Inclusive Interviewing in Tech:
How to create an inclusive hiring process

Jill Bender, Software Engineer

"How do I hire more ___?"

veterans

Black people

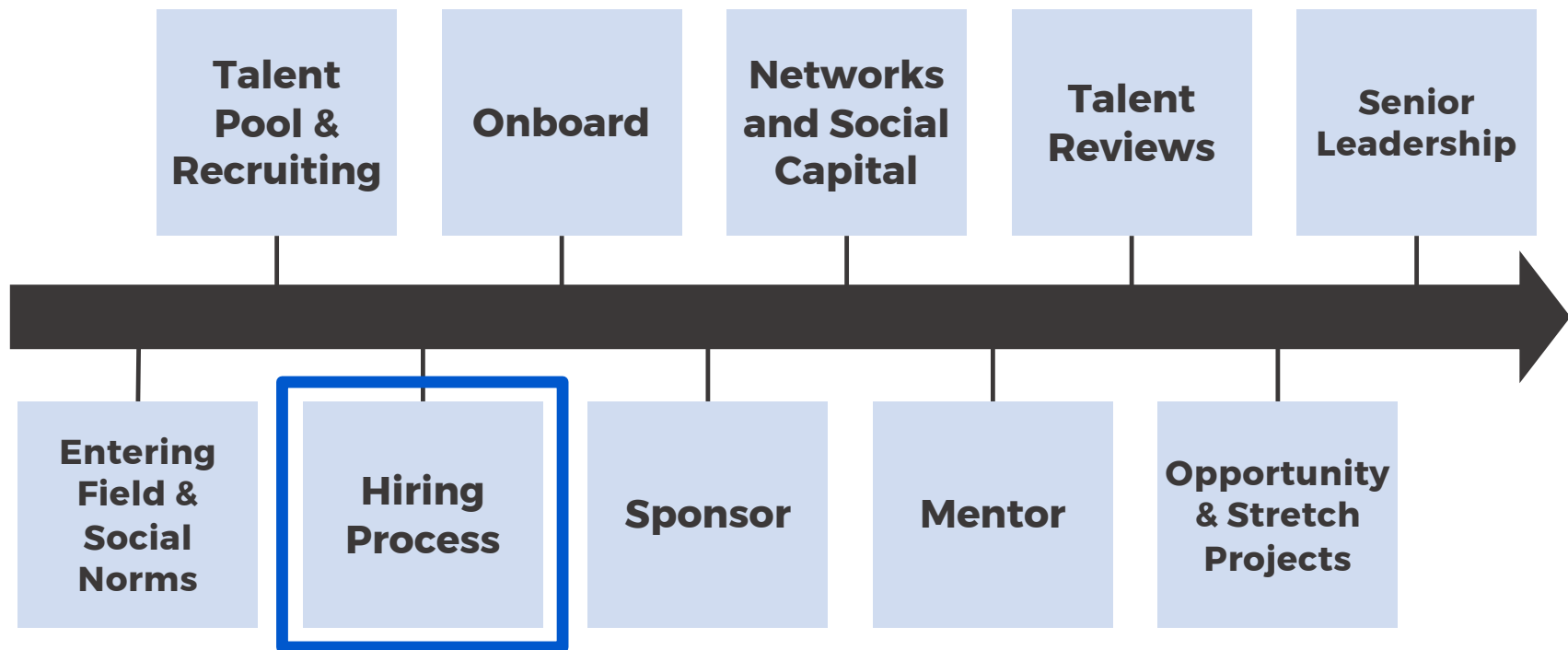Asian American and Pacific Islanders

Hispanic and LatinX people

women

parents

people with disabilities

neurodiverse people

LGBTQ+ employees

NANOG

Jill Bender

The Problem

Talent Pool & Recruiting

Onboard

Networks and Social Capital

Talent Reviews

Senior Leadership

Entering Field & Social Norms

Hiring Process

Sponsor

Mentor

Opportunity & Stretch Projects

NANOG

Jill Bender

Overview

- Part 1: History of Bias in Hiring

- Part 2: Understanding Bias in Hiring

- Part 3: Best Practices for Inclusive Interviews

- Part 4: Building an Inclusive Hiring Culture

NANOG™

Jill Bender

Part 1:
History of Bias in Hiring

NANOG™

Dorothy Vaughan

Mary W. Jackson

Katherine Johnson

NANOG™

Patsy Simmers, holding ENIAC board; Gail Taylor, holding EDVAC board; Milly Beck, holding ORDVAC board; and Norma Stec, holding BRLESC-I board.
U.S. Army/ARL Technical Library Archives

Stereotype of the tech guru

- Tech interviews shifted to rely on logic and math puzzles.

