



Diversity & Inclusion in Engineering: It's Everyone's Job

WFEO Women in Engineering Workshop
December 2016

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American Association of Engineering Organizations

Agenda

Diversity: the art of thinking independently together
Malcolm Forbes

Examine the data to illustrate the importance of engaging in diversity conversations in the workplace.

Origins of SWE's diversity and inclusion programs.

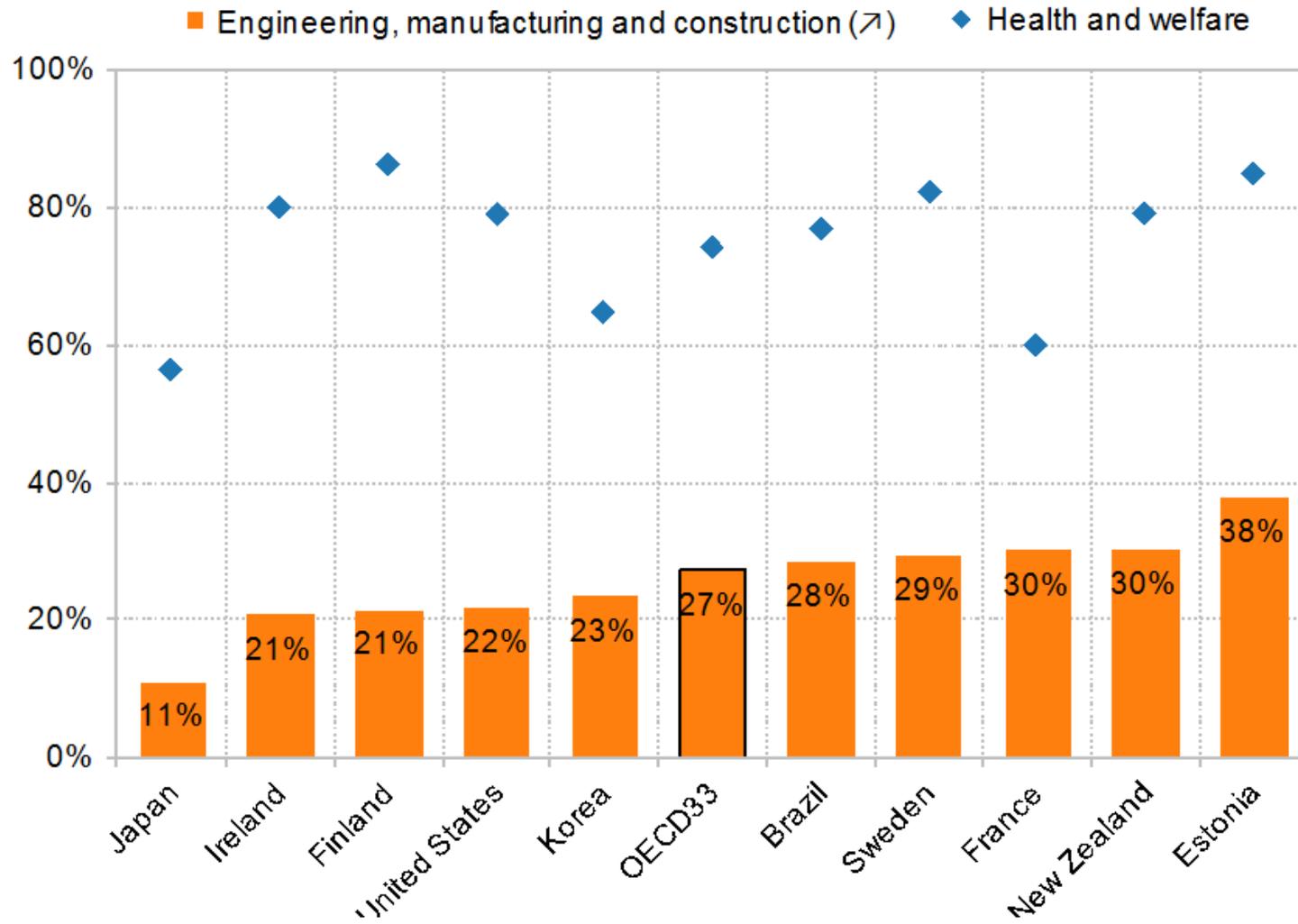
Introduction to unconscious bias and how it affects our decisions.

Introduce ways to engage in conversations about diversity and inclusion issues in a non-confrontational manner.

Reviewing the Research

Degrees Awarded to Women by Field of Education (%)

