WOMEN IN STEM
FOCUS ON COLLEGE WOMEN

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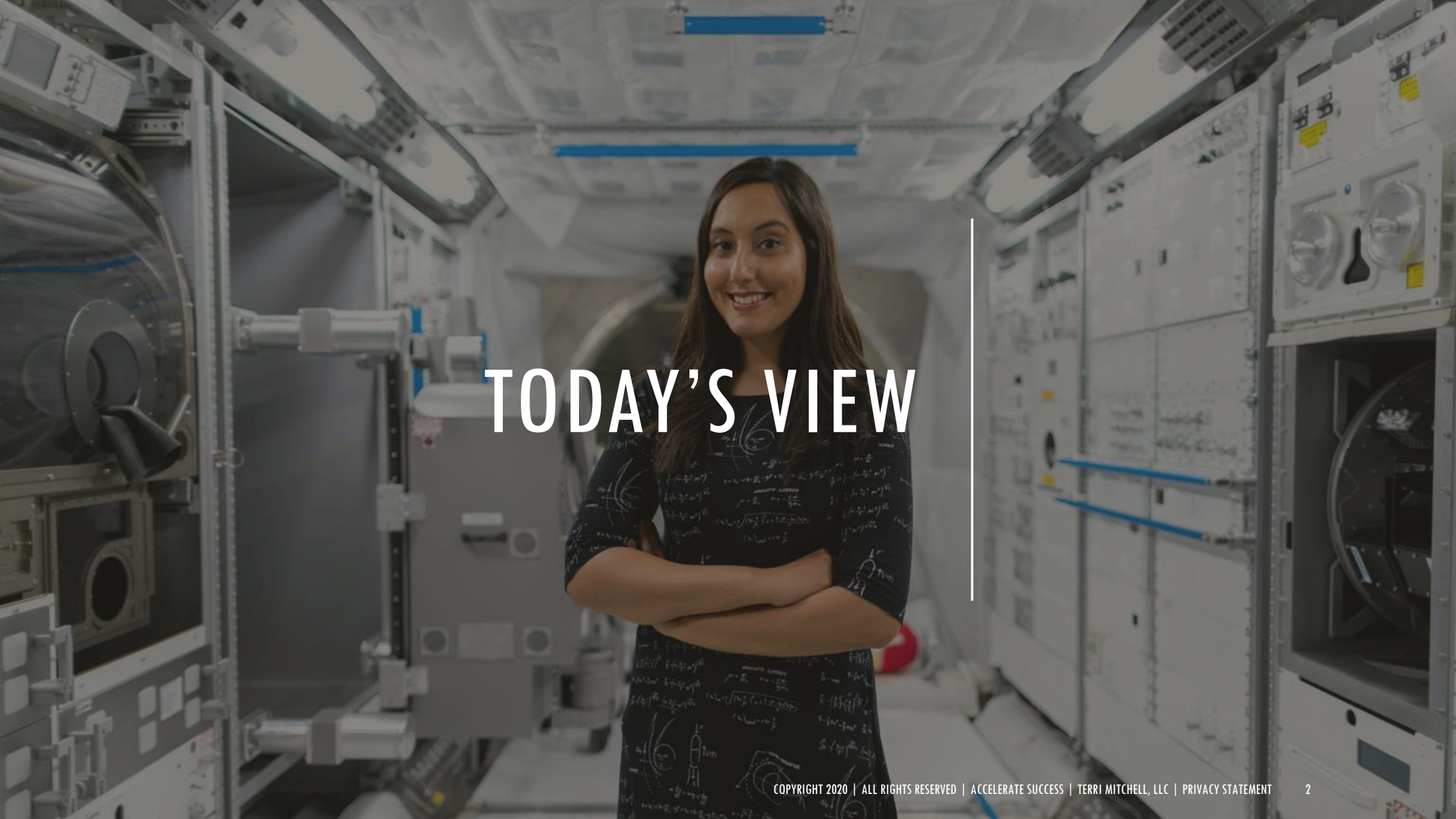
NC House Committee for Advancing Women in STEM
August 24, 2022

