Collaboration space, Alexandria, VA

Increasing the Representation of Women in Cybersecurity
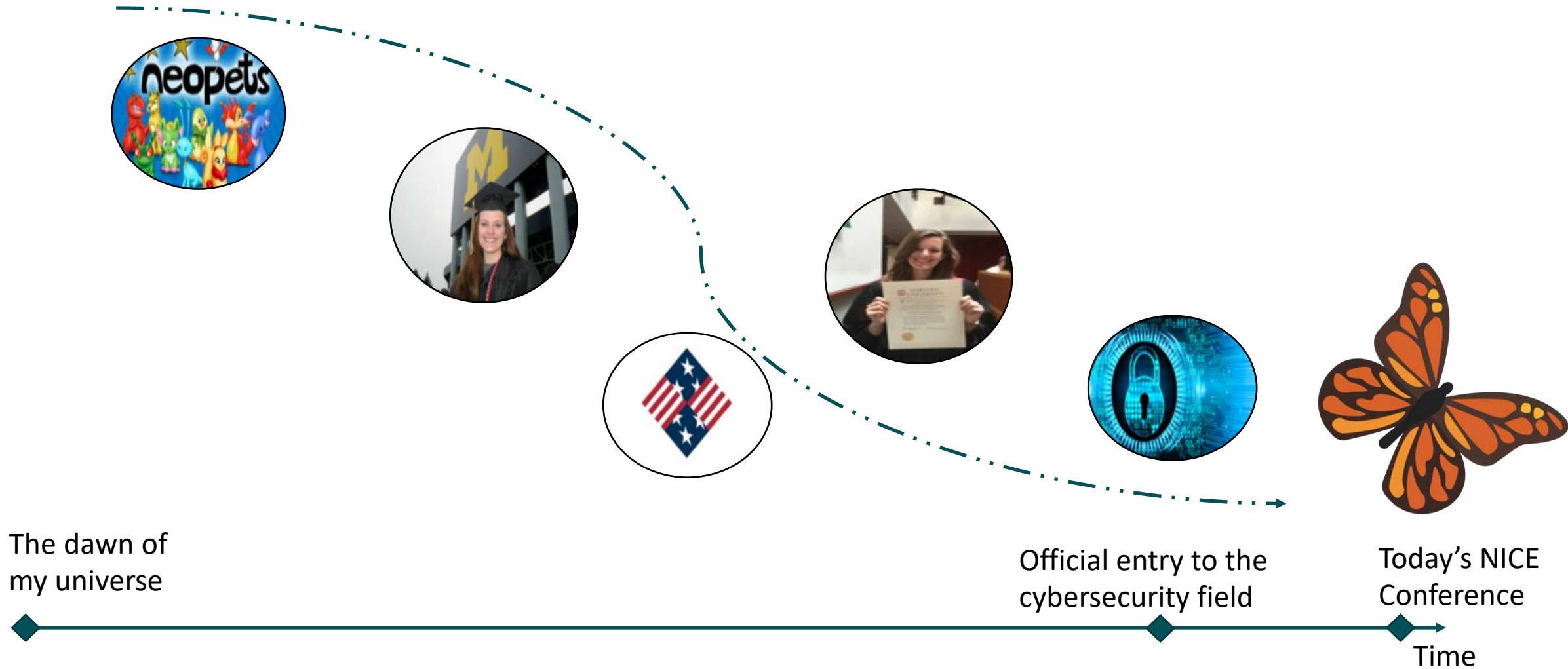
Katie D'Hondt

2018 NICE Conference

Miami, Florida

NOVEMBER 6, 2018

MY STORY

The dawn of my universe

Official entry to the cybersecurity field

Today's NICE Conference

Time

Special thanks to…

New America Foundation

Harvard Kennedy School

Harvard NCWiT, WiCS, and CS groups

Booz Allen Hamilton

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THE NEXT 40 MINUTES

The Symptom

What is the current representation of women in cybersecurity?

The Diagnosis

Why does this statistic matter?

The Root Causes

What are there so few women in cybersecurity?

The Prescription

How can we increase the representation of women in cybersecurity?

Your Assignment

What can you do to change this?

