

College of Engineering

Diversity, Equity and Inclusion Strategic Plan

Five-Year Strategic Objectives, Measures and FY18 (Year 2) Actions

August 24, 2017

To: Office of the Provost – Diversity, Equity & Inclusion

This submits our revised five-year DEI strategic plan for the College of Engineering.

Our plan remains fundamentally the same. We have made much progress during the first year with initiatives and events for students, faculty and staff. Through these efforts, we have focused our time and energy on the initiatives that have the most impact. Much more work is needed and we will continue to place priority on education and awareness, training to build our skills and experience, reviewing and improving processes and climate while proactively measuring to quantify results.

With the proactive support of Dean Gallimore and the administration of the College, we expect to continue to provide leadership in this important area.

Michael Wellman
Associate Dean, Academic Affairs
CoE DEI Implementation Lead

Robert Scott
Director, CEDO
CoE DEI Implementation Lead

I. Diversity Equity and Inclusion Strategic Plan: Overview

In March, 2015, President Mark Schlissel charged each school, college and unit to develop a five-year strategic plan for achieving the University's vision for diversity, equity and inclusion (DEI). President Schlissel's charge:

To further promote our mission and values regarding diversity, equity and inclusion, the University will engage in strategic planning. Each school, college or unit is responsible for overseeing a high-quality engaging planning process that results in a five-year plan for diversity, equity and inclusion covering all of the key constituents (e.g. students, staff, faculty, alumni, patients) in their school, college or unit. These plans should be: (1) highly aspirational and consistent with the leading role U-M has played in matters of diversity throughout its history; (2) concrete and supported by a series of specific measurable goals; and (3) consistent with the wide variety of research, educational, and public engagement activities that occur throughout the University.

We use the following definitions and commitments regarding diversity, equity and inclusion in our work:

Diversity: *We recognize that many dimensions exist that describe human beings and speak to the human experience, such as race and ethnicity, gender and gender identity, sexual orientation, socio-economic status, language, culture, national origin, religious commitments, age, (dis)ability status and political perspective. We commit to work assiduously to broaden the diversity of our community, to promote and extend opportunities and outcomes for all members of our community, and to develop a campus environment in which each individual can realize his or her full potential.*

Equity: *We commit to working actively to challenge and respond to bias, harassment, and discrimination. We are committed to provide equal opportunity for all persons and do not discriminate on the basis of race, color, national origin, age, marital status, sex, sexual orientation, gender identity, gender expression, disability, religion, height, weight or veteran status as prescribed by University policy.*

Inclusion: *We commit to pursuing deliberate efforts to ensure that our college is a place where differences are welcomed, different perspectives are respectfully heard and where every individual feels a sense of belonging. We know that by building a critical mass of diverse groups and creating a vibrant climate of inclusiveness, we can more effectively leverage the resources of diversity to advance our collective capabilities.*

In February 2008, the National Academy of Engineers announced 14 grand global challenges for engineering in the next century. The list included making solar energy economical, providing access to clean water, engineering better medicines, and securing cyberspace (“*Grand Challenges for Engineering*”, National Academy of Engineering). As a discipline focused on problem-solving, engineering is an enormous part, though certainly not the only part, of the way to a better world. The increasing interest in engineering careers among students and the increasing number of students applying to our programs in the College of Engineering (CoE) speaks both to their excitement about being part of these efforts and to the College’s recognized excellence. CoE must demonstrate leadership in the development of globally competent engineers prepared to take on the grand challenges in engineering.

To develop this next generation of engineers, our efforts in teaching, scholarship, research and service to society must be coupled with an understanding that diversity, equity and inclusion are a critical part of our excellence, both now and going forward. There are several compelling reasons why increasing and leveraging the diversity in CoE is an imperative today, ranging from the needs of our workforces to the mission of our public universities:

1. **Diversity drives innovation and fosters creativity.** Studies consistently show that diversity – of perspective, thought, experiences, and training – drives innovation and fosters creativity.^{1,2} Companies with diverse workforces out-innovate and out-perform others. In one report, employees at these companies were 45% more likely to report that their firm’s market share grew over the previous year and 70% more likely to report that the firm captured a new market.³
2. **Businesses agree that diversity is critical for the bottom line.** In a Forbes survey, 85 percent of respondents said diversity is crucial for their businesses, and approximately 75 percent indicated that their companies will put more focus during the next three years to leverage diversity to achieve their business goals.⁴ Understanding that diverse workforces come from diverse undergraduate populations, more than 60 leading 500 Fortune companies—including Coca-Cola, General Electric, Hewlett-Packard, Intel, Johnson & Johnson — submitted an amicus brief to the Supreme Court in the *Grutter v. Bollinger* ruling in support of admissions policies that include consideration of race.⁵

¹ Page SE. *The Difference: How the Power of Diversity Creates Better Groups, Firms, Schools, and Societies*: Princeton University Press, 2008.

² Galinsky AD, Todd AR, Homan AC, Phillips KW, Apfelbaum EP, Sasaki SJ, Richeson JA, Olayon JB, Maddux WW. Maximizing the gains and minimizing the pains of diversity: A policy perspective. *Perspectives on Psychological Science* 2015;10(6):742-8.

³ Hewlett SA, Marshall M, Sherbin L. How diversity can drive innovation. *Harvard Business Review* 2013;91(12):30-.

⁴ Insights Forbes. Global diversity and inclusion: Fostering innovation through a diverse workforce. *Forbes Insight*, New York 2011.

⁵ *Grutter v. Bollinger*, [539 U.S. 306 \(2003\)](#)

3. **The global marketplace drives a need for cultural competency.** Our corporate partners (the College’s Engineering Advisory Council; Center for Educational Diversity and Outreach (CEDO) Advisory Council) have defined diversity as a key element of their business strategy. Their business rationale includes the need to develop and market products and services in a global marketplace and the requirement of working with suppliers and customers who are multicultural, both elements requiring multicultural skills and competencies. *“We want our management to be culturally prepared. We have a vast amount of diversity that comes into work every day in order to create and build technology that plays out around the world.”* – Rosalind Hudnell, Director of Global Diversity and Inclusion, Intel.⁶ Our corporate partners have made it clear that they expect to be able to hire talent from universities with both multicultural skills and having international experiences. They can and will choose universities that provide a strong pool of talent with such skills.
4. **Diversity (both faculty and student diversity) on campus benefits all students.** Diversity on college campuses isn’t just a benefit for non-majority students. Learning with people from a variety of backgrounds encourages collaboration and fosters innovation, thereby benefitting all students. Research shows that the overall academic and social effects of increased diversity engagement on campus are likely to be positive, ranging from higher levels of academic achievement to the improvement of near- and long-term intergroup relations.⁷
5. **Our nation is changing, and our higher education institutions need to reflect this diversity.** By 2050 our nation will have no clear racial or ethnic majority. As our nation becomes more diverse, so too does the national workforce. Per Census Bureau projections, in 2050 one in two workers will be a person of color. Communities of color are critical to the engineering leadership of tomorrow, and we need to better prepare our future workforce. As the population changes to one in which there is no majority group, we need to learn to work with, respect, and build on all the various types of difference between people while recognizing that, to a very large extent, we are all the same at the highest level. Today our biggest challenges in engineering fall along racial/ethnic, gender and socioeconomic differences, so we chose to pay particular attention to these diversity dimensions.
6. **As a public, state university, we have an obligation to educate the broad spectrum of qualified students from across the state.** 14.2% of the Michigan population is Black or African American and 4.8% is Hispanic,⁸ but the Black and Hispanic CoE student populations in total are only 8%.⁹ The University of Michigan is largely off the radar screen of many

⁶ Insights Forbes, op.cit.