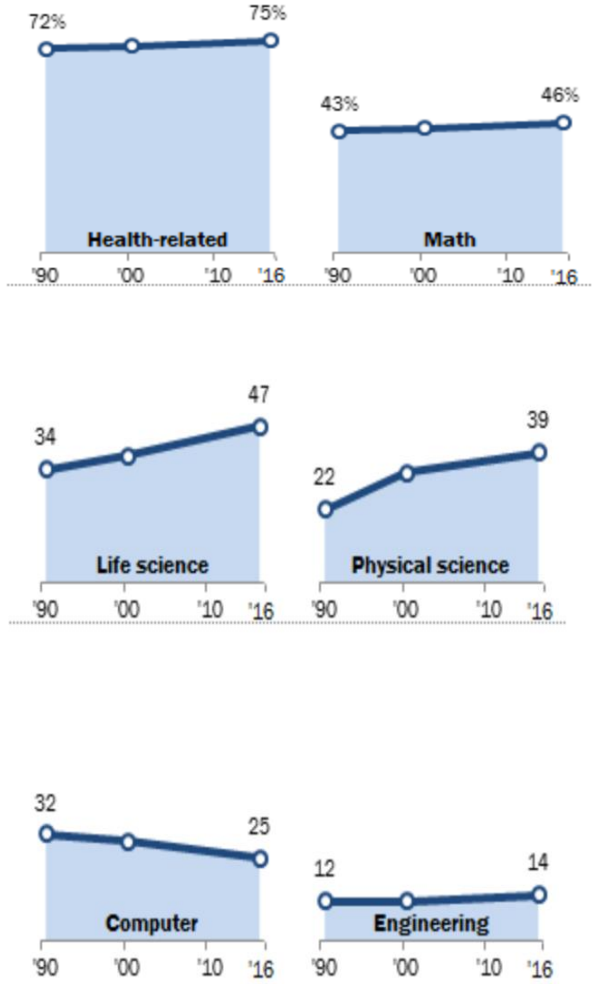


TODAY'S VIEW

INDUSTRY

Women's representation in computer jobs has declined since 1990

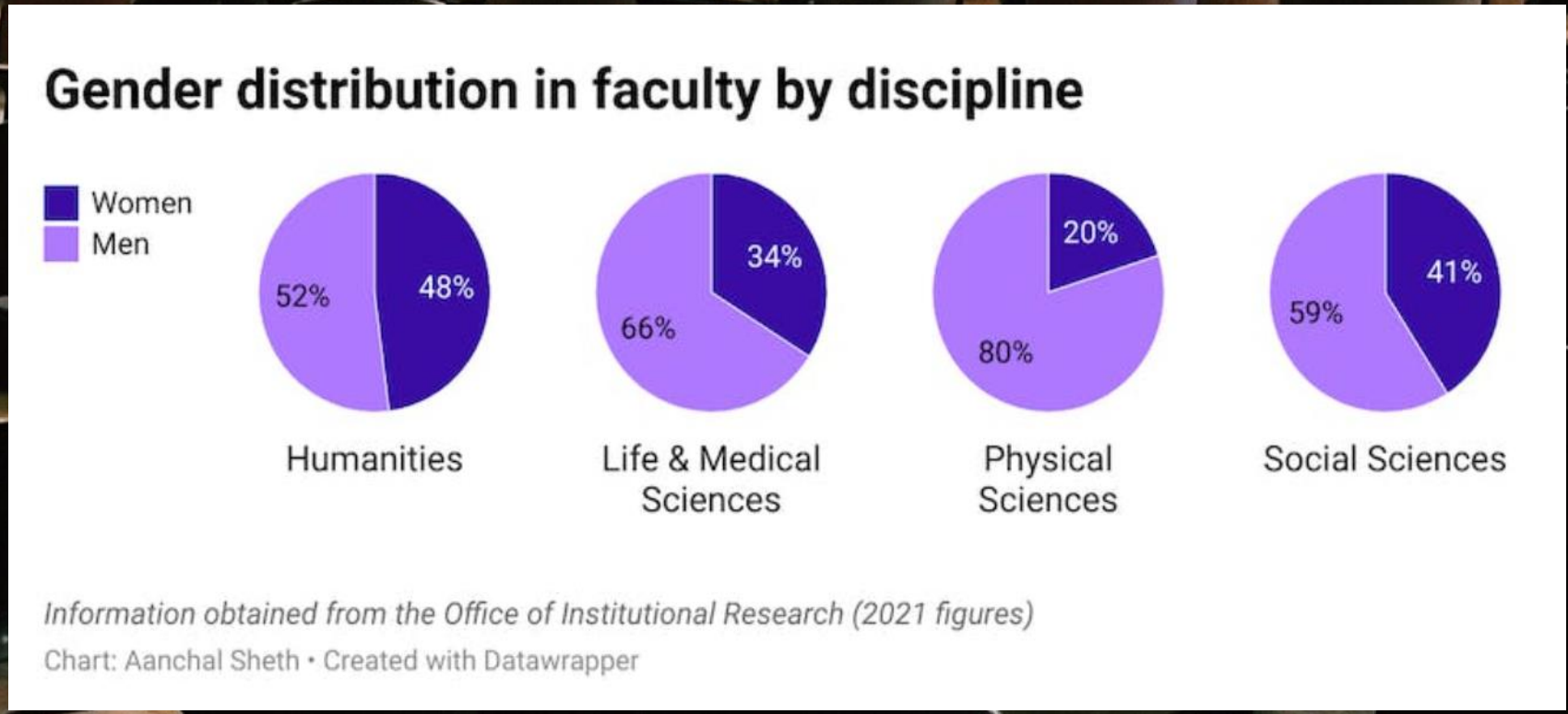
Share of employed adults in each occupational group who are women (%)