- The selection criteria lead to overrepresentation of "antisocial", "mathematically inclined", and "male" candidates.[1]
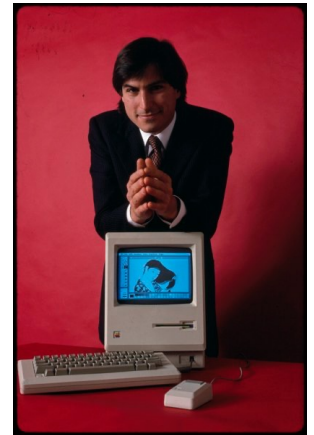
[1] Ensmenger, N. (2015, January). "Beards, Sandals, and Other Signs of Rugged Individualism": Masculine Culture within the Computing Professions. Osiris, 30(1), 38–65. https://homes.luddy.indiana.edu/nensmeng/files/Ensmenger2015.pdf

Photo attribution: Steve Jobs and Macintosh computer, January 1984, by Bernard Gotfryd via Library of Congress commons.wikimedia.org
William Henry Gates III in 1977 Albuquerque, New Mexico police department [Public domain], via Wikimedia Commons

NANOG

Jill Bender

Tech Sector Job Interviews Assess Anxiety, Not Software Skills

July 14, 2020

NC STATE UNIVERSITY **News**

Chris Parnin | cjparnin@ncsu.edu

Matt Shipman | matt_shipman@ncsu.edu

Photo credit: Christina Morillo.

https://news.ncsu.edu/2020/07/tech-job-interviews-anxiety/
Behroozi, M., Shirolkar, S., Barik, T., & Parnin, C. (2020). Does stress impact technical interview performance? Proceedings of the 28th ACM Joint Meeting on European Software Engineering Conference and Symposium on the Foundations of Software Engineering.
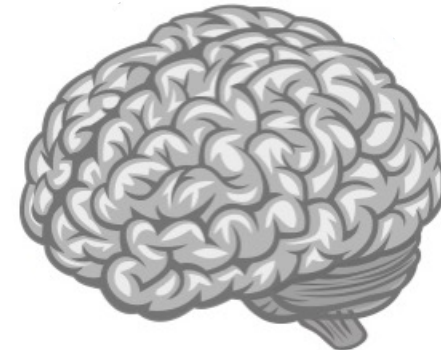
NANOG

Jill Bender

Part 2: Understanding Bias in Hiring

NANOG™

Why do we interview?

- **For the company**
  To predict success in a role

- **For the candidate**
  Evaluate the role and company to determine if they
  will thrive in the work environment

NANOG™

Jill Bender

What is **cognitive bias**?

Systematic pattern in thinking that often doesn't follow logic and reasoning.

N A N O G™

Jill Bender

"But I'm not biased"

- Perceiving yourself as objective is correlated with showing even more bias.[1]

- We all have biases.

[1] Uhlmann, E. L., & Cohen, G. L. (2005). Constructed criteria: Redefining Merit to Justify Discrimination. Psychological Science, 16(6), 474-480.

NANOG™

Jill Bender

Common Biases

Conformity Bias	Change your opinion based on group opinion or peer pressure
Affinity Bias	Favoring people with similar interests or backgrounds
First Impression Bias	Adding undue importance to an initial piece of information

NANOG™

Jill Bender

Common Biases

Contrast Error	Comparing candidates instead of accurately evaluating individual skills
Education & Credential Bias	Overlooking abilities based on school or previous job

NANOG™

Jill Bender

Exercise:
What kinds of biases show up in these statements?

- "I would have a beer with them."

- "Kim told me the candidate wasn't a good fit from the last interview, and I trust Kim."

- "This person doesn't have the same command line skills as the last person in this role."