2010

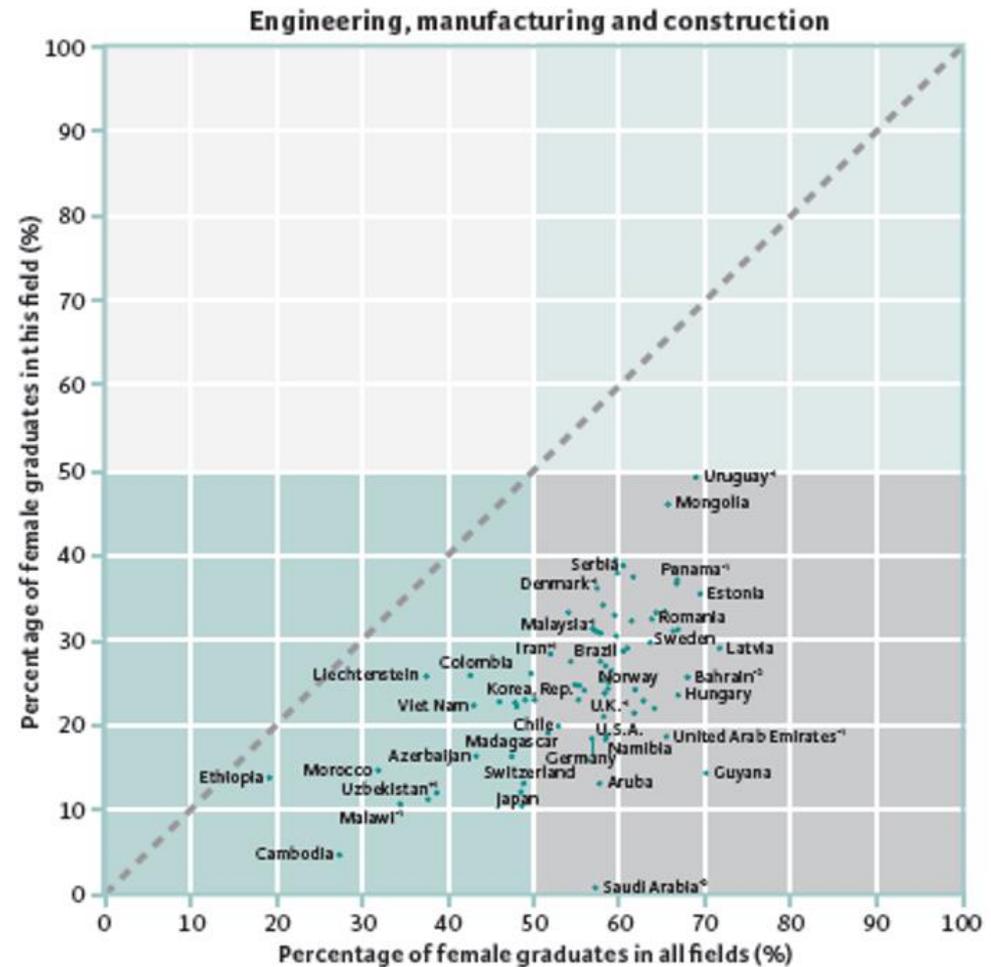


Source: OECD Gender Initiative, 2012

Women as a Percentage of Tertiary Graduates by Country

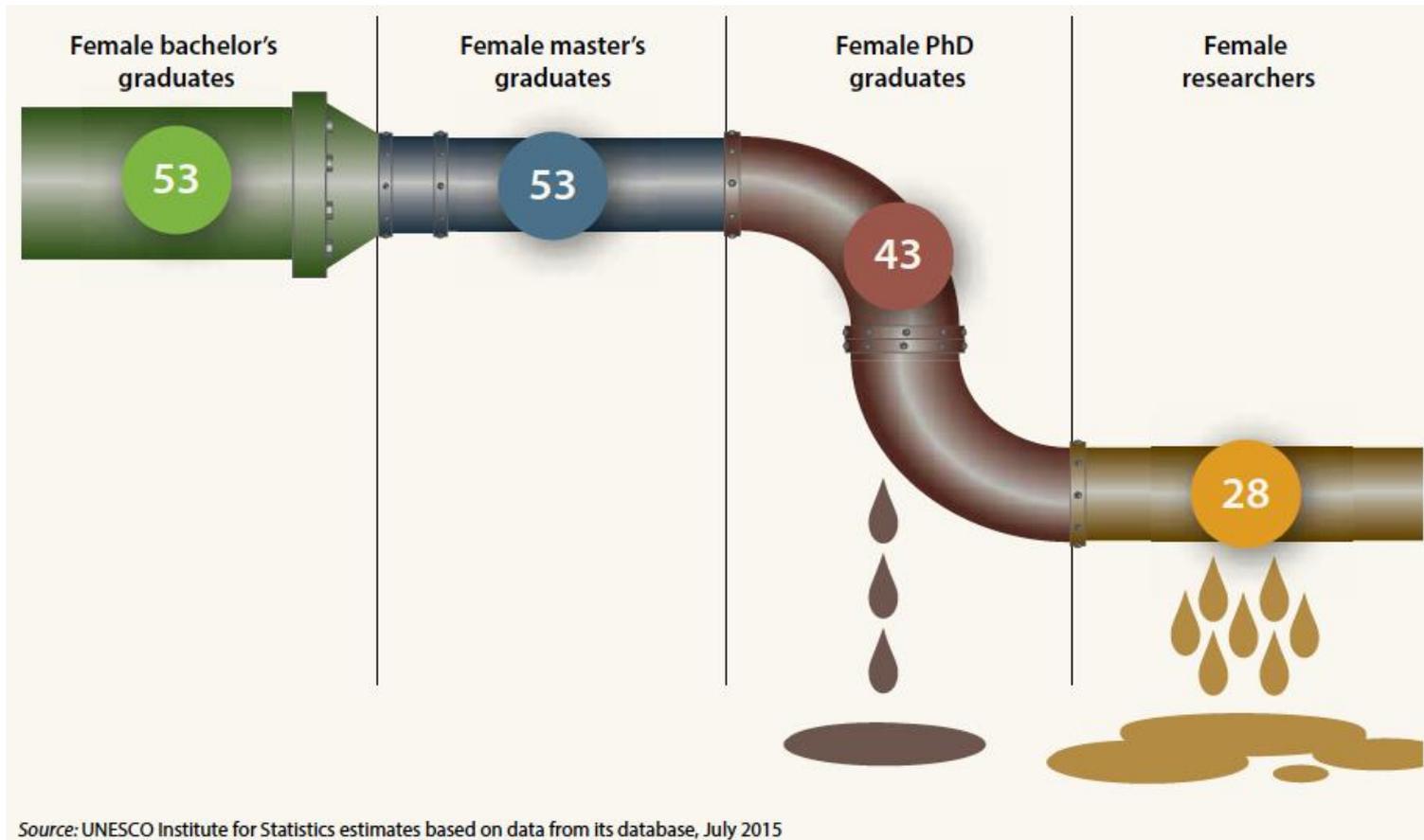
2008

-  More female than male graduates in this field but fewer female than male graduates in all fields
-  Fewer female than male graduates in this field and in all fields
-  More female than male graduates in this field and in all fields
-  Fewer female than male graduates in this field but more female than male graduates in all fields