Note: Based on employed adults ages 25 and older. Engineering includes architects.
Source: Pew Research Center analysis of 1990 and 2000 decennial censuses and 2014-2016 American Community Survey (IPUMS).
"Women and Men in STEM Often at Odds Over Workplace Equity"

PEW RESEARCH CENTER

ACADEMIA



WOMEN IN STEM SALARIES

- Women in **computer, engineering, and science** were paid an estimated 79.2% of men's annual median earnings in 2016 *Catalyst*

- At all categories of institutions, full **professors** who are women earned on average 94.3% of what men earned. (2016-2017) *Scientific American & Catalyst*

- Women **doctors** earn an avg of 27.7% less than their male counterparts *CNN Business*

- Women make 92% of the salaries of men in **nursing** *2018 Nurse.com Nursing Salary Research Report*

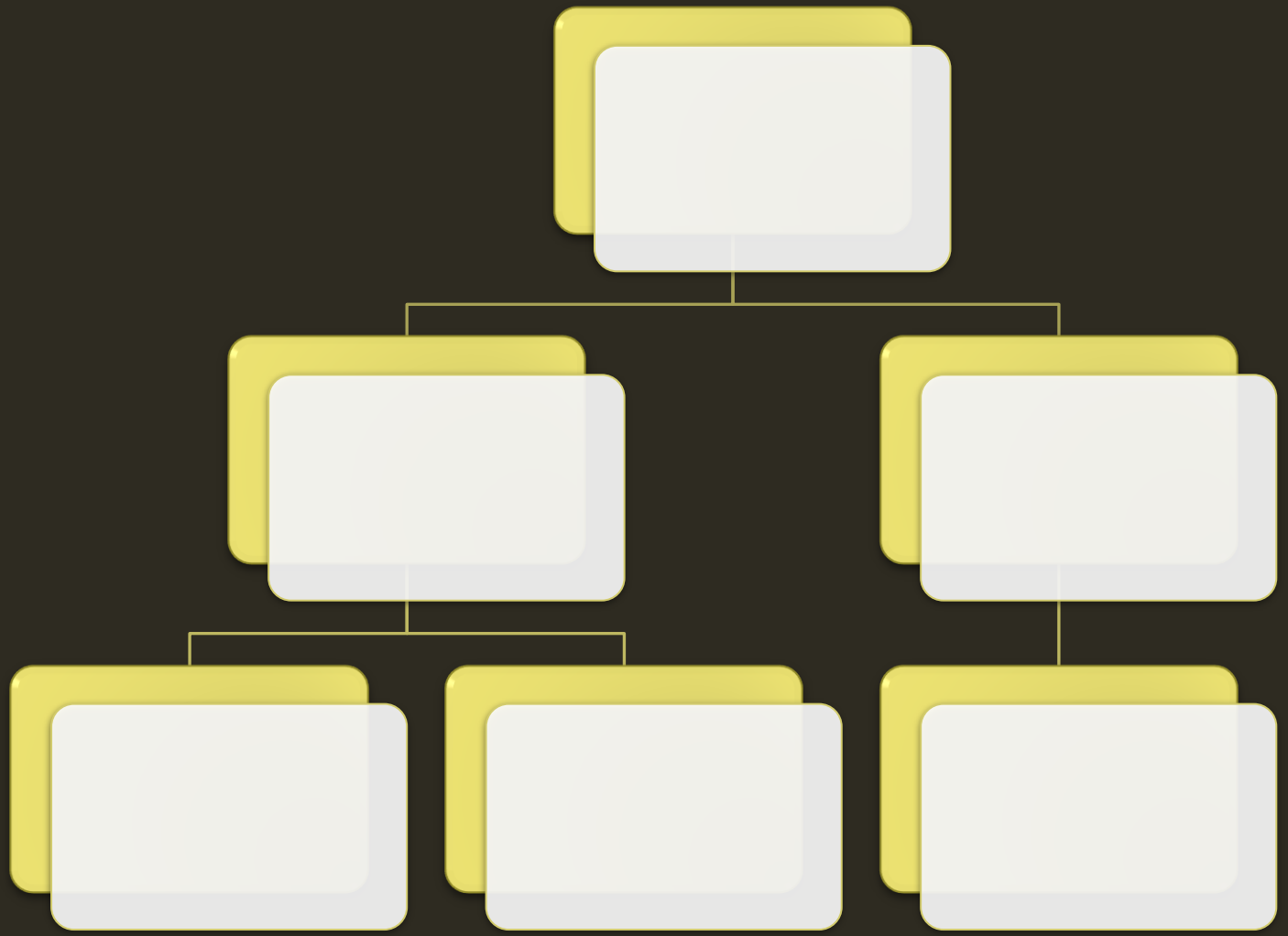
WOMEN'S CAREER PROGRESSION IMPACTED BY 'BROKEN RUNG'

Women are 12% less likely to receive first promotion to manager

Participation continues to decline at each higher organizational level

McKinsey & Company 2021

EXAMPLE OF WHY WOMEN NEEDED AT ALL LEVELS OF STEM PROFESSIONS



CRASH TEST DUMMIES

Developed in the 1950s

1973 mandated 50th-percentile male dummy be used in safety testing

1997 airbags mandated for cars

2011 the US started using female crash-test dummies, that represent the size of the 5th-percentile woman and the shape of a man

CAR SAFETY