NANOG

| Conformity |
| Affinity |
| First Impression |
| Contrast Error |
| Education & Credential |

Part 3:
Best practices for inclusive interviews

NANOG™

Guide to inclusive interviews

- **Welcoming** culture
- **Fair** hiring criteria
- **Repeatable** process
- **Consistent** evaluation standards

NANOG™

Jill Bender

Best practice:
Create environment of belonging

- Reduce stereotype threat
  - Remove stereotypically male posters, decorations[1]
  - Avoid a homogenous interview panel[2]
  - Don't call attention to race or gender in hiring process

[1] Cheryan, S., Plaut, V. C., Davies, P. G., & Steele, C. M. (2009). Ambient belonging: How stereotypical cues impact gender participation in computer science. Journal of Personality and Social Psychology, 97(6), 1045–1060. https://doi.org/10.1037/a0016239
[2] Women in Tech The Facts, NCWIT (2016) https://wpassets.ncwit.org/wp-content/uploads/2021/05/13193304/ncwit_women-in-it_2016-full-report_final-web06012016.pdf

NANOG™

Jill Bender

Best practice:
Clearly Define Criteria

Myth: Improving diversity means "lowering the bar"

NANOG™

Jill Bender

Best practice:
Clearly Define Criteria

- Create a measurable scorecard

- Use consistent criteria to assess <u>every</u> candidate

- All interviewers should agree

- Track areas of potential bias

NANOG™

Jill Bender

Best practice:
Clearly Define Criteria: Scorecard

Skill	X	👎	👍	★	Explanation
Communication			x		Described their…
Implementation Quality			x		The classes were factored well…
Algorithmic Thinking			x		Demonstrated the ability to g…
Testing		x			Failed to write…
Collaboration			x		Described a ti…

NANOG™

Jill Bender

Best practice:
Skills based assessments

- Companies that don't use whiteboard interviews hire more Black and Latinx women technologists[1]

- Review you're not accidentally testing performance anxiety or speed
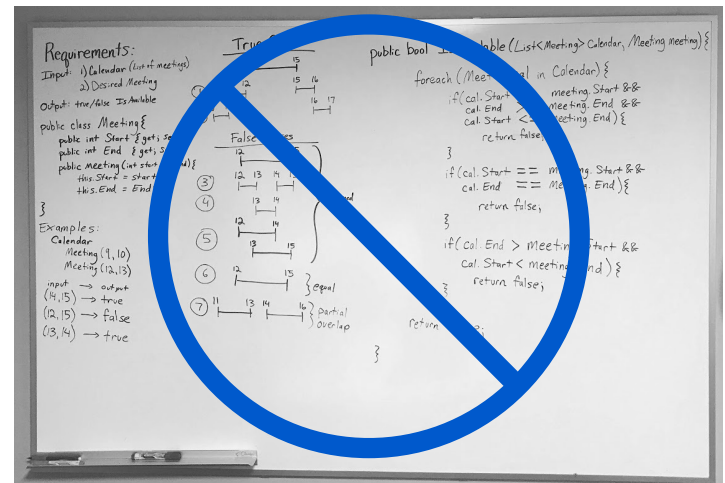
[1] https://anitab.org/wp-content/uploads/2022/12/AnitaB_2022_Design_Final-Digital_update.pdf Pg. 16

NANOG™

Jill Bender

Best practice:
Skills based assessments

- Measure actual, current job skills

- All candidates must complete assessment

- Avoid long take-home assignments

- Examples:

  - Small coding task, Pair programming, Debugging, Design a system

NANOG™

Jill Bender
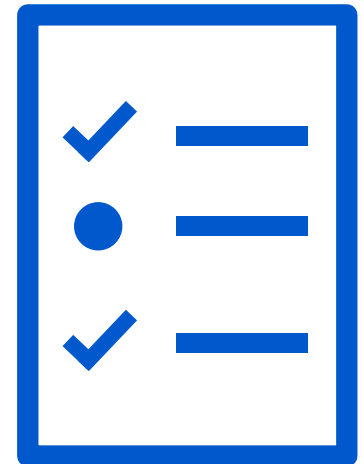
Best practice:
Standard interview format

- Same format for every candidate

- Keep track of time

NANOG™

Jill Bender

Best practice:
Standard interview format

Start	Role	Behavioral	Skills	Close
5 mins	10 mins	15 mins	20 mins	10 mins
Intro & Interview Format	Gather details for position	Problem Action Result	Technical Assessment	Questions

NANOG™

Jill Bender

Best practice:
Independent feedback

- Interviewers submit separately before meeting

- Prevents biasing other interviewers' assessments

NANOG™

Jill Bender

Best practice:
Consistent evaluation

- Avoid introducing new criteria

- Same standards for every candidate

"~~technical enough?~~"

