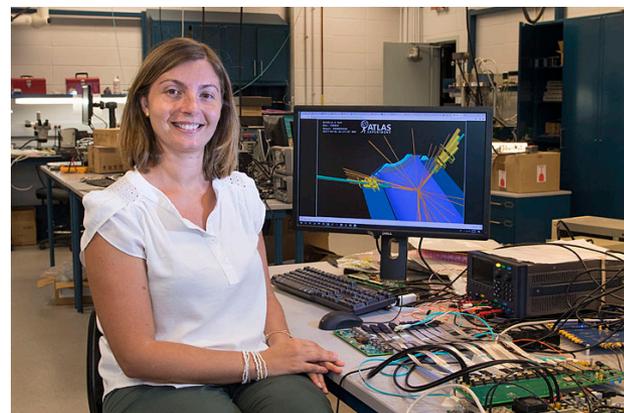
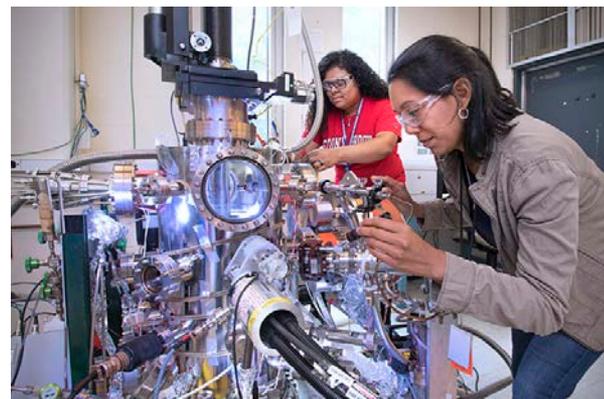




# She Wins – We Win: The Criticality of Supporting Women in STEM and Innovation

## *Today's Goal: Awareness and Action*

- Awareness
  - Provide research based studies to demonstrate the issues impacting women in STEM
  - Share impact of these challenges on STEM workforce
- Opportunities
  - To be a model in transforming STEM culture for women
  - To gain more from existing and future STEM workforce
- Action
  - Organizational strategies
  - Individual strategies



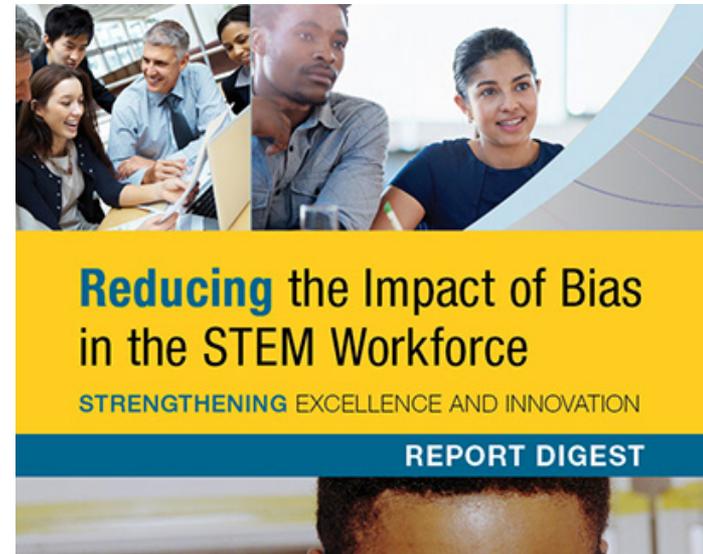
## A National Imperative

- America must accelerate efforts to engage, inspire, develop, and advance diverse talent in STEM fields, especially by reducing the impact of bias where it exists.
- Several imperatives in particular converge to create a national imperative to make the STEM workforce diverse:
  - Science and innovation
  - Workforce imperative
  - Economic imperative



# A FEDERAL STUDY: Increasing Diversity in the Federal STEM Workforce by Reducing the Impact of Bias: The Vision (2016)

*A robust and inclusive world-class U.S. STEM enterprise characterized by institutions of higher learning and Federal-workplace environments free from bias and other barriers that can impede creativity, productivity, entrepreneurial vitality, and quality of life.*



# Why it Matters



**NATIONAL LABS  
LEAD THE NATION**

**INNOVATION**

**IMPACT**

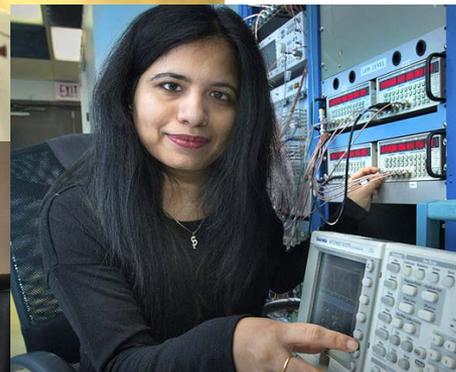
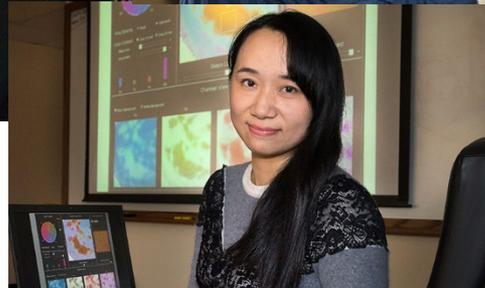
**INCLUSION**

*For over 80 years, the National Laboratories have been on the leading edge of American technology and innovation*



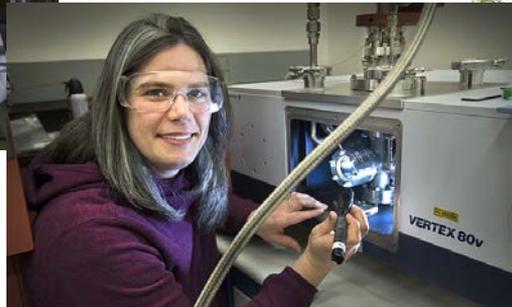
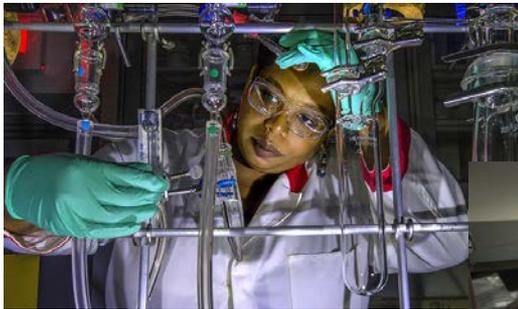
# A SEASON OF OPPORTUNITIES

- The National Labs have an opportunity to be global leaders in transforming STEM cultures to enhance the career and advancement opportunities for women
- ***Brookhaven National Labs has an opportunity to be a unique Model of a Diverse and Inclusive STEM Workforce Culture***



# WHY SAY YES...

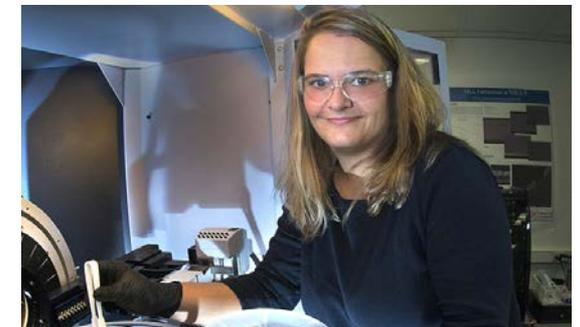
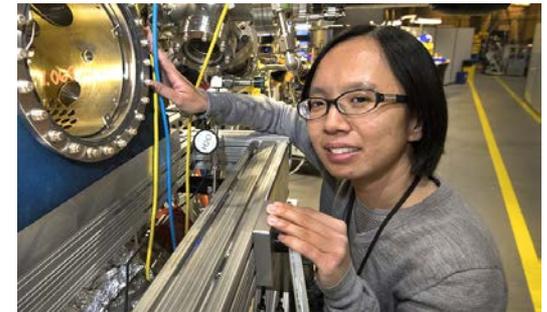
- The National labs address the most critical scientific challenges of our time
- Large scale, complex, interdisciplinary projects
- Must translate basic science into innovations



