



WOMEN IN ADVANCED COMPUTING: LEVELING THE PLAYING FIELD

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ABOUT ME

- ▶ National Cathedral School for Girls
- ▶ Rutgers University BA, Spanish
- ▶ Universidad de Salamanca (fluent in Spanish)
- ▶ University of Maryland Robert H Smith School of Business, MBA eCommerce
- ▶ 25+ years in high tech and HPC



TODAY'S TALK

- ▶ Women in HPC – stats
- ▶ Does Diversity Matter?
- ▶ Diversity is Uncomfortable
- ▶ Attracting and Keeping New Talent
- ▶ Build Trust
- ▶ Be Curious!



TEXAS WOMEN IN HPC



- ▶ Texas Women in HPC brings together a diverse community of professionals in industry, academia, and government, from the advanced computing community across the state.
- ▶ The mission of TXWHPC is to provide a venue for knowledge-sharing, networking, support, and visibility for women and minorities, by engaging in initiatives to raise awareness and broaden diversity in HPC.

NOT MANY WOMEN IN HPC

- ▶ Women make up ~17% of our community
- ▶ Female attendance peaked at 16% for SC19
- ▶ SC22: 13% Female, 0.5% non-binary or other gender identity
- ▶ SC23: 14% Female, 0.5% non-binary or other gender identity*
- ▶ First paper on female participation in HPC conferences:
 - ▶ Women represent only 10% of all HPC authors

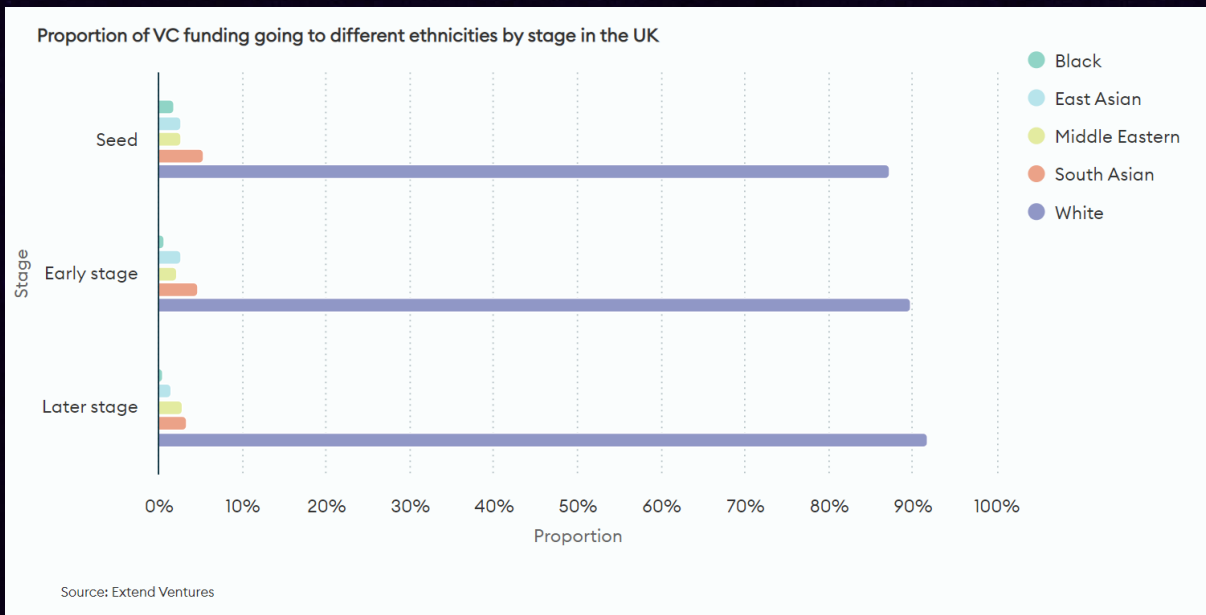


NOT MUCH DIVERSITY EITHER

- ▶ Black people make up 12% of the US workforce but only 8 percent of employees in tech jobs, and just 3% of technology executives in the C-suite are Black.
- ▶ Black students earned only 7% of STEM bachelor's degrees in 2018, compared with 10% of all bachelor's degrees
- ▶ At Intel, 28% of Intel employees are women, while 72% are men. The most common ethnicity at Intel is White (52%). 19% of Intel employees are Asian
- ▶ At Dell, 34% of employees are women (2% better than 2021). 10% of employees are Hispanic or Latino, 15% Asian, 6% Black.

