

AS501349

Beyond One Gender – The Power of Diversity and Inclusion

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Learning Objectives

- Identify how the evolution of technology enabled us to positively impact the diversity and inclusion of our workforce
- Compare different journeys and understand how to navigate the world of BIM as a minority
- Create a culture to build confidence and support equality to re-shape the way we work
- Showcase how diversity can successfully impact corporate culture

Description

Follow the journey of five different architecture, engineering, and construction (AEC) professionals as they navigated their careers in building information modeling (BIM). See the challenges they faced, and the impacts they've made. Learn how they developed their skills to transition from typical AEC professionals into the tech side of BIM. This discussion will show how a diverse strategy can improve corporate culture, business success, and, ultimately, the bottom line. Topics of discussion will include mentorship, burnout, diversity, equality, parenthood, work-life balance, and inclusion.

Speakers

Shir Erlich

Shir Erlich is a Product Owner for Naviate products at Microdesk. Naviate is a series of products built to streamline processes for AEC professionals for Autodesk Revit and Civil 3D. Prior to becoming a product owner, she was a BIM implementation and dynamo automation specialist. While at Microdesk she started as an architectural consultant before transitioning to the product development team. Her prior positions include BIM Manager roles at firms in Munich, Germany and New York City. Shir earned her Bachelors of Architecture degree at Pratt Institute and has focused on various technologies related to the AEC industry since. She has used these different experiences to translate the challenges Revit users face into technical solutions within the Naviate product line. Shir is a Certified Scrum Product Owner (CSPO) and certified SAFe POPM and leads the team in Agile methodologies within the Scrum and Kanban framework.

Follow Shir Erlich on LinkedIn: www.linkedin.com/in/shir-lea-erlich

Shivoni Soni

Leading our Co-Innovation Lab globally, where "Innovation meets Vision." Shivani is responsible for the development of the R&D department, primarily focusing on co-developing strategic, organization-wide digital transformation journeys. In addition, she works to progress the industry through co-researching, co-creating, and implementing global new business proposition/models and innovation models to meet objectives such as sustainability to meet the demands of urbanization. Shivani strategically builds partnerships with stakeholders, clients, and innovation communities to bring valuable impact and supports them to innovate by adopting digital technologies to facilitate growth and increase business activities, enabling them to compete in a global marketplace. To deliver global, compliant solutions that enhance the people, clients, and communities we work with.

Follow Shivoni Soni on LinkedIn: <https://www.linkedin.com/in/shivanisoni/>

Mallary White

Mallary is an experienced Project Manager and leads the West Coast Architecture, Structure and Interior Design teams as the Vice President of Consulting - West Coast at Microdesk. She is a part of the Architecture and Scan to BIM teams, with an expertise in Scan to BIM for Historic Preservation. She is a Regional Lead for Women in BIM (WIB) and her main thrill is leveraging technology and BIM data to streamline and automate workflows. Her team provides Technology Ecosystem Evaluations + Recommendations, BIM Project Management, Technical Support, Software Training, Workforce Technology Implementation and Adoption Strategies, BIM Guideline and Template Development along with consulting services to Microdesk's Architectural clients worldwide. Mallary holds a BArch (Bachelor of Architecture) degree from Mississippi State University College of Architecture, Art + Design and she is also a Certified Autodesk Revit Architecture Professional.

Follow Mallery White on LinkedIn: www.linkedin.com/in/MalleryQWhite

Tenille Bettenhausen

Tenille has been in the AEC industry for over 20 years. She began her career in project, in architecture firms and local offices serving as a designer and project manager. The last 6 years of her career, she pivoted to business development and client relations strategist roles interfacing with clients. Tenille is currently one of the Client Success Manager at Microdesk where she truly believes that architecture and design lifts the human spirit and is a champion of goals that lead to knowledge diversification and consensus-building for Microdesk's clients. Tenille has a degree in Architecture from Arizona State University and is currently on the Board of Directors for AIA Orange County. This year she is co-chairing and will be the Master of Ceremonies at the 2023 Orange County Design Awards. Tenille is the podcast host of Death by Architecture, a short story telling podcast centered around true crime in the AEC industry and the author of the upcoming children's book, "Maybe I'll be an Architect" releasing this fall.

Follow Tenille Bettenhausen on LinkedIn: <https://www.linkedin.com/in/tenilleb/>

Mackenzie McCulloch

Mackenzie is an NCIDQ registered Senior Interior Designer and Associate Principal working for Lamar Johnson Collaborative. With a BArch (Bachelor of Architecture) degree from Mississippi State University College of Architecture, Art + Design he has worked in the Design field for over 12 years. With over 7 million square feet of projects under his belt, Mackenzie has worked on projects of various sizes in the corporate, hospitality, healthcare and educational realms. He has also held various leadership positions where his focus is to build a strong and confident team of designers and technical staff. Mackenzie is involved in his local community of designers as part of the IIDA Community Impact Committee whose goal is to build a stronger bond between designers and their local community with a focus on sustainability, introducing new groups to the field of design and connecting different arms of the local design community. He has also held positions with the AIA Mentorship Program in his local chapter whose goal is to help members at different phases in their career connect with one another and grow professional in their career.

