

Diversity Summit Continues Progress on Solutions

Lynne Robinson

DIVERSITY
IN THE MINERALS, METALS, AND
MATERIALS PROFESSIONS (DMMM2)



Jonathan Madison, senior member, technical staff, Sandia National Laboratories, summarized key points made during the two days of dialogue at DMMM2.



(Left to right) Amy Clarke, associate professor, Colorado School of Mines, and DMMM2 Organizing Committee chair, pauses between summit sessions with David Hwang, Natalie Larson, and Wennie Wang, graduate students from the University of California, Santa Barbara, who gave a report on the “Transforming the Diversity Landscape” symposium that they organized for the TMS 2016 Annual Meeting & Exhibition.

Attendees of the 2nd Summit on Diversity in the Minerals, Metals, and Materials Professions (DMMM2) took stock of progress made on diversity issues, while identifying potential solutions within topic areas identified as critical to the ongoing development of a more inclusive workplace culture.

Held July 25 and 26, 2016 at Northwestern University, DMMM2 showcased 38 experts on diversity and inclusion issues who engaged the more than 120 participants in thoughtful dialogue throughout the robust agenda of plenary talks, case study presentations, panel discussions, and breakout sessions. Programming was specifically developed to continue exploration of three key themes that had emerged through the work of the first summit in 2014:

- Strategies for increasing under-represented minority (URM) engagement in the science, technology, engineering, and mathematics (STEM) professions
- Best practices for building a welcoming and inclusive workplace culture
- Addressing factors behind the self-induced glass ceiling and supporting new pathways to career fulfillment

DMMM2 was organized in honor of Frank Crossley, a TMS/AIME (American Institute of Mining, Metallurgical, and Petroleum Engineers) member since 1947 and the first African American to earn a Ph.D. in metallurgical engineering. Amy Clarke, DMMM2 Organizing Committee chair, reflected on how Crossley faced barriers that were so daunting that he, at one point, considered leaving the United States to pursue his chosen career. “The question becomes—how do we measure progress and missed opportunities by not being a more diverse and inclusive profession?” she noted in her welcome to DMMM2 attendees. “It remains difficult today to develop a clear and measurable understanding of the lost innovation, creativity, and productivity resulting from a lack of diversity and inclusion in the workplace.”

Speakers and facilitators then worked throughout the summit to draw out specific strategies that addressed the challenges that Clarke outlined. “Numbers provide information regarding the state of things but numbers do not necessarily tell us the why,” noted 2013 TMS President, Elizabeth Holm, Carnegie Mellon University,

Celebrate the Barrier Breakers: 2018 TMS Diversity Awards Nominations Now Open

While the worlds of Frank Crossley and Ellen Swallow Richards could not be further apart, their stories follow a very similar trajectory. Frank Crossley, the first African American to earn a Ph.D. in metallurgy, achieved academic and professional distinction in a 20th century United States that witnessed people being routinely refused service in restaurants because of their skin color. In the late 1800s, Ellen Swallow Richards overcame scorn and incredulity to become the first U.S. woman admitted to a university of science and technology, and later succeeded in establishing the Women's Laboratory at the Massachusetts Institute of Technology. Because of their courage and tenacity, both Crossley and Richards broke down barriers so that others could pursue their dreams of a career in the minerals, metals, and materials professions.

Shining a light on these and other role models is an important way to offer inspiration and insight in advancing a more diverse and inclusive professional community. This is the intent of two awards that honor the legacy Crossley and Richards, both made possible through a generous donation to the TMS Foundation by Jeffrey Wadsworth, chief executive officer and president, Battelle Memorial Institute, and his wife, Geraldine McCulley Wadsworth.