TECH DIVERSITY IN THE UK

- ▶ In the UK, 26% of workers in tech are women (overall it's 50%)
- ▶ There are more BAME people in tech than the labour market as a whole, 11.8% for all occupations, and **15.2% for tech**. But 20% of people in the UK are BAME.



- ▶ In the UK, BAME Entrepreneurs received a total of **1.7% of VC investment**. On the other hand, 76% of VC investment went to all white founding teams.
- ▶ **43% of VC funding** went to teams where at least one founding member was from an elite university, defined as the **University of Cambridge, the University of Oxford, Harvard University, or Stanford University** including their business schools

DOES DIVERSITY MATTER?



“This is a business decision. By 2025, we are going to be a millennial and Generation Z workforce [that is] inclusive and diverse. If your business is not, you are going to get bottom-of-the-barrel workers.”

Increasing diverse participation
is not a women's issue or an
issue that is *only* relevant to
women and other
underrepresented groups



WHY DIVERSITY MATTERS - ECONOMICS

- ▶ McKinsey found that gender-diverse companies are **25% more likely to outperform** their non-gender diverse counterparts.
 - ▶ This is up from 21% in 2017 and 15% in 2014
 - ▶ Even in online collaboration, teams who communicated a lot, participated equally, and possessed good “emotion-reading” skills worked smarter.
- ▶ Ethnically diverse companies are 36% more likely to outperform their non-diverse peers



NOBEL PRIZE IN ECONOMICS

- ▶ Claudia Goldin has documented the journey of American women from holding jobs to pursuing careers
- ▶ **Women have outpaced men in education, poured into the labor force, and found meaning in their work.**
- ▶ Yet women still lag behind men in pay, in their workforce participation, and the share who reach the top of professions.
- ▶ **She has disproved the conventional wisdom that women are paid less because they choose lower-paying careers.**
- ▶ “We’re never going to have gender equality until we also have couple equity,”



<https://www.nytimes.com/2023/10/11/upshot/claudia-goldin-nobel-prize.html>

WHY DIVERSITY MATTERS – THE FUTURE



Who is on your bench?

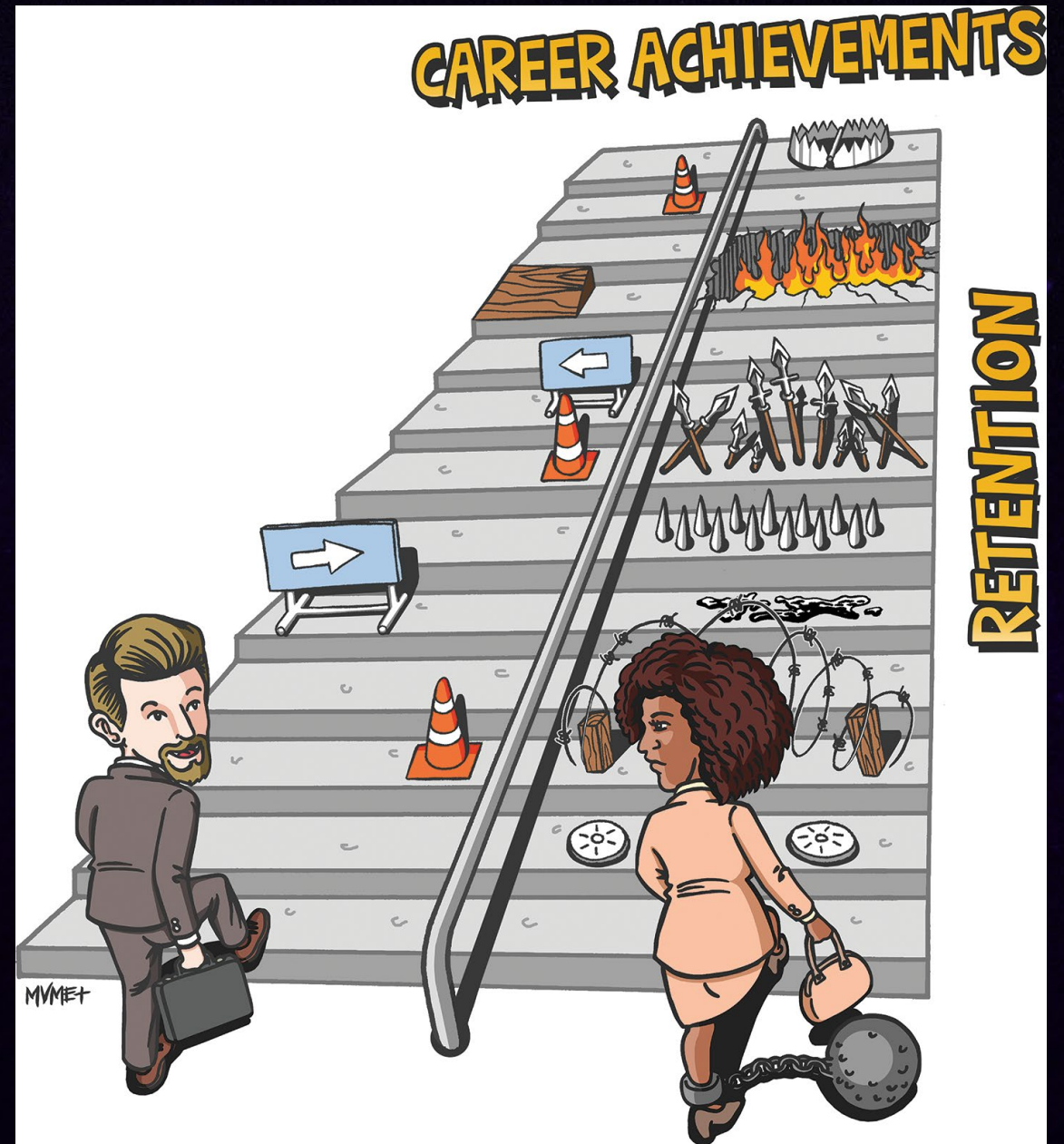
- ▶ Organizations that are developing more high-potential leaders from diverse backgrounds are also:
 - ▶ 11X more likely to have high-quality leaders overall.
 - ▶ 10X more likely to have a strong leadership bench.
 - ▶ 3.2X more likely to engage and retain top talent.