Follow Mackenzie McCulloch on LinkedIn: <https://www.linkedin.com/in/mackenziemcc/>

Moderator

Luc Wing

Luc is a Solutions Specialist at Microdesk, focusing on sustainable analysis platforms and workflows. Over the past five years since obtaining his Autodesk Building Performance Analysis (BPA) Certification, he has made it his mission to promote integration of sustainable mindsets and solutions as part of the BIM process and throughout the life-cycle of a project. Luc has worked with a wide range of architectural, engineering, and construction management clients on Revit modeling, construction documentation, training, and energy analysis. He has provided support for firms participating in the Architecture 2030 initiative, has conducted whole building analysis including heat gain, cooling loads, daylighting, solar, and wind, and has presented at Autodesk University. As part of the Sustainability Team at Microdesk, Luc develops workflows and documentation for our team, while helping our clients make informed design decisions that lead to better building performance. Luc is skilled in a host of software including Revit, Navisworks, Insight, and Bluebeam, is a Revit Certified Professional and is a certified Building Performance Analyst. He holds an Associates Degree in Architectural Drafting Engineering and Design from the Central New Mexico Community College.

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Overview

Defining Diversity, Equity, and Inclusion

Diversity is the presence of differences that may include race, gender, religion, sexual orientation, ethnicity, nationality, socioeconomic status, language, (dis)ability, age, religious commitment, or political perspective. Populations that have been-and remain-underrepresented among practitioners in the field and marginalized in the broader society.

Equity is promoting justice, impartiality and fairness within the procedures, processes, and distribution of resources by institutions or systems. Tackling equity issues requires an understanding of the root causes of outcome disparities within our society.

Inclusion is an outcome to ensure those that are diverse actually feel and/or are welcomed. Inclusion outcomes are met when you, your institution, and your program are truly inviting to all. To the degree to which diverse individuals are able to participate fully in the decision-making processes and development opportunities within an organization or group.

Definitions by <https://dei.extension.org/>

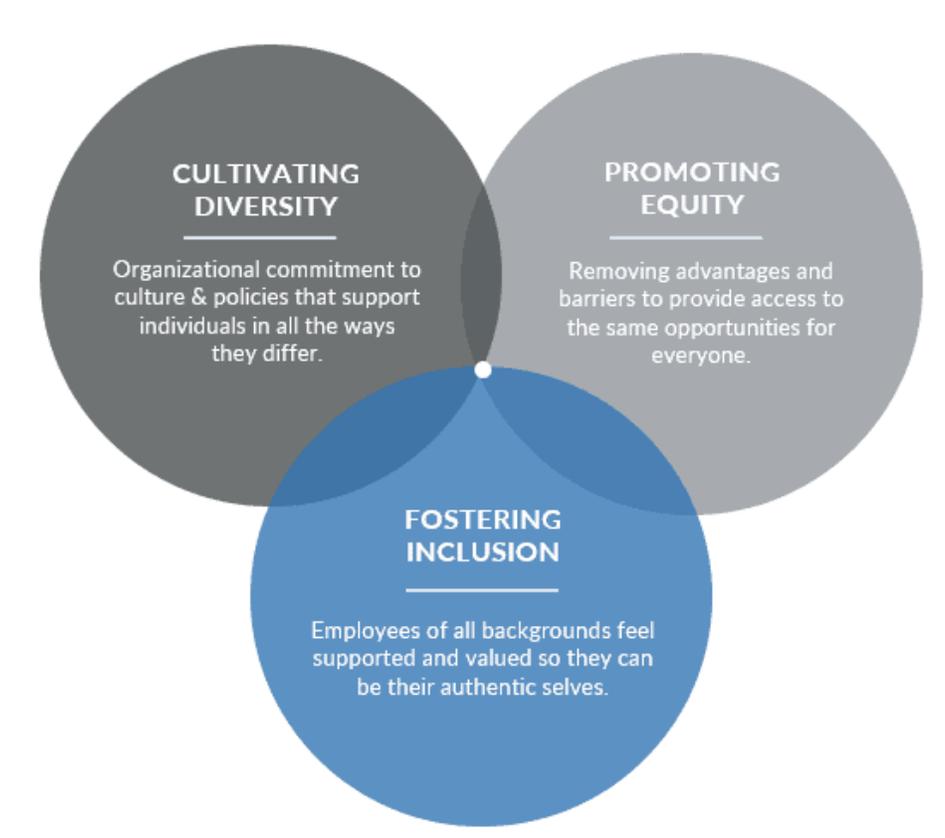


Image by <https://newmeasures.com/products/diversity-equity-inclusion/>

Learning Objective: Identify how the evolution of technology enabled us to positively impact the diversity and inclusion of our workforce