Q&A

THE SYMPTOM: 11-20%

OF CYBERSECURITY PRACTITIONERS ARE WOMEN

THE SYMPTOM: DIFFERENT EXPERIENCES FOR MEN AND WOMEN

"I don't always feel completely a part of the CS community, or sometimes even taken seriously by others in the community." – Female respondent

"[The gender gap does] Not [have] a huge impact, since some of my best friends who take CS are girls." – Male respondent

"I haven't had any experience in CS at Harvard yet, but I think there's a lot of support for females in CS (ie. WiCS) so I'm not too worried about my future experience." – Female respondent

"Well it doesn't affect me at all. I don't take classes based on their demographic representation; I take them for the material, quality of professor, and to some degree the intelligence/engagement of the student body. None of these things depends on how many women are in the class. I can see how it might discourage some women from taking the more male-dominated classes though." – Male respondent
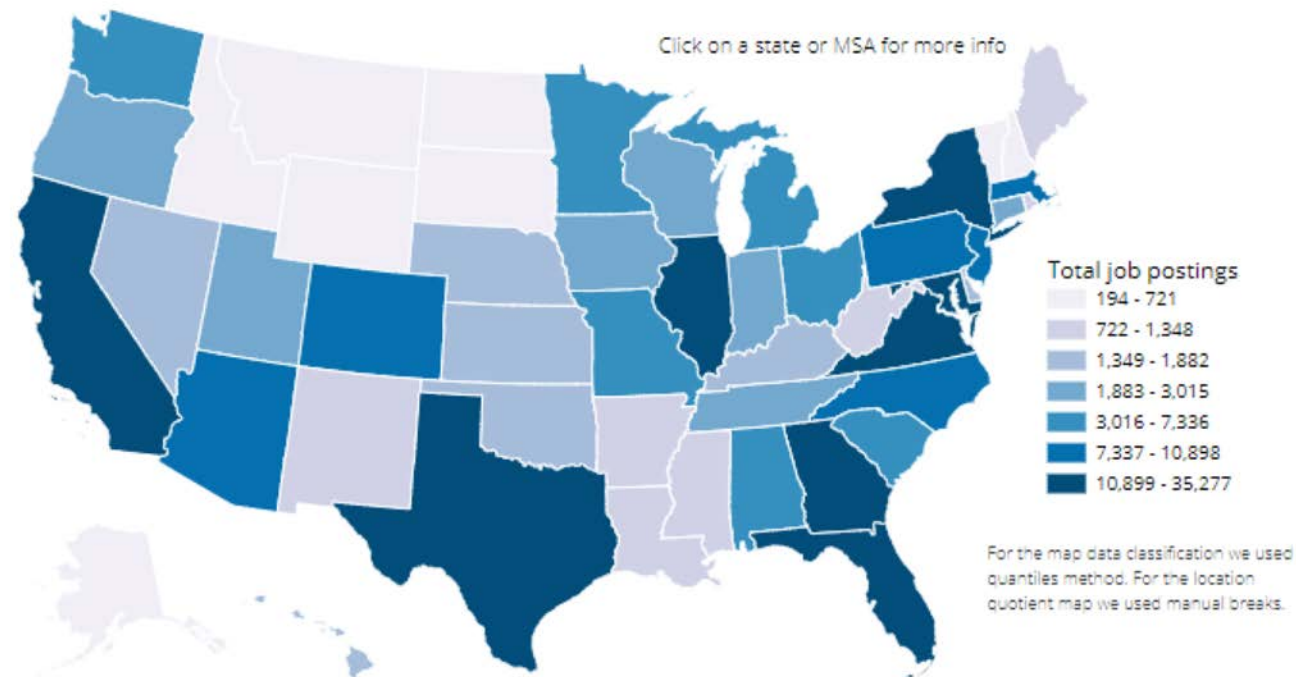
"It [the gender gap] adds the pressure to excel in CS" – Female respondent

https://wappp.hks.harvard.edu/files/wappp/files/dhondt_pae.pdf

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THE DIAGNOSIS: A CYBERSECURITY LABOR SHORTAGE

… OF 1.5 MILLION CYBERSECURITY PRACTITIONERS BY 2020 AND AS HIGH AS 3.5 MILLION BY 2021.