LEGAL/POLITICAL ISSUES

Image From: **Scientists from historically excluded groups face a hostile obstacle course**

Nature Geosciences
23 December 2021

<https://www.nature.com/articles/s41561-021-00868-0>



LEGAL/POLITICAL ISSUES – WOMEN’S RIGHTS

- ▶ There is a strong link between **reproductive rights and workforce participation.**
- ▶ In a global market, an empowered worker is one who can migrate.
- ▶ Researchers estimated that restrictions on abortion cost states **\$105 billion a year**
- ▶ Lifting these restrictions could add **half a million women** to the workforce.



LEGAL/POLITICAL ISSUES – THIS TALK!



Leila Saidane/The Texas Tribune

- ▶ State Universities in Texas had to **close their diversity, equity, and inclusion offices**, which were used to try to boost faculty diversity and *help students from all backgrounds succeed*.
- ▶ It will “undermine the ability of educators and administrators to create a diverse and welcoming campus and threaten the quality of higher education in Texas.”
- ▶ It “negatively impacts student outcomes,” such as retention and graduation rates for students from underrepresented communities.



FIRST: ADMITTING THERE'S A PROBLEM

- ▶ “If I have to hire a ‘diverse’ candidate, won’t the candidates be less qualified?”
- ▶ “The HPC community cannot influence diversity – the problem is elsewhere”
- ▶ “I don’t think we deliberately treat women differently, but I think it’s very easy for us to implicitly assume that a decent female student will take a more applied path, while we force her male colleague to start programming.”



“ADDRESSING DIVERSITY” IS NOT QUICK

- ▶ It’s a multi-level challenge. Start younger, and continue after people are hired.
 - ▶ Teenagers (or younger): sponsor summer camps & offer paid internships, apprenticeships
 - ▶ *Only 5% of HS students in Texas take CS*
 - ▶ Recent graduates: recruit in new places, provide training
 - ▶ Current employees: support engagement & mentorship



“ADDRESSING DIVERSITY” IS NOT QUICK

- ▶ A commitment to increasing/improving your organization's diversity **has to come from the top**, with allies at all levels. And it must really be a commitment, not just lip service. It has to be baked into your culture.
- ▶ Applicants are looking for people who look like them, who are **succeeding** in the company.
- ▶ Inclusion and equity work are actually about **reorganizing the world around us — and re-distributing power and resources**. It's hard work.