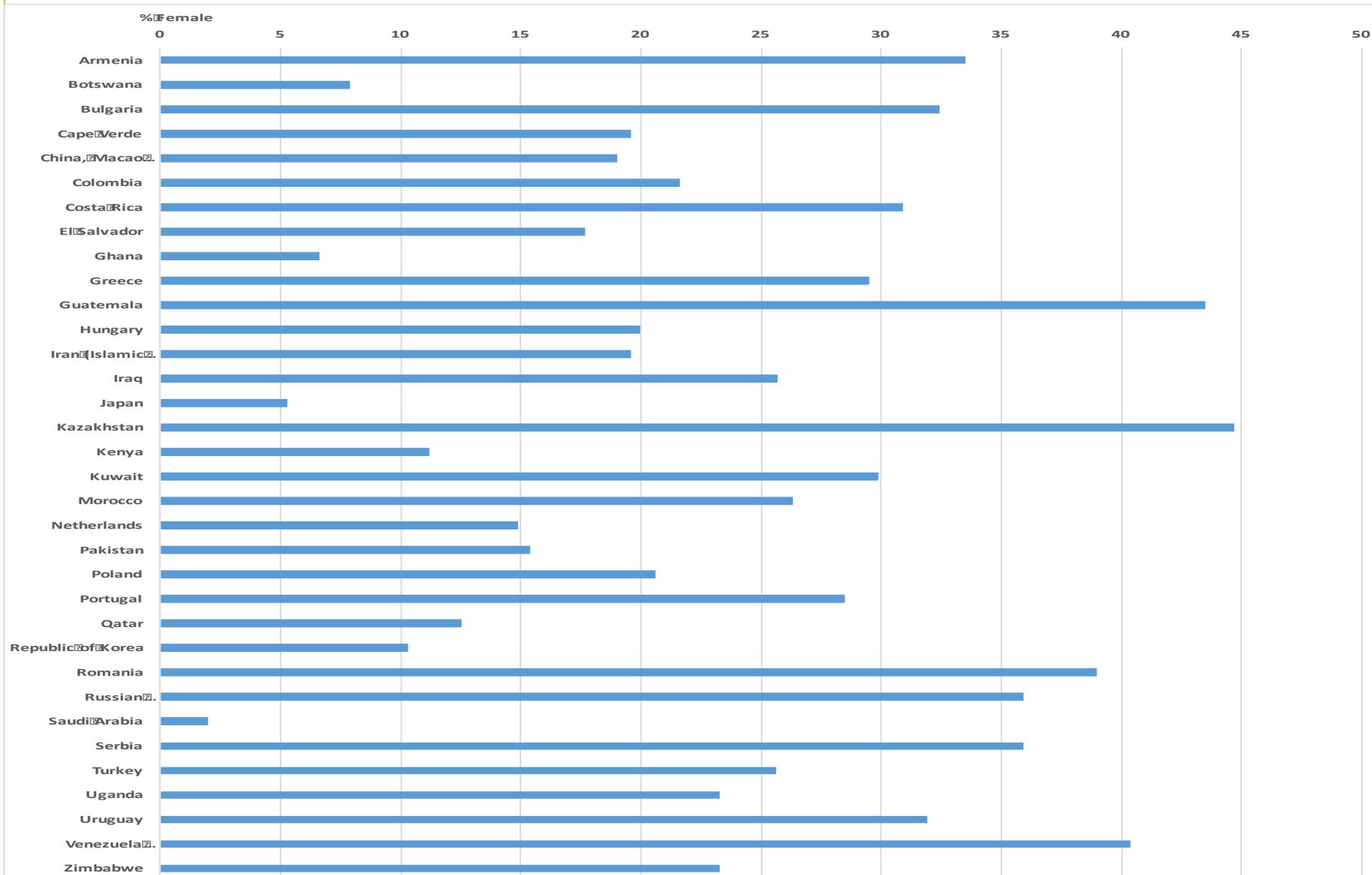
Source: UNESCO. (2010). *Global education digest 2010: Comparing education statistics across the world*.

Share of Women in Higher Education and Research (not discipline-specific), 2013 (%)