https://hbr.org/2017/05/cybersecurity-has-a-serious-talent-shortage-heres-how-to-fix-it
https://cybersecurityventures.com/jobs/

THE DIAGNOSIS: A CYBERSECURITY LABOR SHORTAGE TODAY

https://www.cyberseek.org/heatmap.html

THE DIAGNOSIS: NOT JUST A DIVERSITY PROBLEM

WOMEN'S LACK OF REPRESENTATION HAS NATIONAL SECURITY & BUSINESS IMPLICATIONS

THE DIAGNOSIS: NOT JUST A DIVERSITY PROBLEM

THE ROOT CAUSES

WHY ARE THERE SO FEW WOMEN IN CYBERSECURITY?

THE ROOT CAUSES: THE SOCIALIZATION OF CYBERSECURITY

THE ROOT CAUSES: THE SOCIALIZATION OF CYBERSECURITY

What Happened To Women In Computer Science?
% Of Women Majors, By Field

■ Medical School   ■ Law School   ■ Physical Sciences   ■ Computer science
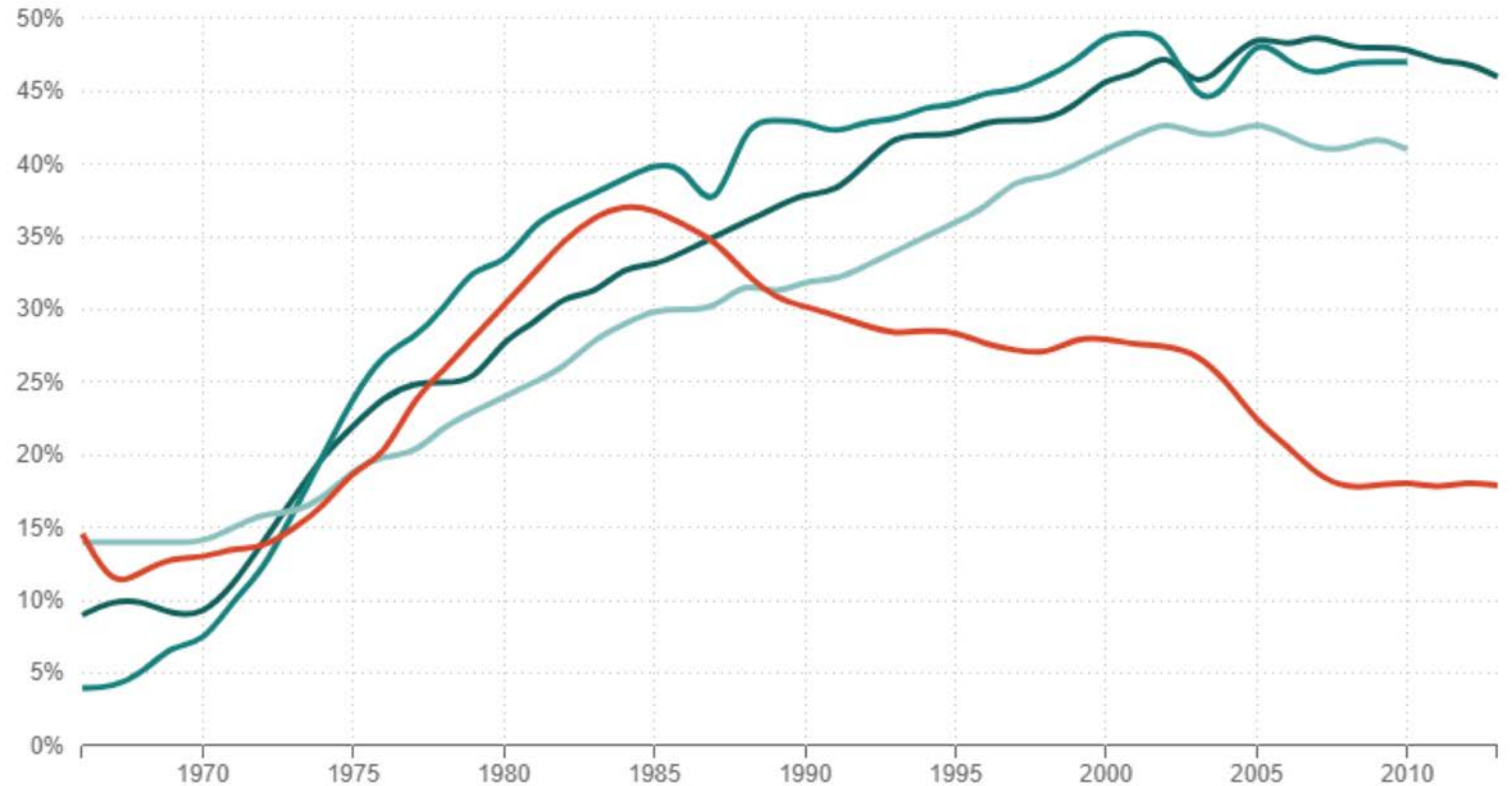
Source: National Science Foundation, American Bar Association, American Association of Medical Colleges
Credit: Quoctrung Bui/NPR

