

Authentic Women & Effective Engineers... Create the Future

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Acknowledgements and References

- Women Engineering Students' Self Efficacy – A Longitudinal Multi-Institution Study, Rose M. Marra & Barbara Bogue
- Gendered Organizations, Joanne Martin, Stanford GSB
- Imposter Syndrome, Pauline Clance & Suzanne Imes, 1978
- SWE Retention Study. SWE Magazine, 2008

Introductory Notes

- Generalizations do not apply to every individual
- Men are our partners
 - In creating a sustainable future
 - In advancing women in engineering
- Differences in styles are not differences in “quality”
- Challenges for women cross generations

Argument

- Diversity matters
- The realities of being effective
- The value of being authentic



The Value of Diversity to Innovation

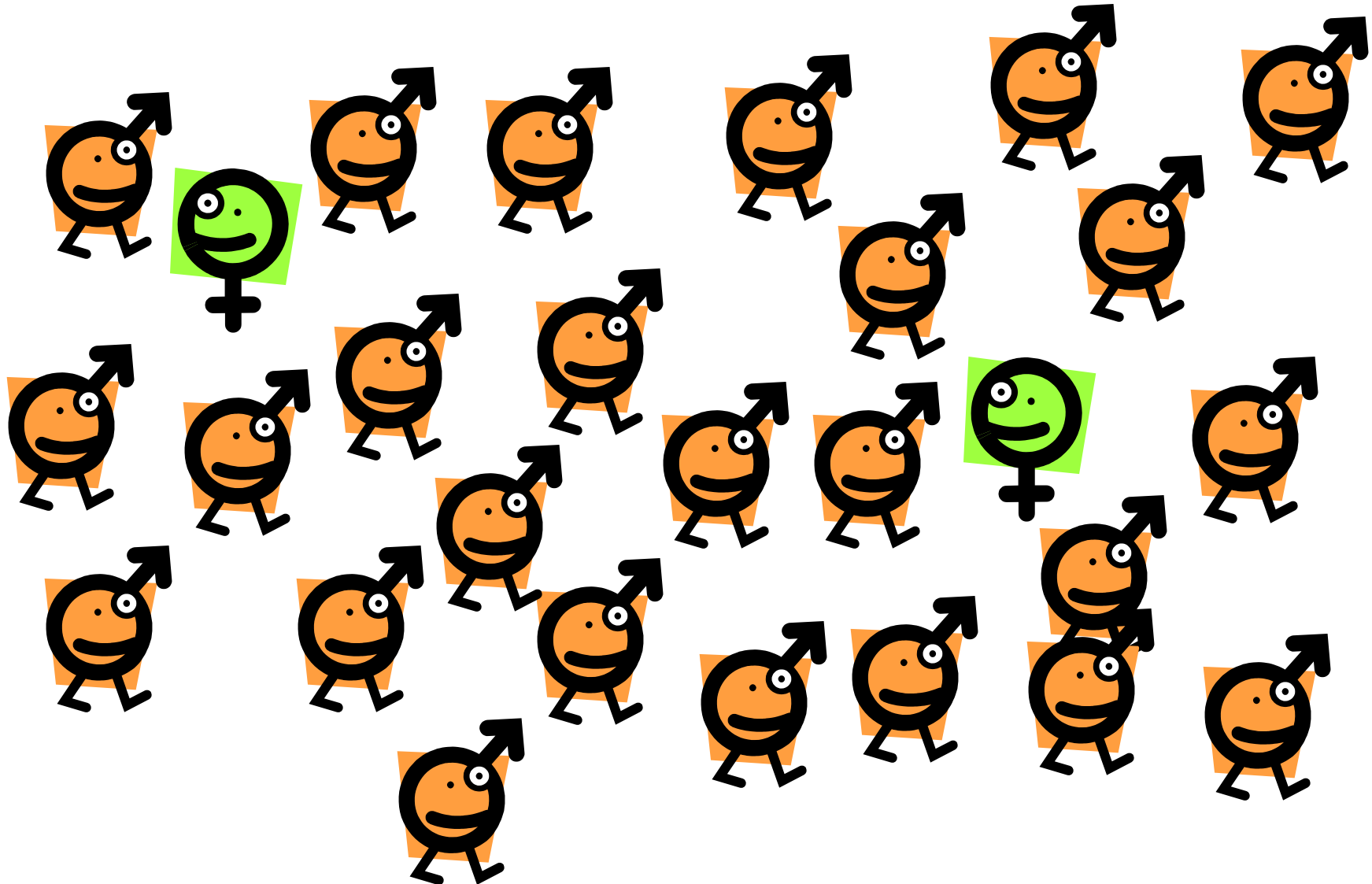
- Servicing an increasingly diverse, global marketplace
- Recruiting and retaining the best talent
- Expanding creativity and better decision making due to:
 - Varied perspectives
 - A wider array of ideas and solutions
 - Challenge to long-accepted views
 - Divergent thinking
 - Differing communication skills