As our industry becomes more sophisticated, adapting to changing technologies, increasing towards data analytics, and developing new and innovative ways of working, it needs highly educated and skilled workers to fill these new roles. Over the last decade many new roles, responsibilities, and titles have surfaced that are focused on evolving technologies; BIM/VDC Manager, BIM Coordinator, Data Analyst, Technology Implementation Lead, and Asset Management Specialist, just to name a few. In order to fill these technology-based roles, we need to diversify our search outside of the standard AEC candidate.

Women have consistently outpaced men, receiving 57% of bachelor's degrees according to an analysis by [Pew Research](#) of data collected from the [U.S. Bureau of Labor Statistics](#). Women, ages 25 and older, now account for more than half of the college-educated workforce (50.2%) — an 11% increase since 2000.

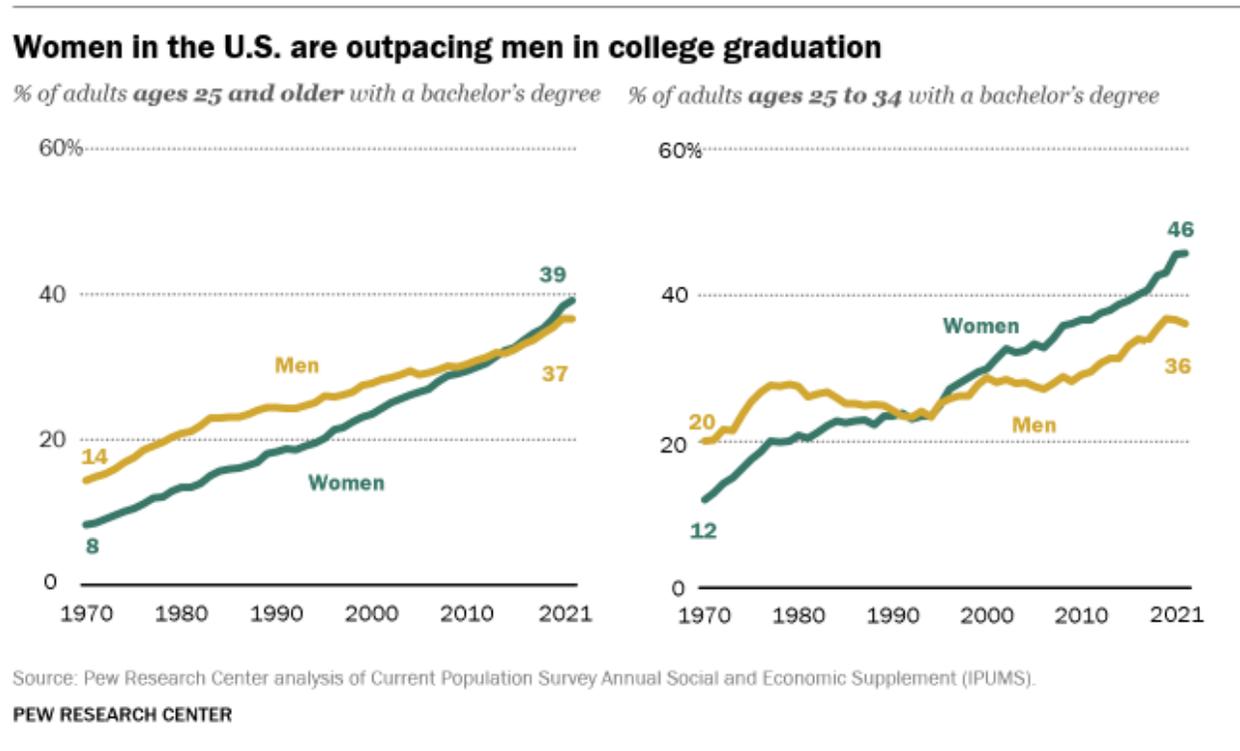


Image by <https://www.pewresearch.org/fact-tank/2021/11/08/whats-behind-the-growing-gap-between-men-and-women-in-college-completion/>

This increase in diversity in undergraduate degrees is also reflective in other minority groups. According to the American Council on Education, the share of white students as a proportion of total undergraduate enrollment has declined. In 2015-16, approximately 45% of all

undergraduate students identified as being a race or ethnicity other than white, compared with 29.6% in 1995-96.