The TMS Frank Crossley Diversity Award annually honors an individual who has “overcome personal, professional, educational, cultural or institutional adversity to pursue a career in minerals, metals, and/or materials,” and includes a cash prize, as well as formal recognition. The inaugural Crossley Diversity Award was presented to Carolyn Hansson, professor, University of Waterloo, and 1997 TMS Fellow, at the 2nd Summit on Diversity in the Minerals, Metals, and Materials Professions (DMMM2). Hansson was cited “for overcoming professional, educational, cultural, and institutional challenges and adversity while pursuing a successful scientific research and management career within U.K. and U.S. universities and

industry, Danish research laboratories, and Canadian academic institutions.”

The Ellen Swallow Richards Diversity Award is conferred on an individual who has “helped or inspired others to overcome personal, professional, educational, cultural, or institutional adversity to pursue a career in minerals, metals, and/or materials.” Lynnette Madsen, program director, National Science Foundation, received the third Richards Diversity Award at DMMM2. She was specifically recognized for “written works and outstanding and visionary leadership in the creation and support of programs to increase diversity, and engagement in and endorsement of mentoring.”

Nominations are now open for the 2018 Crossley and Richards Diversity Awards, to be presented at DMMM3. Take this opportunity to celebrate the contributions of a mentor or colleague who have helped to make the minerals, metals, and materials community more diverse and inclusive through their actions and example. **Submit a nomination by April 1 for the 2018 TMS Frank Crossley or TMS Ellen Swallow Richards Diversity Awards at awards.tms.org.** Contact Deborah Hixon, TMS Awards and Recognition Specialist, at hixon@tms.org, for additional information.



A highlight of DMMM2 was presentation of the 2016 TMS Diversity Awards. Pictured at the awards ceremony, from left to right, are: Stanley M. Howard, 2016 TMS President; Lynnette Madsen, recipient of the 2016 TMS Ellen Swallow Richards Diversity Award; Carolyn Hansson, inaugural recipient of the TMS Frank Crossley Diversity Award; Desne Crossley, Frank Crossley's daughter who offered remarks on behalf of her father, who was unable to attend; and Jeffrey Wadsworth, chief executive officer and president of Battelle Memorial Institute, who established the awards through a generous donation to the TMS Foundation.

in the opening plenary. Chris Yates, Caterpillar, echoed this observation in his plenary talk, saying, “Culture is contextual, fluid and tremendously complex. As such, the approaches used to shape, influence, and impact the cultures of diversity and inclusion must possess similar traits.” David Bahr, Purdue University, offered a specific observation as a panelist during the breakout session on STEM pipeline issues: “We must unravel the differences between correlation and causation in our diversity efforts. Failure to do so can often result in policies that are too broad and/or improper in implementation.”

At the conclusion of the summit, Jonathan Madison, DMMM2 Organizing Committee member, shared the key takeaways that had been synthesized from the various sessions:

- Issues of diversity and inclusion affect everyone
- Both cognitive and non-cognitive factors are key



Fielding questions during the panel discussion focused on executive professionals were (left to right) Justin Schwartz, Kobe Steel Distinguished Professor, North Carolina University and session chair; Karl W. Reid, executive director, National Society of Black Engineers; Mary Hockaday, associate director for Experimental Physical Sciences, Los Alamos National Laboratory; and Tia Benson Tolle, director, Advanced Materials Product Development, The Boeing Company.



Theodore Hodapp, director of Education and Diversity, American Physical Society, led a discussion on STEM pipeline issues.



Michelle V. Buchanan, associate laboratory director for Physical Sciences, Oak Ridge National Laboratory, shared strategies during the DMMM2 plenary session, Best Practices for Building a Welcoming and Inclusive Workplace Culture.

- It's not about counting. It's about cultivating relationships, and creating an environment and culture conducive to inclusion
- Unconscious bias is a reality
- Exposure to opportunities and careers among under-represented populations is important. However, under-represented populations actually envisioning themselves in these roles is, in some ways, a completely different challenge

To keep the momentum going until the next summit, Madison urged DMMM2 attendees to share the ideas and concepts that they learned over the last two days with their colleagues and co-workers. Reiterating the challenge issued by Elizabeth Holm to DMMM1 attendees as chair of the 2014 summit, Madison said, “Commit to go home and advocate with your management for one of the ideas you’ve heard here that you think would be both tractable and beneficial.”