DIVERSITY IS *UNCOMFORTABLE*



- ▶ Homogenous teams just *feel* more effective.
- ▶ **Working on diverse teams produces better outcomes** because it's harder -- no pain, no gain.
- ▶ Requires a strong sense of team and **organizational inclusion.**
- ▶ The debate and unfamiliarity that come with diversity are an **important catalyst for creativity** and deep thinking

RECRUITING: HOW TO ATTRACT DIVERSE TALENT

- Have a Diverse talent acquisition team
- Ensure inclusive wording in job descriptions
- No-name Resume Screening
- Emphasize value-based hiring
- Give a sample work test
- Standardize interviews
- N8 CIR Checklist



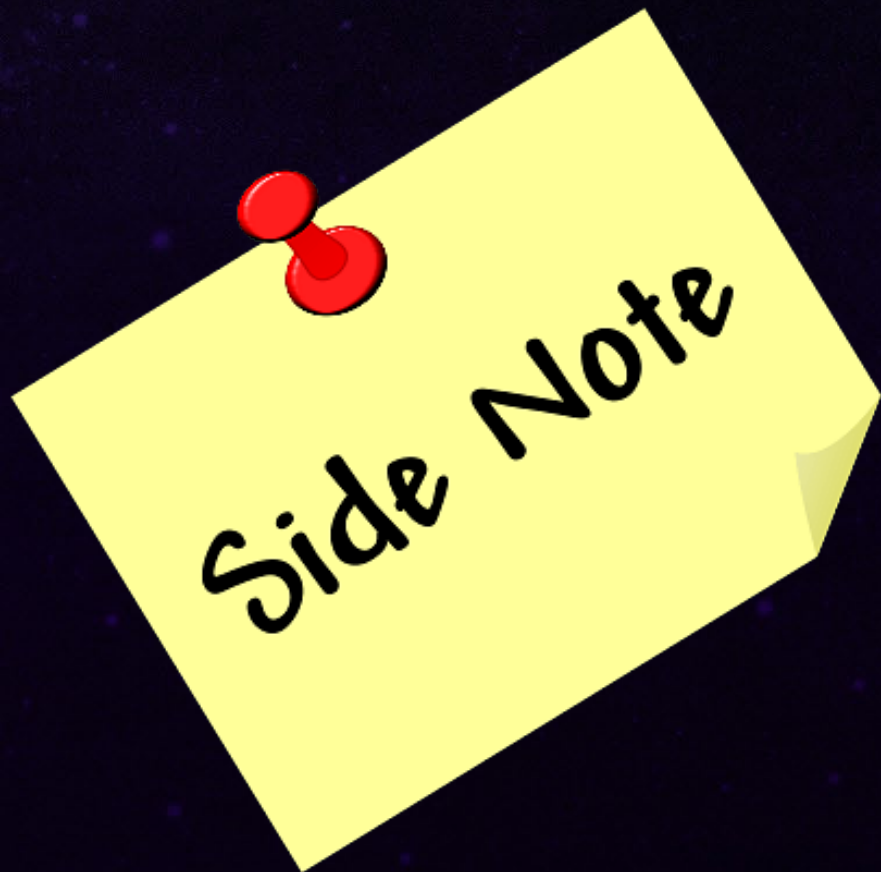
<https://n8cir.org.uk/news/diversity-checklist/>

WHERE TO FIND TALENT:

- Society of Women Engineers - <http://societyofwomenengineers.swe.org/>
- National Society of Black Engineers - <http://www.nsbe.org/home.aspx>
- MAES – Latinos in Science & Engineering <http://mymaes.org/>
- National Girls Collaborative Project <https://ngcproject.org/>
- Girls Who Code – <http://www.girlswhocode.com>
- Diversify Tech - <https://www.diversifytech.com/>
- Diversity in Tech UK: <https://www.diversityintech.co.uk/>
- Women in HPC job listings: <https://womeninhpc.org/community/jobs>
- Broaden your recruiting & collaborations to include HBCUs, MSIs, Tribal Colleges in your area



WOMEN: APPLY FOR THAT JOB!



- ▶ Organizations expect new people to grow into the position. They want new hires to ask a lot of questions, seek out mentoring, and even make a few mistakes as they get acclimated to a role.
- ▶ Look for positions that will stretch you, not ones where you can already tick all the boxes. Other people have had to learn on the job too – they don't know everything.
- ▶ **Ignore the Imposter Syndrome (or Discriminatory Gaslighting, or your own inner demons) and APPLY!**

“CULTURE ADD”

- ▶ Move away from “Culture Fit” and towards “**Culture Add**” – Look for people who are different and will add diversity to your team.



