ways while they're still in high school.
 - b) **Recommended High School Coursework**. Lists the general requirements most engineering schools have. Different schools have varying entrance requirements and place emphasis on different aspects. When you review this list it is also a good opportunity to remind people that kids don't need an A+ average in math and science to be accepted into an engineering programming, often times the B+ students get in as well.
 - c) **Researching Engineering Schools**. Reviews the tips for researching different kinds of engineering schools.
 - d) **Scholarships and Financial Aid**. Offers suggestions for how to research and obtain financial assistance.

SLIDE 23—GET INVOLVED

- Use EYL messages. Help us break down stereotypes about engineering and encourage girls to consider it as a career option by using the Engineer Your Life messages and resources.
- 2. Tell **everyone** about the project!
- 3. Hand out posters, brochures, and postcards. Distribute the free Engineer Your Life brochures and posters to interested girls and educators. Order copies by emailing engineeringwomen@eweek.org.

- 4. Host an EYL table at a NACAC college fair. The EYL table is an opportunity to provide prospective engineering students, their parents, and educators with information and give them a chance to ask questions in an informal setting.
- 5. Train others. We'll provide you with a training slide show, talking points, and printable handouts. Contact engineeringwomen@eweek.org if interested.
- 6. Join the coalition. Show the engineering and education community that your organization is committed encouraging young women to become engineers.
- 7. To do any of these things and more, email engineeringwomen@eweek.org.

SLIDE 24—SPECIAL THANKS

Please take a moment to thank the funders who made this project possible.