***NATIONAL LABS MUST HAVE  
OUTSTANDING STEM TALENT!!!***

# PSYCHOLOGICALLY SPEAKING WHY SAY YES\* ...

- Benefits to Employees
  - Increased job satisfaction
  - Higher morale
  - Better physical and mental health
  - Enhanced motivation
  - Improved ability to manage stress
- Benefits to the Organization
  - Improved quality, performance and productivity
  - Reduced absenteeism, presenteeism and turnover
  - Fewer accidents and injuries
  - Better able to attract and retain top-quality employees
  - Improved customer service and satisfaction
  - Lower healthcare costs



\*Source: American Psychological Association



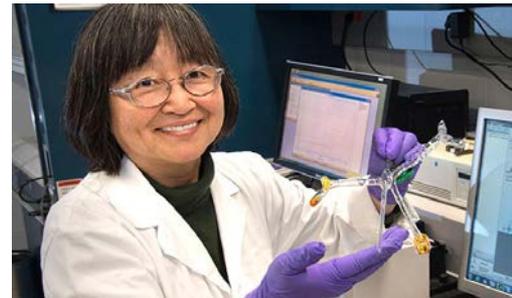
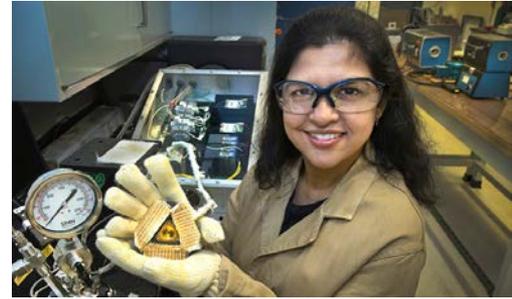
# The Criticality of **Women** in STEM

**Why** does it matter? Women in STEM directly impact the level of innovation, economic returns, and the environment around the world on a global, national, local community, and individual scale.

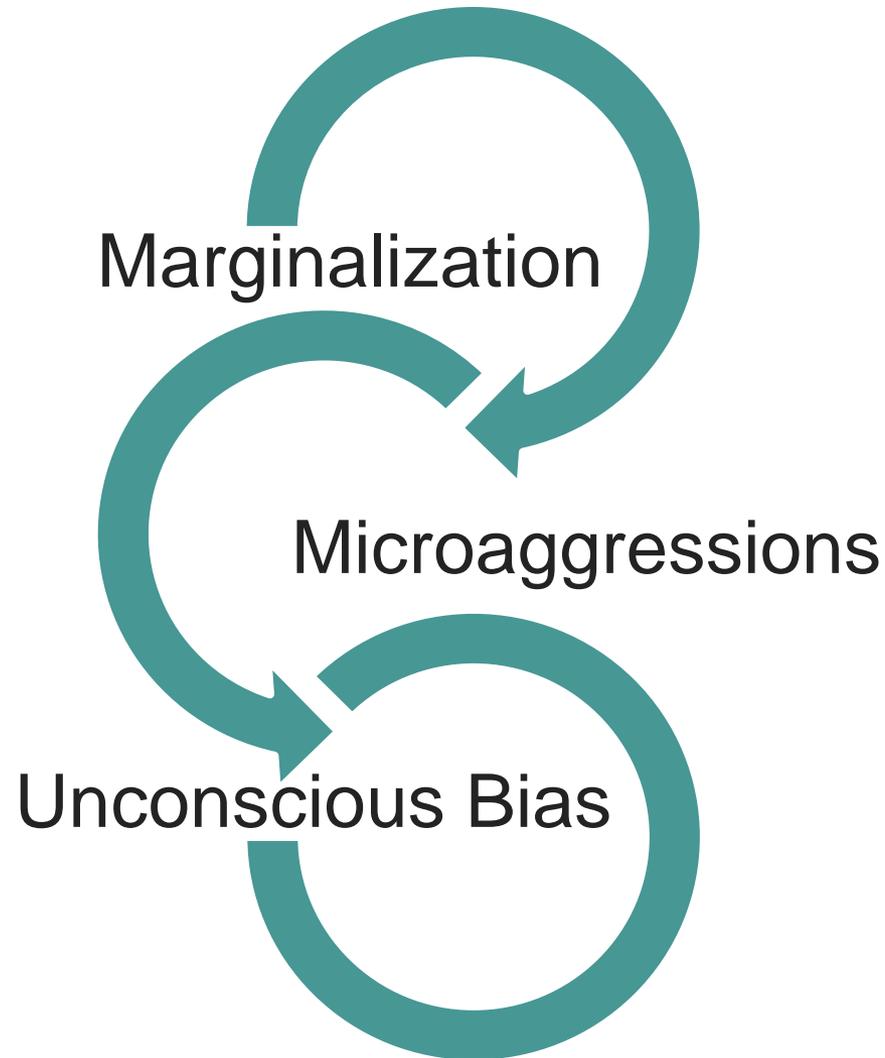


# Why Women Choose STEM Careers

- Enjoy math and science
- Were told they were good in math or science
- Were encouraged to parents or mentors
- Inspired by a STEM educator
- Had female role models in STEM
- Want to impact society
- Love what they do!



# Why Women Lose Love for their STEM Careers



# What is workplace marginalization?

Marginalization in the workplace is the result of systemic actions taken consciously or unconsciously by the “in-group” that alienate or disenfranchise another or others by sidelining them from the main activities and contributions of the group



# What are microaggressions?

**Microaggression** is a term used for brief and commonplace daily verbal, behavioral, or environmental indignities, whether intentional or unintentional, that communicate hostile, derogatory, or negative prejudicial slights and insults toward any group, particularly culturally marginalized groups



# What is unconscious bias?

- Unconscious biases are social stereotypes about certain groups of people that individuals form outside their conscious awareness.
- Unconscious bias happens outside of our control.
- It occurs automatically and is triggered by our brain making a quick judgment.