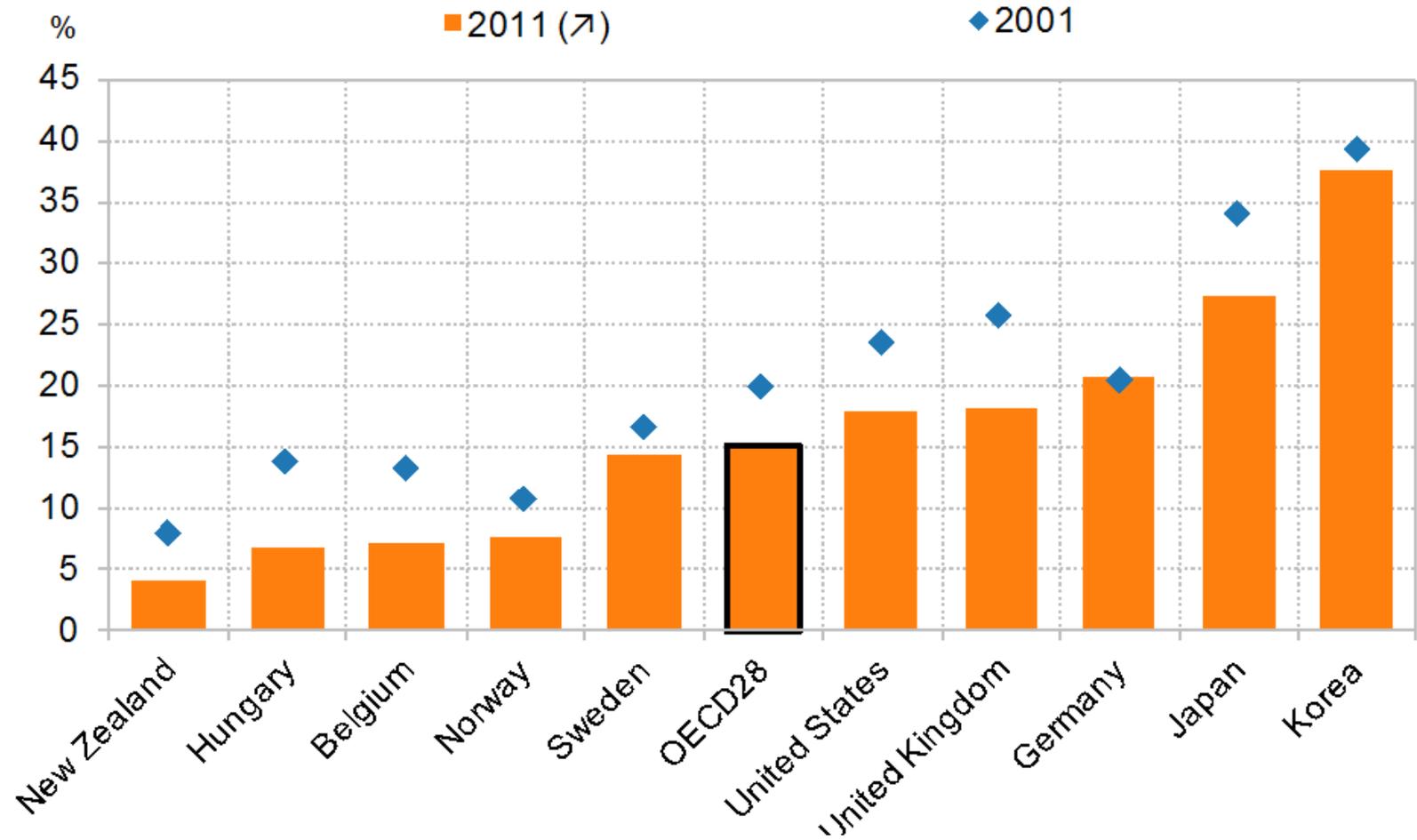
Female Researchers in Engineering & Technology

Selected Countries, 2013 (or closest year data available)



