Exploding the Myth of Women’s Inequality

Women in Science, Technology, Engineering and Math
Our Vision and Mission

- We envision a safe, inclusive, and innovative technology future that includes equal pay, participation, and treatment of women.
- ChickTech is dedicated to retaining women in the technology workforce and increasing the number of women and girls pursuing technology careers.

Lauren Dillard
Volunteer and Marketing Lead, ChickTech NYC (volunteer)
Senior User Experience Designer, TandemSeven (real job)
Series Goal

Creating new knowledge about the root causes of poverty, developing interventions and rapidly translating research findings into action.

Workshop Goal

Understand and identify strategies to combat gendered disparities in educational and professional environments for STEM fields.
Women in Poverty

“Year after year, data show that men typically earn more than women — and women are more likely to be poor. Single mothers, women of color, and elderly women living alone are at particularly high risk of poverty.”

"One in seven women and four in ten single-mother families are poor. Women are overrepresented in low-wage jobs despite better educational credentials than ever. And unemployment rates remain painfully high for some groups of women.”

http://nwlc.org/issue/data-on-poverty-income/
Consider a Birdcage

“If you look very closely at just one wire in the cage, you cannot see the other wires.

“If your conception of what is before you is determined by this myopic focus, you could look at that one wire, up and down the length of it, and be unable to see why a bird would not just fly around the wire any time it wanted to go somewhere.”

— Marilyn Frye

http://frozenstocks.deviantart.com/art/Rusty-Birdcage-Render-456501840
Exposure to the concepts wrapped into STEM education improves access to three key aspects of a productive, comfortable life — resources, education and well-being. It teaches problem solving skills, boosts creativity and increases confidence.

**Resources**
- Job opportunities
- Access to capital
- Raw materials, goods
- Free time, autonomy

**Education**
- K-12 / Early education
- Vocational / Postsecondary
- Access to information
- Pursuit of knowledge

**Well-being**
- Adequate nutrition
- Disease prevention
- Proper care of self
- Mental health care
A Big Opportunity

• The State University of New York (SUNY) indicates that STEM careers are growing 2.5x faster than other fields in New York
• The median annual income for employed STEM workers is $65,700 compared to $33,300 for non-STEM workers
• STEM workers experience lower joblessness than workers in other fields
• Because professional workers need first-tier support, as much as 32 percent of the workforce has an associate’s degree, some college or less

https://labor.ny.gov/stats/PDFs/enys0714.pdf
http://www.esa.doc.gov/sites/default/files/stemfinalyjuly14_1.pdf
An Important Choice

- Women represent 50 percent of the population and up to 85 percent of purchasing decisions, yet many solutions are not developed to fit women.
- Women represent only 28 percent of New York’s STEM workforce.
  - Even though heart disease is a leading killer for women as well as men in the US, artificial hearts fit about 85 percent of men and only 20 percent of women.
  - Women often can’t perform one-handed tasks on smartphones, like taking a picture.
  - Early voice-recognition would not register female voices, leaving women literally unheard.
  - First-generation automotive airbags were tailored for men, resulting in avoidable deaths.

- Innovation serves its master, which must include diverse representation.
- Businesses that prioritize workforce diversity are often more profitable.

http://motherboard.vice.com/read/technology-isnt-designed-to-fit-women
What is STEM?

- An acronym that stands for science, technology, engineering and math
- No longer four discrete subjects, but rather a cohesive learning paradigm that emphasizes using the scientific method to solve real-world problems
- Roles that require (at most) an associate’s degree:

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Six women programmed the ground-breaking ENIAC computer, the world’s first electronic digital computer (left), Margaret Hamilton was the lead software designer for NASA’s Apollo Program and SKYLAB (center), Navy Rear Admiral Grace Hopper invented the first compiler and is credited with the development of COBOL – a high-level programming language (right).
Beginning in 1984, personal computers were marketed exclusively to men and boys.

Movies like *Weird Science*, *Revenge of the Nerds* and *War Games* emphasized the narrative: awkward geek boy genius uses tech to save the world and win the girl.

When young men and women entered computer science programs after 1984, professors assumed that their students had grown up with computers at home.

http://www.npr.org/sections/money/2014/10/21/357629765/when-women-stopped-coding
The Problems

Because of the three factors listed below, women are risking their emotional, social and financial wellness to entire STEM professions. The effects are cumulative.

- **Socialization**: How women perceive their relationship to STEM fields
- **Education**: Early experience and encouragement for STEM fields
- **Retention**: How women are treated after they’ve entered a STEM field
Socialization

Socialization begins in infancy and is pervasive in the development of young girls.

- **Risk-taking**: Girls are often socialized not to take risks with their safety and to appear perfect (looks and skills).

- **Stereotypes**: Women are often portrayed in media as either smart or beautiful, rarely both. Women are believed to be less savvy with tech.

- **Gender Roles**: From an early age, girls are socialized to care for dolls and perform household chores.

Related:
- [https://www.youtube.com/watch?v=XP3cyRRAfX0](https://www.youtube.com/watch?v=XP3cyRRAfX0)
Academics

While women actually outnumber men in academia, far fewer women are entering science, engineering, math and CS.

• **Role Models:** From academic advisors to professionals in the field, we are lacking role models to encourage women.

• **Curriculum:** STEM courses often trade in theoretical, rather than the real-world. Applications and course descriptions can be a turn off for women exploring interest.

• **Horror Stories:** For women who’ve indicated interest, horror stories can discourage. Horror stories can be personal or come via the news.
Retention

Once women enter science and technical fields in college, or even graduate and get jobs in the field, as many as 50% leave.

• **Competition**: Because science and tech fields are so male dominated, they are often oriented toward competition and not cooperation and teamwork.

• **Marginalization**: Women and other minorities are often asked to prove themselves over and over again. Their voices are often unheard.

• **Environment**: It can be hard to be the only girl in a classroom or conference room. Many women leave because working in tech doesn’t seem to fit.
Interventions

1. Educate women about opportunities and bias

2. Create opportunities for women to learn

3. Connect women with communities for support
For More Information

Visit newyork.chicktech.org

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