⁷ Maruyama G, Moreno JF, Gudeman RH, Marin P. Does Diversity Make a Difference? Three Research Studies on Diversity in College Classrooms. 2000.

⁸ "Population Estimates, July 1, 2015, (V2015)". *Census.gov*. N.p., 2016. Web. 23 Mar. 2016.

⁹ University of Michigan Office of the Registrar. *816: Enrollment by Program, Location, Ethnicity and Gender*. 2015. Web. 23 Mar. 2016.

students in western Michigan, the UP and Detroit. While gender diversity has slowly increased over recent years (now reaching 25% within the College), there are still enrollment and climate challenges for women students.

A community that is diverse, but not equitable and inclusive, cannot achieve its full potential. A climate that does not provide equal opportunity for all to excel will not remain diverse, as those who are afforded less opportunity will not choose to come to Michigan. Those who do come will be more apt to leave, or will not take full advantage of all the College has to offer. Diversity on campus that is equitable and inclusive provides educational benefits for all students—minority and majority alike—that simply cannot be duplicated in a homogeneous setting. Providing a diverse, equitable and inclusive environment enables us to deliver on the educational promise of creating a unique learning and research setting where innovation and creativity can be combined with the spectrum of academic programs and resources that are the hallmark of the University.

Thus, we believe that there is intrinsic value to the College in delivering on its educational, scholarship, and service goals by proactively embracing and leveraging diversity, equity and inclusion. However, we have a long way to go to create a truly diverse, equitable and inclusive community. In terms of gender and race/ethnicity – the two most easily measured metrics – the level of diversity is low, including as compared to the overall U.S. or Michigan population. In terms of other, less easily identified, measures of diversity (e.g. religion, gender expression, physical disability, low socioeconomic status), we need to better understand and measure how we are doing.

Today we pride ourselves on being the “leaders and the best.” In fact, this is more than just a slogan. All the departments in the College are ranked within or near the top 10 in their field. At the university level, nearly 100 departments are in the top 10 in their respective fields and there are only three other universities worldwide that can make that claim. Some would argue, therefore, that we are excellent now *despite* our shortcomings on the DEI front. However, as the demographic makeup of the future pool of potential students shifts, and as more corporations recognize the contributions of diverse teams to creativity and innovation, we believe the competitive advantage and high rankings of the College and University will erode if we fail to become a more diverse, equitable and inclusive environment.

Our five-year vision is to make a difference through the education of all students, and the creation of research and technologies, for maximum impact on society. To achieve this vision, we must cultivate a creative community of scholars, leaders, innovators, faculty, students and graduates with diverse interests, knowledge and backgrounds. We must support this community with resources and the intentional fostering of opportunities to interact, collaborate and create. In doing so, we will be able to take full advantage of U-M’s primary distinction of having a wide range of highly ranked academic disciplines both within and beyond CoE (“excellence across breadth”).

With this in mind, we are adopting the following strategic imperatives:

M | DIVERSITY, EQUITY & INCLUSION

College of Engineering

*The College of Engineering will distinguish itself from competing engineering schools by becoming a “**best-in-class” institution for developing engineers who excel as multicultural technologists and leaders** (which we define as intellectually and socially engaged, valued, interactive, and rapidly connected to resources, information, each other, the College, the nation, and the world).*

- *We will select and implement a governing framework for the College approach to diversity, equity and inclusion similar to the “Inclusive Excellence Framework” used by the Ross School of Business. The framework would provide a roadmap for how we approach DEI, how we communicate our strategic intent internally and externally and how we maintain a “constancy of purpose” for accountability.*
- *The College of Engineering will strive to build a critical mass of diverse talent representative of all forms of diversity; we will leverage this talent to create a unique learning environment/experience for faculty, students and staff.*

*The College will work to **define and deploy a mission that signifies our belief in the power and necessity of diversity, equity and inclusion as a competitive advantage.** This includes:*

- *A statement of commitment affirming our intention to leverage diversity, equity and inclusion to ensure that innovation, entrepreneurship and public service are fundamental characteristics of our graduates.*
- *A definition of our guiding core principles and values*
- *A statement of the value proposition as defined by our business customers (industry leaders recruiting at and/or doing research with us).*

Creating the community that we desire will require the full engagement of our faculty, staff and students and holistic institutional change. CoE has many important initiatives underway already to realize this vision. The work done to develop this strategic plan is aimed at focusing and accelerating our progress toward our vision for the future. The following defines the process used to determine our strategic objectives and supporting action plans. All strategic objectives and related actions will be pursued in accordance with the law and University policy.

II. Implementation Highlights / Planning Process Used

Implementation Highlights

The first year of implementation of the College's strategic plan was one of both discovery and action. The DEI strategic plan launch coincided with significant leadership changes within the College, including a new dean (Alec Gallimore), three new associate deans (academic affairs, graduate education, research) and four department chair changes. The DEI strategy was instrumental in informing this leadership direction. Emerging from this came a new mission and vision for the College that tightly integrates diversity, equity and inclusion into the foundation of the College's structural pillars: Educational Experience, Research and Values/Culture.

At the direction of the Dean, an implementation committee was charged to oversee the DEI strategy and specific supporting initiatives and project. Through this committee, over \$1.6M in funding for DEI initiatives was allocated, including \$600K from the Provost and \$1.0M in College/donor-provided funds. This has supported a variety of College initiatives including the expansion of the MSTEM Engineering Academy, scholarship grants for students and several department and student group DEI engagement events. The committee also worked to identify DEI liaisons within departments and then met with these contacts to review department DEI activities. This enabled both recognition of successful DEI initiatives and the encouragement to learn and reapply across departments.

The College also held a variety of DEI events and workshop with the objective of raising awareness and skills of students, faculty and staff. Some events, like the Margot Shetterly lecture, the Willie Hobbs Moore awards and the MLK Spirit Awards, extended the College's reach beyond Engineering to the entire University campus.

Our main improvement areas are to further extend the reach of engagement to more students, faculty and staff and to bring external stakeholders more actively into our DEI planning and initiatives. Additionally, we want to be more proactive in communicating our plans and activities to all constituency groups.

Implementation Leads: Michael Wellman, Associate Dean for Academic Affairs and Robert Scott, Director, Center for Engineering Diversity and Outreach (CEDO).

Planning Team/Structure: The purpose of the CoE DEI Implementation Committee is to plan and oversee the implementation of programs and activities of the strategic plan. The committee comprises senior leaders responsible for all areas of CoE operations. Current members are Michael Wellman (Academic Affairs), Joanna Millunchick (Undergraduate Education), Mary-Ann Mycek (Graduate Education), Steve Ceccio (Research), Jeanne Murabito (Office of Student Affairs), Lyonel Milton (Center for Engineering Diversity & Outreach), Deborah Mero (Resource Planning & Management), Jennifer Judge Hensel (Communication & Marketing) and Robert Scott (Center for Engineering Diversity & Outreach).

RoseMarie Moya serves as formal project manager for the implementation committee. Key responsibilities of the project manager are:

- Coordinate resources for the flawless execution of projects
- Ensure that all projects are delivered on-time, within scope and budget
- Developing project scopes and objectives, involving all relevant stakeholders
- Ensure resource availability and allocation
- Develop a detailed project plan to track progress
- Measure project performance using appropriate systems, tools and techniques
- Report and escalate to management as needed
- Create and maintain comprehensive project documentation

Implementation Committee Charge: The initial charge directed the Committee to:

- Engage the CoE community, especially students, in evaluating and further shaping the plan.
- Review, refine and prioritize the initiatives and projects defined in the DEI Strategic Plan, beginning with specifying the Year 1 action plan.
- Provide project oversight and management for DEI initiatives and projects. Ensure that roles and accountabilities for implementation are defined. Provide recommendations to senior administrative leaderships (Dean, Cabinet, Executive Committee) for actions, rewards/recognitions and interventions (if needed).
- Lead necessary marketing and communication efforts to ensure broad understanding and engagement with key constituency groups both inside and outside the College
- Establish the initial set of DEI measures, ensure that these metrics are collected and reviewed on a regular basis.