Earnings for Women vs. Men Full-Time Employees

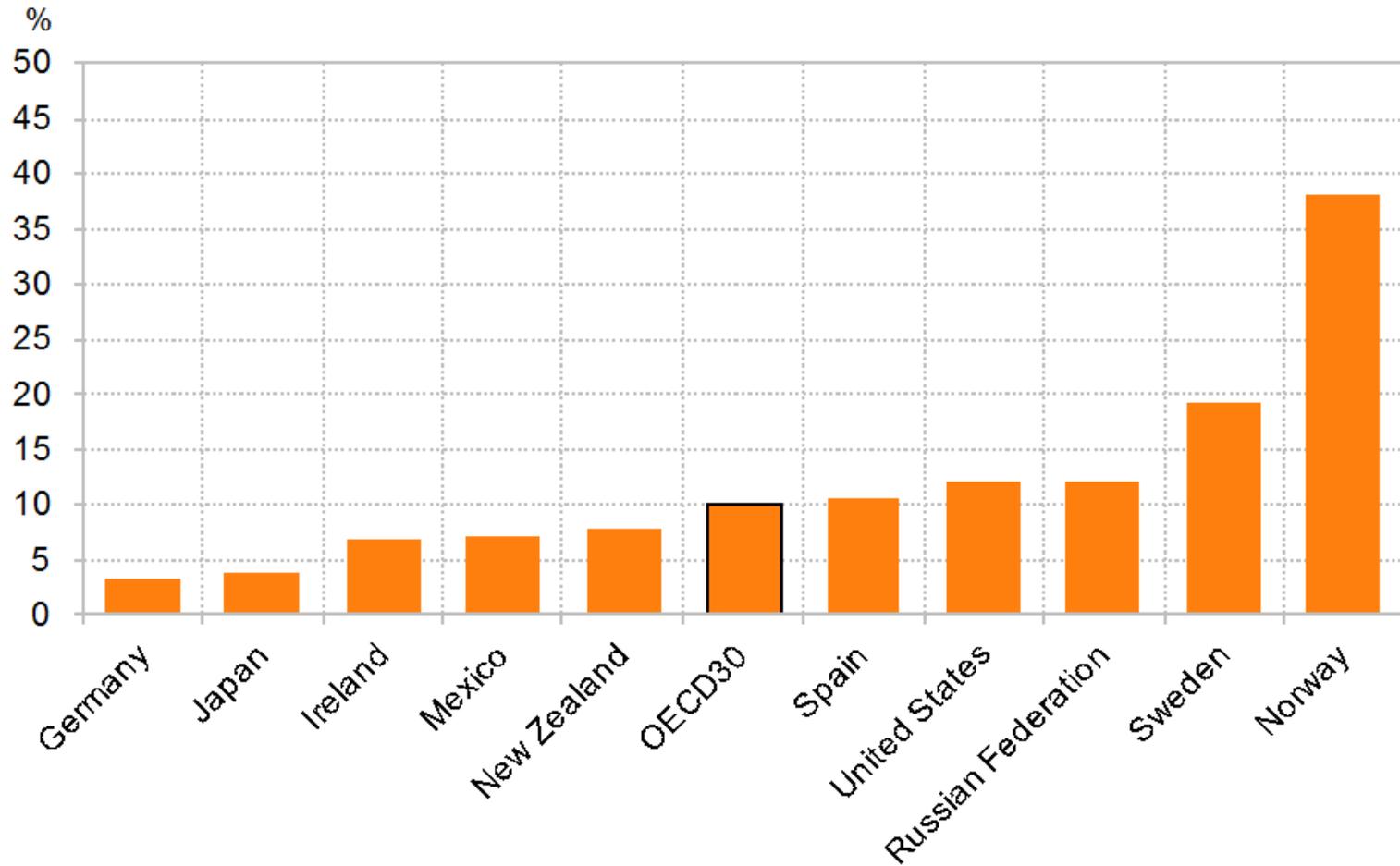
2001 and 2011*



Source: OECD Gender Initiative, 2012
* Or nearest year

Leadership: Share of Women on Boards

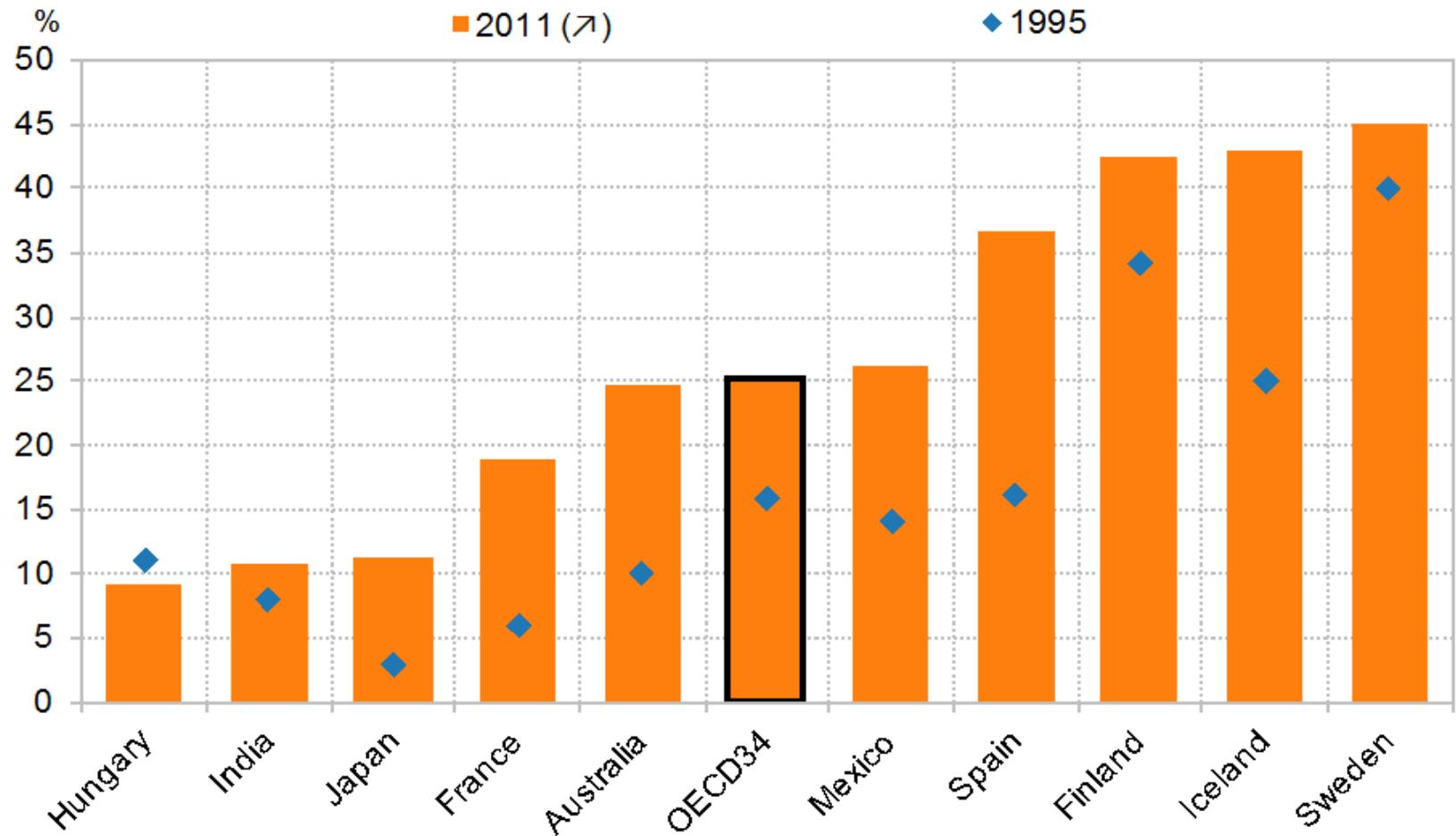
2009



Source: OECD Gender Initiative, 2012

Leadership: Share of Women in Parliament

1995 and 2011



Source: OECD Gender Initiative, 2012

Origins of SWE's Diversity and Inclusion Programs

The Society of Women Engineers

Brand Promise

- World's largest advocate for all women in engineering and technology.



- Will be there for women as they seek to be their authentic selves through all stages of their career and lives.



The Society of Women Engineers was Established in 1950

- Champions the value of diversity by being a catalyst for change.



SWE Members Represent All Engineering Disciplines and Many Areas of Technology

- Inspires women to achieve their full potential as engineers and leaders.