# AWIS

ASSOCIATION FOR WOMEN IN SCIENCE

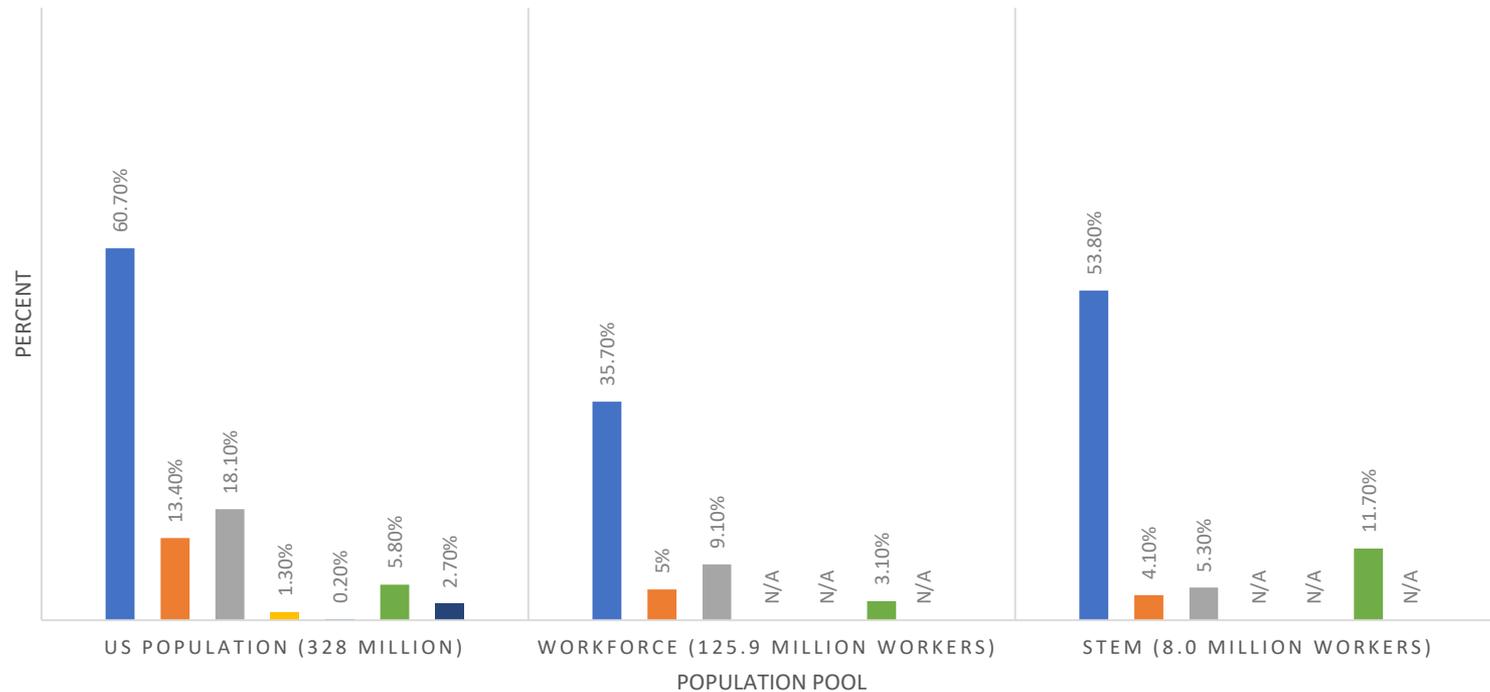
# Recent Research Findings

## Transforming Your STEM Leadership Culture



# America's Population & STEM Workforce

## RACIAL/ETHNIC DIVERSITY BETWEEN US POPULATION, US WORKFORCE AND STEM WORKFORCE



■ White

■ Black/African American

■ Hispanic/Latinx

■ Native American/Alaskan Native

■ Pacific Islander/Hawaiian Native

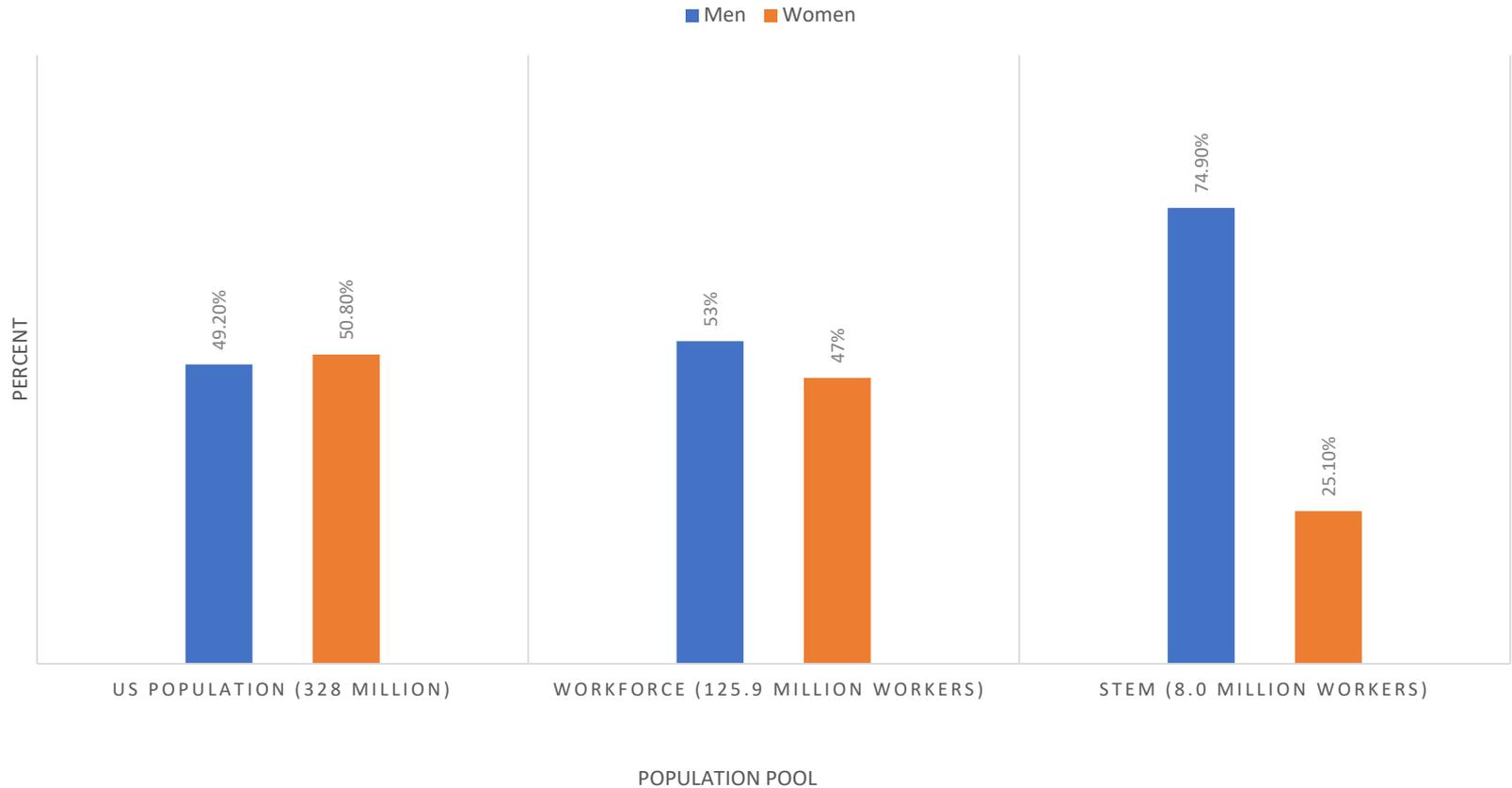
■ Asian

■ Two or More Races



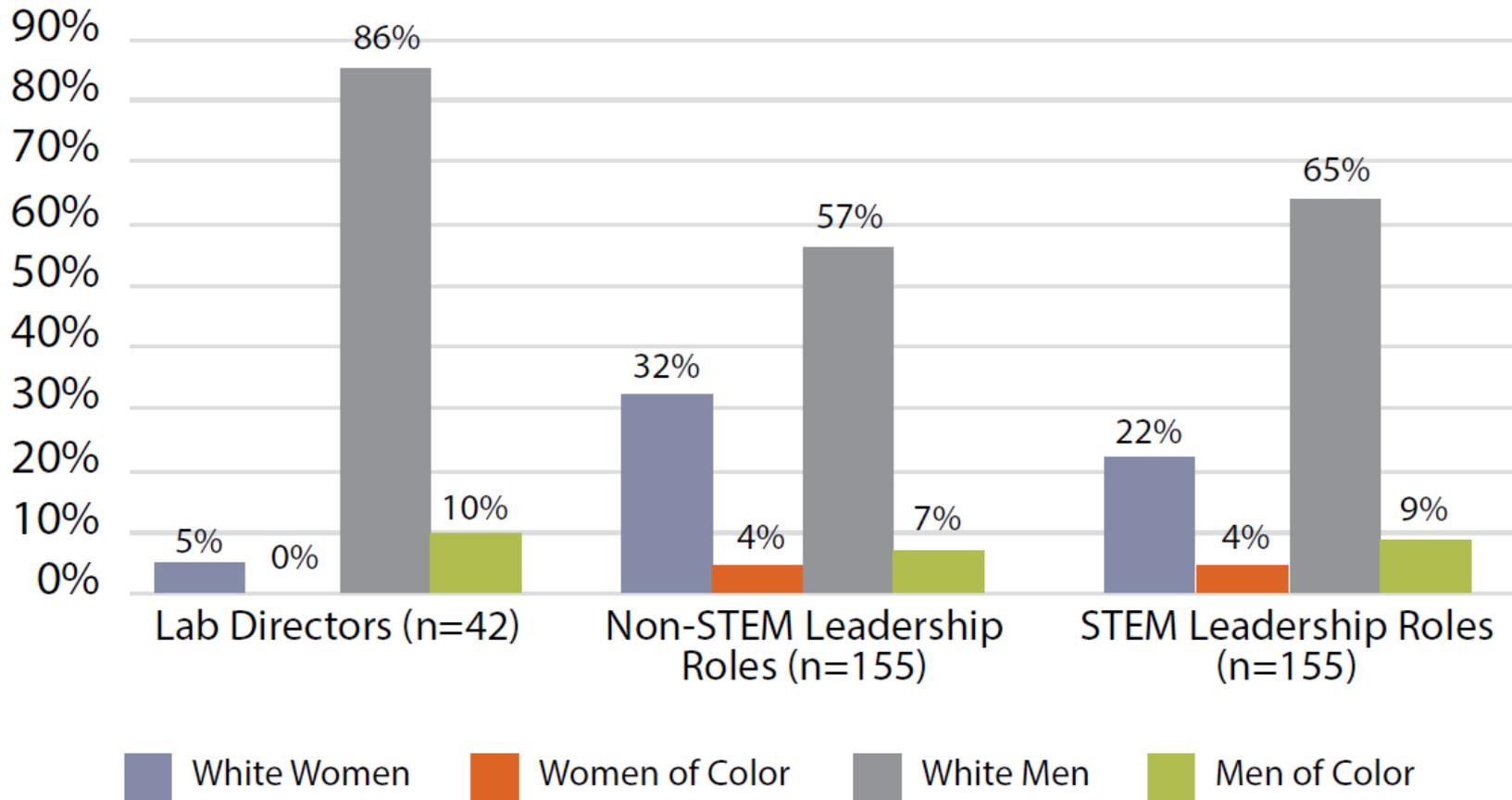
# America's Population & STEM Workforce

## GENDER DISTRIBUTION BETWEEN US POPULATION, US WORKFORCE AND STEM WORKFORCE



# A Little Closer to Home...

## National Lab Leadership by Gender and Race, 2019



Source: Metcalf, H. (2019). Original Analysis of National Lab leadership positions posted on lab websites.

**Source: AWIS Transforming STEM Leadership Culture**





## Women in the Academy

- **Women Are Less Likely Than Men to Achieve Tenure**
  - While women held nearly half (48.9%) of all tenure-track positions in 2015, they held just 38.4% of tenured positions.
- **Women were more likely to be found in lower-ranking academic positions.**
  - While women represent over half (51.5%) of Assistant Professors and are near parity (44.9%) among Associate Professors, they accounted for less than a third (32.4%) of Professors in 2015.
  - Women held over half (57.0%) of all instructor positions
  - 22.1% of women faculty are in non-tenure-track positions, compared to 16.8% of men faculty.

Source: <https://www.catalyst.org/research/women-in-academia/>

# Women in STEM

## Experiences, Challenges and Perceptions



## Jennifer v. John Study

Dr. Corinne Moss-Racusin and her colleagues at Yale University asked faculty members in biology, chemistry, and physics departments at research universities across the country to provide feedback on an application for a student science-laboratory manager position.

Half of the science professors reviewed an application from a student named “Jennifer,” while the other half reviewed an *identical* application from a student named “John.”

The results were striking.

# How employers rate female and male candidates with identical résumés



Source: AAUW, *Solving the Equation*

Think you're hiring the right person? You might not be. Studies show that stereotypes and biases often lead employers to select male candidates, regardless of qualifications. #addwomen



# Association for Women in Science (AWIS) 2019 Survey

A recent AWIS survey assessed the level of microaggressions experienced by women in STEM fields