DMMM2 was sponsored by TMS and co-sponsored by AIME, the Society for Mining, Metallurgy & Exploration, and the National Science Foundation. Partner organizations included Newmont, the Center for Hierarchical Materials Design (CHiMaD) and Materials Research Science and Engineering Center (MRSEC) at Northwestern University, and Los Alamos National Laboratory. New resources generated from the summit have been posted on www.tms.org/diversityresources.

Look to future issues of *JOM* and other TMS communications for news and updates on DMMM3, slated for 2018.



DIVERSITY IN THE MINERALS, METALS, AND MATERIALS PROFESSIONS (DMMM2)

Personal Reflections from DMMM2

A recurring comment throughout the 2nd Summit on Diversity in the Minerals, Metals, and Materials Professions (DMMM2) was that statistics on their own do not really speak to the nuance and complexity involved in making progress on diversity and inclusion issues. In addition to presenting the facts and outcomes of the second summit, these pages also share the perspectives of four attendees, who, in their own words, offer their opinions on the lessons learned from their DMMM2 experience.



"It was clear that effective mentoring partnerships and programs were crucial to the success of retaining diverse talent."

Kathleen Chou
Graduate Student
University of Michigan

When I first heard about the 2nd Summit on Diversity in the Minerals, Metals, and Materials Professions (DMMM2), I was excited that there was a meeting being organized on diversity and inclusion in the context of a technical field. I had attended TMS annual meetings in the past and had been involved in meetings solely focused on diversity, but I was intrigued by the combination of addressing both in a single meeting. I thought that it would provide a unique and important discussion of identity in a technical field.

The two-day meeting at Northwestern University was structured as speaker sessions and breakout panel discussions. The agenda addressed challenges in diversity and inclusion at the early, mid-career, and executive levels, as well as topics such as the student pipeline and recruitment or retention of professionals in academia, government, and industry. Speakers discussed the current state of affairs for diversity, citing sources from the National Science Foundation, American Association for the Advancement of Science, and the American Association of University Women.

Throughout the summit, several common themes were addressed by speakers and panelists, including the importance of mentoring at all education and career levels to retain diverse populations. Mentoring was an important part of programs such as the Fisk-Vanderbilt Bridge Program, which is aimed at increasing the

number of underrepresented minority students entering STEM graduate programs. Mentoring partnerships at universities also assisted new faculty in acclimating to the responsibilities of being a professor. In many organizations, mentoring provided a strong support system for a person to ask questions and navigate issues that arose. It was clear that effective mentoring partnerships and programs were crucial to the success of retaining diverse talent.

Speakers also emphasized the need for support at all levels of an organization for diversity and inclusion efforts, but especially at the leadership and executive level. Leaders are uniquely positioned to send strong messages on an organization's values by demonstrating a commitment to diversity and inclusion. Although the actions of leadership are important, speakers discussed that the ownership of developing a community is shared among all members.

One highlight of the meeting was becoming aware of the many programs and initiatives on diversity and inclusion being implemented. Each organization has developed slightly different strategies to address inclusion, and sharing knowledge among the industry was a key strength of DMMM2. The meeting also included valuable time for attendees to network and discuss the similar challenges occurring across the various sectors of the materials science field.

As a graduate student, I plan on utilizing the knowledge learned through attending the summit when working with K-12 and undergraduate students. Many speakers emphasized the importance of mentoring in retaining diverse students and talent, and as a teaching assistant I will be in a position to mentor undergraduate students. Strategies discussed at the meeting can also be applied to department and university initiatives in supporting K-12 and undergraduate student populations. I look forward to continuing the discussion on diversity and inclusion in the materials science and engineering field, as well as attending future Diversity Summits.