NANOG™

Jill Bender

Part 4:
Building an inclusive
hiring culture

NANOG™

Culture

- Process doesn't fix everything

- Encourage inclusive team environment

Jill Bender

Language Matters

Instead of: **Use:**

Instead of:	Use:
"Culture Fit"	"Culture Add"
"Diverse Hire"	"Underrepresented"
"The Ideal Candidate"	"Candidate"

NANOG™

Jill Bender

Build a team of trust

- Appropriately engage co-workers when you notice possible bias

- Remind team of agreed-upon criteria

- Use personal stories

- Ask questions and listen

Jill Bender

Summary

- Rethink interview norms

- We are all biased, but systems and consistency can block bias

- Building inclusiveness through the hiring process is a team effort

NANOG™

Jill Bender

Thank you

Questions? Comments?
https://www.linkedin.com/in/jill-bender/

To learn more:
AnitaB.org Top Companies Report
National Center for Women & Information Technology
(NCWIT) Women in Tech: The Facts
Nathan Ensmenger The Computer Boys Take Over

NANOG™

Additional Resources

NANOG™

Jill Bender

Research:

- Ensmenger, N. (2015, January). "Beards, Sandals, and Other Signs of Rugged Individualism": Masculine Culture within the Computing Professions. *Osiris*, *30*(1), 38–65. https://homes.luddy.indiana.edu/nensmeng/files/Ensmenger2015.pdf

- McNamara, W. J. (1967). "The Selection of Computer Personnel: Past, Present, Future". *Proceedings of the Fifth SIGCPR Conference on Computer Personnel Research - SIGCPR '67* https://dl.acm.org/doi/pdf/10.1145/1142662.1142667

NANOG™

Jill Bender

Research:

- Uhlmann, E. L., & Cohen, G. L. (2005). Constructed criteria: Redefining Merit to Justify Discrimination. Psychological Science, 16(6), 474-480.

- McNamara, W. J. (1967). "The Selection of Computer Personnel: Past, Present, Future". *Proceedings of the Fifth SIGCPR Conference on Computer Personnel Research - SIGCPR '67* https://dl.acm.org/doi/pdf/10.1145/1142662.1142667
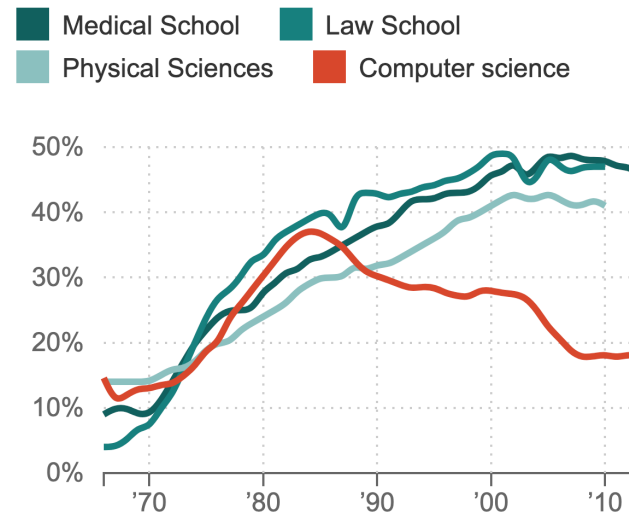
NANOG

Jill Bender

Articles & Books

- https://hbr.org/2016/02/a-scorecard-for-making-better-hiring-decisions

- https://hbr.org/2019/06/how-to-reduce-personal-bias-when-hiring

- https://www.kateheddleston.com/blog/improving-diversity-does-not-mean-lowering-the-bar

- https://anitab.org/research-and-impact/top-companies/2022-results/

NANOG

Articles & Books

- https://www.smithsonianmag.com/science-nature/history-human-computers-180972202/

- https://www.nytimes.com/2019/02/13/magazine/women-coding-computer-programming.html

- Nathan L. Ensmenger (2012). The Computer Boys Take Over. The MIT Press. https://mitpress.mit.edu/9780262517966/the-computer-boys-take-over/

- Chang, E. (2019). *Brotopia*. Penguin USA. https://www.penguinrandomhouse.com/books/547571/brotopia-by-emily-chang/

NANOG

Jill Bender

Articles & Books

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

■ Medical School   ■ Law School
■ Physical Sciences   ■ Computer science

NANOG™

Jill Bender

Other Resources

- https://github.com/poteto/hiring-without-whiteboards
- Women in Tech: The Facts (2016 Uptdate) NCWIT
  https://ncwit.org/resource/thefacts/

NANOG™

Jill Bender