**“I am honored to serve  
the women who are  
advancing the world  
through their talents  
as STEM professionals.”**

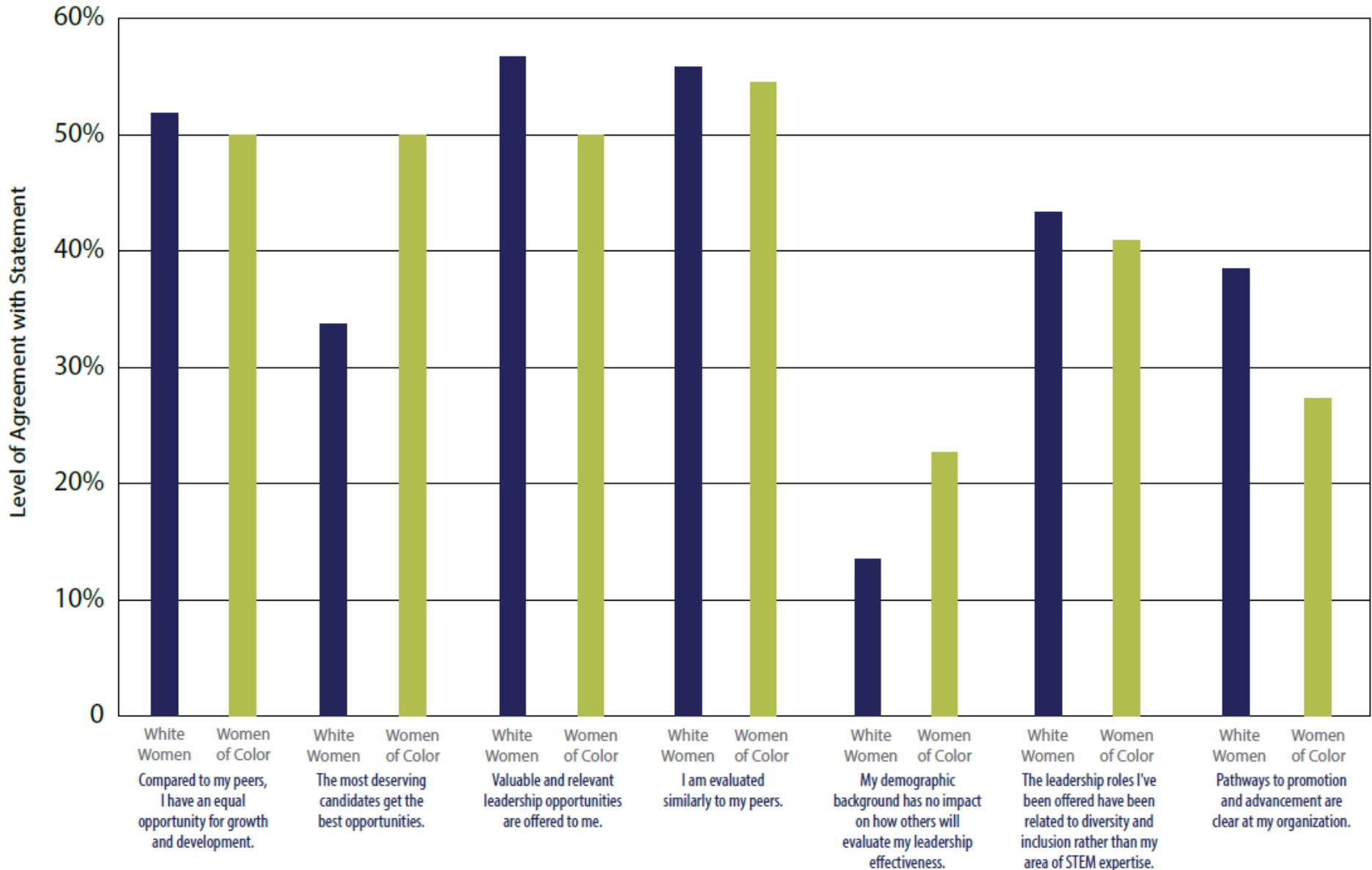
**– Sandy Robert, CAE  
AWIS CEO**

**AWIS**  
ASSOCIATION FOR WOMEN IN SCIENCE

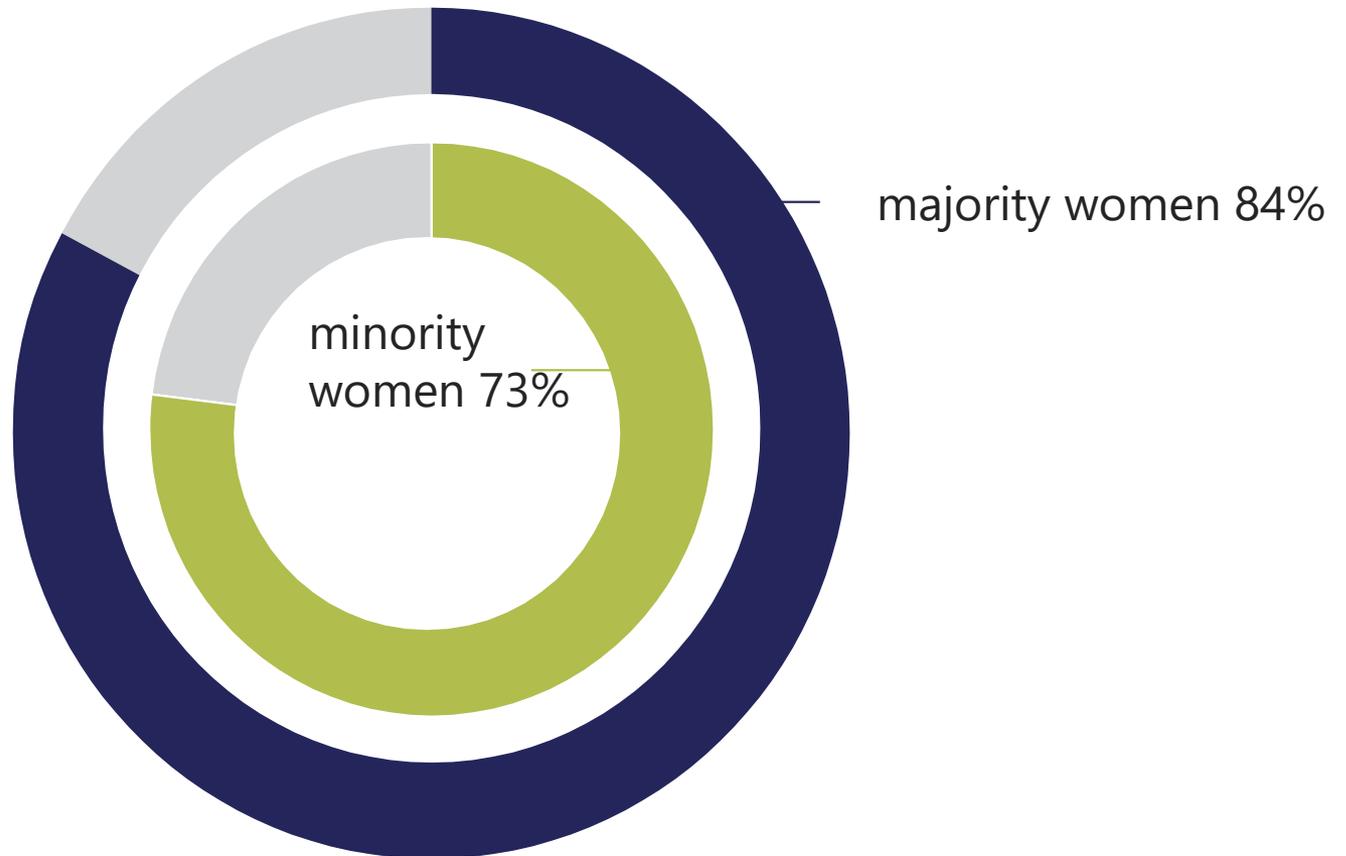




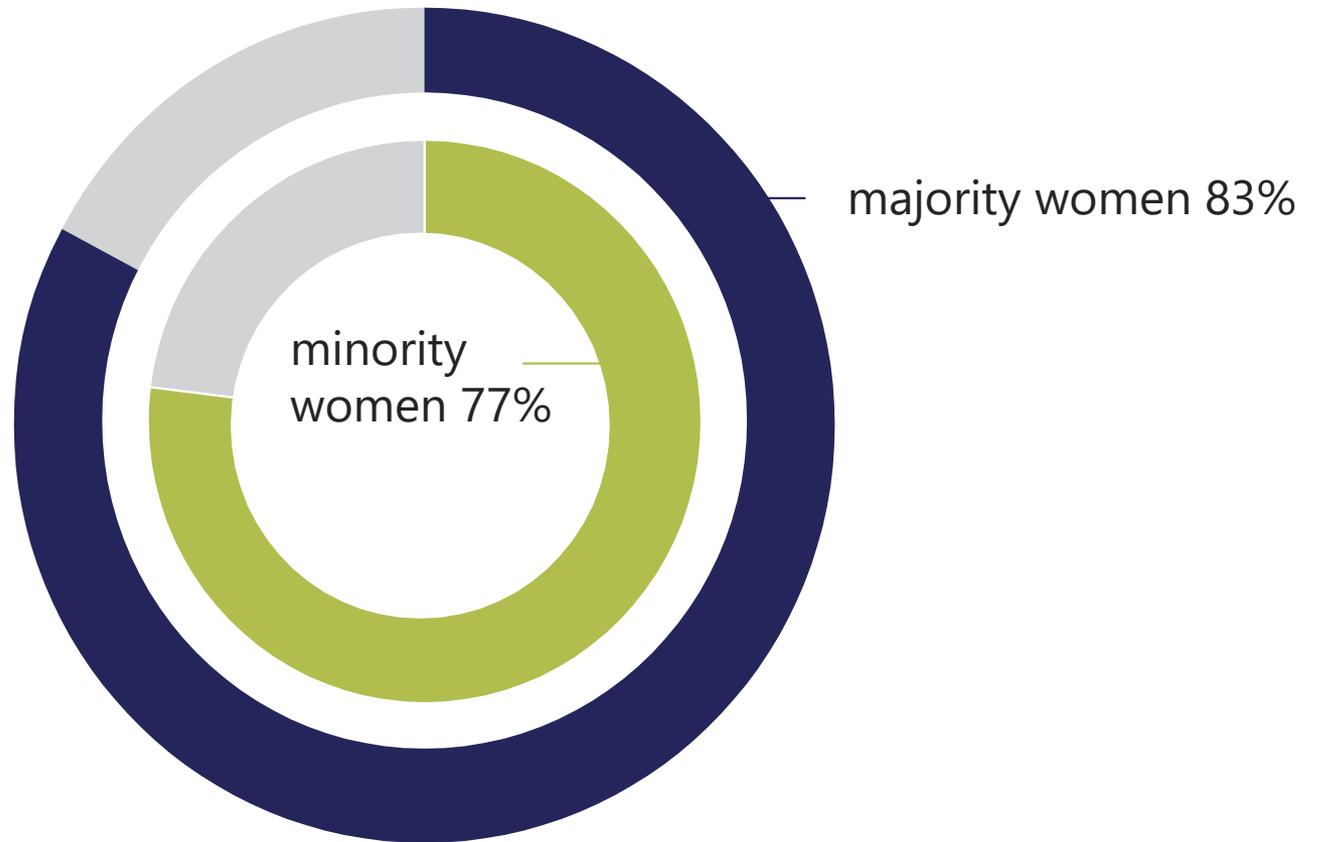
# AWIS Members' Experience with Leadership Opportunities and Evaluation, 2019



