DIVERSE TEAMS ARE ESSENTIAL TO QUALITY SOFTWARE

Rebecca Long | @amaya30
PNSQC 2018 | @pnsqc | #pnsqc2018 | #qecamp

OVERVIEW

- Introduction
- Benefits of Diversity and Diverse Teams
- Brief History of Diversity in Technology
- Current State of Diversity in Technology
- What Can We Do? Ways to Increase Diversity on Your Team(s)
- Wrap Up

WHO AM I?

- Rebecca Long

- Spokane, Washington

- Bachelor's and Master's in Computer Science

- 15 years in software engineering focused on quality assurance and DevOps

- Lead DevOps Engineer at RiskLens

- Founder / President of the non-profit Future Ada

- Executive Committee Member of Spokane NOW (National Organization for Women)

- Feminist & diversity advocate

RiskLens

- Startup company

- Headquartered in Spokane, WA

- Build cyber risk quantification and management software based on FAIR (factor analysis of information risk) ontology

Basic FAIR Ontology
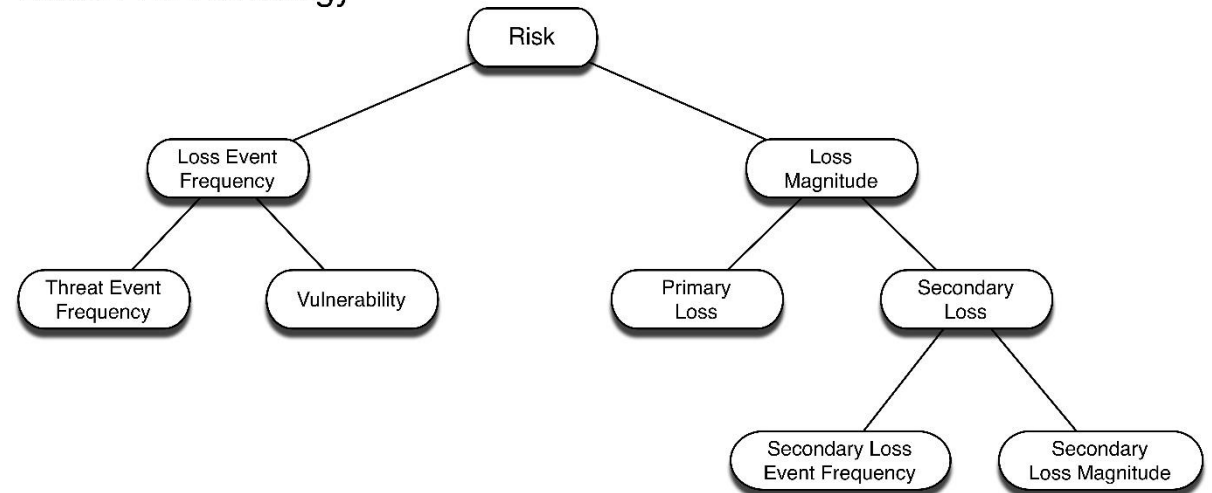
FUTURE ADA

- 501(c)(3) non-profit

- Based in Spokane, WA

- Named after Ada Lovelace

- Advocate for & support women & non-binary individuals in STEAM *(science, technology, engineering, art, & mathematics)*

- Aim for diverse and inclusive STEAM industries

BENEFITS OF DIVERSITY

Diversity is the engine of invention. It generates creativity that enriches the world

Justin Trudeau
Prime Minister of Canada

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"A diverse mix of voices leads to better discussions, decisions, and outcomes for everyone."

-Sundar Pichai, CEO, Google

Google Diversity

"

IF ONLY DUDES ARE DEVELOPING SOFTWARE, THEY ARE SOLVING PROBLEMS ONLY DUDES HAVE.

