Why a Career in Technology Matters for Women

Call to Action

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- CTO – Evangelist-New Frontiers-Engineering
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1. The Situation
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The Situation
Opening Doors of Opportunity

STEM for students of all backgrounds

Over the past three decades, there has been a steep decline in the number of female graduates with computer science degrees.

The number of computer science degrees awarded to women peaked at 37 percent between 1984 and 1985. Compare this to only 18 percent of C.S. degrees awarded to women in between 2008 and 2011, and it is easy to see the dilemma employers are facing today.

Cisco is committed to opening doors of opportunities to increase the number of women and girls, members of underserved communities and veterans who go into STEM fields.

We do this through partnerships with incredible organizations like Junior Achievement, Gooru, US First Robotics, Citizen Schools and many more.
STEM Facts

Only 26% of STEM workers are female.

Women were 28% of all workers in S&E occupations in 2010, up from 21% in 1993.

The wage gap between women and men is much smaller in STEM occupations than in other occupations. In STEM fields, women earn $0.92 for every $1 earned by the men, compared to $0.77 for other fields.

Women's presence among computer/mathematical scientists declined from 31% to 25% between 1993 and 2010, but only because men's rate of growth in this area was higher than women's. The number of women working in computer/mathematical sciences has increased more than in any other broad occupational area.

Although women fill close to half of all jobs in the U.S. economy, they hold less than 25 percent of STEM jobs.

Women with STEM jobs earned 33 percent more than comparable women in non-STEM jobs, considerably higher than the STEM premium for men. As a result, the gender wage gap is smaller in STEM jobs than in non-STEM jobs.

Women comprise more than 20% of engineering school graduates, yet only 11% of practicing engineers are women.

Infographic courtesy of Tata Consultancy Services
Unprecedented STEM Education Crisis in U.S.

By 2018, there will be 1.2 million job openings\(^1\) in the U.S. in the fields that make up STEM. There will be an acute shortage of qualified applicants without a major influx of talent.

In 2009, only 18%\(^2\) of bachelor's degrees were STEM-related, down from 24% in 1985.

75%\(^3\) of students in community college don't graduate.

Students in the U.S. rank only 18th\(^4\) in math and 13th in science literacy.

Sources:
1. U.S. Dept. of Labor
2. U.S. Congress Joint Economic Committee
3. Center for an Urban Future
4. Organization for Economic Cooperation and Development
The U.S. Ranks Low Among Other Countries

Only 40% of students that start as undergrad STEM majors complete in those areas.

Ranked 40th in innovation-based competitiveness in the past decade.

Source: NCES – National Center for Education Statistics
Igniting the Fire

4 in 5 STEM college students made the decision to study STEM in high school or earlier.

1 in 5 STEM college students decided to study STEM in middle school or earlier.

51% of STEM college students and parents of K-12 students do not feel that preparing students for careers in STEM is a top priority for K-12 schools in the U.S.
Industry in Crisis...

Cybersecurity ‘experts’ lacking in numbers, skill

By Toshimitsu Ishima and Mayumi Kamizono / Yomiuri Shimbun Staff Writers

Amid ever-increasing cyber-attacks, a shortage of cybersecurity experts has become a serious problem.

At least 80,000 more information security experts are reportedly needed, with...
“The information security discipline is not evolving fast enough. Most notable, women represent just 11% of this profession.”
Why So Few Women?

Study: Millennials not encouraged to fill security workforce demand

Only a meek showing of young people are being encouraged to pursue cyber security careers, a recent study on millennials' attitudes found.

According to the “Raytheon Millennial Cybersecurity Survey Report” (PDF) released on Tuesday, a staggering 82 percent of young people, aged 18 to 26, said that no high school teacher or guidance counselor ever mentioned to them career opportunities in the field.
The Faces-Images
Women in Tech: The Facts*

- **Girls Comprise**
  19% of AP CS exam-takers

- **Women Earn**
  18% of CIS degrees

- **Technical Women Leave**
  at twice the rate of men:
  56% by mid-career

* Next 5 slides from Sr. Catherine Ashcroft NCWIT Sr Research Scientist
Women In Tech: The Facts

**WOMEN COMPRIS**
57% of U.S. Professional Occupations

**WOMEN HOLD**
25% of U.S. Technology Jobs

**WOMEN MAKE UP**
19% of U.S. Software Developers

Only 5% of TECHNOLOGY LEADERSHIP Jobs Are Held by Women
Why Women Matter
Diversity Enhances Teams

Groups with greater diversity solve complex problems better and faster than homogenous groups.