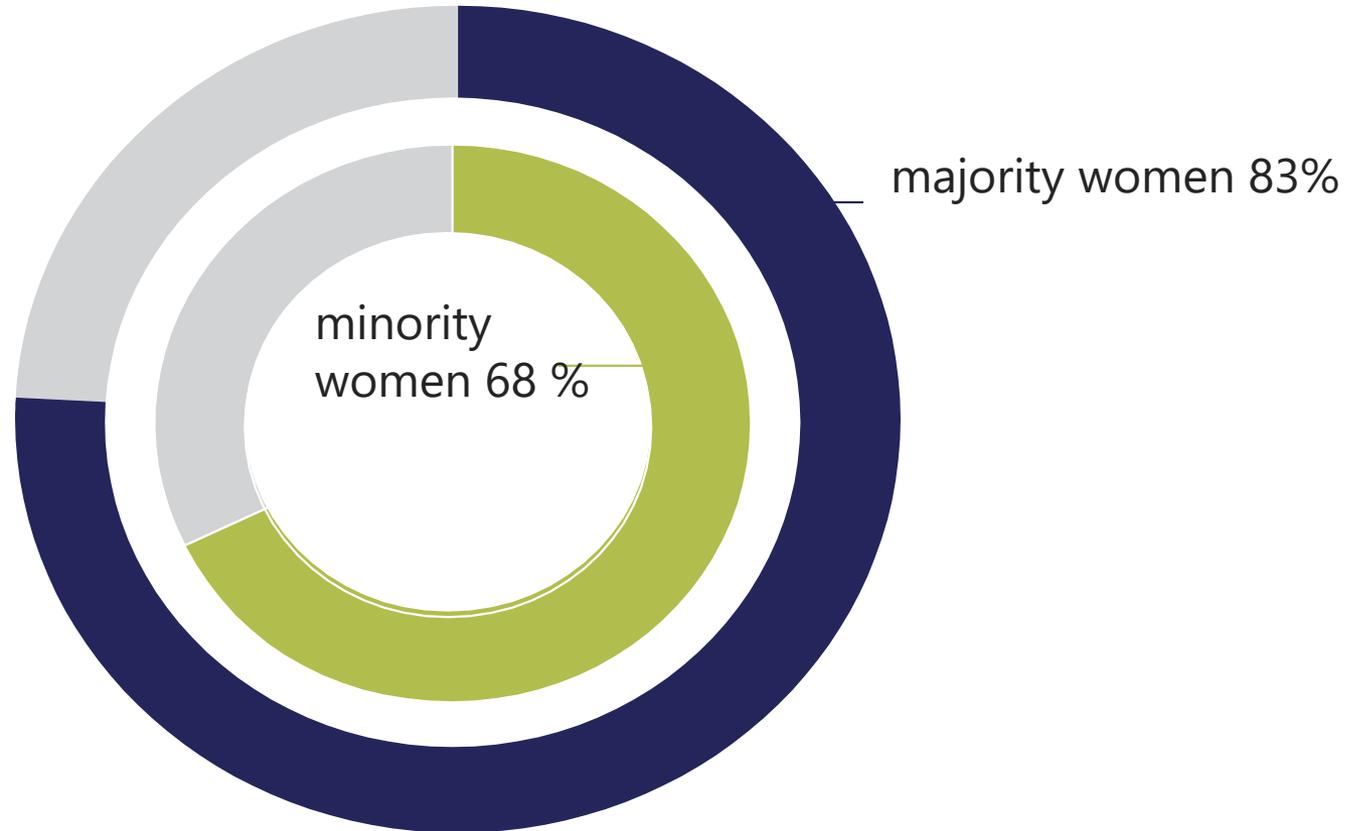
# Had their judgment questioned in their area of expertise



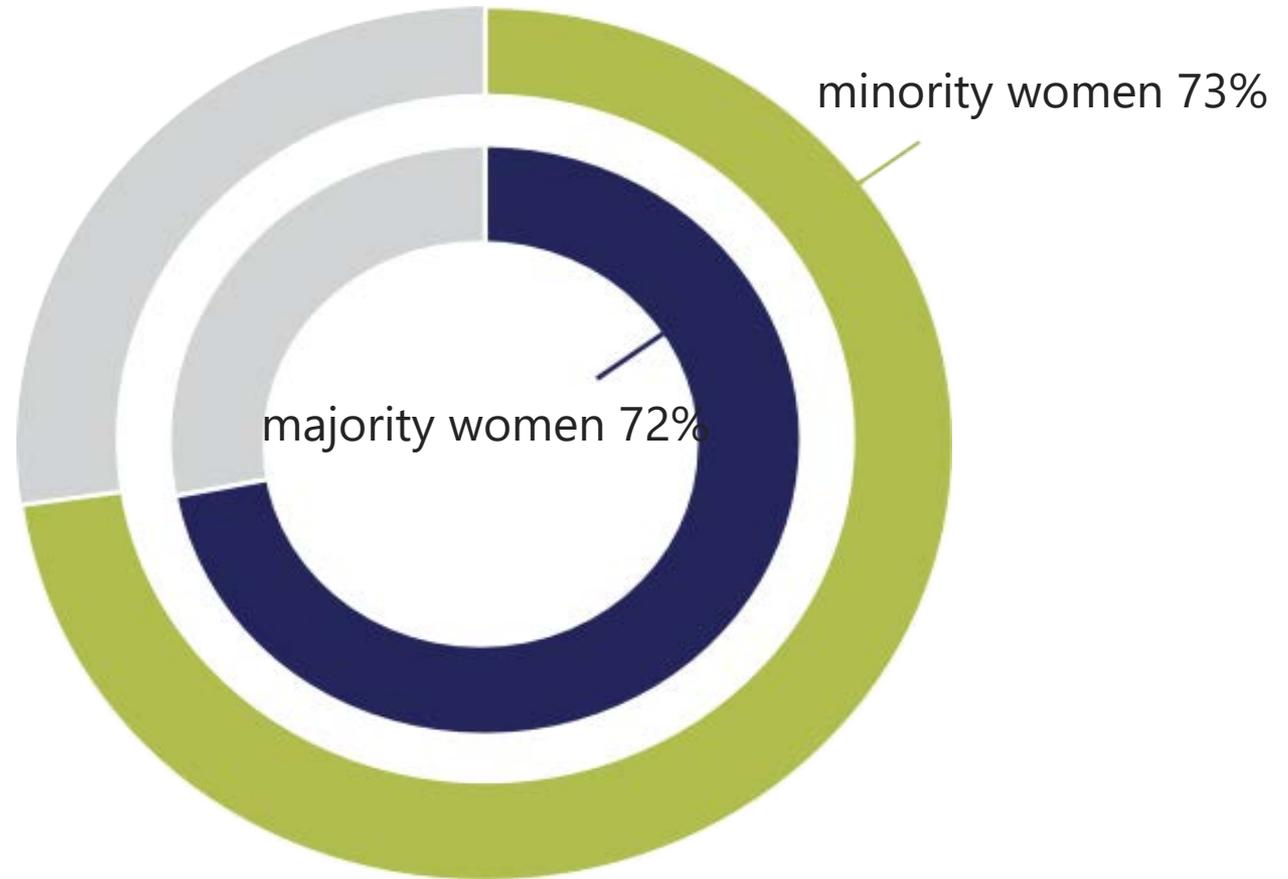
# Work harder than others to prove themselves



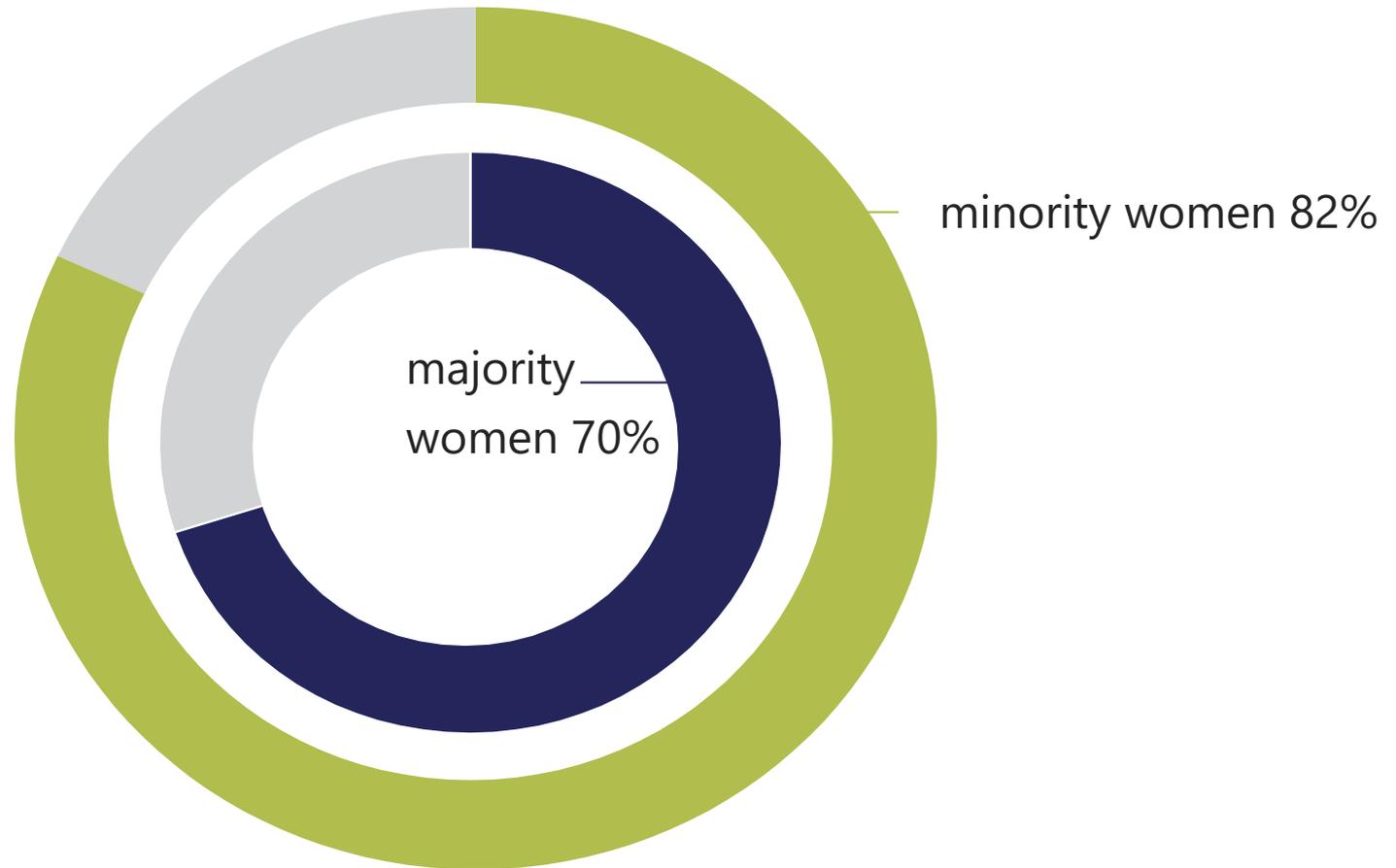
Had to provide more evidence of competence than their peers