“For the first time, my view of a particular issue was valued and given merit specifically because of my identity.”

Matthew Korey
Graduate Research Associate
Purdue University

DMMM2 was a pivotal moment in my career as a materials engineer. In fall 2015, I began my path toward receiving my Ph.D. in materials engineering, and from the outset of my degree, I felt like an outsider. Living as an LGBT (lesbian, gay, bisexual, transgender)-identified engineering student was more than a significant challenge for me. Due to circumstances out of my control, it significantly limited my ability to impact the materials engineering profession. The never-ending feelings of loneliness and inadequacy I felt for almost an entire year often led me to consider pursuing other career paths.

However, at this conference, I met so many materials engineering students, faculty, and researchers who looked, thought, and felt like I did. I found role models and felt, for the first time, that someone like me could actually succeed as a materials engineer. Until DMMM2, I had never met so many friendly, accepting people in my profession in one space. No longer did I feel like I needed to hide a particular aspect of myself in order to succeed. For the first time, my view of a particular issue was valued and given merit specifically because of my identity.

The value of finding mentors in the discipline was immeasurable. I found LGBT-identifying materials engineers who explicitly reached out to me at the conference to help connect me with accepting people in my field. It was also through these people that I learned of resources available specifically to help people like me succeed. I met people from across the country and around the world who were willing to work patiently with me. It is of note that I had been actively looking for many of the resources that I was directly connected with at this conference, but I honestly would never have found them without the many generous mentors I met at DMMM2. It was a truly life-changing experience for me in many ways, with one of the most impactful aspects being the personal connections I made with supportive people in my profession.

This accounting of DMMM2 doesn't come without a few critiques. I do wish that the conference would have explicitly reached out to my identity population, but I do understand that there were limited resources available. I would have appreciated if time had been explicitly set aside to speak about issues faced by LGBT engineers, rather than my personally having to raise the issue and distract from the opportunity for discussion on the needs of other minority groups. There was a significant emphasis on people of color

and female-identified engineering students, and I think this is to be celebrated. However, at future conferences I would love to have discussions on sexual and other gender minority populations in engineering, as well as engineers with disabilities.

In conclusion, I'm not saying my journey in the engineering discipline will be easy, but it will be made possible because of the people that I met at DMMM2. I am so thankful for this experience, as I have finally been given a pathway to excel in a world and profession that often actively works to prevent people like me from succeeding. I cannot wait to attend the 2017 TMS Annual Meeting & Exhibition, and to finally be able to more comfortably network with people in my area of materials engineering.



“I found DMMM2 very successful in terms of elucidating the effect. But I gathered that we have focused on the effect much more than the cause so far. Hopefully, the next summit would cover that.”

Farangis Ram
Postdoctoral Researcher
Carnegie Mellon University

I am a postdoctoral researcher at Carnegie Mellon University (CMU). Being a postdoc means one must be looking for the next job from day one. But when you are a materials engineer specialized in metal formation and you are a female and international, the next step becomes a more complex conundrum than one that every postdoc faces.

My quest began about a year ago. Soon enough, I realized that when one is being considered as a candidate for a job, there are other factors that come before educational or professional background. My first choice was academia. But I observed that in my department, there were only three female faculty among the total 28. I also observed that the newest female faculty member, who was hired in 2016, was not an early-career researcher. These observations are not limited to CMU. The National Science Foundation has reported that only 9% of faculty in materials science and engineering are female. And, so it was that I turned to industry.

At DMMM2, there were speakers from a few corporations and national laboratories who seemed to be genuinely concerned with the small number of female engineers and were willing to take actions towards solving the issue. The recruiters claimed that women do not apply for engineering positions. One of the interesting arguments that I heard was that the job postings were not written for women. They believed that very often, job ads list many requirements that are not realistic to gather in one person and that women usually do not apply for a job if they do not have more than 90% of the required skills.