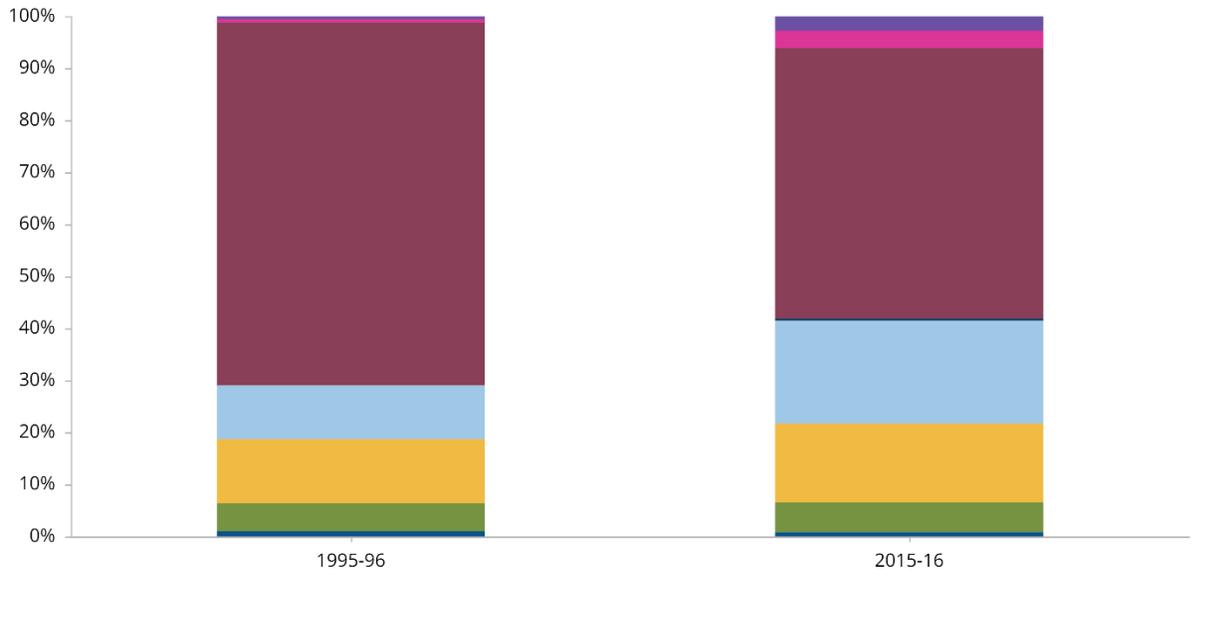
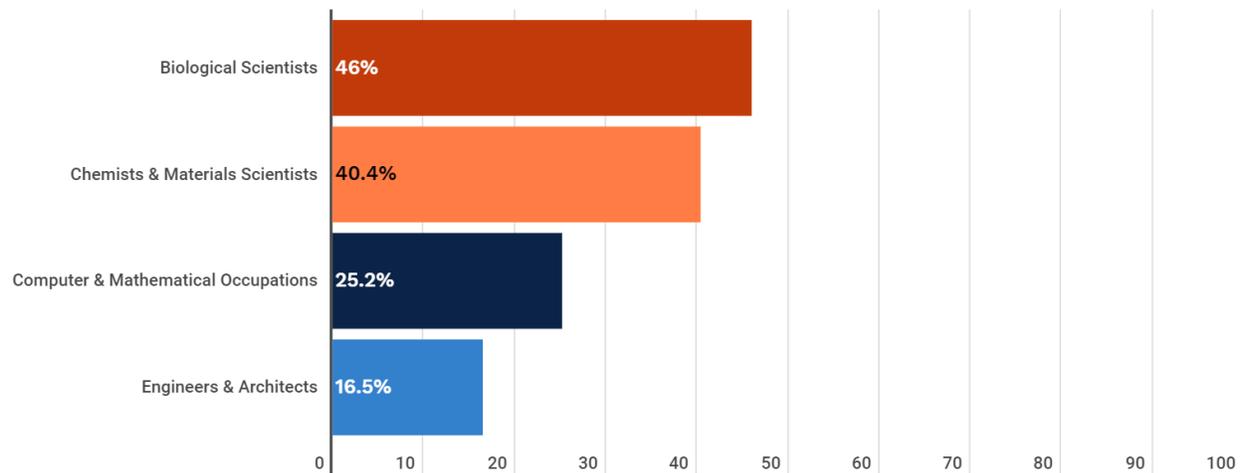


Image by <https://www.equityinhighered.org/indicators/enrollment-in-undergraduate-education/race-and-ethnicity-of-u-s-undergraduates/>

Because of the growing need for highly skilled, technology savvy, educated workers in the AEC industry, it has opened the doors and allowed more women and minorities to entire the field and stay in the industry.