"

Sabrina Geremia (@sabrinageremia) of Google

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"IN THE UNITED STATES, THERE IS A LINEAR RELATIONSHIP BETWEEN RACIAL AND ETHNIC DIVERSITY AND BETTER FINANCIAL PERFORMANCE: FOR EVERY 10 PERCENT INCREASE IN RACIAL AND ETHNIC DIVERSITY ON THE SENIOR-EXECUTIVE TEAM, EARNINGS BEFORE INTEREST AND TAXES (EBIT) RISE 0.8 PERCENT"

Jennifer Brown, *Inclusion: Diversity, the New Workplace & The Will to Change*

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BRIEF HISTORY OF DIVERSITY IN TECH
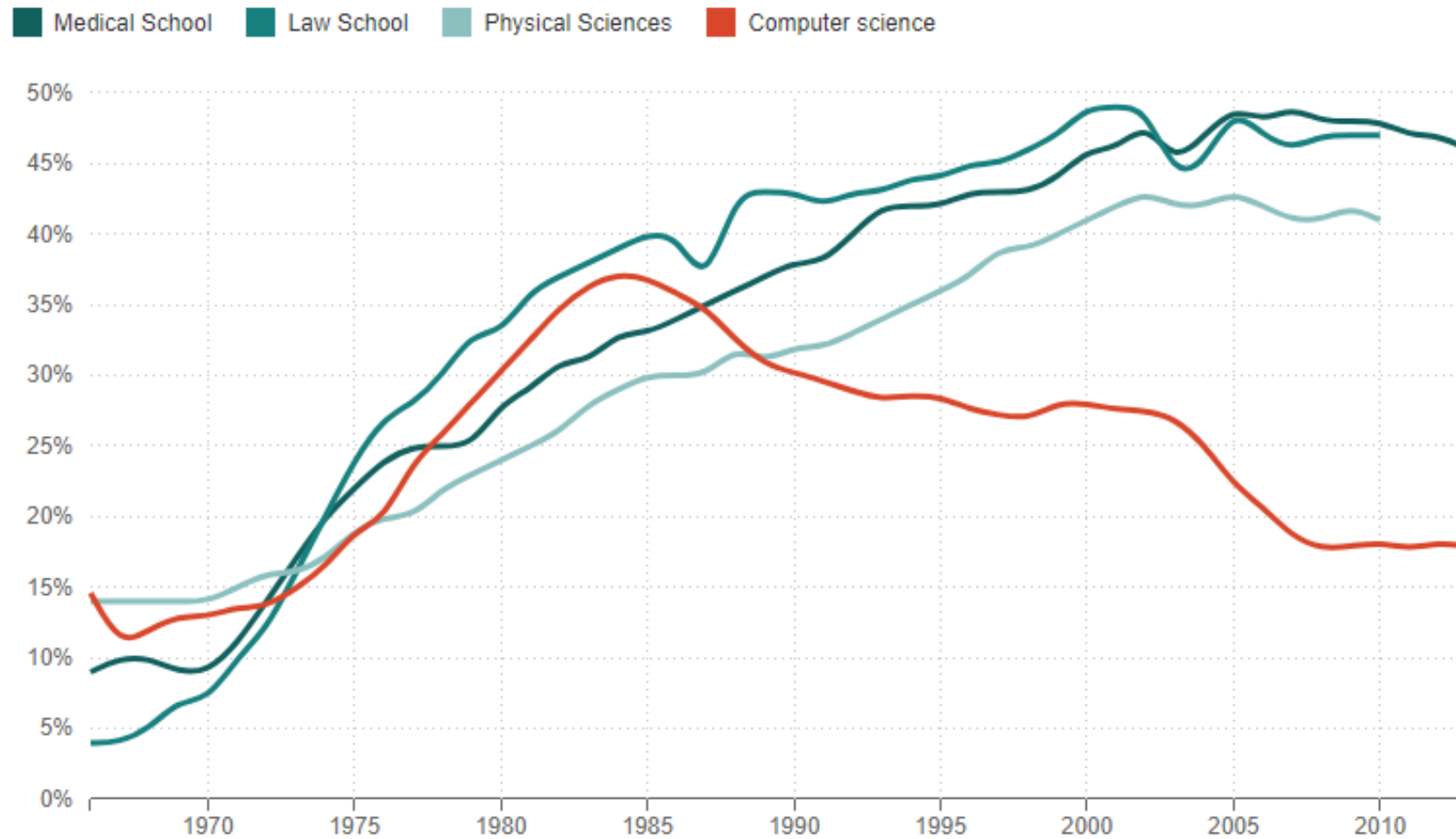
FAMOUS WOMEN FROM TECH HISTORY