Planning Process: The Implementation Committee began the year with a detailed review of the DEI strategic plan. Based on this review, the Committee performed the following actions:

1. Developed a prioritized action plan for Year 1. This includes identifying resource needs for implementing the action and a project timeline.
2. Validated the action plan with the Deans, Cabinet and department Chairs.
3. Created and oversaw an engagement process for students, faculty and staff to bring them into the planning process and actively involve them going forward.
4. Provided direction for the College communication plan, including a DEI website and other social media platforms.
5. Built an initial set of DEI metrics for the collection and monitoring of information (data) relevant to the reporting and evaluation of DEI-related issues within the College of Engineering.

Through the work of the Committee, progress was made on several key initiatives, including building awareness for DEI concepts through the sponsorship of engagement forums and workshops and proactive review of the DEI action plan.

III. Data and Analysis: Key Findings

Year 2 UPDATE:

We continued to develop a variety of DEI-related data sources. These included college enrollment dashboards that include breakouts by demographics for students, faculty and staff as well as faculty career progression metrics.

Through several DEI training and awareness events/forums, we reconfirmed the need to a) build awareness and skills and b) address local climate issues. Building DEI awareness, skills and experience remains a top priority for students and staff. We want to increase the reach to engage more students and staff (especially those in student-facing roles). We need to expand the engagement with faculty and lecturers to include more of the CoE faculty population. Faculty understanding and commitment is seen by students and staff to be critical to success. We will need to standardize our metrics to be consistent with those planned at the university level. We will also continue to collect additional DEI data and to manage this data in a consistent way, giving access to those that need it at the College and department levels.

The College achieved a tremendous response rate to the staff climate survey conducted by the University (Engineering response was 75.3% vs. overall University rate of 46.5%); we anxiously await the results to determine Year 2 actions.

IV. Strategic Objectives: Key Findings and Recommendations (for the College)

Our first three objectives could be termed “foundational”, as they are necessary to create the processes, tools, structures and capabilities to effectively deliver on our vision and strategy for diversity, equity and inclusion.

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- 1. Increase the understanding and application of diversity, equity, and inclusion concepts to build skills and provide learning experiences to effectively and constructively engage in dialogue on DEI-related topics across our community.**

Finding: Many in our community lack an understanding of key concepts relevant to diversity, equity and inclusion or have not had thoughtful and substantive opportunities to engage these concepts, especially across boundaries of difference. Our different identities – gender, race, international or domestic, sexual identity, socioeconomic class, religion, etc. – can make it difficult to work together. This influences interactions of all types: in the classroom, in team-oriented project work, in hiring processes, in research groups, in meetings, in student mentoring and advising, and in social settings. There is a need for more skill development and experience for intercultural engagement and conflict resolution. It is noted that the College currently has conflict resolution processes in place for students and faculty; these processes can be enhanced through additional intercultural skills. No clear process exists for staff and this is a need (addressed as a University recommendation for a staff ombudsman).

Recommendations:

- Develop approaches so that all students and postdoctoral scholars learn about critical concepts such as privilege, unconscious bias, accumulation of (dis)advantage, and micro-aggressions, and increase their skill level in communicating across cultures. For undergraduate students, we will focus on including content in new or existing courses. For graduate students and postdoctoral scholars, and in coordination with Rackham, we will consider using the Responsible Conduct of Research and Scholarship (RCRS) program for teaching this material. Methods to assess our approach will be developed and implemented.
 - Develop approaches to expose our staff to these same concepts. A workshop on unconscious bias was piloted this year and will continue, and other approaches may also be useful. **Year 2 UPDATE:** We will leverage formal training programs offered by Learning & Professional Development.
 - Increase the number of opportunities and incentives for faculty, lecturers, and research scientists to be exposed to these same concepts. Our approach here will utilize single-topic events, particularly Faculty Recruitment (STRIDE) workshops, CRLT Players workshops, Rackham Graduate Admissions workshops, and the ADVANCE Program's Faculty Leading Change workshops, as well as periodic presentation of critical material in more routine setting, e.g. faculty meetings, graduate chairs meetings, and undergraduate program chairs meetings. **Year 2 UPDATE:** We will leverage newly-developed mini-courses developed by CRLT-Engineering.
- 2. Build a robust and complete set of metrics with an established standardized methodology for the continuous collection and monitoring of information (data) relevant to the reporting and evaluation of DEI-related issues within the College of Engineering.**

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Finding: Understanding and influencing DEI requires quantitative and qualitative measures of how we are doing. Some quantitative and qualitative data are routinely reported to appropriate leadership in the College. For example, Rackham reports on the admission process and tracks students through their Master's and PhD programs, by program, allowing assessment of the diversity of the applicant pool and whether different demographic groups fare differently in, for example, time to graduation. The ADVANCE Program provides data on faculty diversity, and at the College's request administers and interprets climate surveys of departments every 4-6 years. Data on the diversity of the staff, postdoctoral scholars, lecturer, and research scientist ranks are available from the College and distributed during the annual budget process. Our analysis indicated, however, that other types of data are not routinely produced or examined, that data are available at irregular intervals and in non-standardized forms, that data are incomplete or nonexistent for some student demographics, and that there are few opportunities to discuss data relevant to DEI with the appropriate college representatives at the table. Some of these data are college-specific and even course-specific (e.g. demographics of students involved in extracurricular and co-curricular activities or in particular gateway courses) and unlikely to be obtained or reported at the university level. It will be difficult to assess our progress on DEI without a more regular reporting, monitoring and discussion of the relevant data.

Recommendations:

- a. For each constituency (undergraduates, graduate students, postdoctoral scholars, lecturers, research scientists, faculty and staff), determine an appropriate set of DEI metrics, how and by whom data will be obtained, how the data will be used (including appropriate training regarding legal use of such data) and in what form and how often these data will be reported.
- b. Establish regular meetings of appropriate leaders at which DEI metrics will be discussed.
- c. Institute a yearly "DEI state of the college" report by the Dean to describe the status of the college on various DEI metrics, progress on our strategic plan, challenges, and opportunities.
- d. **Year 2 ADDITION:** UPDATE: Leverage university-deployed metrics (when defined) to augment those used within the College.

3. Build mechanisms, including leadership accountability and reward systems, to bring a "constancy of purpose" in focusing on DEI-related issues and opportunities within the college.

Finding: Our current efforts in DEI¹⁰ have gradually and unevenly been integrated into specific and multiple roles (e.g. Associate Deans, department chairs, Office of Student Affairs, Office of Graduate Education, CEDO, undergraduate and graduate program chairs, etc.). To ensure that

¹⁰ See Appendix C: Diversity Census—Existing Efforts to Further Diversity, Equity, and Inclusion in the College of Engineering

the College effort in DEI is both meaningful and sustainable, it is critical that a leadership infrastructure is created to oversee and maintain the focus. Across our community, efforts that further DEI should be expected, considered at times of hiring and promotion, and rewarded.