Diversity Principles

SWE

At SWE, we acknowledge and respect the value of a diverse community.

- Scope of diversity includes race/ethnicity, religion, family status, age, physical abilities, sexual and affectional orientation, actual or perceived gender, gender identity and expression, socio-economic status and occupational focus.
- Our society will maintain an environment that is supportive of these elements, and we will promote inclusion within our organization and the engineering community.

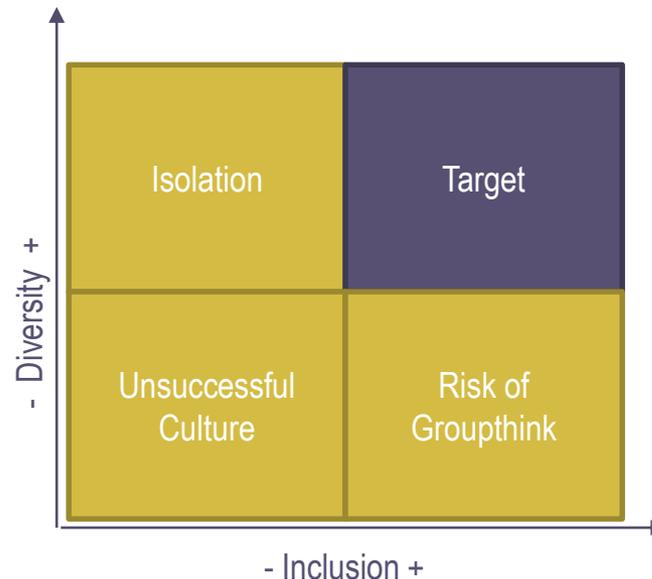


Introduction to Unconscious Bias

SWE's Goals

Diversity Goal We want our diversity to reflect the diversity of the communities where we work.

Inclusion Goal We want people to feel that they belong and are valued, that they bring value and are encouraged to thrive.



Talking About Unconscious Bias

What is Unconscious Bias?

What does it mean to you?

Bias is the process by which the brain uses: "mental associations that are so well-established as to operate without awareness, or without intention, or without control."

"Implicit biases come from the culture. I think of them as the thumbprint of the culture on our minds." (Mahzarin Banaji, Harvard University, Project Implicit - an online test for unconscious bias)

Everyone has unconscious biases, this does not make us bad people.

Introduction to Unconscious Bias

Example

Read What You See

Ca y u rea th s?

You a e not r adi g th s.

W at ar ou rea in ?



Unconscious Bias

Study

- Yale Study: Sept 24, 2012 – 127 Biology, Chemistry, and Physics Science professors at 6 prestigious research institutions rank “Jennifer” vs “John” when given the exact same resume to review for a lab manager position.
- “Jennifer” is systematically ranked
 - less competent
 - less hireable
 - and worth less investment in mentoring-trend holds for both male and female professors.



- John’s average offer = \$30,328 (USD)
- Jennifer’s average offer = \$26,508 (USD) 12.5% less on entry level job

Question for Consideration

In what way does our unconscious bias potentially perpetuate sameness in career development, promotion, and recruitment?



Discussing a Diverse Culture is in the Cards

Inclusion Solutions

Many organizations are often afraid to talk about race, gender, ethnicity or sexual orientation because they do not have the skills needed to successfully communicate or start a conversation in a multicultural environment.

SWE is helping you to have these conversations with the Inclusion Solutions cards!

INCLUSION SOLUTIONS

DISCUSSING A DIVERSE CULTURE IS IN THE CARDS

Many organizations are often afraid to talk about race, gender, ethnicity or sexual orientation because they do not have the skills needed to successfully communicate or start a conversation in a multicultural environment.

Inclusion Solutions are training cards designed to create awareness and provide an easy introduction to many fundamental Diversity & Inclusion topics. Each topic is supported by research and thought-provoking questions that can be used as conversation starters for one-on-one coaching, self-reflection activities, as part of formal professional development sessions, or even as a fun way to start your team meetings.

These cards make a potentially difficult topic more approachable and help individuals create open dialogue around diversity within our organization.



EVIDENCE

GENDER PAY EQUITY

DIVERSITY IN ENGINEERING

WHAT CAN WE AS LEADERS DO TO ENCOURAGE AND SUPPORT WOMEN INTERESTED IN PURSUING OCCUPATIONS THAT ARE TRADITIONALLY MALE-DOMINANT?

HOW CAN WE AS LEADERS GAIN A BETTER UNDERSTANDING OF THE LEADERSHIP CAPABILITIES AND TALENTS DEMONSTRATED BY WOMEN?

WHAT ARE SOME WAYS WE CAN WORK TOWARD ELIMINATING GENDER BIAS IN THE WORKPLACE IN AREAS LIKE SALES, MARKETING, HUMAN RESOURCES, TECHNOLOGY, ETC.?



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Inclusion Solutions Cards Overview

The cards are divided into the four topics: (1) best practices, (2) demographics, (3) experience, and (4) evidence.

DEMOGRAPHICS EXECUTIVE PRESENCE

DIVERSITY IN ENGINEERING

WHAT CAN WE DO TO ENCOURAGE AN ORGANIZATION TO SEE POTENTIAL IN THOSE THAT DO NOT LOOK AND ACT ALIKE?

IN WHAT WAYS DOES OUR UNCONSCIOUS BIAS POTENTIALLY PERPETUATE SAMENESS IN CAREER DEVELOPMENT, PROMOTION, AND RECRUITMENT?

NAME THREE THINGS YOU PERSONALLY CAN START DOING TODAY TO ENCOURAGE FEMALE CAREER DEVELOPMENT, WHILE STOPPING A CORRESPONDING ACTIVITY THAT PERHAPS CONTRADICTS THE GROWTH OF FEMALE LEADERS?