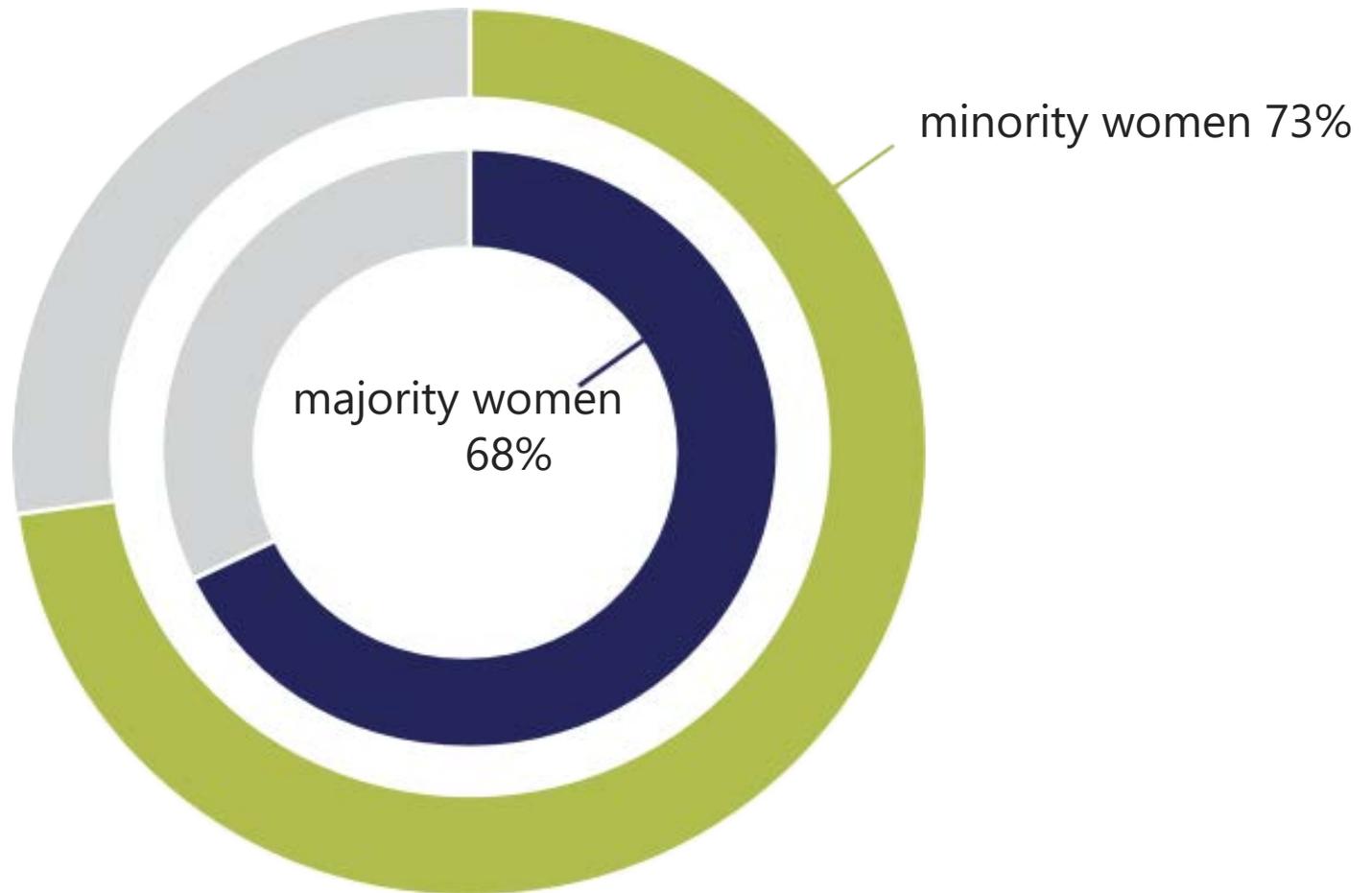
Have had others explain things to them in their area of expertise



# Assumed to be more junior than they are



# Had their accomplishments or ideas credited to someone else



# Anita B.ORG

## Top Companies for Women Technologists 2018

- Top Companies measures key areas that impact women in technology, including representation, policies and programs, and workplace experience.
- In gathering this information, AnitaB.org determines methods that companies are using to increase representation, and how these efforts are changing over time.
- Some factors evaluated include the following:
  - Recruitment rates
  - Retention rates
  - Advancement rates



Brenda Darden Wilkerson, President &  
CEO



# Top Companies for Women Technologists 2018



Accenture  
Bank of America  
Google  
IBM  
SAP



Airbnb  
Blackbaud  
GEICO  
State Farm  
Ultimate Software



HBO Inc.  
Morningstar, Inc.  
Securian Financial  
ThoughtWorks XO  
Group

***CONGRATULATIONS TO THESE COMPANIES!***



**But we still have work to do!**  
**Even at great companies...**



# Bias is real in STEM:

## *Leaked Google internal memo*

- The memo questioned whether discrimination is a factor in gender disparities in tech and at Google, and instead largely attributed those disparities to biology (2017).
- Response: Karen Panetta, Dean of graduate engineering at Tufts University
  - “This actually exemplified that the problem exists everywhere, even at progressive companies like Google,”
  - “The problem persists because too many people, too many companies, too many academic institutions want to stick their head in the sand and don’t want to acknowledge that it’s there.”
  - “It validates that this is really happening,”
- Response: Laurie Leshin, President of Worcester Polytechnic Institute
  - “Hopefully by exposing the pervasiveness of these demonstrably incorrect opinions, acceleration of change will be possible.”

Source: <https://www.insidehighered.com/news/2017/08/10/google-memo-reflects-familiar-bias-women-stem> Comments from



# So Despite Tremendous Opportunity Many Women **Leave STEM!**



# An Alarming Statistic

The majority of women in U.S. STEM fields leave (quit) their jobs. Most leave in their mid to late thirties.





# Why Women are Leaving

- Isolation
  - 45% lack mentors; 83% lack sponsors
- Mysterious career path
  - Hard to gain an understanding of the way forward; 40% feel stalled or stuck
- Workplace hostility
  - 63% experienced sexual harassment
- Systems of risk and reward
  - 35% had difficulty with risk taking
- Extreme work pressures
  - 54% work across multiple time zones
- Challenges in balancing family demands



Source: The Athena Factor: Reversing the Brain Drain in Science, Engineering, and Technology





Where do we go  
from here?



**STOP**

IS THERE AN OPTION  
TO LEAVING?!