Recommendations:

- a. Define and deploy a mission statement for the College that includes a clear declaration in our belief in the power and necessity of DEI as a competitive advantage. This includes a statement of commitment affirming our intent to leverage DEI to ensure that innovation, entrepreneurship, and public service are fundamental characteristics of our graduates as a part of our guiding core principles and values.
- b. Examine our current leadership structure to determine whether a senior leadership position and/or standing committee(s) should be created to better foster, coordinate, and monitor our efforts in DEI and to continue the conversation started in our strategic planning efforts with various subgroups in our community. Examine current units and structures (e.g. CEDO, Office of Student Affairs, Office of Graduate Education) to determine and optimize approach, responsibilities and accountabilities for DEI-related activities.
- c. When hiring and promoting instructional faculty, research scientists, and staff, and when appointing individuals to leadership positions, consider whether the individual has already, or has the potential to, positively affect the inclusiveness of our community as an important criterion.
- d. Provide legal incentives to chairs, departments, faculty and staff to foster DEI.
- e. Create transparency and engagement with our community by developing opportunities, e.g. outside speakers, student forums, or in concert with the “DEI state of the college” report by the dean, to engage in discussion of DEI throughout the year. Communicate information about our DEI initiatives broadly via our website.

The next five objectives are essential to creating our future state. They leverage the foundational objectives to deliver key outcomes.

4. Build communities and creative learning spaces by leveraging and transforming the use of space within the College to create an inclusive environment that welcomes and supports students, postdoctoral fellows, instructional and research faculty, and staff.

Finding: Space is a valuable resource, and the way we choose to use that space reflects our priorities and commitments. Space has a tremendous impact on the learning environment within the College. Effective use of space can create natural learning communities that invite

intercultural engagement and/or provide “safe havens” for groups to come together and feel included and supported. In many instances, however, current space designs do not facilitate this purpose. Unlike central campus, for example, we have no central gathering place for north campus activities and student groups. Where possible, we should examine how to design, redesign, or repurpose space to be more welcoming and inclusive.

Recommendations:

- a. Explore possible avenues for creating a major community space that invites students to come together academically and socially.
- b. Review our current spaces for their inclusiveness, including consideration of location, function, and artwork/photos. Assess our facilities to determine other areas for improvement, e.g. for those with disabilities, for breastfeeding mothers, and for those who desire gender neutral restrooms, and work to meet those needs. **Year 2 ADDITION:** Explore possible actions to reinforce physical safety on North Campus.
- c. Engage relevant campus units, e.g. Spectrum Center, Services for Students with Disabilities, Program for Intergroup Relations, and Trotter Multicultural Center, to explore ways in which they could develop or enhance their presence on North Campus. **Year 2 UPDATE:** The International Center will establish an ongoing presence on North Campus.
- d. Make available and improve study areas for student communities. Particularly urgent needs include space for ENGR 101 and EECS 183, and spaces for Master’s students.

5. Develop talented and diverse college leadership, departmental leadership, and instructional and research faculty capable of providing a world class academic and research learning environment for a global, diverse student body. Our five-year objective is to develop a diverse instructional faculty with year-over-year increases in the percentage gender and URM representation.

Finding: Despite our solid efforts, our instructional faculty (~20% female, ~5% URM) are not as diverse as we would like. Although the fraction of female faculty has been slowly growing, it has been particularly difficult to increase the fraction of URM faculty. Similar statements can be made about research faculty and lecturers. Multiple mechanisms must be used to understand and address the various issues that have led to an insufficiently diverse faculty so that we can make substantial progress on improving faculty diversity.

Recommendations:

- a. Increase the fraction of instructional faculty who have attended Faculty Recruitment (STRIDE) workshops. Discuss, review, and share strategies and best practices for faculty hiring at chair’s meetings, faculty meetings, and search committee meetings.
- b. Continue offering the NextProf workshop to attract underrepresented and female graduate students and postdoctoral scholars to academia, and potentially to the University of Michigan. Improve advertising of the workshop, communication with departments, tracking of previous attendees, and communication with previous attendees

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so that departments can make better use of this resource as one means of attracting excellent and diverse applicants for CoE faculty positions.

- c. Make increased use of the President's Postdoctoral Fellowship Program to recruit outstanding fellows whose research, teaching and service will contribute to diversity and equal opportunity in higher education, and mentor them to be competitive faculty applicants.
- d. ~~Consider our own graduates and postdoctoral scholars as faculty candidates.~~ **Year 2 UPDATE:** eliminating this recommendation; no longer considered appropriate.
- e. Review the associate-to-full promotion pathway to identify and address differences in timing and success among demographic groups.
- f. Provide career and leadership development opportunities for research and instructional faculty. The Faculty Fellows Program, which was piloted in 2014-2015, is one potential mechanism. Workshops such as Faculty Leading Change, coaching, and mentoring are also important mechanisms to consider.
- g. Encourage and support departments and department chairs in creating an environment that is conducive to increasing the diversity of their instructional and research faculty.

6. Recruit, develop, and graduate a talented and diverse body of students and postdoctoral researchers with the academic and multicultural skills to engineer solutions to tomorrow's global challenges. Our five-year objective is achieve year-over-year increases in percentage of female and URM enrollment while reaching and maintaining parity on academic performance (GPA) and retention-to-graduation.

Finding: Despite a concerted effort in outreach and proactive recruiting, our student body is not sufficiently diverse. A number of critical issues faced by undergraduate and graduate students and postdoctoral scholars were identified. In terms of demographics, the enrollment numbers for many groups are significantly below that of the general population of the State of Michigan and the United States, for example. Female student enrollment across undergraduate and graduate populations is at the mid-20% level. URM enrollment is ~11%, though students explained that this calculation, which is a percent of domestic students, is misleading: because of the significant number of international students, especially at the graduate level, the minority student enrollment "feels" much lower. Many URM students have solo status in their classes. We have not reached critical mass for URM students, and only reach critical mass for women in some departments.

The academic achievements (e.g. graduation rates, grade point average) for some groups (URMs, low socioeconomic status) are significantly below those of the average student population. The lack of critical mass strongly impacts the climate for women, URM students, those with low socioeconomic status and other minority groups. Finally, engineering students currently operate within a particular culture that is not as inclusive as it could be. These issues affect all students, and mean that for some students CoE is not a place where they feel welcomed and can thrive.

Recommendations:

- a. Expand successful models that provide student support, boost academic achievement, and enhance student climate. These include: Michigan STEM Academy (M-STEM M-Engin), Women in Science & Engineering Residential Program (WISE-RP), Michigan Engineering Transfer Support (METS) Program, and Community Grants. M-STEM M-Engin has successfully nurtured over 400 engineering students in diverse cohorts, maximizing the academic, personal, and professional success of students. The program spans the first two years and includes a pre-freshman 6-week summer transition program, customized advising, career guidance, learning enrichment activities, and assistance in obtaining a paid professional summer internship or research opportunity. The WISE-RP recruits, supports, and retains a diverse population of students in the science, technology, engineering, and mathematics (STEM) fields by linking students with resources and opportunities that will support their academic and personal pursuits. The METS program is designed to facilitate the adjustment of transfer students to the Michigan academic environment while minimizing the impact of “transfer shock” on first transfer semester grades. Community grants support staff, student or faculty-led proposals to host a workshop, event, etc. to improve promote a sense of community for students.
- b. Institute an annual review of the effectiveness our K-12 ~~pipeline and~~ outreach efforts to evaluate the return on investment so that we can best utilize our resources. This would include the Summer Engineering Academy programs for 9th, 10th and 11th graders and the Michigan Engineering Zone. **Year 2 UPDATE:** eliminated the word “pipeline”; considered beyond our scope of responsibility. We will examine how effective our outreach programs are in impacting diversity and recruiting matriculation.
- c. Increase partnerships with pipeline schools (both undergraduate and graduate), community colleges, and national organizations. Build new dual-degree partnerships with minority-serving institutions, using Atlanta University Complex Consortium-Dual Degree Engineering Program (AUCC-DDEP) as a model.
- d. Increase the number of undergraduate and Master’s student scholarships and funding for student co-curricular experiences.
- e. Establish a Bridge-to-the-Doctorate Program for Master’s students, in partnership with Rackham (and including Rackham Merit Fellowship criteria). We are currently recruiting students for this program, to launch in Fall 2016 with approximately 20 students.