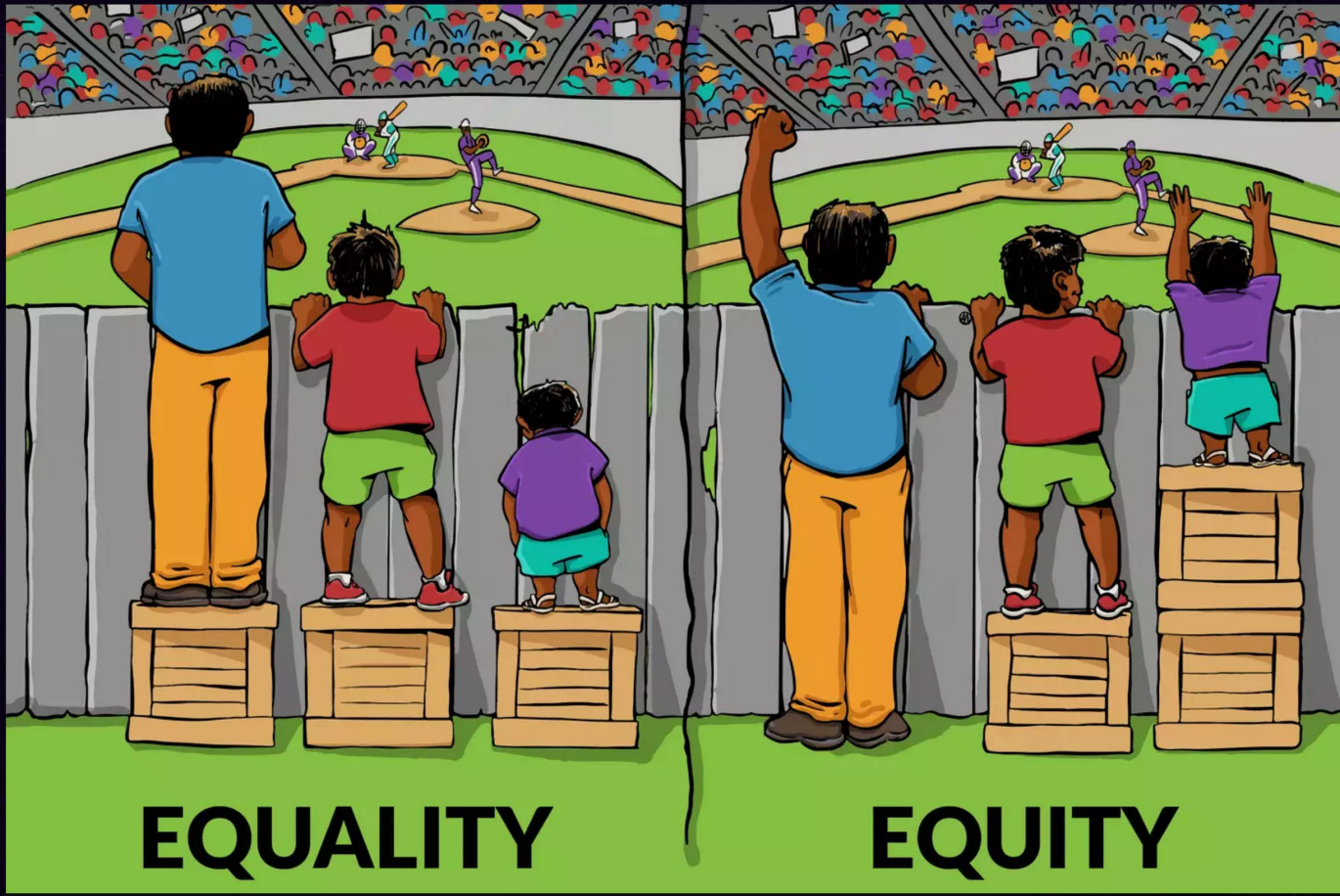
- ▶ Engagement affects the bottom line. Engaged employees generate more sales.
- ▶ Gen Z is 57% more likely to say that diversity, culture, and environment are important.

THEY'RE HERE!...

NOW WHAT?



EQUITY IN THE WORKPLACE



INTERACTION INSTITUTE FOR SOCIAL CHANGE | ARTIST: ANGUS MAGUIRE

- ▶ Equality means that all employees have access to the same opportunities, resources, and treatment.
- ▶ **Equity** recognizes that each person has different circumstances and allocates the exact resources and opportunities needed to reach an equal outcome.
- ▶ Companies with highly engaged employees are more productive and more profitable.
- ▶ Equity improves retention and reduces burnout.

MAKING YOUR WORKPLACE MORE EQUITABLE

- ▶ **Hire for skills, not degrees.** Can a candidate prove their qualifications with experience and skills?
- ▶ **Accommodate health conditions or disabilities.** Remote work is just one possible accommodation. Every person is different, so this will vary based on individual needs.
- ▶ **Offer flexible work schedules.** What roles at your company could be accomplished with flexible hours?
- ▶ **Provide training during work hours.** Record presentations so any employees who can't attend the live session can watch the replay.