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DIVERSITY & INCLUSION
DEMOGRAPHICS

Executive Presence

Is being perceived as "leadership material" essential to being promoted into leadership positions? According to a study conducted by the Center for Talent Innovation (CTI), "Performance, hard work, and sponsors get top talent recognized and promoted, but leadership roles are given to those who also look and act the part."

In that same survey, 268 senior executives surveyed said "executive presence" counts for 26 percent of what it takes to get promoted—but what is it? CTI surveyed nearly 4,000 college graduate professionals in large corporations to get at the essence of executive presence. Most individuals surveyed defined executive presence into three key characteristics: as an individual's ability to exude gravitas, being articulate and commanding the room, and finally looking like leadership material.

Unconscious bias research teaches us that each of these characteristics in assessing leadership potential can become problematic, as they are often dependent on the dominant culture's understanding of what it means to demonstrate executive presence. For example, the study revealed that some 56 percent of minority race professionals felt they are held to a stricter code, compared to 31 percent of white professionals. Women participants said feedback on executive presence was often "contradictory and confusing," which may be why an astounding 81 percent say they're unclear about how to put it into action. And finally, people of color shared they are 37 percent more likely than whites to feel that they need to compromise their authenticity at work in order to conform to conventional standards of executive presence.

So what can we do to demonstrate leadership material, without compromising our authentic selves?

Harvard researcher, Ann Cuddy says that as human beings we tend to assess people based on our ability to trust and respect them before anything else. Most people assume competence trumps all other qualities when it comes to the workplace, but Cuddy's research has found that warmth or trustworthiness is the most important factor in how we evaluate others. "From an evolutionary perspective," Cuddy says, "it is most crucial to our survival to know whether a person deserves our trust."

Did You Know?

- 78% of CEOs of Fortune 500 companies are men
- only 14.2% of all men are in the "now"
- Executives with higher confidence are 3x more likely to be promoted
- 79% of executives say that exuding confidence is a woman's executive presence. 78% say it contributes to a man's
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SOURCE: Women in Leadership, Harvard Business Review, 2012; "No Ceiling, No Walls, Loving Women," 2012 Executive Presence: How to Crack the Code, Center for Talent Innovation, 2012; Anna Goodwin, "Do You Have 'Executive Presence'?" Forbes Magazine, OCT 29, 2012; Amy Cuddy, "Presence: Bringing Your Boldest Self to Your Biggest Challenges," CBS, Brown and Company, New York, New York 2015; "By Action Form, 'Smart Gets Successful CEO Sound Like? Try a Deep Breath,'" Wall Street Journal, Apr 16, 2013.

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The cards make a potentially difficult topic more approachable and help individuals create open dialogue around diversity.

EVIDENCE CAREER GROWTH & DEVELOPMENT

DIVERSITY IN ENGINEERING

WHAT ARE THE KEY FACTORS THAT CONTRIBUTE TO THE SUCCESS OF WOMEN IN THE WORKFORCE?

HOW CAN COMPANIES LEVERAGE THE KNOWLEDGE AND EXPERIENCES OF WOMEN TO ENHANCE YOUR WORKPLACE, PRODUCTS, SERVICES, OR POLICIES?

IDENTIFY THE VARIOUS WAYS THAT YOUR ORGANIZATION HELPS WOMEN ADVANCE WITHIN AND AROUND THE COMPANY.



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DIVERSITY & INCLUSION
EVIDENCE

Career Growth & Development

Many women enter the workforce with the goal of holding a powerful role that warrants a certain level of respect and achievement. However, right from the get-go, 39-50 women begin to lose their passion and drive to seek a senior leader role—even those without children and those who have been the head of the household. At some point, the ambitions of their early years begin to lose their luster and women begin to exit their profession.

Founder and CEO of the Center for Talent Innovation, Sylvia Ann Hewlett, and Executive Vice President of the Center for Talent Innovation, Melinda Marshall, set out to understand why women in the U.S., U.K., and Germany were losing their drive to seek out those higher-level career roles within that 39-50 age group. The results—women and men wanted the same five things out of a powerful role: (1) the ability to self-realize or flourish in impact and well-being, (2) the pursuit of intellectual challenge and the opportunity to excel, (3) the opportunity to have a lasting impact based on causes important to them and to have meaning and purpose to the work, (4) the option to be a sponsor and empower others, which drive self-empowerment, and (5) the chance to grow their bank accounts by earning well. The difference was, women perceived the burdens of getting on that leadership role to outweigh the benefits.

The Athena Factor 2.0 report indicates similar data when it comes to women leaving the workforce. The good news is that in the Science, Engineering and Technology (SET) field, there continues to be an overwhelming number of jobs needed in these areas. The pipeline of good female talent in SET remains rich and deep, and women continue to be the majority of SET college graduates in many key geographies. However, the same overt biases that have plagued this industry sector continue to be the leading cause for women quitting their jobs as quickly as after only a year—a hostile work environment, being co-opted, the lack of sponsorship or effective sponsors, and difficulty around the expectation and ambiguity of "executive presence."

What can organizations do to get women to stay? Here are two examples of organizations making intentional efforts to address these challenges and ensure women thrive in the workplace.

Symantec, a United States software company, implemented the Gender Equity Image Project to promote gender equality within the company. The goal of the program is to work toward the ongoing improvement of gender representation and the reduction of the use of stereotyping imagery at Symantec whenever possible.

Alcatel-Lucent is a global telecommunications company. In facilitating a more connected world, the company is strongly committed to advancing equality. Alcatel-Lucent's management committee and their teams have committed to either sponsoring, mentoring, or providing coaching to women in the company's leadership pipeline to help prepare them to take executive positions.