7. Recruit, retain, and develop a talented and diverse staff capable of supporting a world class academic and research learning environment for a global, diverse student and faculty population.

Finding: While many of our staff members have direct interaction with student and/or faculty communities, they often have not had the training, skills and experiences to work effectively across DEI dimensions. Some question the necessity of spending time on DEI issues. It is

important to provide DEI learning experiences for our staff in order to develop their understanding and skills. Internally, while staff demographics overall are reasonably diverse, for example, as compared to the demographics of Southeast Michigan, demographics in particular staff job categories are not as egalitarian and point to a continuing need to reach out to potential job applicants to diversify our applicant pools.

Recommendations:

- a. Explicitly integrate staff into the College recommendations regarding DEI training, metrics, and structure. Reliably communicate to staff our efforts in these areas and how they impact staff as well as faculty and students.
- b. Integrate considerations of how staff can or have contributed, through their professional experience, to DEI into staff hiring, performance reviews, and awards.

8. Design and develop resources and opportunities for engagement and interaction that facilitate a more equitable and inclusive learning environment for students.

Finding: We heard from students that the classroom, research group, and team project environments can be difficult to navigate when there are cultural differences among students, between students and faculty, and between students and GSIs. While the conceptual understanding gained from the efforts in Recommendation 1 will be useful, the particular application of these concepts to the learning and research environment is equally important to support.

Recommendations:

- a. Expand resources and instruction on the topic of inclusive teaching for instructional faculty and GSIs in the college.
- b. Increase the fraction of faculty who have attended Rackham's MORE ("Mentoring Others Results in Excellence") workshop. Develop other ally training opportunities for faculty, e.g. in concert with Rackham or the ADVANCE Program.
- c. Develop and expand the offerings of Insitu: Center for Socially Engaged Design, which teach students across U-M to design for the full range of social, cultural, economic, and environmental factors that influence the success of technology adoption. The training here, while focused on product design for users well outside of the university, incorporates the development of skills to communicate across cultures.

College of Engineering

V. Strategic Objectives: Key Findings and Recommendations (for the University)

Through our analyses and discussions, additional concerns were identified that are best addressed more centrally. We recommend the following initiatives to be pursued at the University level:

1. Increase the number of President's Postdoctoral Fellows.

Finding: This relatively new program has attracted 12 excellent postdoctoral fellows to UM whose research, teaching and service contribute to diversity and equal opportunity in higher education. Seven have accepted assistant professor positions at UM, and 4 are still completing their fellowships. An increase in the capacity of the program could further impact postdoctoral scholar and ultimately faculty diversity.

2. Provide additional scholarship funds for out-of-state students

Finding: The significant tuition differential for students who are not Michigan residents prevents many from being able to attend; instead they remain in their home state. By removing or lowering this financial hurdle, the University would increase the matriculation rates for admitted students.

3. Improve the availability of and access to childcare.

Finding: At the President's Advisory Committee on Faculty Diversity meeting on April 20, 2015, the ADVANCE Program presented data on faculty childcare needs. At that time, there were 124 faculty and 245 other university personnel (staff, students, postdocs) on the waitlist for UMCC infant care slots. Engineering faculty, voicing their concerns as part of the CoE Advisory Board for ADVANCE and within an ad hoc committee assembled by ADVANCE, have had great difficulty finding infant slots in child care centers and also have had marginal success with Kids Kare at Home as back up care for sick children due to the limited number of caregivers. We believe that addressing the issue of child care, especially infant care, will be a critical piece of our ability to recruit and retain faculty in engineering, and will also, albeit to a lesser extent, aid in recruiting and retaining students, postdoctoral scholars, lecturers, research scientists, and staff.

4. Expand facilities to accommodate alternative examination needs for some specific student disabilities.

Finding: As the population of students with disabilities increases, and the availability of classroom or conference room space during critical hours has dwindled, it has become difficult for faculty to accommodate these student needs. CoE is interested in working with other units,

and with Provost office support, to either expand the current testing facility on Central Campus or to establish a facility on North Campus.

5. Develop UM Career Path Training and Tools.

Finding: The current career path navigator and job posting rules are not sufficient to allow for staff to make informed decisions about career changes/upward growth. Salary ranges are not currently required on all postings. Without ranges, it is difficult for staff to determine if the position is considered to be higher level and a promotional opportunity. We recommend posting of salary ranges for all positions. In addition, development of training and certification modules for not only internal staff but also for those interested in applying for UM staff positions could improve the quality and potentially the diversity of our applicant pools.

6. Coordinate our relationships with partner institutions across campus.

Finding: We often hope to interact with partner institutions, identifying institutions that, for example, have a vibrant master's program but few research opportunities or Ph.D. programs. Leveraging the strengths of UM and partners can increase the educational opportunities for a diverse population of students. When we identify a possible partner institution, e.g. a minority-serving institution or community college, it is difficult to know whether there is an historical relationship with this institution, whether others on campus are already interacting with the institution, or who appropriate contacts at the institution might be. It would be helpful to have a central office that tracks, assists and manages these relationships, so that information is not lost when personnel move on.

7. Build a North Campus Multicultural Center/Space to serve the collective communities of the four schools housed on North Campus: College of Engineering, College of Music, Theatre and Dance, School of Art and Design, College of Architecture, and Urban Planning.

Finding: In our Recommendation 4, we point out the need for inclusive spaces in engineering. A further need is for a facility that provides services and a supportive environment for all students on north campus, regardless of college/school, to develop a better understanding and appreciation for the multicultural diversity represented at the University. Such a center could serve as a vibrant hub for students, faculty, staff, parents, alumni, community members, campus visitors, and student organizations and play a role similar to the Trotter Multicultural Center on central campus.

8. Create the position of staff ombudsman for the campus.

Finding: Unlike faculty and students, staff currently have no confidential resource for resolving difficult issues and acting as a voice to senior administration. We recommend the creation of a staff Ombuds office where staff questions, complaints and concerns can be discussed

confidentially in a safe environment. This office would offer informal dispute resolution services, provides resources and referrals, and help staff members consider options available to them. The office would operate independently as a supplement to existing administrative and formal dispute resolution processes and would have no formal decision-making authority.

**9. Support the cross-unit initiative (led by LS&A, Medical School and Engineering):
“Growing STEM: Pipelines, Collaborations and Pedagogies for Diversity & Inclusion at Michigan”**

Finding: Growing STEM: Pipelines, Collaborations and Pedagogies for Diversity and Inclusion at Michigan” – a new collaboration at the University of Michigan – is a response to the disparities present at almost every level of STEM education. Faculty and leadership from the College of LSA, the Medical School and CoE have come together to build a sustainable and strong “pipeline,” including for underrepresented minority and women, into STEM fields. This pipeline would encompass: pre-college outreach, recruitment and admission; first and second year undergraduate STEM education and retention into STEM majors; preparation and mentorship for undergraduate students into graduate and professional programs. Ideally, this pipeline would encompass all stages from K12 outreach through graduate and professional schools, postdoctoral fellowships and entrance into careers. The Growing STEM collaboration is open to all interested individuals, programs, schools and colleges at U-M.