What the Research Says
Let’s Cut to the Chase

- Technical Women Aren’t Broken
- Technical Men Aren’t The Enemy
- Culprit = Societal Biases We All Share
- We Can Take Action Together
How Stereotype Threat Shows Up in Technical Environments

Not speak up in meetings

Be reluctant to take leadership positions

Be overly harsh about their own work

Discount their performance
Subtle Dynamics Example: Micro-inequities

**Slights:** “Actually, Susan has a good idea.”

**Exclusion:** “Oops, I forgot to cc her on the email about the architecture review.”

**Recognition:** “No, I’m pretty sure Jane would not have had the idea to use a link algorithm.”

**Isolation:** “Dude, let’s talk about it over a beer!”
Institutional Barriers

**Hiring**
Selecting people “like me”

**Task Assignment**
Women find themselves in “low status” jobs

**Performance Appraisal**
Men appraised for effort, skill; women for collaboration, luck

**Promotion**
Criteria modeled implicitly on existing senior male leaders
At Cisco
Cisco Networking Academy: Putting the “T” in STEM

Technology Skills

What You Learn
- Address the “T” for Technology
- Networking
- Security
- Wireless
- Configuration

21st Century Skills

How You Learn
- Collaboration
- Community
- Communication
- Problem-Solving
- Initiative-Taking

Entrepreneurial Skills

How You Think
- Mindset
- Innovative Thinking
- Personal and Social Responsibility
- Business Management
US2020: STEM Mentoring

U.S. 2020: Igniting a passion for STEM

Cisco is a founding partner of US2020, which grew out of a White House initiative to increase STEM mentoring across the country.

Cisco has pledged that 20% of our U.S. employees will provide at least 20 hours of STEM mentoring per year by 2020.

To meet this goal, we host events like Girls in ICT Day and partner with a range of nonprofit organizations, including the Girl Scouts, FIRST Robotics, Million Women Mentors and CyberPatriot.
Cisco Encourages & Trains Individuals in STEM Careers, Diminishing the Talent Gap

Through nonprofit partnerships and Cisco programs

Cisco Networking Academy

Air Force Association’s CyberPatriot
The National High School Cyber Defense Competition

Cisco’s Veterans Programs
White House IT Training and Certification Program

MWM Million Women Mentors

STEMconnector The One Stop Shop for STEM Information

US2020 Igniting Moments of Discovery

Employee Volunteers
Cisco Published its Diversity Statistics 2014

Like most of its peers, Cisco’s workforce is overwhelmingly comprised of Caucasian and Asian men.

A full 77% of its employee base is male, with 54% of total workers (male and female combined) identifying as Caucasian and 36% as Asian.

The number of employees identifying as Hispanic and African American was 5% and 3%, respectively.

For the first time, Cisco has also released the gender breakdown for specific roles, and the numbers there are even bleaker.

A full 85% of the company’s technical roles are filled by men.

When it comes to managers, just 19% are female.


“The worst thing for people to say is that it’s going to take time,” says Warrior. “In technology, we pride ourselves on the pace of change. Why can’t we talk about that same pace of change when it comes to women in leadership?”
The Men’s Pledge

• As a member of Cisco For Inclusion:
  I will serve as an Ally to women colleagues in the company through these four vows:
  ▪ I commit to building a relationship of trust and respect with you.
  ▪ I commit to helping you find and secure opportunity.
  ▪ I commit to seeking your feedback and being candid with you.
  ▪ I commit to helping other men do the same.
The Women’s Pledge

• As a member of Cisco Men For Inclusion

I will serve as an Ally to women colleagues in the company through these four vows:

- I commit to building a relationship of trust and respect with you.
- I commit to helping you find and secure opportunity.
- I commit to seeking your feedback and being candid with you.
- I commit to growing relationships of reciprocity with male Allies, so they do these things as well.
Call to Action
If you don't like the way the world is, you change it. You have an obligation to change it. You just do it one step at a time.

– Marian Wright Edelman
We WANT You!

IEEE Women in Engineering:
http://www.ieee.org/membership_services/membership/women/index.html
What Does Success Look Like?
WOMEN ENGINEERS IN DEVELOPMENT
Call for Action: “You Can’t See It, You Can’t Be It”!

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