**The answer:  
Organizational Innovation  
&  
Personal Innovation**

# Organizational Innovation for women in STEM

- Understand the significant cultural, economic and workplace climate changes that can take place in systemically addressing these issues facing women in STEM
- Make long-term commitments to promote systemic changes
- Take bold and creative measures to address the challenges
- Become a national model for success in this area



# Transform Your Leadership Culture



Knowing the systemic inhibitors to diversity in leadership is an important first step in building inclusive leadership cultures

# Broaden Your Organizational Network.

- When conducting leadership searches, organizations often miss out on talented leaders because the networks they use for outreach are ineffective and driven by homophily
- Take time to assess and broaden your network to ensure a diverse and skilled candidate pool



When Intel started requiring managers to interview a diverse slate of candidate, they saw the percentage of new hires from underrepresented groups increase from 31.9% to 45.1%.

# Re-think the Leadership Evaluation Process

- Processes for promotion and evaluation must be transparent, applied consistently, and based on evidence, not bias.
- Creating clear and consistent evaluation criteria and ensuring reviewers applying them are trained in anti-bias
- Remove gender information from evaluation scenarios



# Learn From Your Employees

- Organizations can learn a lot from their employees about the leadership opportunities they want, the experiences they have had, and how current policies and processes affect them.
- Taking the time to incorporate a diversity of employees' views helps update offerings, policies, and processes and contributes to a sense of employee belonging and inclusion.



# Offer Leadership Development Opportunities

- AWIS Survey shows, employees are actively seeking opportunities to develop their leadership skills.
- Offering employees a variety of avenues for leadership development, whether in-house or in the local community, meets their needs and builds the organizational leadership talent pool.



# Formalize Mentorship

- Companies with formal mentorship programs (ad-hoc mentorships tend to favor white men, since they are more likely to seek out mentors on their own) saw the representation of underrepresented groups in management increase by 9-24%.



Source: <https://www.hirevue.com/blog/5-steps-to-mitigating-bias-in-the-workplace>

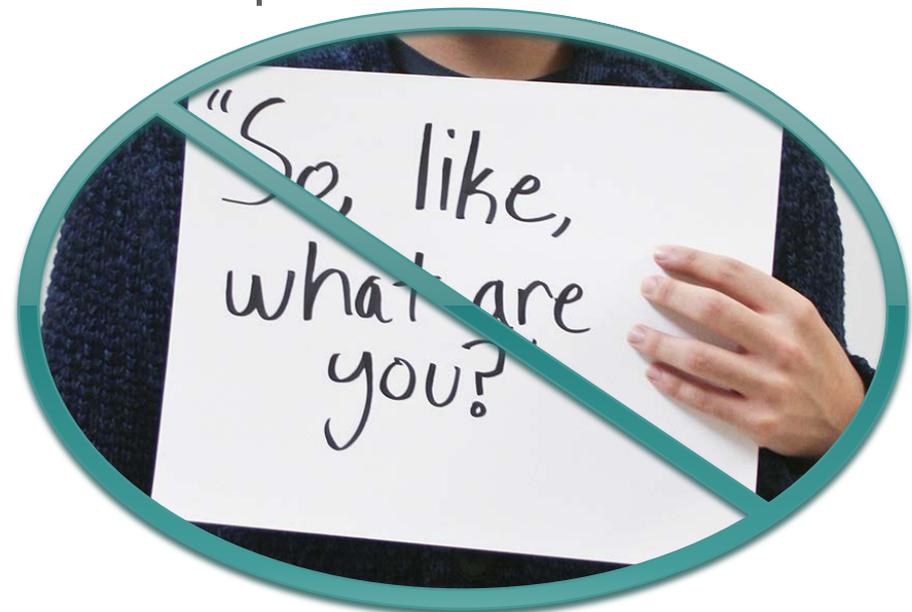
# Evenly distribute and recognize service work

- Women, especially women of color, unevenly carry the bulk of the service workload in their organizations, particularly diversity and inclusion work.
- This labor is often undervalued and unrecognized and rarely contributes to promotability.
- Organizations should more evenly distribute the service workload across all employees and recognize the valuable role it plays in leadership development, for example, by incorporating it into the evaluation process more substantially



# Immediately address microaggressions and biases

- Microaggressions and bias in organizational culture undermine collaboration, fair evaluation, and the utilization of expertise for innovation.
- Train employees on microaggressions and bias in a way that builds shared responsibility for respectful workplaces and contributes to inclusive leadership cultures
- Incorporate these values into the daily fabric of your organization, rather than viewing them as something separate
- Root out uncivil behaviors



# Cultivate accountability

- Organizations that hold themselves accountable for disparities in leadership and the underlying cultural issues at play are more successful at implementing change efforts.
- Accountability means acknowledging where things are not going well, taking responsibility for them, and demonstrating active and visible steps to meet the commitment to equity and inclusion





# Measure, Ask and Adapt

- Measure: setting and tracking measurable goals will tell you when to stay the course, and when to change direction.
- Ask: Ask employees for feedback in multiple formats such as surveys, individual feedback and assessment of new initiatives
- Adapt: Adapt your strategies and initiatives to meet your organizational and human capital needs.



# Stay the Course

- It's worth the commitment to genuinely transform organizational culture
- Economic, organizational and societal benefits.
- ***This is a marathon not a sprint...***



# Personal STEM Career Innovation

- **Innovation is the capacity to quickly and efficiently adapt research, knowledge and insight into useful products, processes, strategies and/or organizations.**

career  
focus

personal  
capabilities

skills

relationships

# Personal innovators

## Know themselves

Be more confident and aware of their professional and personal strengths

## Know the career landscape

Be better able to explore the range of opportunities available to them

## Know how to take action

Be equipped to take effective action in developing their career

Personal innovation tailors **career focus, personal capabilities, skills, and relationships** to meet current and emerging needs in a given area of opportunity.

# Become an Assertive Collaborator

- Know your collaborative style
- Understand the “Collaboration Landscape”
- Developing a Collaborative Network
- ***ASK TO BE ON THE TEAM!!***



# Create a Career Strategy

Develop a Personal Career Strategy

- Vision Statement
- Mission Statement



# Personal **Vision** Statement

## Vision Statement (long-term perspective)

- A statement that represents the holistic view, intention, and purpose of your life and career.
- This statement is described with global or high level words and should be original and specific to the values, passion, and life views that you hold.



# Personal Mission Statement

## Mission Statement

- Statement of goals to be attained in support of the vision- 1 to 3 years timeframe
- The mission statement consists of actions that you will follow to achieve your vision.
- The statements connect specific action to your vision.



SET GOALS

- 1.
- 2.
- 3.



# Self-evaluate!

## Do not self-deprecate!

**Failure** is a necessary step in the path to success

Our professional **actions** should show that we believe in the goals that we have set

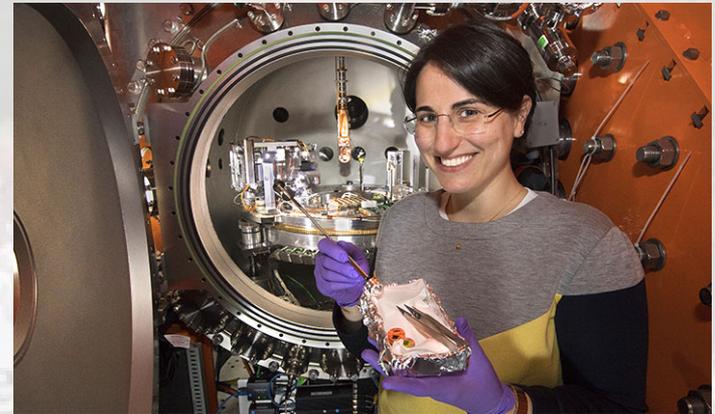
**Success** takes work - but if you believe you can make it happen

Believe against **ALL** negative odds and **WORK** to beat the odds!



# Share your Achievements!

- Develop a strategy to communicate your desires, goals and achievements .
  - Use your networks
- This can inspire and encourage others.
- Each achievement should launch you into new opportunities.



# ***She Wins...***

## ***Brookhaven National Labs Wins!***

- **You have a global voice**
- **This is a moment of opportunity**
- **Brookhaven National Labs can lead the way...**



# Connect



Transforming Your STEM Career



@DrPamMcCauley



@DrPamMcCauley



drpamelamccauley@transformingyourstemcareer.com