VI. Goal-related Metrics – School, college or unit measures tracked over time

Year 2 UPDATE: Goal-related metrics will be reviewed and adjusted once university measures are defined and deployed in Fall 2017.

Diversity

- Undergraduate and graduate student application, selectivity and yield data by demographic group
- Instructional and research track faculty application, selectivity and employment by demographic group
- Staff by job family, demographic group and staff/manager
- Postdoctoral fellow employment by demographic group

Equity

- GPA, time to graduation, and graduation rate by demographic group
- Faculty retention and promotion by demographic group
- Faculty leadership roles and honors (e.g. named professorships) by demographic group

Inclusion

- Students involved in extracurricular and co-curricular experiences by demographic group
- Climate measures (students, faculty, staff) - climate studies, online surveys, exit surveys, student responses at forums/focus groups, etc.

VII. Plans for Supporting, Tracking and Updating the Strategic Plan

YEAR 2 UPDATE:

We anticipate that the role of the existing DEI Implementation Committee will continue for Year 2 with an updated but consistent charge from the Dean. This committee will continue to guide and review progress as well as recommend course-corrections as needed. We will continue to look for new ideas and initiatives that may well supersede planned action items. Yearly reviews and the Dean's "state of the college" message will provide the stage for a broader conversation each year. There are plans for a major college DEI event in November to coincide with the University diversity summit. We will continue to proactively share information about our initiatives with other units across campus, as well as learning from them.

List of Abbreviations

ADAA	Associate Dean for Academic Affairs
ADGE	Associate Dean for Graduate Education
ADR	Associate Dean for Research
ADUE	Associate Dean for Undergraduate Education
AUCC-DDEP	Atlanta University Complex Consortium-Dual Degree Engineering Program
CAEN	Computer Aided Engineering Network
CEDO	Center for Engineering Diversity & Outreach
CoE	College of Engineering
CRLT	Center for Research on Learning and Teaching
DEI	Diversity, Equity, and Inclusion
grad-SWE	Society of Women Engineers-graduate students
GSAC	Graduate Student Advisory Committee
GSI	Graduate Student Instructor
HR	Human Resources
IGR	Program on Intergroup Relations
LGBTQ	Lesbian, Gay, Bisexual, Transgender, and Queer or Questioning
METS	Michigan Engineering Transfer Support Program
MORE	Mentoring Others Results in Excellence* *Rackham's Faculty Committee on Mentoring
M-PACE	Michigan Postdoctoral Association of the College of Engineering
M-STEM M-ENGIN	Michigan STEM Academy, Engineering
OIE	Office for Institutional Equity
OSA	Office of Student Affairs
PPF	Presidential Postdoc Fellow
PPFP	Presidential Postdoc Fellowship Program
RCRS	Responsible Conduct of Research and Scholarship
RPM	Resource Planning and Management
SHPE-grad	Society of Hispanic Professional Engineers-graduate students
SMES-grad	Society of Minority Students-graduate students
SSD	Services for Students with Disabilities
STEM	Science, Technology, Engineering, and Mathematics
STRIDE	Committee on Strategies and Tactics for Recruiting to Improve Diversity and Excellence
UMCC	University of Michigan Children's Center
URM	Under-represented Minorities* *as defined by National Science Foundation. This group includes persons identified as African-American/Black, Hispanic, and Native American.

College of Engineering Programs

Listed below are CoE programs designed to enhance diversity, equity, and/or inclusion implemented at the college level. All programs listed are open without regard to gender, race, ethnicity, etc., except for the NSF-funded Michigan Louis Stokes Alliance for Minority Participation, which follows federal guidelines for this program.

Center for Engineering Diversity and Outreach

CEDO works to (1) create a pool of diverse students who enter Michigan Engineering; (2) foster academic success of diverse students (3) showcase multicultural perspectives in engineering; (4) advocate policies for diversity and inclusion; (5) promote appreciation and understanding of diverse individuals and groups; and (6) demonstrate the importance of multicultural competency.

Contact: Lyonel Milton

Collaborators: Industry, engineering faculty researchers, K-12 educators, School of Education, Center for Educational Outreach

Michigan Engineering Zone (MEZ)

The MEZ is a forum located in the U-M Detroit Center where Detroit students acquire the knowledge and tools they need to propel themselves to higher education and careers in science, technology, engineering, and mathematics through challenging and exciting hands-on experiences.

Contact: Jeanne Murabito

Collaborators: Industry, K-12 educators

First Generation Initiative

A new College of Engineering initiative to support first generation students.

Contact: Jeanne Murabito

Collaborators:

First-Year Student Recruitment Programs

The College of Engineering's first-year student recruitment programs bring select groups of students in for campus visits and participation in admitted student weekends. A post card writing campaign by select student groups to admitted underrepresented students is part of the recruitment conversion effort.

Contact: Jeanne Murabito

Collaborators:

M-STEM Academies

The M-STEM (Michigan Science, Technology, Engineering and Mathematics) Academies provide students with a supportive and academically rigorous experience during that critical transition from high school to college. Our increasingly global workforce demands rigorous technical training, entrepreneurial mindsets, multicultural competencies, and intellectual curiosity.

Contact: Darryl Koch

Collaborators: LSA, industry

Michigan Engineering Transfer Student Support Program

This program provides the opportunity for students transferring into the College of Engineering to have the same level of support as first time in any college students to ensure their continued academic success.

Contact: Jeanne Murabito

Collaborators: Office of Student Affairs, Shanghai Jiao Tong University

Michigan Louis Stokes Alliance for Minority Participation

The Michigan Louis Stokes Alliance for Minority Participation (MI-LSAMP) was established in 2005 to address the need for greater retention and representation in science, technology, engineering, and mathematics (STEM) education and degree attainment, and the associated workforce, by individuals from certain demographic groups, most notably African American, Hispanic and Native American. MI-LSAMP is a federally funded collaborative effort of Michigan universities designed to share best practices and resources to achieve excellence in U.S. STEM education to support the development of a diverse and well-prepared workforce and well-informed citizenry. MI-LSAMP's funding comes from the National Science Foundation and allows the College of Engineering to create a program initiative specifically focused on underrepresented minority students, as this is a federally funded program.

Contact: Derrick Scott

Collaborators: LSA, Undergraduate Research Opportunity Program, Michigan State University, Wayne State University, Western Michigan University, 14+ Michigan community colleges

Michigan Gaining Early Awareness and Readiness for Undergraduate Program (GEAR UP-STEM)

The GEAR UP-STEM program provides science, technology, mathematics, and engineering exposure and enrichment to middle school youth in Michigan, including classroom projects as well as campus visits. It is a turnkey program that allows the participating universities to provide direct programming in middle schools and communities that feature compelling engineering projects and activities to pique student interest in engineering education and careers. GEAR UP-STEM also provides professional development services to teachers, and critical, actionable information for parents on preparing them for STEM academic success. The College of Engineering assisted in the program design for GEAR UP-STEM, and now serves as a consultant on strategy and content for its continued growth and success.

Contact: Robert Scott

Collaborators: Office of Academic Multicultural Initiatives, State of Michigan King/Chavez/Parks Program, Grand Valley State University, Wayne State University

Focus: HOPE STEM Bridge Program

Focus: HOPE STEM Bridge is a college preparatory program which significantly increases the success rate and retention of underprepared, but intellectually capable students in colleges. It comprises eight courses delivered over three terms and includes support services.

Contact: Jeanne Murabito

Collaborators: Center for Engineering Diversity and Outreach, Provost's Office

Scholarship Partnership Initiatives

College of Engineering partnerships with partner schools, the National Action Council for Minorities in Engineering, and select companies to provide scholarship support for increasing diversity, equity, and inclusion on campus.