<https://insightglobal.com/blog/equity-in-workplace/>

NEXT STEP: INCLUSION

- ▶ Diversity and Equity are good, but without inclusion, you're left with a room full of people without connectedness and without the necessary relationships that promote belonging.
- ▶ Inclusion ties it all together. It promotes meaningful contributions, and it allows for the use of all skills, strengths, and abilities. It develops a sense of identity and belonging.
- ▶ Inclusion ensures that the individual feels appreciated, valued, respected and involved.



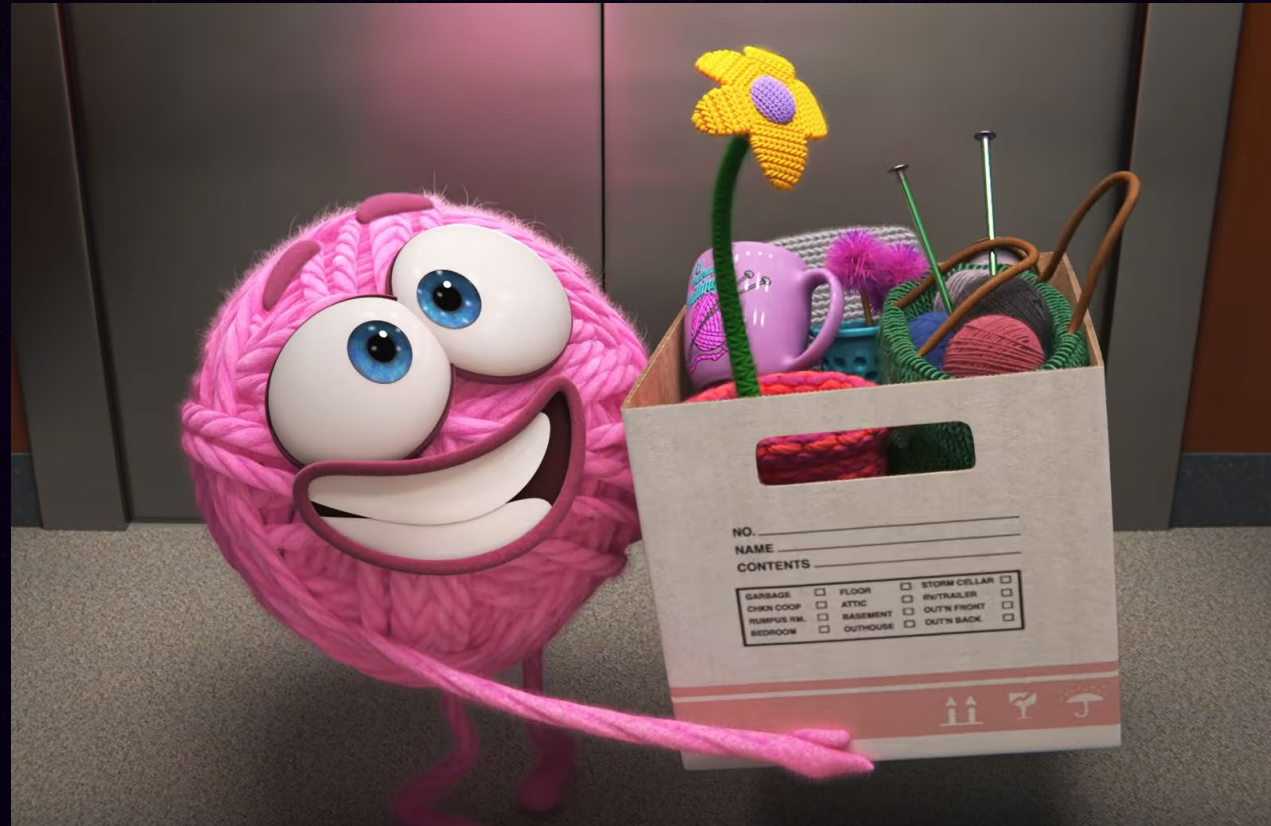
INCLUSION WILL CHALLENGE YOUR BIASES

Unconscious bias is a hidden preference or predisposition for or against something

- Governs our pre-existing beliefs and attitudes towards particular groups
- More problematic in workplaces dominated by a single gender or group
- Inadvertently disadvantages those who are in an underrepresented group



INVITE PEOPLE TO BE THEIR AUTHENTIC SELVES AT WORK



<https://www.youtube.com/watch?v=B6uulHpFkuo>

DIVERSITY -> EQUITY -> INCLUSION -> RETENTION



RETENTION EFFORTS – MENTORS & SPONSORS

- ▶ A mentor is someone who shares knowledge and provides guidance. A sponsor is someone who actively promotes growth, provides access to opportunities at work, and/or advocates for career advancement
- ▶ “Women of color do not need special accommodations to excel (not even close); what we need is the **unwavering belief in our potential to succeed** and being offered opportunities to prove our capabilities”
- ▶ “Black women are more ambitious and more likely to say that they want to advance in their companies than their white women counterparts but are less likely to find mentors who will aid their climb up the corporate ladder,”