Ada Lovelace

Grace Hopper

Katherine Johnson

CURRENT STATE OF DIVERSITY IN TECH

Number of Women In Computer Science Over Time (Henn 2014)

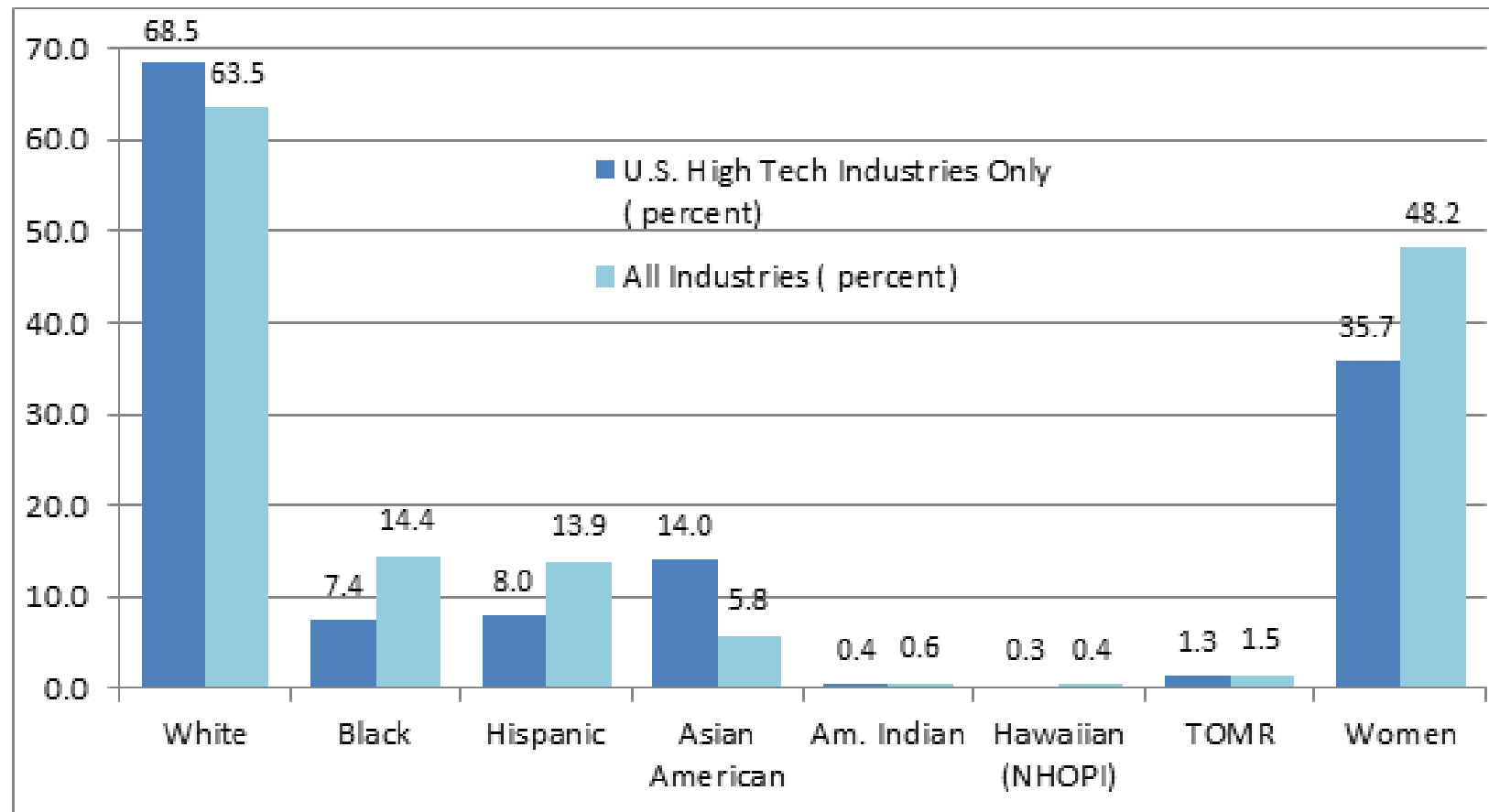Legend: Medical School | Law School | Physical Sciences | Computer science

Source: National Science Foundation, American Bar Association, American Association of Medical Colleges
Credit: Quoctrung Bui/NPR