Contact: Jeanne Murabito

Collaborators: Partner schools nationwide, industry, NACME

High School Partnership Initiatives

This initiative allows a focus and an opportunity for College of Engineering faculty and staff to work closely with staff, students, and families at partner high schools. Several these schools have significant underrepresented and/or low socio-economic populations.

Contact: Jeanne Murabito

Collaborators: Partner schools nationwide

Atlanta University Center Consortium - Dual Degree in Engineering Program

A College of Engineering partnership with Historically Black Colleges and Universities, Clark Atlanta University, Morehouse College, and Spelman College for engineering students at the transfer level.

Contact: Jeanne Murabito

Collaborators: HBCUs

Alternative Spring Break - Chicago

Alternative Spring Break in Chicago is a collaborative effort conducted via the Society of Women Engineers, the National Society of Black Engineers, and the Society of Hispanic Professional Engineers that entails a week in Chicago public schools and community-based educational programs teaching engineering through hands-on design projects. It provides a comprehensive

opportunity to engage students and model what it is like to be a college student studying engineering.

Contact: Jeanne Murabito

Collaborators: Chicago public schools and community-based educational programs

K-12 Engineering Programming

These programs introduce engineering to K-12 students and their parents to show that the field is exciting and significant. Programs provide students with access and exposure to engineering concepts in a variety of settings, including classrooms, day camps and residential programs. Programs also equip parents with knowledge, skills and competence to support their children as they prepare for and apply to engineering colleges like Michigan Engineering. Programs include (1) Summer Engineering Academy; (2) Detroit Area Pre-College Engineering Spring Program; (3) GEAR UP STEM Initiative; (4) Michigan Engineering Road Show; (5) Engineering is Elementary.

Contact: Lyonel Milton

Collaborators: Industry

ScholarPOWER

ScholarPOWER consists of a comprehensive suite of educational support services that provides students with focused training that supports student retention and cultivates academic, personal, and professional development.

Contact: Lyonel Milton

Collaborators: Industry

Engineering Career Resource Center (ECRC)

The ECRC offers specific workshops and events for M-STEM/M-ENG, transfer students, and international students as well as for student organizations such as the Society of Women Engineers, the National Society of Black Engineers, and the Society of Hispanic Professional Engineers.

Contact: Kerri Boivin

Collaborators: Industry

International Programs in Engineering (IPE)

The mission of the IPE office is to prepare College of Engineering graduates for success in the global engineering profession by helping all CoE students gain international experience. The international experience can help students develop cultural awareness, leadership qualities, communication skills, and professional development.

Contact: Miranda Roberts

Collaborators: Donors, partner universities, industry

Women in Science and Engineering (WISE)

The WISE program's goal is to increase the number of women students who choose majors, advanced degrees, and careers in science, mathematics, and engineering. All interested students may participate.

Contact: Cinda-Sue Davis

Collaborators: Donors, partner universities, industry, alumni

Dean's Advisory Committee on Female Faculty (DACFF)

The DACFF assists the Dean by identifying and prioritizing best practices to recruit, retain and promote women faculty members in the College while serving as an advocacy group for women engineering professors.

Contact: Allison Steiner

Collaborators:

Dean's Advisory Committee on Faculty of Color (DACFC)

The DACFC assists the Dean by identifying and prioritizing best practices to recruit, retain and promote under-represented minority faculty members in the College while serving as an advocacy group for minority engineering professors.

Contact: Avery Demond

Collaborators:

Faculty Search Procedures

College of Engineering procedures to motivate and assist faculty search committees in creating diverse candidate pools and reducing unconscious bias in assessing candidates.

Contact: Michael Wellman

Collaborators: U-M ADVANCE

NextProf Future Faculty Workshop

NextProf is a program for doctoral students in or beyond the fourth year of study and postdoctoral scholars who are interested in pursuing academic careers in engineering, who are committed to promoting diversity in higher education, and who are one to three years away from beginning a job search with the goal of diversifying the face of academia.

Contact: Mary-Ann Mycek

Collaborators: Rackham, LSA, faculty and administrators from engineering schools across the country

Graduate Student Recruitment Programs

Graduate student recruitment programs include application fee waivers; funded visits for approximately 100 undergraduates to the Engineering Graduate Symposium to learn about research and meet faculty; funded department visit weekends for approximately 250 prospective

graduate students; funded opportunities for U-M undergraduate students to do summer research (SURE Program); funded opportunities for non-U-M undergraduate students to do summer research (SROP Program, in partnership with Rackham); masters fellowships (tuition fellowships to incoming masters students, selected using RMF criteria); sponsored interactions that pair graduate students, for example from grad-SWE and SHPE-Grad, and undergraduate students; recruiting at national meetings including SHPE and NSBE. National Sponsor of the 2014 SHPE National Conference (Detroit, November 2014).

Contact: Jeanne Murabito

Collaborators:

Graduate Student Retention Programming

Retention programs include workshops on common graduate student concerns; sponsored interactions that pair PhD students with masters students; leadership summit of graduate student society leaders; graduate student community grant program; social events; emergency funding for students; coordination of sponsored fellowship processes.

Contact: Mary-Ann Mycek

Collaborators: Rackham, CEDO, Counseling and Psychological Services, International Center, CRLT Players, etc.

Graduate Student Advisory Committee (GSAC)

Representatives from graduate programs and major graduate student societies identify priorities, help plan activities, and address areas of concern.

Contact: Mary-Ann Mycek

Collaborators:

ADVANCE Program

Collaboration with the U-M ADVANCE Program: mandated attendance at STRIDE workshops for College of Engineering faculty on search committees; launch committees for all new untenured faculty; leadership coaching for new full professors and new chairs; climate surveys.

Contact: Jennifer Linderman

Collaborators: ADVANCE Program

Center for Entrepreneurship Undergraduate Academic Programs

The Center for Entrepreneurship runs undergraduate academic programs focused on teaching students the mindset and skills needed to innovate in today's rapidly evolving industries. Students learn about problem solving, networking, team building and more through hands-on entrepreneurial experiences. It has been nationally documented that women and other minorities between the ages of 18 and 24 are very underrepresented in entrepreneurship and business creation. At CFE, our undergraduate students are made up of 30 percent women and 11 percent other minorities, well above the national average. CFE aims to increase those numbers through directed marketing efforts and outreach in the coming year, and is working to further expose

students to the importance of understanding underrepresented groups in entrepreneurship through new undergraduate curriculum and opportunities.

Contact: Jonathan Fay

Collaborators: Donors, industry

Center for Entrepreneurship Graduate Academic Programs

Graduate academic programming at the Center for Entrepreneurship has significantly evolved over the past year. CFE's technology-innovation program is designed to expose students in STEM-based disciplines to entrepreneurial ways of thinking as it relates to technical fields. In the past year, women represented 27 percent of CFE's graduate program population and underrepresented minorities made up 16 percent.

Contact: Jonathan Fay

Collaborators: Donors, industry

Center for Entrepreneurship Student Startup Treks

CFE has developed a Startup Trek program with two objectives: bringing students to entrepreneurial hubs to learn about what makes those ecosystems thrive and connecting student startups to alumni and industry partners that can provide mentorship and networks to make them more successful. Every year, CFE takes student startup teams to San Francisco for the Weather Underground Startup Trek (WUST). CFE's application team looks to bring a diverse and dynamic group of students on the trek, selecting students with unique cultural backgrounds and perspectives.

Contact: Jonathan Fay

Collaborators: Donors, industry

College of Engineering Organizations

Listed below are organizations of students, staff, and faculty within the college that focus on diversity-related issues. Some voluntary student organizations are also included. All organizations are open without regard to race, ethnicity, gender, etc. and comply with the University of Michigan's nondiscrimination policy.