Yes, there are studies that show women are competition-

averse and do not enter tournaments. But I don't think this is the reason. It is simpler than that. If I want strawberry ice cream, I ask for a strawberry ice cream! I don't go to the shop asking for strawberry ice cream that tastes like banana, has almonds in it, can pour itself into the cup, and by the way, I only will pay the price of a plain strawberry ice cream and not a penny more.

I also wonder if a very decisive fact is being overlooked. To have some data to support the hypothesis I want to put forth, I searched the CMU factbooks. In the year 2014–2015, 32% of master's and doctoral graduates in the department of materials science and engineering were female. However, 75% of the graduate females were international. This means that 75% of the female graduates were not a U.S. citizen or a U.S. permanent resident. Yet, to my experience, in more than 80% of job postings, including most of the corporations with a representative at DMMM2, you read: "must be a U.S. citizen", "must be a U.S. permanent resident", or "do not apply if you need sponsorship to work in the U.S."

I found DMMM2 very successful in terms of elucidating the effect. But I gathered that we have focused on the effect much more than the cause so far. Hopefully, the next summit would cover that.



"Something I'm continually learning, and was strongly reminded of during DMMM2, is the incredible value of listening."

George Spanos
Technical Director
TMS

Those who have spent any time with me know that I'm an extrovert by nature. But something I'm continually learning, and was strongly reminded of during the 2nd Summit on Diversity in the Minerals, Metals, and Materials Professions (DMMM2), is the incredible value of listening.

Let me elaborate a bit. The Merriam-Webster dictionary defines listen as: "(1) to pay attention to sound, (2) to hear something with thoughtful attention; give consideration, (3) to be alert to catch an expected sound." I'm thinking about something closer to the second definition, but much more difficult, especially when it comes to diversity and inclusion. What I'm thinking of involves really, really hard work. I'm speaking about a willingness to temporarily hold back my own thoughts and prior experiences that are constantly fluttering through my mind, and focus intently on another person's words, facial expressions, body language, and feelings, for some reasonable length of time (even hours, but not just seconds or minutes). One of my favorite verses from the Bible is "...be quick to listen, slow to speak, and slow to become angry". I personally struggle less with the angry part, but the *slow to speak* and the *quick to listen*—What a

monumental effort for me (and how often I fail)!

Now, to some personal thoughts and experiences on the correlation between listening, and diversity and inclusion. I was most strongly reminded of the value of listening by an experience at DMMM2. One day, after the summit sessions had ended, two scientists who are friends of mine, and who years earlier were undergraduate student interns in my research group at the Naval Research Laboratory, were walking back to the hotel with me to drop off our bags before we headed off to dinner. We didn't make it to dinner until hours later, because beginning on the walk back and continuing in our hotel, we engaged in some very rich discussions. These followed on from the DMMM2 sessions and interactions, but delved much deeper into their personal experiences and wealth of knowledge, as related to diversity and racism. As you might have guessed by now, these friends of mine are from an underrepresented group, while I am not.

In addition to gaining incredible knowledge and experiencing some great interactions at the summit itself, that after-hours discussion was one of the highlights of the summit experience for me. In this more private setting, we gradually transitioned into deeper, more personal discussions, and I decided to try my hardest not to speak, but to listen and learn from not only their own experiences and knowledge, but also experiences of their relatives and friends, which they shared with me and another friend in the room. As they spoke, many different thoughts were trying to force their way into the forefront of my brain, and I wanted to interrupt them either to agree or to offer some additional points, but I kept working at shoving those thoughts back temporarily, and instead focus intently on what I was hearing, learning, and feeling from them. Although I probably still interrupted too much, I sensed that I needed to try my very best to stay quiet. In many respects, I learned more in those couple of hours than I had learned as a result of reading many articles and news stories on diversity and inclusion.