41% of women
leave technology
companies after
10 years of experience

(from the Athena Factor)

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Equal Employment Opportunity Commission stats on race and gender in high tech (EEOC 2014)

INDUSTRY PARTICIPATION BY GENDER SEX AND RACE GROUPS
HIGH TECH VS. ALL PRIVATE INDUSTRIES

■ U.S. High Tech Industries Only (percent)
■ All Industries (percent)

	White	Black	Hispanic	Asian American	Am. Indian	Hawaiian (NHOPI)	TOMR	Women
U.S. High Tech Industries Only	68.5	7.4	8.0	14.0	0.4	0.3	1.3	35.7
All Industries	63.5	14.4	13.9	5.8	0.6	0.4	1.5	48.2

"When I walk into a room that happens to be filled with mostly white men, they're usually looking at me wondering why I'm there. That has to change."

- Shireen Mitchell

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WHAT CAN WE DO?

Let's work to increase diversity on our software teams!

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EDUCATE YOUR TEAM

- Educate your leadership and team members on the importance of diversity and inclusion

- Develop an annual or semiannual mandatory training on diversity, inclusion, equal employment opportunities

- This will help with understanding and reduce the "chances of unfavorable situations" (Forbes Coaches Council 2018)

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INCLUSIVE LANGUAGE

"language that avoids the use of certain expressions or words that might be considered to exclude particular groups of people, esp gender-specific words, such as "man", "mankind", and masculine pronouns, the use of which might be considered to exclude women"

http://www.dictionary.com/browse/inclusive-language

- Respect the language people call themselves
- Recognize different family situations
- Avoid negative or demeaning language around people with disabilities
- Avoid using statements which perpetuate stereotypes
  - E.g. "girls aren't good at math"
- Be thoughtful on what imagery you use
- Avoid idioms, jargons, and acronyms
  - If unavoidable, be open to sharing the meaning or providing a definition to help everyone understand
- Use gender-neutral terms *(hint: "guys" is not one of them)*

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BE MINDFUL OF UNCONSCIOUS BIAS

- We all have them!

- Unconscious biases are social stereotypes about certain groups that are formed outside our conscious awareness