2019: University of Virginia's Center for Applied Biomechanics reported that women wearing seat belts have 73% greater odds of being seriously injured in frontal car crashes based on accident data from 1998 - 2015

DEV TEAMS SHOULD MIRROR THE USERS

When YouTube launched the video upload feature for their app, 5-10% of videos were uploaded upside-down, and Google developers were baffled. Could such a large percentage of users be shooting their videos incorrectly? Google engineers had inadvertently designed the app for right-handed users.

They never considered the fact that phones are usually rotated 180 degrees when held in a user's left hand.

DEVELOPING FUTURE GENERATIONS OF WOMEN LEADERS IN STEM

Multifaceted Challenge

WOMEN IN STEM – THE CONTINUUM

K-12

Start the Pipeline

College

Support & Retain the Pipeline

Career

Support & Promote the Professional

FOCUS ON COLLEGE WOMEN IN STEM

K-12
Need exposure & interest

College
Have interest & aptitude
Need sense of belonging
Need success enablement

Career
Need inclusion, key assignments & sponsorship

WOMEN & STEM DEGREES US Higher Ed

- Women earn 57% of all Bachelor's degrees [1]
- Women earn 36% of STEM degrees [2]
- Black & Latina women earn 2.9% & 3.8% of STEM degrees respectively [1]
- Women's participation rates in STEM degrees flat 2000 – 2015, except Comp Sci which declined [3]
- 1984 was peak of women's participation in Comp Sci degrees: 37% [3]
- Comp Sci participation in 2018 – raw numbers of women graduates now back to 1986/2003 levels [1]