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

THE ROOT CAUSES: THE ORIGIN AND APPLICATION OF CYBERSECURITY

"The trajectory of how the cybersecurity field has evolved explains some of [why cybersecurity is different from other STEM fields].

It has traditionally been focused on computer network defense, with a heavy national security focus and military lineage.

Because the field has historically been very defense oriented, the government was really one of the only places that was training and building the workforce."

THE ROOT CAUSES: IMPLICIT BIAS

THE ROOT CAUSES: HARASSMENT AND BURNOUT

"When you say, "Women shouldn't go to [Hacker conferences] if they don't like it," you are saying that women shouldn't have all of the opportunities that come with attending … : **jobs, education, networking, book contracts, speaking opportunities** -- or else should be willing to undergo sexual harassment and assault to get access to them. Is that really what you believe?"
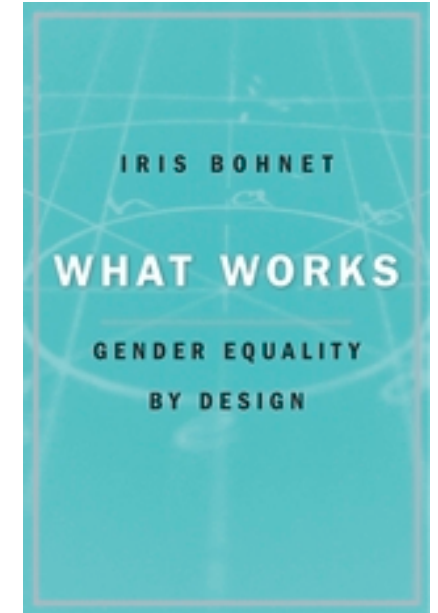
-Bruce Schneier

https://www.schneier.com/blog/archives/2012/08/sexual_harassme.html

THE PRESCRIPTIONS

HOW CAN WE GET MORE WOMEN IN CYBERSECURITY?

THE PRESCRIPTIONS: START AT THE BEGINNING

https://www.boozallen.com/e/media/company-news/a-pipeline-of-stem-talent-with-stem-girls-4-social-good.html

THE PRESCRIPTIONS: CLEAN UP THE BEACH

THE PRESCRIPTIONS: MENTORSHIP AND SPONSORSHIP

"The mentorship piece is very important. It is incumbent on more senior people to… give more junior people an opportunity to show their expertise. [This could be in the form of] assigning a task that hasn't been asked for. Just because someone isn't volunteering for it doesn't mean they aren't competent to do it."

THE ASSIGNMENT

WHAT CAN YOU DO TODAY ABOUT THIS PROBLEM?

YOUR ASSIGNMENT: GUIDE THE BUTTERFLY EFFECT

- **Assess your organization's current state**
  - Culture and representation matters!
  - Examine retention rates
  - Conduct focus groups and anonymous surveys
  - Research industry benchmarks

- **Provide fair mentorship and sponsorship opportunities**
  - Unconscious bias training / Project Implicit: https://implicit.harvard.edu/implicit/takeatest.html

- **Encourage "non-traditional" entry to the cybersecurity field**
  - Cybersecurity is still being "professionalized" as a field, meaning there are many entry points

Discussion and Q&A

Katie D'Hondt

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