- Often stemmed from our misconceptions around the belief "that the norms and experiences of our own social group— whether defined by race, class, gender, sexual orientation, disability, religion, or some other qualifier— are, or should be, the same for every other social group" (Jennifer Brown, *Inclusion*)
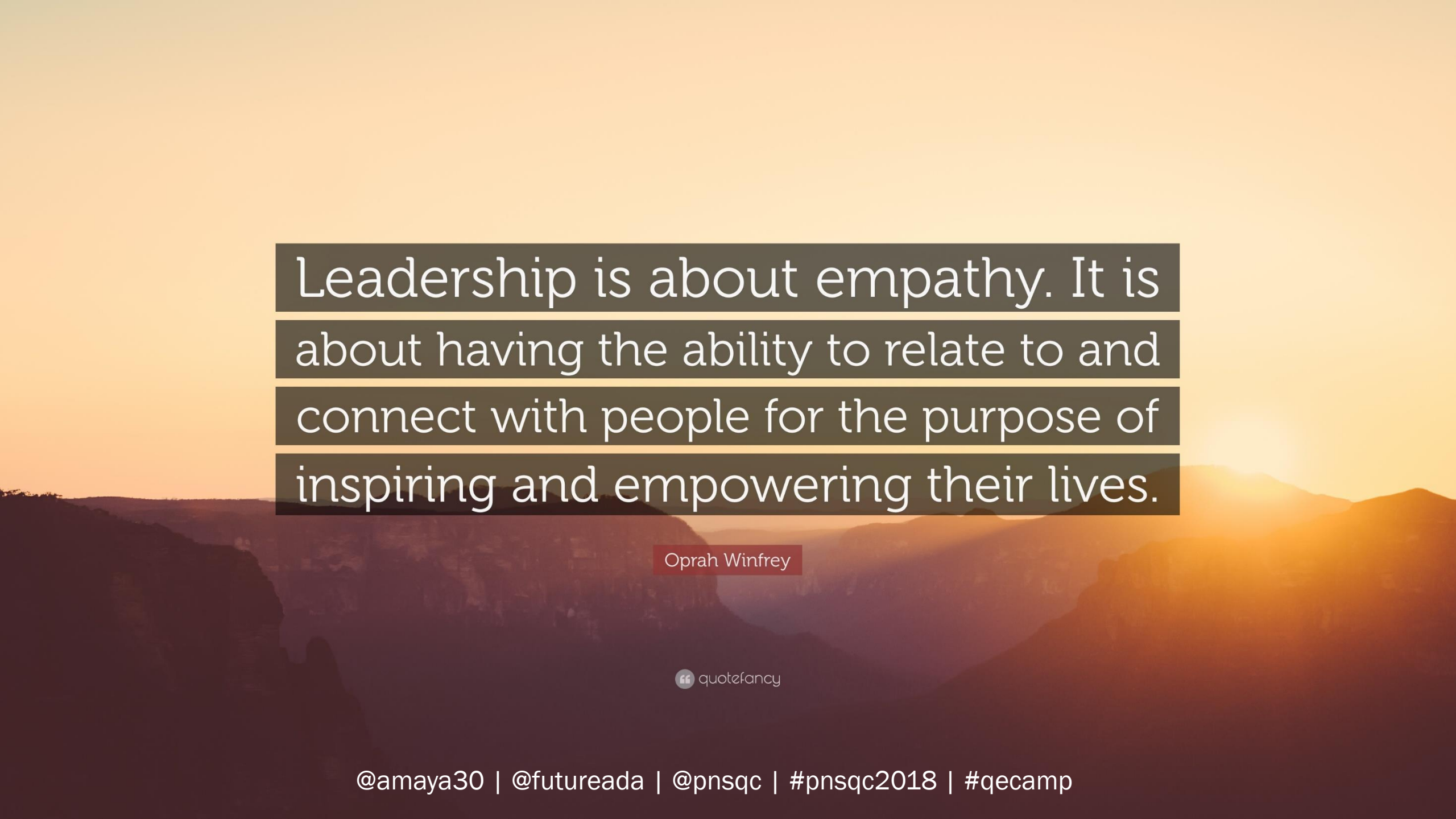
EMPATHETIC LEADERSHIP
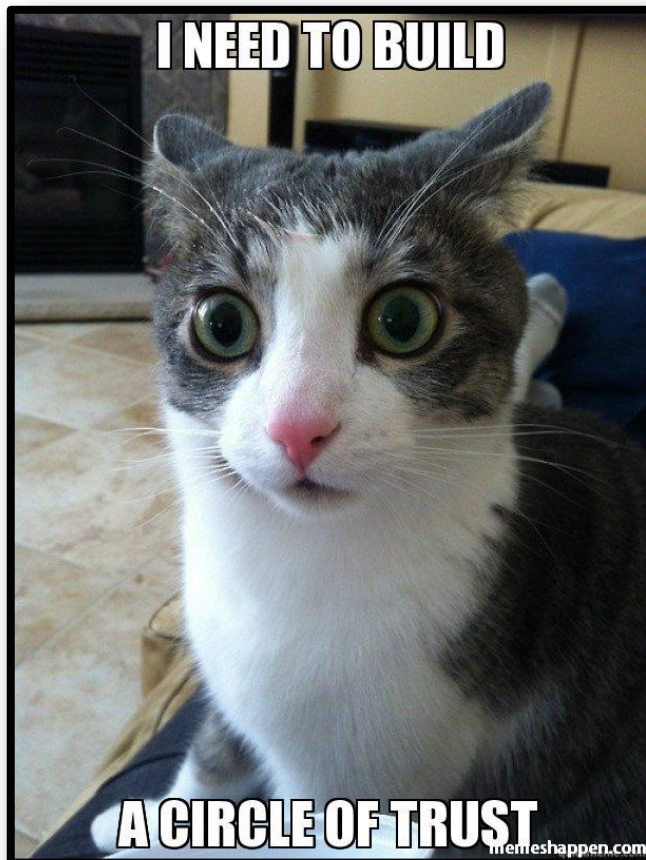
- Remember we are all people with lives, families, hobbies, passions, and emotions

- Get to know team members as people

- Create a safe space for people to bring their full selves to work

- Recognize the emotional impact on employees / coworkers when major life events happen
  - Births
  - Deaths
  - Marriage
  - Divorce

"**HIGHER EMOTIONAL QUOTIENTS HAVE GREATER SENSITIVITY AND EMPATHY, ARE RATED AS MORE EFFECTIVE, RECEIVE HIGHER PERFORMANCE RATINGS, DEVELOP HIGH-PERFORMING EFFECTIVE TEAMS, AND CREATE A HEALTHIER ... CULTURE**"

Ari Pinkus, "A Call for More Inclusive, Empathetic Leadership"

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"Leadership is about empathy. It is about having the ability to relate to and connect with people for the purpose of inspiring and empowering their lives."