As a consequence of a lack of diversity, we pay an opportunity cost, a cost in designs not thought of, in solutions not produced.

- William A. Wulf, Past President, National Academy of Engineering

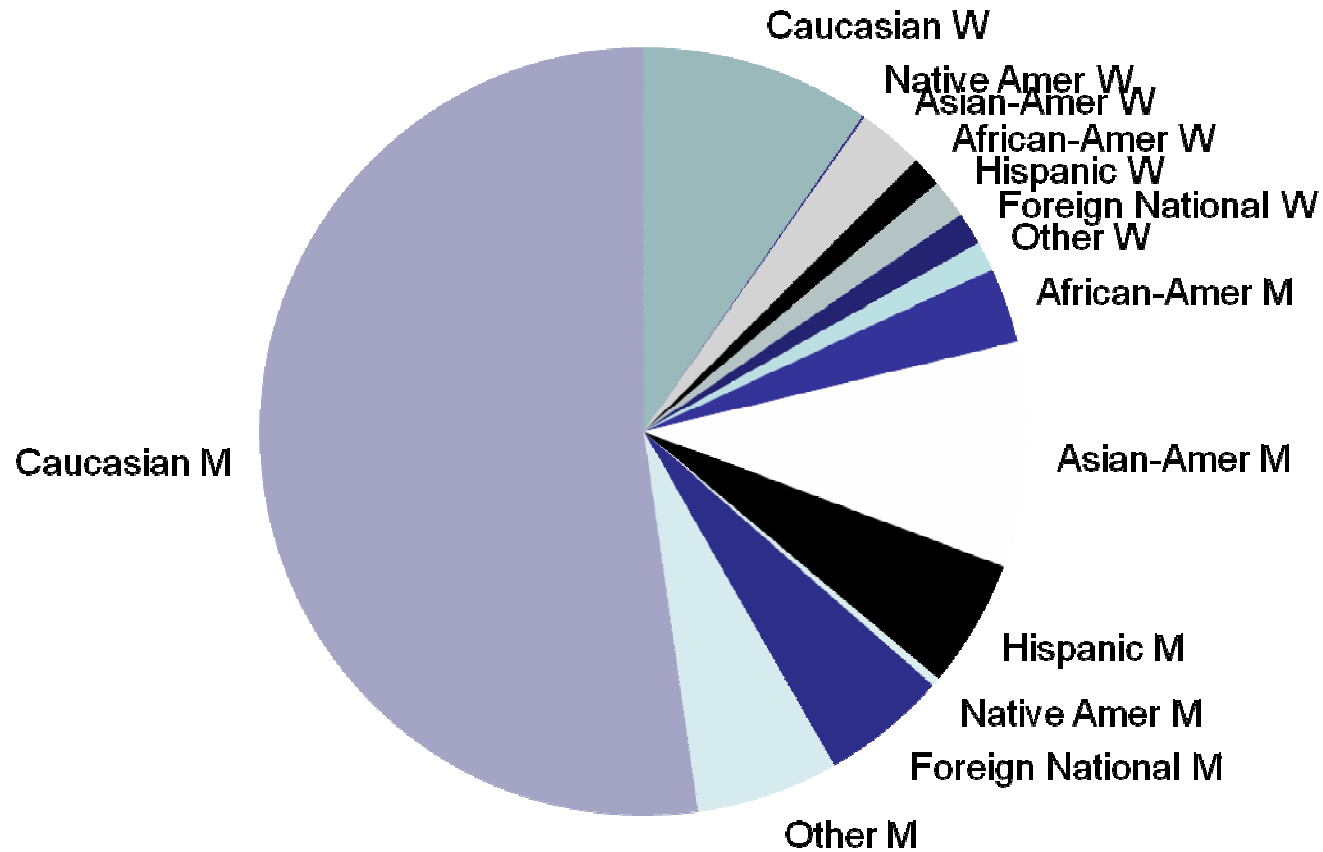


The Engineering/Technology Workplace and Classroom





2007 Bachelor's in Engineering Awarded





Inhospitable Culture: Illusion of Inclusion

- Different paradigms by gender and race/ethnicity are so ingrained that we are rarely conscious of the possibilities of other paradigms
- We welcome others, hence we feel we are inclusive
- But we welcome others to live in *our* environment not an inclusive environment, hence the *illusion*

