



Susan Staffin Metz, Sudbury, MA

Susan Staffin Metz is the Senior Advisor for the *Center for Innovation in Engineering and Science Education* (CIESE) at Stevens Institute of Technology. CIESE collaborates with K-12 and university educators, researchers, policymakers and educational organizations to develop curriculum materials, conduct professional development programs, and research new methodologies to strengthen STEM education. As a founder and president of WEPAN, Women in Engineering Proactive Network a national education organization, Susan has spent her career increasing access and engagement of women in engineering through research, policy and program development at the national level. Susan's work was recognized by the White House as a recipient of the Presidential Award for Excellence in Science, Mathematics and Engineering Mentoring (PAESMEM).

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Workshop topics:

Status of Women in Engineering

Workshop provides education trends (elementary, secondary and college) degrees granted and workforce data about women in engineering and science fields. This session is an excellent way to set the stage for any program or conference focused on women in the technical professions.

Audience: Secondary school educators, counselors and administrators, college administrators, engineering professionals.

Format: Lecture and discussion

Length: 20 minutes - 1 hour

Developing Pre-College Programs to Introduce Women and Girls to Engineering

This presentation focuses on a variety of program formats to introduce young women to pursue engineering majors at the college level including: on-site presentations at secondary schools; one-day campus-based conferences, campus-based residential summer programs,

Audience: Middle and high school counselors, college faculty and administrators

Format: Lecture and discussion with a how-to focus

Length: 1 hour

What is Engineering and Why Encourage Student to Consider this Field?

Engineering touches all of our lives in so many ways. Yet few people are well-informed about what engineers do. This workshop discusses the contributions made by engineers, offers succinct examples of the type of work engineers do, identifies barriers that deter women and minorities from pursuing engineering and provides strategies to engage these underrepresented groups in the field.

Audience: Guidance counselors, teachers, parents, college administrators interested who conduct programs to interest more women in engineering

Format: Webinar or Workshop

Length: 1 hour

Dispelling Stereotypes about Engineering

This is a good warm-up exercise to precede a program focused on introducing the audience to careers in engineering. It raises issues of why women traditionally and currently lag behind men in their interest in pursuing engineering as a course of study and career. It begins with a “Startling Statements Quiz” asking the participants to guess what percent of women are engaged in various careers e.g. politics, medicine, law, engineering. Following the quiz and discussion of why this is the case, an interactive session about engineering stereotypes is presented.

Audience: Students, parents, educators, counselors, engineering professionals, college administrators interested who conduct programs to interest more women in engineering.

Format: Interactive session

Length: 45 minutes

Selected Publications:

Metz, S.S. (2007). Attracting the Engineering of 2020 Today. In R. Burke and M. Mattis (Eds.) *Women and Minorities in Science, Technology, Engineering and Mathematics: Upping the Numbers*. Edward Elgar Publishing, Northampton, MA.

Metz, S.S. (project director, editor, & author) (2002). *Making the Connection Curriculum: Presenter’s Guide* with Karen Samuelsen – a resource for professionals

and lay people to introduce engineering to students in grades 3-12, Connections newsletters, and hands-on engineering based activities with Dr. Martha Cyr, Tufts University. Funded by Lucent Technologies Foundation. Women in Engineering Programs & Advocates Network. http://www.wepan.org/events_connection.html

Metz, S.S. (2007). It Takes a Village to Change the Perception of Engineering. *Proceedings of the American Society for Engineering Education*. <http://www.asee.org/acPapers/AC%202007Full436.pdf>

Brainard, S.G., Metz, S.S., and Gilmore, G. (1999). WEPAN Pilot Climate Survey: Exploring the Environment for Undergraduate Engineering Students. Proceedings of the 1999 IEEE/ISTAS Conference on Women and Technology: Historical and Professional Perspective, pp .61-71.

Metz, S.S. (Ed.and Project Director). (1996). Increasing Access for Women in Engineering, The Fund for Improvement of Postsecondary Education, U.S. Department of Education. Grant # P116B41893-95. Stevens Institute of Technology: Hoboken, N.J.

Metz, S.S. and Bott, K. (1996). Developing Pre-College Programs. In S. S. Metz (Ed.). *Increasing Access for Women in Engineering* (pp. 109 - 178). Stevens Institute of Technology: Hoboken, N.J.

Contracts:

National Academy of Engineering (NAE)
Project Lead the Way (PLTW)
American Association for the Advancement of Science (AAAS) Center for Advancing Engineering and Science Capacity,
American Society of Mechanical Engineers (ASME)
National Alliance for Partnerships in Equity (NAPE)
Women in Engineering Proactive Network (WEPAN)

College Level Projects

Project to Assess Climate in Engineering: Funded by the Alfred P. Sloan Foundation and the Engineering Information Foundation

Working with 25 colleges of engineering to better understanding issues regarding their academic and social environment to improve retention of undergraduate students, and in particular women and minorities. Data is obtained through an on-line web-based survey and on-campus student interviews.

Extension Services in Engineering: Climate, Instruction and Community, Funded by the National Science Foundation

Working with colleges of engineering to enhance community, instruction and climate to improve retention of all engineering students, and in particular women.

WEPAN Training Seminars: Funded by the National Science Foundation, Alfred P. Sloan Foundation, AT&T Foundation and Fund for the Improvement of Post-Secondary Education (DOE).

Provided technical assistance to nearly 200, two and four year engineering colleges to establish or expand programs at the pre-college and college level to improve recruitment and retention of women in engineering. Created a curriculum to support this effort.

Secondary School Level Projects

Project Lead the Way:

Conducting an extensive review of PLTW curriculum to integrate equity principles and research into the coursework to attract more students, particularly women and underrepresented minorities, to PLTW classes in the US.

Making the Connection: Funded by Lucent Technologies

Created a series of hands-on activities for students in grades 3-12 to introduce them to engineering; developed a presenter's guide to assist engineering professionals and lay people to give effective presentations about engineering to students in grades 3-12; and developed compelling newsletters for five educational levels that include profiles, games, and information about engineering.

<http://www.wepan.org/displaycommon.cfm?an=1&subarticlenbr=38>

Qualifications:

Association for Women in Science Fellow Award
Maria Mitchell Women in Science Award
White House Presidential Award for Excellence in Science, Mathematics and Engineering Mentoring
Boston University Psychology BA 1976
Seton Hall University Counseling Psychology MA 1978

Member:

Women in Engineering Programs & Advocates Network, Inc. (WEPAN)
--Co-founder, Past President, Vice President

American Society for Engineering Education (ASEE)
Association for Women in Science (AWIS)