US Higher Ed: Women's Participation in STEM BA/BS Degrees (2017-2018) [3]	
Biological & Biomedical Sciences	61.5%
Mathematics & Statistics	42.4%
Physical Sciences & Science Technologies	40.0%
Engineering & Engineering Technologies	21.5%
Computer & Information Sciences & Support Services	19.1%
All STEM Fields	36.1%

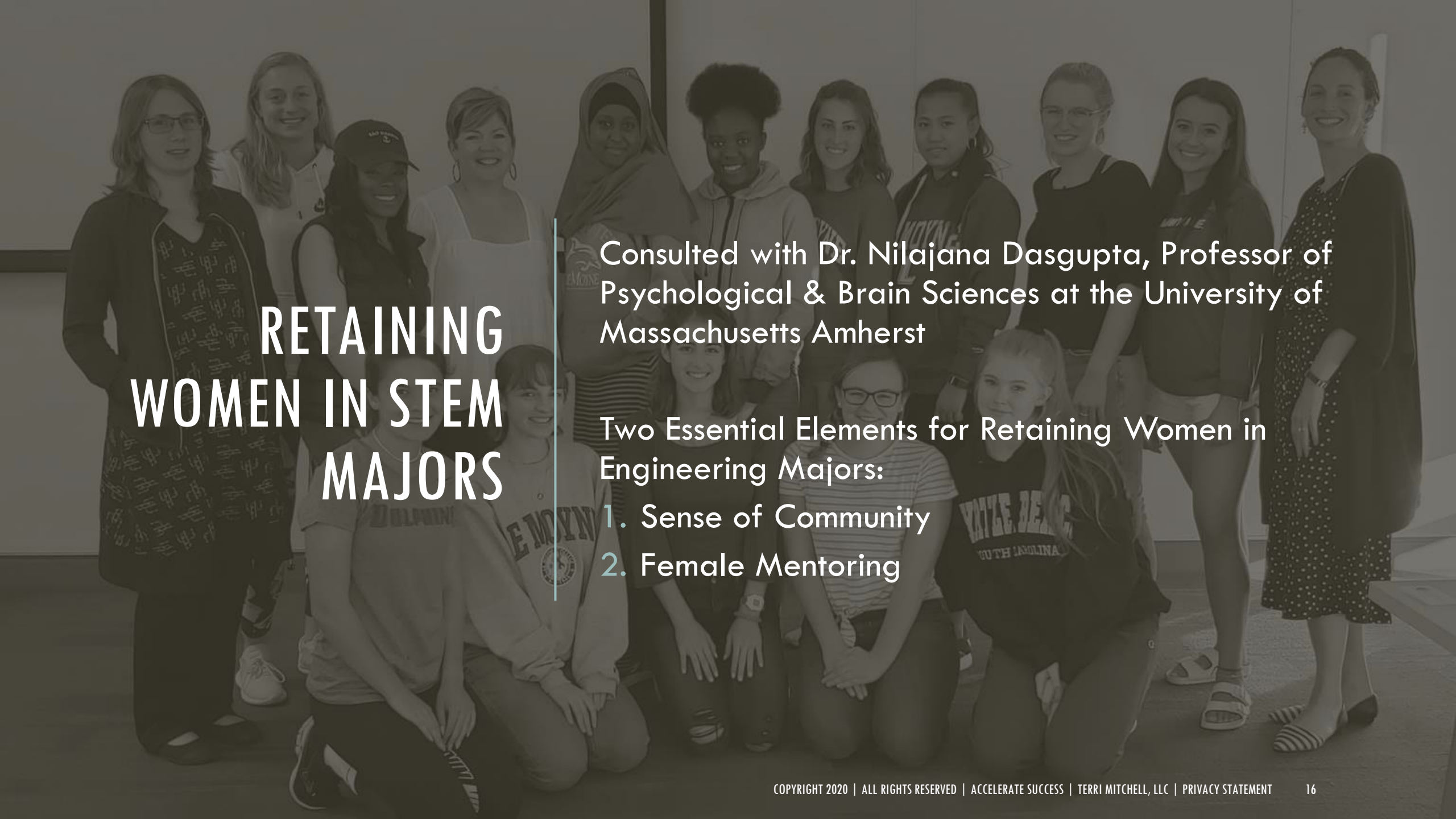
Women's STEM Degree Participation Rates Outside the US:
India 44% Canada 31% Mexico, 31% Germany 27% China 21% (4)