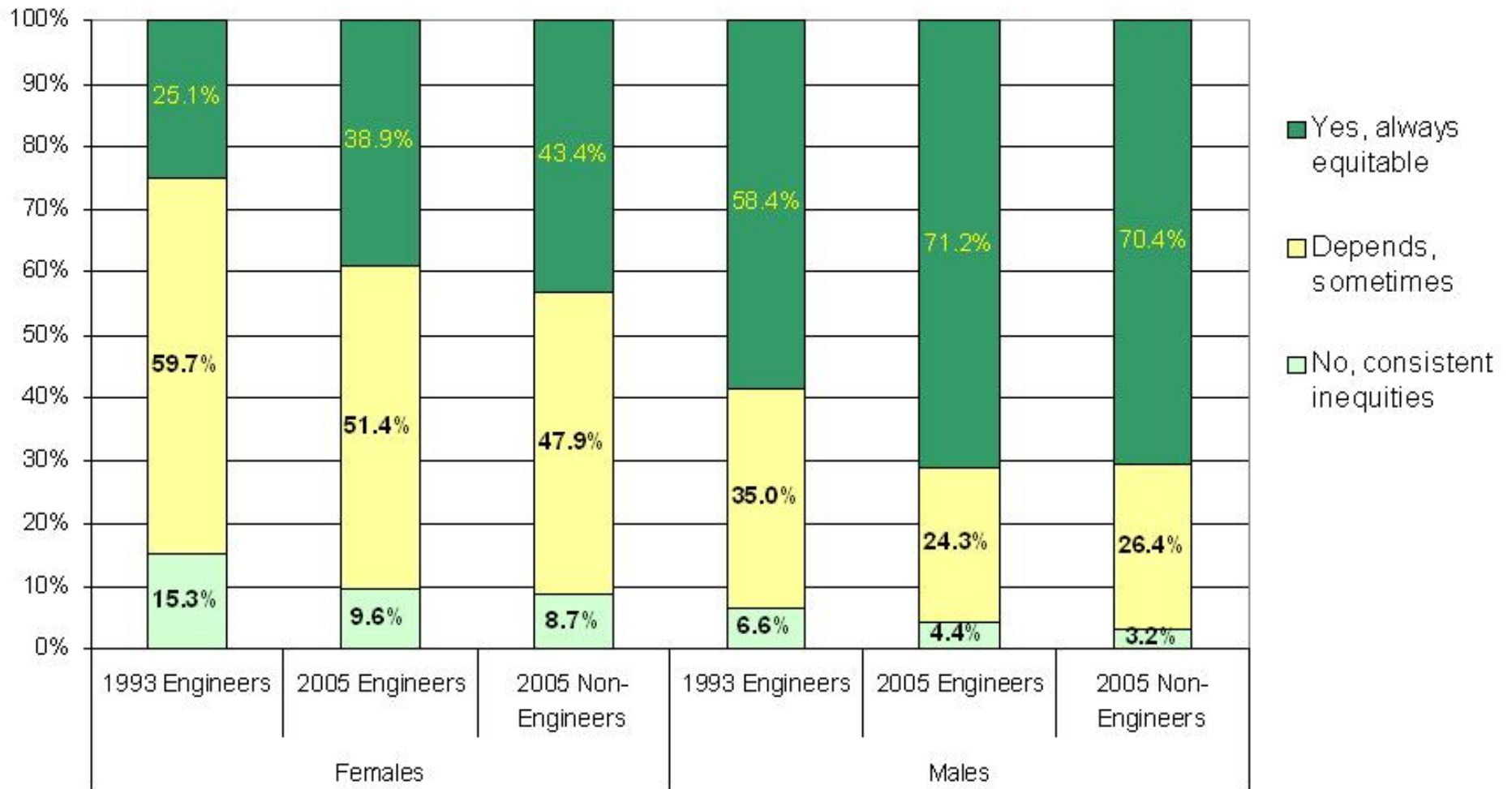


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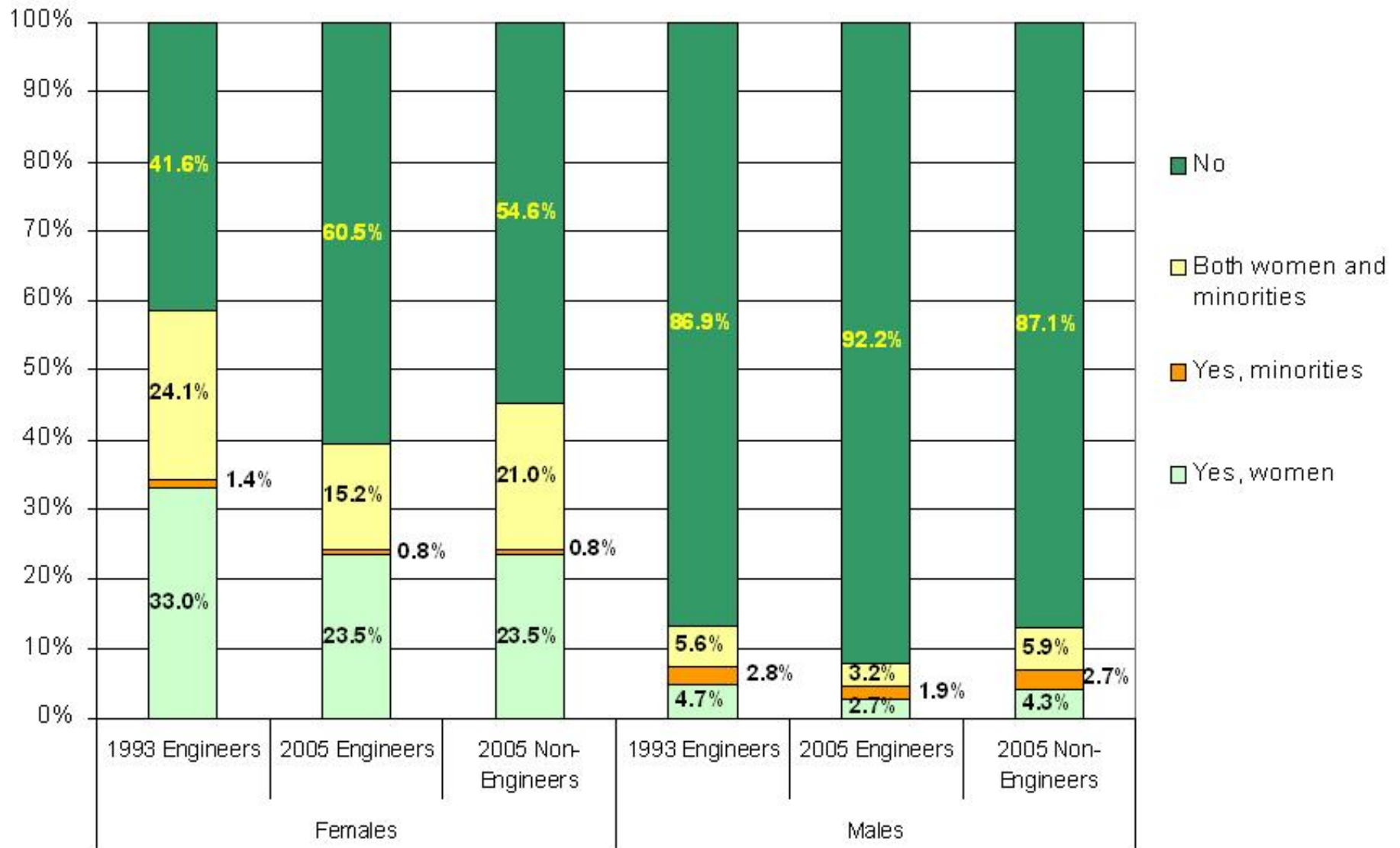


Do you believe that female and male employees performing the same job are treated equitably where you work?





Are you personally aware of instances where women or members of minority groups have been overlooked with regard to career opportunities?