Center for Engineering Diversity and Outreach

CEDO works to (1) create a pool of diverse students who enter Michigan Engineering; (2) foster academic success of diverse students (3) showcase multicultural perspectives in engineering; (4) advocate policies for diversity and inclusion; (5) promote appreciation and understanding of diverse individuals and groups; and (6) demonstrate the importance of multicultural competency.

Contact: Lyonel Milton

American Indian Science and Engineering Society (AISES)

The mission of AISES is to substantially increase the representation of American Indian and Alaskan Natives in engineering, science and other related technology disciplines.

Contact: aises.members@umich.edu

girls in Electrical Engineering and Computer Science (gEECS)

gEECS is an organization dedicated to supporting female students pursuing degrees through the EECS department, including degrees in Computer Science, Computer Engineering, and Electrical Engineering.

Contact: Kayla Fedewa (kafedewa@umich.edu)

Graduate Society of Women Engineers (GradSWE)

GradSWE plans a plethora of events to help female graduate engineers, and any other interested graduate students, integrate into a successful tenure as a graduate student.

Contact: Abby Azari (azari@umich.edu), Steph Crocker Ross (sjcrock@umich.edu)

Ingenieros

Ingenieros is a student-based organization committed to providing an environment for the practice of Spanish language skills. It also aims to encourage the understanding and celebration of Hispanic culture not only in the College of Engineering, but also in the University of Michigan as a whole.

Contact: ingenieros@umich.edu

Indian Student Association (ISA)

The Indian Students' Association is a group of graduate and undergraduate students of Indian

origin studying at the University of Michigan, Ann Arbor. The association aims to create a social network amongst the Indian community on campus. The association also aims to participate in various activities organized by the University along with other student organizations, thereby contributing to the diversity on campus.

Contact: Kush Goliya

Jewish Engineering Association (JEngA)

JEngA provides a community for Jewish undergraduate and graduate students while promoting the awareness and development of Jews in the field of engineering.

Contact:

Korean-American Scientists and Engineers Association (KSEA)

KSEA is an organization that promotes academic networking and professional development among Korean-American students in the science and engineering fields.

Contact: ksea.michapter@gmail.com

Michigan Baja Race Team

The Michigan Baja Race Team is an entirely student-run competition team housed within the College of Engineering. Every year the team designs and manufactures an entirely new race vehicle from the ground up. This effort takes a variety of skilled and ambitious team members who design all the system components in CAD and integrate them together. These systems include the frame, drivetrain and transmission, fuel system, suspension, brakes, panels, and guards. Student team members are responsible for raising donations and working with material and manufacturing sponsors in the area.

Contact: Justin Lopas, jlopas@umich.edu

Movement of Underrepresented Sisters in Engineering and Science (MUSES)

MUSES is an organization designed to provide a unique support structure for women of color pursuing advanced degrees at the University of Michigan.

Contact: Christian Greenhill, musescommittee@umich.edu

MRacing Formula SAE Team

Formula SAE is a collegiate motorsport racing series in which students use technical innovation and advanced engineering analysis to build formula style racecars. Teams design and build a completely new car each year, taking knowledge from previous years and unprecedented innovations out to the track. Fifteen competitions around the world test each team's designs from every aspect with dynamic, design theory, cost, and business events. This experience in cradle-to-grave applied engineering gives the students a strong competitive advantage after college and prepares them for the best engineering jobs in the world. International competitions also expose the team to different cultures and approaches to engineering.

Contact: Joe Hendrickson, mrracingmanagement@umich.edu

Muslim Engineering Student Association (MESA)

The mission of MESA is to unite Muslim engineering students on campus to create an inclusive community, existing within the scope of the larger Muslim community on campus.

MESA seeks to provide opportunities for Muslim engineering students to know each other, communicate, and collaborate.

Contact: mesa.officers@umich.edu

National Organization for the Professional Advancement of Black Chemists and Chemical Engineers (NOBCChE)

NOBCChE is dedicated to building an eminent cadre of people of color in science and technology.

Contact: answers.nobcche@umich.edu

National Society of Black Engineers (NSBE)

NSBE's mission is to increase the number of culturally responsible Black engineers who excel academically, succeed professionally, and positively impact the community.

Contact: Raymond Smith-Byrd, nsbe.eboard@umich.edu

Network for Women in Civil and Environmental Engineering (NeW in CEE)

NeW in CEE's mission is to provide female undergraduate and graduate students at the University of Michigan with the mentorship, support and guidance necessary to achieve excellence in the Civil and Environmental Engineering field.

Contact: Qianru Guo, qianru@umich.edu

Out in Science, Technology, Engineering, and Mathematics (O-STEM)

O-STEM's mission is to provide networking, professional development, and social activities for undergraduate and graduate LGBTQ and ally students in the fields of engineering, science, technology, and math.

Contact: Caitlyn Hines, ostem-board@umich.edu

Phi Sigma Rho

Phi Sigma Rho is a social sorority for women in engineering and engineering technologies. Phi Sigma Rho was founded by Abby McDonald and Rhasmi Khanna at Purdue University. Phi Sigma Rho was then founded on September 24, 1984 with the balance of sisterly bonding and academic success in mind.

Contact: [Samantha Steinberg \(PhiRhoPresident@umich.edu\)](mailto:Samantha Steinberg (PhiRhoPresident@umich.edu))

Shanghai Jiao Tong University Alumni Association at the University of Michigan

The purpose of this organization is to establish an active social network among the students, scholars, and alumni of Shanghai Jiao Tong University (SJTU) at the University of Michigan in Ann Arbor and the Ann Arbor area.

Contact: Zhiyi Fan, sjtuaaum.president.2015@umich.edu

Society of Asian Scientists and Engineers (SASE)

SASE's mission is to prepare Asian scientists and engineers for success in their careers and the global business world. The SASE-UM chapter has a mission to establish an active presence of Asians in engineering and science on campus and engage in the community by emphasizing each individual's technical skills.

Contact: Linda Wu, sase.board@umich.edu

Society of Hispanic Professional Engineers (SHPE)

SHPE empowers the Hispanic community to realize their fullest potential and impacts the world through science, technology, engineering, and math awareness, access, support, and development.

Contact: Alex Lopez, shpe.eboard@umich.edu

Society of Hispanic Professional Engineers – Graduate Committee (SHPE-Grad)

SHPE-Grad is a student-led organization whose primary goal is to function as a professional and social network for Hispanic/Latino graduate students at the University of Michigan.

Contact: Ana Rioja, shpe.grad.board@umich.edu

Society of Minority Engineers and Scientists - Graduate Component (SMES-G)

The objective of SMES-G is to address critical graduate student issues such as graduate school admissions, balancing research and social life, and deciding between academic and industrial careers as they relate directly to minority students.

Contact: smesgcommunications@gmail.com

Society of Women Engineers (SWE)

The mission of SWE is to encourage women to excel as engineers and leaders, and to promote an inclusive community within the College of Engineering and the profession that fosters universal success in engineering, independent of gender.

Contact: Caitlyn Hines, swe.info@umich.edu

Unified Minority Mechanical Engineers (UMME)

UMME is established for the recruitment, retention, and successful graduation of its mechanical engineering student members.

Contact: Arinze Nwankwo, umme-eboard@umich.edu

Services for Students with Disabilities

Two psychologists from the Services for Students with Disabilities office rotate for weekly office hours in the College of Engineering. The Office of Student Support and Accountability supports these office hours by providing referrals for students.

Contact: ssdoffice@umich.edu