Oprah Winfrey

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HIRING

- Have inclusive language in job postings and avoid problematic phrasing like "rockstar" and "ninja" which women are less likely to identify with

- Include a diversity statement on your website and/or job postings

- Reach out to underrepresented candidates via networks, community groups, career fairs, and conferences

- Have a diverse hiring panel and committee

- Standardize position qualifications and interview questions
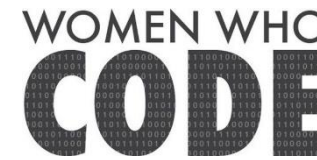
RETAINMENT

- Hold all employees to the same standard for their role

- Provide equal opportunities for promotions and raises for women and minority employees

- Ensure all employees have growth opportunities
  - Mentorship programs
  - Trainings / conferences

- Encourage a healthy work/life balance

- Offer maternal and paternal leave following a birth or adoption of a child

- Offer flexible schedules and remote options

- Zero tolerance policies for harassment and safe reporting channels

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SUPPORT COMMUNITY ORGANIZATIONS

- Women Who Code: https://www.womenwhocode.com
- Girls Who Code: https://girlswhocode.com
- The Anita Borg Institute: https://anitab.org
- Project Include: http://projectinclude.org
- Compassionate Coding: https://compassionatecoding.com
- <div>ersity: https://hirediversity.us/
- Better Allies: https://maleallies.com
- Grace Hopper Celebration of Women in Computing: https://ghc.anitab.org
- Women in Cybersecurity (WiCyS): https://www.wicys.net/
- The Diana Initiative: https://www.dianainitiative.org/
- Write/Speak/Code: https://www.writespeakcode.com/

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WRAP UP

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PACIFIC NW SOFTWARE QUALITY CONFERENCE

IT'S ALL ABOUT THE PEOPLE

- Creativity + Innovation → Software

- Software is built **BY** people and **FOR** people

- Critically important we have the people building the software represent the people who will be using our software

- Diverse team members is the best way to have broad perspectives for creative problem solving and increased innovation

- Quality software isn't just about a low bug count, it's about building the right product

NEXT STEPS
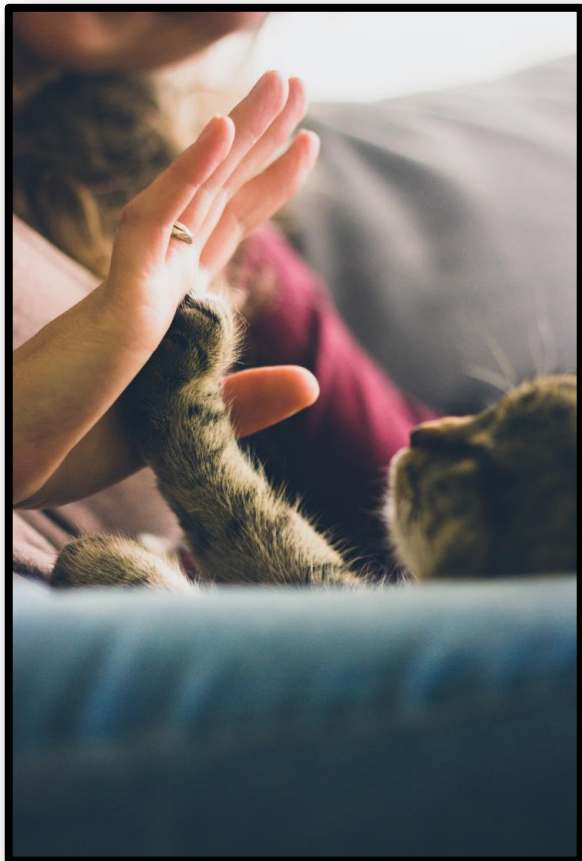
- Simple steps:
  - Use inclusive language
  - Be mindful of unconscious bias
- Bigger steps:
  - Foster an inclusive environment
  - Have strong work policies
  - Safe reporting methods
  - Empathetic leadership
- All these efforts lead to a stronger, more innovative team which will ultimately produce better software and better bottom-lines
- Help create a space where diverse individuals want to be