Sources: NCES [1] Catalyst [2] National Science Board [3] World Bank [4]

COLLEGE WOMEN IN STEM: ACCELERATE SUCCESS PROGRAM

Support and encourage undergraduate women in STEM to retain them in their majors while preparing for successful post graduation professions.

Build confidence and community by providing mentors along with regular engagement on topics essential for college women preparing to be STEM professionals.



RETAINING WOMEN IN STEM MAJORS

Consulted with Dr. Nilajana Dasgupta, Professor of Psychological & Brain Sciences at the University of Massachusetts Amherst

Two Essential Elements for Retaining Women in Engineering Majors:

1. Sense of Community
2. Female Mentoring

COLLEGE WOMEN IN STEM

accelerate success

4 Year Undergraduate Program

Meet monthly for persistent sense of community and belonging for FYs & Sophomores

Sessions to Learn/Discuss Success Readiness

Build self confidence

Understand career roles that support personal goals

Address topics regarding challenging environment for women in STEM professions

Once Yearly Outside Speaker/Panel

Provide role models and career ideas

Mentoring for Entire Undergrad Experience

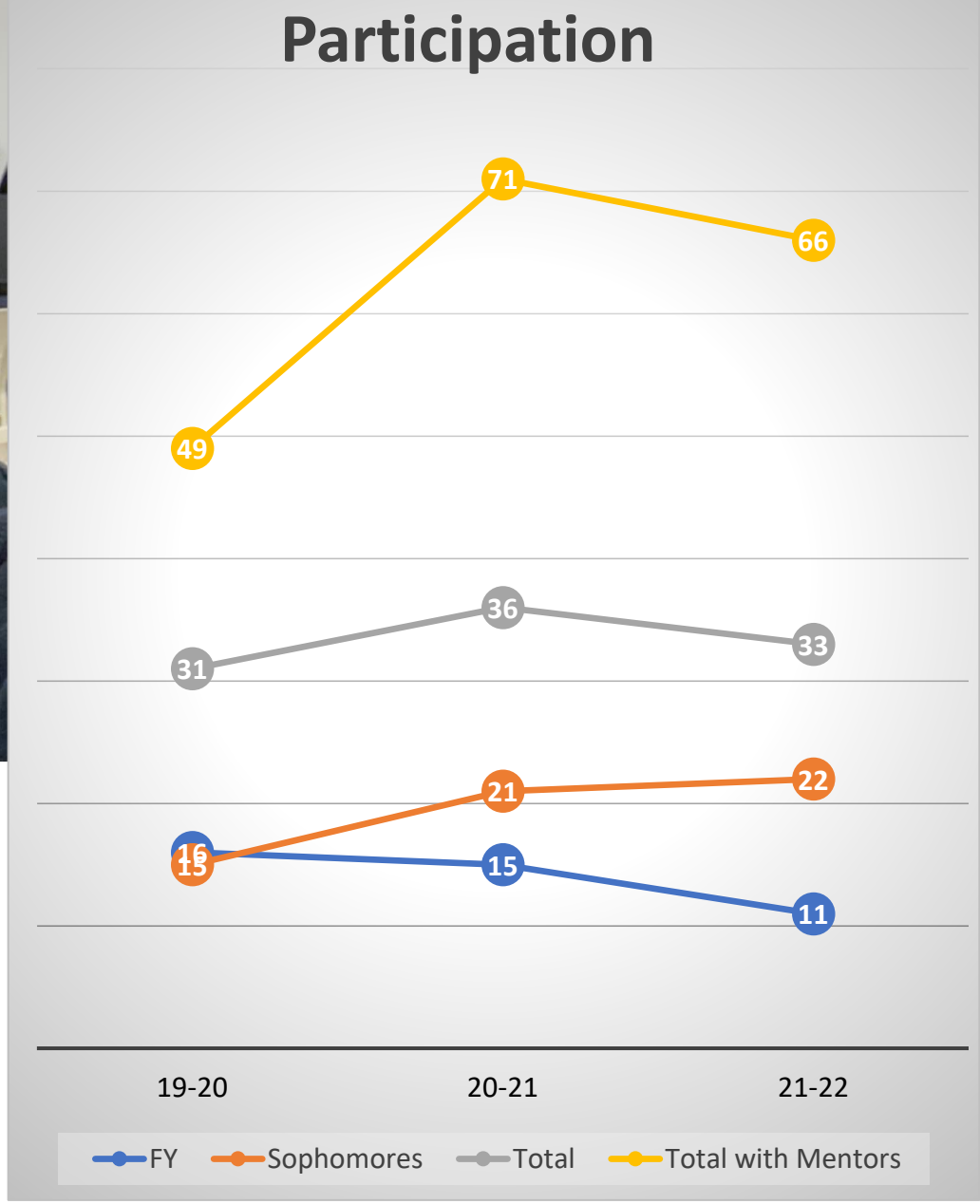
Jr/Sr student mentors assigned to FYs/Sophomores