Finally, I'd like to elaborate a bit on why it is often so difficult for me (and perhaps some of you reading this article) to listen. I believe it is because, in my mind, I think I have so much to offer from my knowledge and experiences, especially in support of diversity and inclusion. But I have decided that, in the end, I can oftentimes affect change, learn, and offer much more by being "quick to listen and slow to speak" first, because that will change *me*. I'm not referring here to the Webster version of listening, but to the deeper, harder work of listening as I described above.

And, one last thought...I've heard and thought many times about the argument, "why should I listen when they are not listening to me. They need to listen better, too". However, I've decided that it is often best for me to try to influence the one person whom I have the greatest chance of influencing—me. I'm willing to take that step to try my best to be more of a true listener, even if it is unilateral.

Raising Diversity Awareness and Myth-busting with a Digital Quiz

Natasha Vermaak, Megan Cordill, Amy Clarke, Panthea Sepehrband, Shokoufeh Malekjani, Elizabeth Holm

Editor's Note: The full report of the Diversity Awareness and Myth-busting Quiz is housed in the TMS Diversity and Inclusion Toolkit at www.tms.org/diversityresources under Reference Materials. The toolkit was generated from the work of the 2014 Summit on Diversity in the Minerals, Metals, and Materials Professions (DMMM1) and will incorporate resources developed through DMMM2.

Part of the challenge in promoting and sustaining diversity and inclusion lies in identifying and implementing effective objectives, programs, and measures. The TMS Diversity Committee advances TMS' commitment to diversity and inclusion by developing programs, initiatives, and activities that address the professional needs and aspirations of underrepresented persons actively pursuing a career in materials science and engineering.

One of the committee's recent initiatives was an online diversity myth-busting quiz (<http://bit.ly/1NSbnR0>), that was given at the TMS 2016 Annual Meeting & Exhibition (TMS2016). The purpose of the digital quiz was to spark conversations and provide more information about diversity and how to get involved. By using a digital platform, we were able to engage a broad demographic in a fun, accessible, and interactive way. The quiz questions and answers were primarily based upon the 2015 National Science Foundation (NSF) Special Report

on Women, Minorities, and Persons with Disabilities in Science and Engineering: <http://www.nsf.gov/statistics/wmpd/>. We also identified several diversity myths and provided additional resources for understanding and addressing them.

We hope that in sharing the content of the quiz (Figure 1), others may use and revise the material to continue to raise diversity and inclusion awareness and communication within our community. For more details regarding the quiz, the supporting references, and results, see the full report: www.tms.org/diversityresources under Reference Materials. We also welcome new members to the TMS Diversity Committee. Contact Mike Bazy, TMS senior manager, at mbazy@tms.org if interested.

About the Authors: Natasha Vermaak is an assistant professor at Lehigh University. Megan Cordill is a senior scientist, Austrian Academy of Science and TMS Diversity Committee vice chair. Amy Clarke is associate professor at the Colorado School of Mines and Director, Member & Student Development on the TMS Board. Panthea Sepehrband is assistant professor at Santa Clara University. Shokoufeh Malekjani is a research fellow at Deakin University. Elizabeth Holm is a professor at Carnegie Mellon University and the 2013 TMS President.



Diversity Myths

MYTH #1: Mandatory diversity training improves diversity.

Requiring employees to attend mandatory diversity training actually leads to a decrease in diversity [4, 5]. Mandatory training sends the message that diversity is only there for legal compliance. Much as what psychologists have known for years, when one is forced to do something, one tends to do the opposite. A better way to address diversity is to make such trainings voluntary. By giving the employee the choice, they are more likely to apply what was learned.

MYTH #2: Training can't overcome biases.