Although technology is working to increase diversity within the AEC industry, STEM fields have continued to underrepresent women and other minorities. On average, women make up only 25% of the workforce in science and technology, however this is even lower for architecture and engineering where women only represent 16.5% of the workforce.

Women in STEM Occupations



SOURCE: U.S. Bureau of Labor Statistics, "Employed persons by detailed occupation, sex, race, and Hispanic or Latino ethnicity," Labor Force Statistics from the Current Population Survey, Table 11, 2020.

Image by <https://www.aauw.org/resources/research/the-stem-gap/>

This gap is mainly due to the following factors:

- Gender Stereotypes
- Male-Dominated Cultures
- Fewer role models
- Unprogressive office culture
- Lack of advancement
- Few mentorship opportunities

This panel will show how minorities use technology to forge their own path through the AEC industry by utilizing their highly desired, innovative, and technologically savvy skills to excel in their careers. We will discuss how we overcame the factors that tend to deflect women and minorities from entering and staying in careers within AEC.

Main questions on this learning objective

How do you think the shift in technology has made an impact on women in our industry?

Of all the STEM fields, architecture and engineering has the largest gender gap where only approximately 16.5% are female. Why do you think the AEC industry is lagging behind other STEM fields in gender equality?

Resources on this learning objective

<https://www.equityinhighered.org/indicators/enrollment-in-undergraduate-education/race-and-ethnicity-of-u-s-undergraduates/>

<https://www.pewresearch.org/fact-tank/2021/11/08/whats-behind-the-growing-gap-between-men-and-women-in-college-completion/>

<https://www.bls.gov/opub/ted/2017/women-in-architecture-and-engineering-occupations-in-2016.htm>

<https://www.aauw.org/resources/research/the-stem-gap/>

Learning Objective: Compare different journeys and understand how to navigate the world of BIM as a minority

1. Navigating BIM as a minority:

This panel will explore the barriers to diversity through the story telling of our journeys throughout our careers. Some points discussed will be:

- The challenges of affording schooling (engineering, construction and architecture programs).
- The lack of role models and the lack of knowledge that BIM careers are a career option and the lack of understanding that representation does matter.
- Lack of flexibility, exploring motherhood and working.

2. Why is it so important for companies to go beyond one gender/ Is there a place for me?

- Women can boost employee morale
 - Most often, morale is mostly impacted by personality types, generational gaps, and the emotional intelligence level of the leaders or management. Women have a unique ability to transcend these obstacles.
- Gender-diverse teams have stronger levels of communication and collaboration.
 - Different personalities contribute to the overall workplace compatibility. Women often excel in communicating effectively. Moreover, teams working together on a project toward a common goal can reach greater success when effective collaborators partner up and share open communication.
- Women can cause dynamic shifts in management.
 - The maternal nature of a female leader can offer a nurturing environment to develop staff members into rockstar employees. Women are generally more empathetic.
- Women introduce different perspectives as a whole.

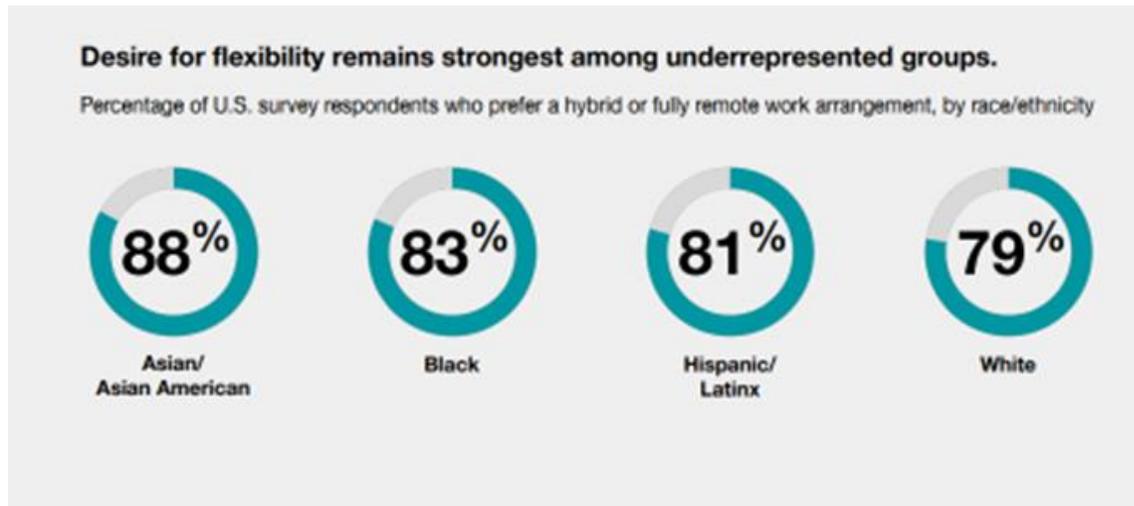
- This is especially true when it comes to problem-solving. It's true what they say about fresh eyes and fresh points of view. Bringing women into the workplace helps to diversify the environment with new ideas and suggestions for reaching core company goals.