Success Factor	
Exposure to STEM	
Interest in STEM	X
Classroom Encouragement	
Confidence	X
Sense of Belonging	X
Understanding of Career Options	X
Mentoring	X
Self-Promotion	X
Salary Negotiations	X
Workplace Flexibility	

Success Factor	
Organizational Sponsorship	
Role Models	X
Organizational Maze Brightness	X
Workplace Visibility	
Strategic Assignments	
Inclusive Work Culture	
Ability to Network	X
Workplace Allys	
Handling Likeability - Assertiveness Challenge	X

SUCCESS FACTORS COVERED BY ACCELERATE SUCCESS

ACCELERATE SUCCESS - LE MOYNE COLLEGE



stempower | LE MOYNE Greatness meets Goodness®

REPRESENTATIVE QUOTES

"I am much more aware of women in STEM careers and understand the steps I need to take to be successful. This program has really taught me a lot and I feel like I know how I can become a good asset to the STEM community now."

"I love the connections and friendships I have made through this program. I have learned to be more confident and I have been motivated to learn more about various jobs and seek opportunities."

"We have learned about all of these successful women in STEM careers and I think it is really cool to be one of them and aspire to be like them someday."

"Being part of a community like this was empowering."

(Highlight) "Meeting my mentor and learning so much from her. Having someone in the same major as me to talk to about school and just life in general was so beneficial to me."

STEMPOWER RESULTS

Outstanding Increase in Sense of Community & Belonging

Significant Impact on Confidence for Future STEM Career

Exceptional STEM Major Retention

Impressive internship & job placement outcomes

CHALLENGES TO EXPAND ACCELERATE SUCCESS TO ADDITIONAL UNIVERSITIES

1. Identifying University Champion with Institution Wide Influence

2. Funding

Pandemic made both #1 and #2 especially difficult

Elon University starting program for 2022-2023 academic year

Triangle Women in STEM

TRIANGLE WOMEN IN STEM

The Triangle Women in STEM initiative will establish North Carolina's Triangle region as the preeminent destination for women in STEM fields. Through partnerships with Triangle industry, universities, nonprofits and local government, we will build a diverse community that values, respects, and supports women in STEM.

COLLEGE STUDENTS ACTION TEAM

Triangle Women in STEM

Our goal is to provide support and a sense of community for women in STEM majors at all higher education levels, so that students can apply their education and experience in the professional world.

2022 Programming:

- Mock Interviews
- Summer Intern Event
- Talk & Tours
- Recruiting Season Ready

RECOMMENDATIONS

The UNC System offers an excellent opportunity for Accelerate Success programs to increase the number of female STEM graduates in NC that are ready to face the leadership challenges scientific careers provide. Rapid deployment needs access to funding to kick off the programs.

Triangle Women in STEM's College Student programs can grow and connect more students with local employers with additional funding to enable scholarships, transportation to events, and software tools for ease of administration.

QUESTIONS?

THANK YOU