We all have biases, whether we recognize them or not. Most often these biases are implicit; they are thoughts and feelings outside of conscious awareness and control. Diversity programs and training can help people acknowledge that implicit biases do exist and understand how they can affect workplace cultures. Many universities and companies provide training on recognizing implicit biases and strategies for preventing those biases from influencing the workplace. Research shows that implicit biases can be malleable, so it is possible to manage and change them [6-15]. If we work toward understanding our biases, we can then begin to mitigate their effects. Try taking the online Implicit Association Test (IAT): <https://implicit.harvard.edu/implicit/takeatest.html>. Using bias-free language can also help individuals to avoid unintentional judgments regarding gender, race, ethnicity, disability, age, and much more. When individuals begin to think about their word choice, it often reveals where implicit biases may exist. Individuals and organizations alike should strive for inclusive language in their communications—both spoken and written—to maintain respect for others and personal credibility [16].

MYTH #3: Promoting diversity requires lowering standards.

Promoting diversity does not require lowering standards. Promoting diversity is finding qualified, diverse talent by broadening recruitment and reducing bias. It does not mean promoting one group at the expense of another. No qualified candidate wants to be considered on the basis of diversity alone. Biases in current hiring processes, however, may unintentionally result in excluding highly qualified people. By recruiting a pool that reflects the availability of candidates from all groups, and by ensuring that criteria that may disadvantage minority candidates are not used, quality will increase, not decrease. Workplaces and industries that foster respect for, and appreciation of, differences are places where people can be authentic and achieve their full potential, leading to better outcomes for businesses, organizations, and individuals alike [17-19].

MYTH #4: Diverse teams are typically more effective, creative, and harmonious.

Decades of research shows that diversity enhances creativity and innovation. However, this is often achieved through difficulty in coming to a consensus. "Research has shown that social diversity in a group can cause discomfort, rougher interactions, a lack of trust, greater perceived interpersonal conflict, lower communication, less cohesion, more concern about disrespect, and other problems" [20]. Diversity promotes cognitive action in ways that homogeneity does not: simply interacting with individuals who are different forces group members to prepare better, to anticipate alternative viewpoints and to expect that reaching consensus will take effort. This encourages the search for novel information and perspectives, leading to better decision-making and problem solving [20-22].

Diversity Quiz

- Women and underrepresented minorities constitute what portion of the U.S. population ages 18-64 in 2012?
 - 72%
 - 66%

See [3] for more details.
- In 4-year academic institutions, among recently degreed science and engineering doctorate holders with similar years of experience, median salaries for men, women, and most racial and ethnic groups:
 - were fairly similar.
 - varied significantly.

A more noticeable difference in median salary was observed between Asian men and Asian women who had received their doctorate prior to 2000.
- Underrepresented minorities' share of science and engineering doctorates has remained.
 - TRUE
 - FALSE

Underrepresented minorities' share of science and engineering bachelor's and master's degrees has been rising since 1993, but their share of doctorates in these fields has flattened at about 7% for the past 10 years.
- In all racial and ethnic groups, more women than men enroll in college.
 - TRUE
 - FALSE

Trends in undergraduate enrollment reflect the increasing diversity of the U.S. college-age population, as Asian and Hispanic shares of the population grow.
- In general, women earn larger proportions of degrees in chemical, materials, industrial, and civil engineering than in aerospace, electrical, and mechanical engineering.
 - TRUE
 - FALSE

Although the number of women earning degrees in engineering has increased in the past 20 years, women's participation remains well below that of men at all degree levels and in all fields of engineering.
- The proportion of blacks in science and engineering occupations is lower than their proportion in the U.S. workforce as a whole (11%).
 - TRUE
 - FALSE

See [3] for trends comparing science and engineering related occupations.
- Together Asian and underrepresented minority women represent about _____ persons employed in science and engineering occupations?
 - 1 in 7
 - 1 in 10

White men constitute about one-half of the science and engineering workforce.
- Is TMS a diverse organization?
 - Yes
 - No
 - Other: _____

For more information on TMS membership statistics, see the May 2015 JOM article "TMS Measures Progress on Diversity and Inclusion"

Figure 1. This presents the overall results from the Diversity Awareness and Myth Busting Quiz administered at TMS2016. For the full report, visit the Reference Materials section at www.tms.org/diversityresources.