ACTIVE SPONSORSHIP

- ▶ Sponsoring someone's career means mentioning their name when projects or opportunities arise.
- ▶ **It means advocating for someone to get a raise or to get sent a job description.**
- ▶ With intentionality, it can result in boosting the careers of people who sometimes do not get as many opportunities as others.
- ▶ Think about whose career you will talk up while you cruise the exhibit hall and attend the many events we all use to build our network.

The screenshot shows an Excel spreadsheet with the following data:

Sponsee name	Current role	Relationship to me	Contact info	Professional goals	Conversation Notes	What I did to sponsor	Date
Vint Cerf	Father of internet	Friend		Retire to a life of surfing	07/06/23 Needs to learn how to surf 8/29/23 New goal: conference speaking	Introduced Vint to my friend	7/10/23
Bugs Bunny	Comedian	Friend of Friend		TEDx comedy act, learn HPC		Connected Bugs with SC23	7/15/23

RETENTION: HPC CONFERENCES ARE NOT 'WELCOMING'



- ▶ People of different races, ethnicities, or genders have different inclusivity experiences at HPC conferences
- ▶ Perceptions of how welcoming HPC conferences and events were indicated a lack of understanding of the experiences of white women and women of color, as well as men of color.

▶ Different experiences of inclusivity at HPC conferences impact attendees' thoughts of ***leaving the HPC field***

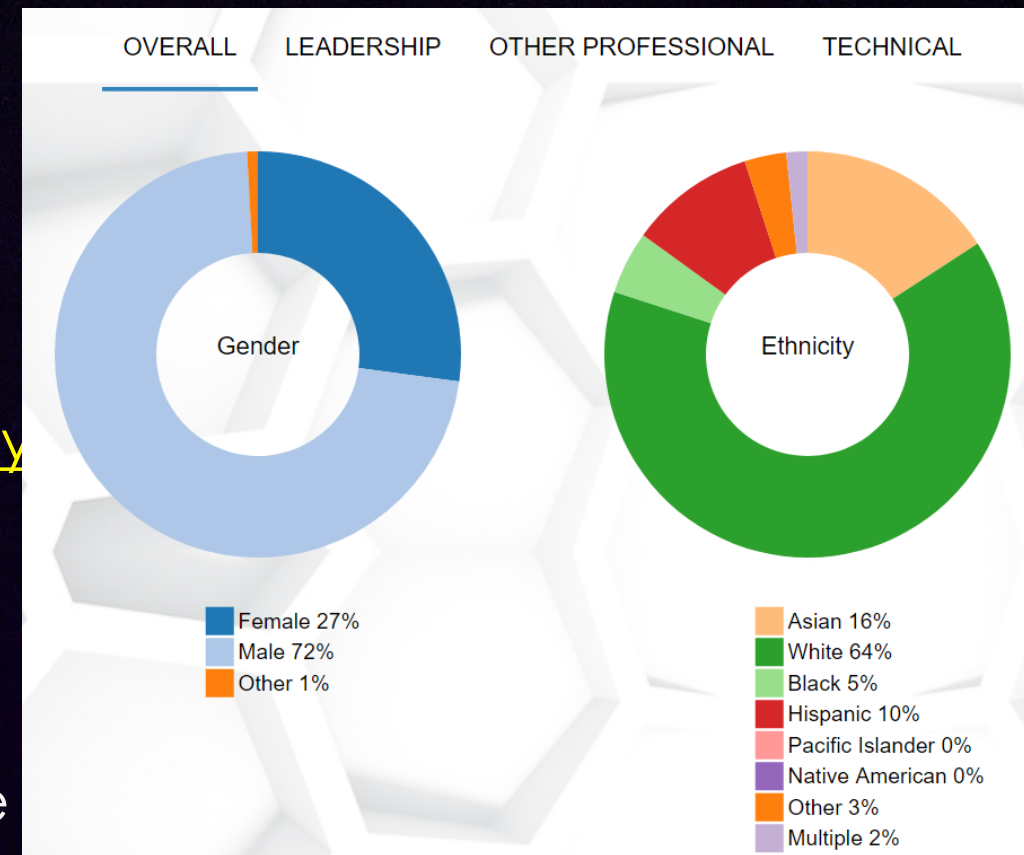
▶ Paper on Inclusivity at HPC conferences: <https://dl.acm.org/doi/10.1145/3569951.3597580>

ACCOUNTABILITY IS KEY

- ▶ In order to foster fair, inclusive workplaces, diversity initiatives must incorporate accountability.
- ▶ They must be more than “colorful window dressing” that unintentionally angers a substantial portion of the workforce.
- ▶ Diversity policies must be researched, assessed for effectiveness, and implemented with care so that everyone in the workplace can feel valued and supported.