Emotional Intelligence - *the ability to sense, understand, and effectively apply the power and acumen of emotions as a source of human energy, information, connection, and influence*

3. Flexibility is the key driver to inclusion:

Flexible work practices are a key component in building inclusive workplaces. While diversity, equity, and inclusion has been a priority for executives over the past two years, it's important to recognize that future-of-work planning and practices fostering workplace belonging must go hand in hand. The desire for flexibility remains strongest among under-represented groups. We will continue to see a higher preference for location flexibility among employees of color.



Knowledge workers who say they have little to no ability to set their own hours report that they are 3x more likely to “definitely” look for a new job in the next year compared to those with moderate schedule flexibility. (Future Forum survey)

Main questions on this learning objective

What are some of the barriers to diversity?

How do we leverage the challenges of diversity in AEC?

It is a well-known fact that our industry is dominated by men, it has a culture of long hours, battles with large egos, unprogressive office culture, and tends to have an image of a stressful and chaotic work environment. So, why did you choose to go into this industry and how have you overcome these challenges?

How are we making challenges inherent to our business (childcare, long hours, location) so that we are not creating larger boundaries for people with these circumstances?

Resources

<https://futureforum.com/wp-content/uploads/2022/07/Future-Forum-Pulse-Report-Summer-2022.pdf>

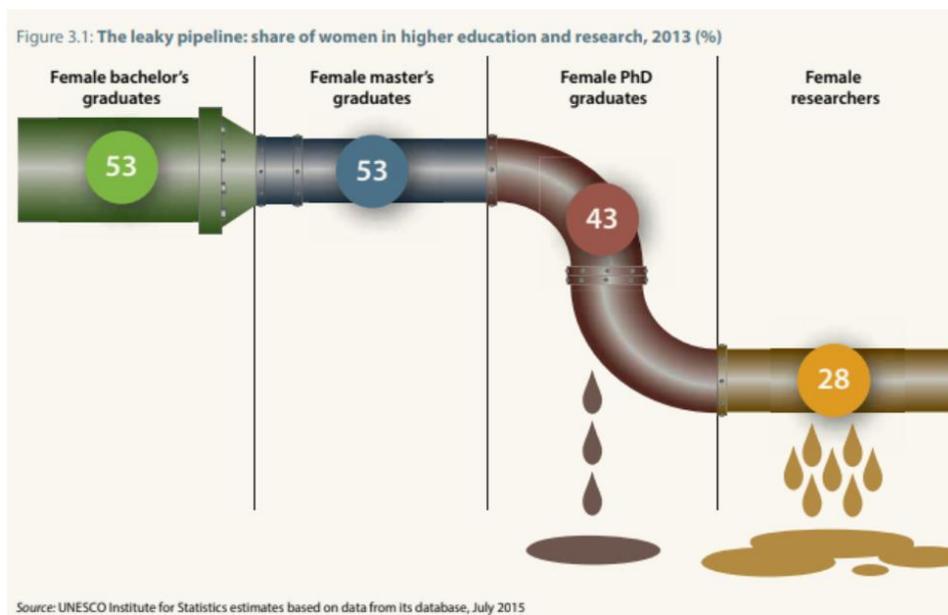
<https://www.census.gov/content/dam/Census/library/publications/2020/demo/p25-1144.pdf>

<https://www.psychologytoday.com/us/blog/the-brain-and-emotional-intelligence/201104/are-women-more-emotionally-intelligent-men>

Learning Objective: Create a culture to build confidence and support equality to re-shape the way we work.

Current State

“There is a phrase known as the 'leaky pipe phenomenon’”, referring to the high percentage of woman, who seek higher education like architecture and/or engineering who tend to slowly trickle off at an alarming rate as they graduate and enter the workforce. Imagine signing up for classes that excite you, learning about things that prepare you for an energized springboard into the workforce only to find out upon your first day that there is no support in place to help you when life happens. It's kind of like finding out that the road drops off a cliff when you are going 90 miles per hour. All you can do is flail and grab onto anything you can to keep you afloat otherwise you fall and everything you worked for is dissipated.



[Source: UNESCO Institute for Statistics](#)

“Women in particular, make up less than 25% of the STEM (science-technology-engineering-mathematics) workforce in the United States.” As minorities in the AECO industry we know this phenomenon all too well. Whether it’s the lack of confidence and encouragement, others’ incredulous influence on our capability, constantly second-guessing ourselves or the simple fact that we don’t see ourselves represented, thus we do not strive for more.