How Do COMPANIES BENEFIT FROM WOMEN IN HIGH POSITIONS?

On average, companies with female board members:

- Outperformed other companies on return on equity.
- Achieved net income growth over a year timeframe.
- Outperformed business with all main board workforces.
- were less averse to risk and had less debt.

SOURCE: Hewlett, S.A. & Marshall, L. (2014). "Athena Factor 2.0: Accelerating Women Talent in Science, Engineering & Technology," Center for Talent Innovation, New York, NY. "Women Leaving the Way: Women's Empowerment Principles," 2016. <http://www.etcinc.org/the-center-redefining-the-way>. Retrieved on August 16, 2016.

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Inclusion Solutions

How to Use the Cards

- Each topic includes review questions, rich insights and examples are provided to include data that helps support the learning.
- The information + data + questions = a starting place for having a dialogue about diversity and inclusion.

DEMOGRAPHICS CHANGING FACE OF DIVERSITY

DIVERSITY IN ENGINEERING

WHAT CAN YOUR COMPANY DO TO HELP CREATE A MORE INCLUSIVE ENVIRONMENT THAT WELCOMES DIVERSE THOUGHTS?

WHAT PROGRAMS OR INITIATIVES ARE AVAILABLE FOR COLLEAGUES TO GROW IN THEIR UNDERSTANDING OF D&I BEYOND SIMPLE AWARENESS?

HOW CAN YOU/YOUR COMPANY PROMOTE AND ENCOURAGE MORE WOMEN AND PEOPLE OF COLOR TO REPRESENT THEIR COMMUNITIES WHEN THINKING ABOUT THE GROWTH OF THE INDUSTRY?



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DIVERSITY & INCLUSION

DEMOGRAPHICS

Changing Face of Diversity

According to the Pew Research Center, a snapshot of the United States in 2026 would show a nation with 117 million more people than today, where about one in three Americans would be an immigrant or have immigrant parents, compared with one in four today. The face of our nation is changing, making our conversation on the value of diversity even more important to understanding both our colleagues and the marketplace. In STEM, much of our work helps to solve complex problems for our clients, students, or patients in an effort to reduce or eliminate disease, improve accessibility, or create the impossible. The nature of the work we do requires us to become innovative by looking at our business through the viewpoint of the people we serve. In order to do this successfully, we have to acknowledge both the diversity and complexity of our customers—and of ourselves—as individuals.

The research is clear that an inherently diverse workforce offers a competitive edge for developing, selling, innovating, or deploying products or services to diverse end users. Research also demonstrates that diverse insights and perspectives are critical to identifying and addressing new market opportunities. According to a report by the Center for Talent Innovation, teams that have one or more members who represent the gender, ethnicity, culture, generation, or sexual orientation of a target market are 158 percent more likely to innovate effectively for that end user. Part of reaching those markets requires us to connect with their communities.

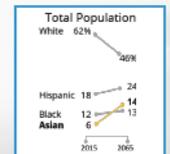
Here are a few examples of leaders in STEM making diversity a business imperative:

Association for Consultancy and Engineering (ACE) is boosting its diversity efforts through its Technical Apprenticeship Consortium (TAC) program. TAC helps individuals with diverse backgrounds develop the necessary skill sets needed for the engineering industry.

BAE Systems, a British multinational defense, security, and aerospace company, is building its pipeline of talent by offering flexible working programs called "SMART working," creating partnerships with diverse communities and providing training for leaders on unconscious bias.

At **BP**, groups of volunteers come together on a local basis, nationally or internationally, to drive activities that fall within BP's five D&I strategy areas.

By 2026, No Racial or Ethnic Group Will Be a Majority



Note: Whites, Blacks, and Asians include only single-race non-Hispanics. Asians include Pacific Islanders. Hispanics are of any race. Other races included in totals but not shown. Source: Pew Research Center projections

SOURCE: Divera Cohn, "Future Immigration will change the face of America by 2026," Pew Research Center, fact tank, October 5, 2015; Sylvia Ann Hewlett, Melinda Marshall & Laura Sherbin with Tara Gonsales, "Innovation, Diversity and Market Growth," September 2012, Royal Academy of Engineering, Diversity Leadership Group, "Increasing diversity and inclusion in engineering—a case study," 1

Let's Try the Cards Out

Small Group Activities

Setting the Stage

Group Discussion

It is important to create a safe environment for discussion to occur. Without a safe environment in which one can talk freely and openly, dialogue can quickly become one-sided or even closed.

Try to open a session with these few questions about the group's understanding on various topics/definitions below.

- How do you feel when you hear the terms diversity and inclusion?
- How do you define diversity?
- How do you define inclusion?
- How are the two terms similar and different for you?
- Describe the term biases.



Now it is Your Turn

In small groups (3 – 8 people) each person reads one card

1. Select a scribe for the group to record highlights of the discussion.

2. Each person takes a card to reflect on the content.

3. Review the card one by one, allowing reflection time to gather a perspective.

4. Share with your group what the content says and how you reacted to it.

5. Ask learners to relate it to the current workplace and what a future state might look like.

6. Discuss how the topic may create innovative thoughts, new direction for products and services or ways to address challenges in the workplace.



Group Discussion

1. Sifting through the cards, which one(s) caught your eye, why?
2. Can you think of areas or functions in your role where the cards would be of benefit, how?
3. What additional D&I tools and resources would be helpful to you?



Additional Diversity and Inclusion Resources

www.swe.org

ARUP and SWE D&I –
Knowledge Card Deck



eLearning Modules
Complement Cards -



SWE Advance App –
iTunes



Questions