DIVERSITY REPORTING

- ▶ Create a diversity page
 - Google's example at www.google.com/diversity
 - TACC's example <https://www.tacc.utexas.edu/about/diversity>
 - (We are surveying again this year)
 - You already know who works for you and where they come from; just start counting
 - Provide the data in aggregate to protect the individuals behind the data from a public identification that they may not yet be ready to make



WHAT ELSE CAN YOU DO?



- ▶ Pronounce Names Correctly
 - ▶ Be comfortable asking for correction
- ▶ Look around – notice the demographics of the room
 - ▶ What can I do differently? Whose stories and viewpoints are we including and whose are missing?
- ▶ Be an Ally!
 - ▶ Speak up when you see something, or report it
- ▶ Look for and/or Provide Mentorship and Sponsorship
- ▶ Review family-friendly working policies (and hybrid work policies)
 - ▶ And don't penalize women for using them

THE IMPORTANCE OF MALE ALLIES



THE IMPORTANCE OF MALE ALLIES

- What prevents men from speaking up for gender equality?
 - *Fear and Apathy*
- **Speak out**, be an advocate, even when it's uncomfortable
- **Share opportunities** (pass up and pass on)
 - *Avoid "Manels"*
- **Acknowledge** the accomplishments of women and people who are underrepresented in HPC at important meetings
- **Volunteer** for non-promotable tasks (taking notes, scheduling meetings)
- **Sponsor someone** – introduce them to the experiences and opportunities that can help them succeed

BE THE PEBBLE IN THE SHOE

- ▶ If you feel strongly enough, be the pebble in the shoe. Advocate for diversity programs, modifications to hiring practices, and other activities to improve the workplace.
 - ▶ Figure out which angle resonates with management
Is it financial? Is it competitive advantage? Planning for the future of the business?
- ▶ Be careful – sometimes the pebble has ripple effects, and sometimes it gets thrown away!



READ, RESEARCH, LISTEN

- ▶ Newsletter: Ruchika Tulshyan – Inclusion is Leadership newsletter -- <https://www.rtulshyan.com/>
 - ▶ Her book is called *Inclusion on Purpose*
- ▶ BCG: How to Advance Gender Diversity in the Workplace
 - ▶ <https://www.bcg.com/featured-insights/how-to/advance-gender-diversity>
- ▶ Bizwomen.com
- ▶ WomeninHPC.org
- ▶ NCWIT – National Center for Women & IT – ncwit.org

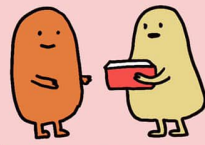


I LOVE DIVERSITY

BECAUSE IT ALLOWS ME TO:

LEARN COOL THINGS

THIS IS A GAME FROM MY COUNTRY.



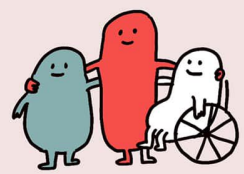
DISCOVER AMAZING NEW FOODS...



...AND MUSIC, BOOKS, MOVIES, DANCES, ART AND MORE



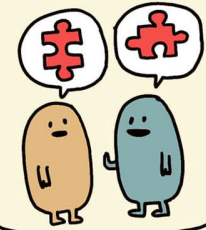
MEET NEW FRIENDS



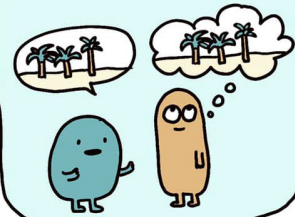
OPEN UP MY MIND TO NEW IDEAS



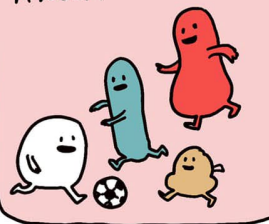
EXPAND MY KNOWLEDGE



TRAVEL WITHOUT LEAVING HOME



AND FIGURE OUT NEW WAYS TO EXPRESS MYSELF.



DIVERSITY IS A LOT MORE FUN!

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<https://www.txwomeninhpc.org/>



<https://womeninhpc.org>

Thanks!

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Facebook: <https://www.facebook.com/groups/txwhpc>