“Women from under-represented groups face prejudice twice over, both against their gender and their race.” We have been conditioned not to speak up, suppress our perspectives and keep our heads down doing things the same way they have always been done, not questioning the status quo. Add to all this a global pandemic, “our industries are faced with the fact that we might lose a whole generation of women. As the bearers of household responsibilities, facing a pay gap and being penalized for stepping off the career path” and not taking into consideration

that “During the Great Recession, the number of architects dropped by 30%” in general, women are struggling to hold on to their careers and some semblance of life outside of the home.

Today we are here speaking as women, minorities and those who just don't fit inside the proverbial prescribed box, who are also in the Tech and AECO industries and this quote from Reshma Saujani sums it up nicely, *“I've been in every single powerful room, I've met every single CEO, every president and every prime minister. And when I meet them, I'm like, You? You're running What? Me and my girls, we can run circles around you. And then I realized it's never been about whether we're qualified, whether we're prepared, whether we're ready, that we've never really dissected all the undeserved unearned privilege that so many people have. And that we have literally bought and been fed basically this propaganda, that we're not good enough or smart enough that we don't belong. And the real resistance in this moment is saying NO MORE. I'm not reading those books, I'm not taking those courses, I'm not taking that class. I'm not buying into that B*****. I'm here and I can lead too.”*

How can we flip the script and leverage diversity to our advantage?

The culture of tech companies cannot change if all people aren't represented in the room where decisions are being made. We can't let others dictate how we live our lives.

- Representation & Visibility
 - ‘You can't be what you can't see.’ - Marian Wright Edleman. It's important to have Female role models to encourage those who wouldn't necessarily be exposed to STEM see that its possible.
- Supportive Initiatives
 - Collaboration
 - Mentorships
 - Problem Solving
- Socialization & Confidence Building
 - Women in general wait to get recognized. “The world doesn't work that way. We need to teach girls that it's OK to ask for what you want.” Find your voice and be loud and don't get discouraged when it doesn't go according to plan.
 - “For the American economy, for any economy to grow, to truly innovate, we cannot leave behind half our population. We have to socialize our girls to be comfortable with imperfection, and we've got to do it now. We cannot wait for them to learn how to be brave.”

As an industry, how can we better support the transitions in and out of the workforce due to life? How can we better support a work/life balance?

Unfortunately, we are all human beings we need to understand that life happens outside of work. This does not only affect minorities it affects everyone.

1. Employee Well-being

- Encourage employees to take care of themselves physically and emotionally by providing time and resources to support healthy eating, exercise, medical care and mental health care.
 - *“Employee well-being has broad implications for the success of a company — from employee retention to the work that’s produced. It shows up in all these invisible ways from the quality of the product you ship, to the reputation that you hold, and frankly, to how easy it is to retain team members,” Du Bey said.*
2. Employee Happiness
 - Support the physical and mental health of your employees
 - *“Happier employees are 13 percent more productive, according to research from Saïd Business School at the University of Oxford.”*
 3. Employee Time Off
 - Paid Time Off
 - While Unlimited time off sounds great on the surface we all know that unlimited time off doesn’t really exist in the working world.
 - *Du Bey said. “But what it really means is we’re not watching the clock, and we want you to take vacations. People will routinely take trips that could be two to three weeks long.”*
 - Paid Leave
 - When moments in your life happen outside of the employee’s control like a death in the family or a sick kid or doctor’s appointment, you don’t want to micromanage your vacation days to the point where you don’t have a real opportunity to take a break from your responsibilities.
 - *Rubin said. “Your vacation should be your vacation and any other things that happen in life should be the things that are happening in your life.”*
 - Recharge Days or Synchronous Breaks
 - This is a situation where the whole company is closed, and employees are off at the same time.
 - *“When people are on vacation on their own, but everyone else is working, it’s actually hard to be on vacation in a modern day and era,” Stevens said.*
 4. Set Asynchronous Communication Standards
 - Not all employees work best at 6am or 12am we must take into consideration working asynchronously, it’s important that employees know they don’t need to respond to messages at all hours.
 - Employees are not required to reply to messages outside their working hours.
 5. Not Glorifying Overworking
 - To avoid burnout, encourage employees to pace themselves whether it’s taking breaks during the day or taking time off.
 - *“We have to look at it through your best interest as a human being first and foremost. I think that’s a huge responsibility to pay attention to.”*
 - Include Breaks in the Day
 6. Lead by Example
 - Turn off work communication outside of work hours and when you are on vacation.