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HELPFUL BOOKS

- Inclusion: Diversity, The New Workplace & The Will To Change by Jennifer Brown

- The New Alpha: Join the Rising Movement of Influencers and Changemakers Who are Redefining Leadership by Danielle Harlan
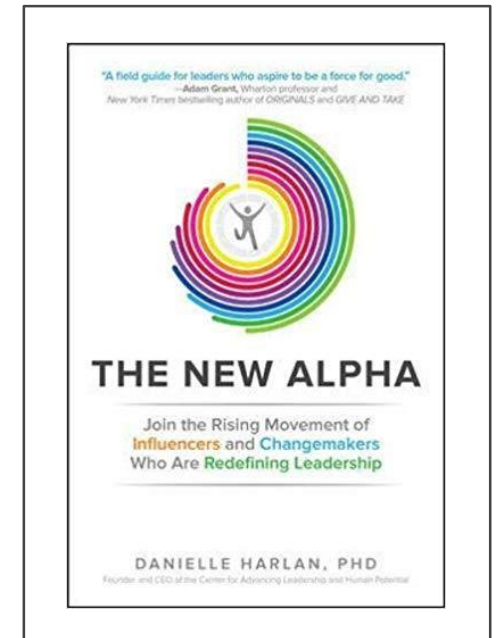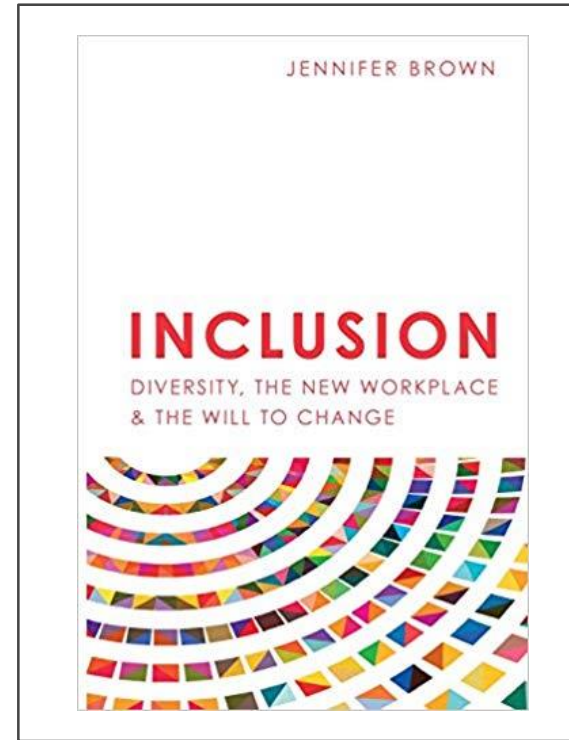
HELPFUL RESOURCES

- "The 3 Research-Backed Benefits of Diversity That Guide Our Team Growth." https://open.buffer.com/diversity-benefits/

- "An Incomplete Guide to Inclusive Language for Startups and Tech." https://open.buffer.com/inclusive-language-tech/

- "HOWTO recruit and retain women in tech workplaces." http://geekfeminism.wikia.com/wiki/HOWTO_recruit_and_retain_women_in_tech_workplaces

- Harvard Business Review: "How Diversity Can Drive Innovation." https://hbr.org/2013/12/how-diversity-can-drive-innovation

- Forbes Coaches Council: "13 Effective Ways to Educate Employees on Diversity." https://www.forbes.com/sites/forbescoachescouncil/2018/06/28/13-effective-ways-your-organization-can-educate-employees-on-diversity/#4624a51756ab

- "A Call for More Inclusive, Empathetic Leadership." https://www.nais.org/learn/independent-ideas/november-2016/a-call-for-more-inclusive,-empathetic-leadership/

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LET'S CONNECT!

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THANK YOU!