Isolation

- “Protection” from jobs that are considered a risk for women, but considered opportunities for men
- Rewards and social activities are male-oriented
- Apologies are made to me for swearing
- Assuming I’ll handle the logistics or take the minutes
- I need to shout just to be heard
- Risk averse manager
 - Decisions in interest of the organization that limit opportunities
 - Don’t support programs that support women

Each single experience seems trivial., but taken collectively and experienced regularly they tend to alienate women



Our Reactions

- I don't belong, so something is wrong with me
- No legitimization of reactions and experiences



Female Engineering Students

- ... entering report high levels of self-confidence and self-esteem.
- ... self-confidence declines precipitously during the first year, does begin to elevate, but will never again reach the same heights
- ... compare themselves unfavorably to their male peers and judge themselves more harshly than the men judge themselves.
- ... who leave consistently express less confidence in their abilities than the men and women who stay, regardless that their actual performance is the same or better than their peers who do not leave.
- ... faced with actually failing a course are likely to leave the program altogether, while their male peers are more likely to repeat the course and continue to pursue their engineering degree.



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The Authenticity Problem

Joanne Martin, Stanford GSB

- Women's' discomfort in male-dominated cultures
 - Example: Female executives at very large technology corporation
 - “It takes too much energy to pretend to be someone other than who you are. (They were) advising me to be less open, less participative, less cooperative – to be not the way I am. It was a real dilemma for me.”
- Heightened inauthenticity problems of minority women
- Result: Women quit
- Classic remedy: “Fix the women” with training in leadership, negotiation, etc
 - Encourage women to act like men,
 - Leaving inauthenticity problems intact,
 - So drop out rates don't change



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Imposter Syndrome

(Pauline Clance & Suzanne Imes, 1978)

- Research on high-achieving women
- Female clients unable to internalize their accomplishments
- External proof of intelligence and ability dismissed
- Successes credited to luck, timing, perseverance, fooling others
- Didn't fully enjoy successes and seize opportunities
- Overwork to compensate for supposed deficiencies



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Imposter Syndrome Symptoms

- Focus on weaknesses rather than strengths
- Don't ask for necessary resources to do the job – I can do it
- Self-defeating attitudes in speech
- Don't take credit for accomplishments



“While ... feelings of fraudulence may be deplorable, ... these same feelings may indicate a wise reluctance to believe in the accuracy of absolute ranking, and may point the way to a valid critique of hierarchical structures. Apology and self-disparagement may indicate an honest refusal to internalize the idea that having power or public exposure proves one’s merit and/or authority. Apologetic or hedging speech may indicate uneasiness with rhetorical or coercive forms of speech and behavior, and may signal a desire to find more collaborative forms. People who feel in public like imposters are perhaps more to be trusted than those who have never experienced feelings of fraudulence.”

- Peggy McIntosh, PhD

Interactions and Communications

- Women wait to be invited, men seek out inclusion
 - Promotions
 - Visible assignments
 - The “right groups”
- We can’t say “no”
- Communications in group settings
 - Your turn may never come
 - Comments are ignored

Amazing Grace



*"It is much easier to
apologize than
to get permission"*

Rear Admiral Grace Murray Hopper



Women Supporting Women

- Assumed competition with other women and other underrepresented groups. Appreciate all cultural diversity
- Acknowledge other women in the group
- Legitimize a point being ignored by asking a question
- Participate in SWE to validate experiences and get training
- Find/become mentors for different support roles
 - Advocate, sounding board, support network, etc.



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“Engineering is also important...”

All of us want to have confidence that the planes in which we fly are safe, that the bridges we cross will stand, that offshore oil platforms will be able to weather the elements and contain the pressures found in reservoirs of oil and gas. We also want to have better cars and faster computers and efficient appliances with more conveniences. Engineering makes our lives more secure, more comfortable, more rewarding. It gives us possibilities and enrichments that earlier generations could not have imagined.”



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Secrets to Success in College

- Internships
- Use the resources of the school
 - Talk to your professors
 - Take advantage of women's programs
 - Join SWE
- You don't have to love it all
- You don't have to ace it all
- Develop other skills



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Career Secrets

- Struggled with early math and science classes
- Finally figured out how to study senior year
- Found success in concentration classes
- Work vs school
 - Always should get an A at work
 - Resources to look up information and can ask for help... it's an open book exam
- More skills to be developed, such as
 - Presentation
 - Negotiation



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*Cat got your tongue and the rent is running late
A bad love affair has made a mess of things
Wolf's at your door and there's nothing on your plate
You're standing there naked and the telephone rings.*



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*The boogie man will get you
When you're lying in your bed
Pull the pillow off your head
You might as well dance!*

- Patty Larkin



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Wishing You Success!



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