- Those little notifications can really impact your mental health while you are trying to actively disengage to take a break for the day-to-day workload.
- 7. Compensate well and engage your employees.
 - If your employees feel as though you are not only invested in them professionally but personally you will see a better-balanced employee.
- 8. Set guidelines and accountability
 - *“There should be a clear understanding on both the employee and manager side about the amount of hours they are expected to work, and the outcomes required for success in the role.”*
- 9. Trust your employees will do the job
 - If your employees want that flexibility, there is a mutual trust that you are hiring adults who are professional. Set goals with a mutual understanding that not only have you set realistic goals, but the employee must deliver against your goals.
- 10. Ask employees what they want
 - Conduct employee sentiment surveys no less than quarterly — usually monthly.
 - *“During the height of the pandemic, one survey question asked if employees felt overworked. About 50 percent of staff felt they were overworked at least some of the time or more.”*
- 11. Get rid of toxic employees
 - *“It’s also really important that even if a person is really talented, but they’re terrifying everybody around them and making life suck for their reports — even talented people should not be kept on staff because the bigger picture, the happiness of the larger employee base, is the most important aspect.”*

“Research shows that diverse teams perform better. Individuals from different genders, races, backgrounds and experiences bring different perspectives that can lead to innovative solutions. Given the changes being brought on by the Fourth Industrial Revolution (4IR), we can’t afford not to have all hands-on deck.” Also, *“According to a study by Forbes, organizations with inclusive hiring processes generate decisions twice as fast while spending 50% less time in meetings. Forbes also found that these teams make better business decisions 87% of the time and that those decisions delivered 60% better results”* With collaboration, equal pay, flexible work schedules, mentorship and above all else representation, we can help our industry evolve into something that benefits all people and not just one gender.

Main questions on this learning objective

How can we flip the script and leverage diversity to our advantage?

As an industry, how can we better support the transitions in and out of the workforce due to life? How can we better support a work/life balance?

Resources on this learning objective

<https://www.weforum.org/agenda/2019/03/gender-equality-in-stem-is-possible/>

<https://www.weforum.org/agenda/2017/11/women-in-tech-engineering-ellen-stofan>

<https://www.weforum.org/agenda/2016/01/the-fourth-industrial-revolution-what-it-means-and-how-to-respond/>

[Diary of a CEO – Steven Bartlett, E149: How I Taught Millions of Women the Most Important Skill: Girls Who Code Founder: Reshma Saujani](#)

https://www.architectmagazine.com/practice/ming-thompson-architecture-might-lose-a-generation-of-women-in-the-coronavirus-era_o

<https://www.viatechnik.com/construction-industry-problem-women-going-solve/>

<https://builtin.com/people-management/work-life-balance>

Learning Objective: Showcase how diversity can successfully impact corporate culture

Leveraging the challenges

The face of ownership is dramatically changing in America. The US Census predicts that the US will be majority nonwhite by 2045. Current demographic breakdown of AEC is 90% white and 79% male. If this holds true, owners will want to hire project teams that share their views, values, and perceptions.

- Cultural Change
 - "The majority must begin advocating for the minority
 - "The entire industry must step up, making conscious efforts and insisting on the female presence in positions of leadership and in the field."
 - "When women have coworkers and industry leaders as allies, it's more likely that they will find themselves in the rooms where important decisions are being made. Women will finally have the opportunity to shape the industry."
 - Women must embrace standing out
 - "In my own experience, I've often been the only woman in a meeting. At industry conferences, I may be among a small handful of women in the room and am often the only woman speaking on a panel. While these experiences could have felt isolating, I see these as opportunities to stand out. I personally realized that standing out was an advantage and,

in a way, a superpower. That's when my career trajectory changed. No one great ever fit in with the crowd. You have to own it."

- The Industry Must Amplify the Voices of Women
 - Junior staff and peers
 - How do we amplify their voices as an inherent process and not as an after thought.
 - Is everyone in the room?
 - Are you creating opportunities for them to speak?
 - Are you being an advocate or a listening ear for when they run into an issue and how to solve it?
 - "Diversity should also be represented in company interviews. If a candidate can't visualize themselves in the industry, they will turn away, increasing the pipeline issue. When the entire industry leans in to focus on attracting and retaining female innovators, everyone wins."
- Blaze Your Own Career Path within Construction
 - "Close your eyes and imagine the CEO of an ENR Top 400 General Contractor. Imagine an ironworker foreman on the construction of a New York skyscraper. Imagine the superintendent on a high-profile public library project. Did you imagine a woman in any of these roles? The harsh reality is that gender stereotypes and public perception about the construction industry have hindered women both in entering and thriving in the construction workforce."
 - "Today, new sets of evolving roles related to innovation, technology, virtual design, and construction exist that were not prevalent in the past decades. Chief Technology Officer, Chief Innovation Officer, Director of VDC, and Technology Solutions Manager are shattering previous gender stereotypes and paving the way for a new generation of female leadership in the construction industry. Fortunately, the industry has seen incredible strides in women adopting and excelling in these roles."