

# Inclusion, Equity, and Diversity in Engineering Committee Report

## Report and Recommendations

2020-2021

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### **2020-21 Committee charge**

The Inclusion, Equity and Diversity in Engineering (IEDE) Committee is charged with providing recommendations to the dean to address the culture and climate within the College of Engineering (CoE). In the 2020-21 academic year, the Committee was charged with providing input in the following two areas that are addressed in this report:

- a. Provide recommendations on training for faculty, staff and students to address the culture and climate issues in engineering.
- b. Given the complexity of organizing training activities at the college level, what should individual departments be doing to address inclusion, equity and diversity.

To begin the process of formulating recommendations, the Committee studied the findings of the 2019 Educational Environment in Engineering Survey (E3 survey). In brief, the survey highlights some important negative patterns related to the educational experience of domestic under-represented minority graduate students, women students, and undergraduate students in general. Motivated in part by these E3 survey findings and our survey of related DEI activity across campus and at peer institutions, this report contains recommendations in the above two areas. Our recommendations are organized in the following categories in this report:

1. Training and expectations for faculty and staff.
2. Training for students.
3. Best practices for the College.
4. Best practices for Departments.

## 5. Infrastructure, information and resources.

Each category contains several recommendations from the Committee. We include additional resources and considerations for following up on these recommendations based on the Committee's discussions. We acknowledge that several of our recommendations span more than one of these categories since the categories are not mutually exclusive, however, each recommendation was placed in a single category. The Committee was also charged with assisting the College in the selection of the person to lead the Office of Inclusion, Equity and Diversity and to work with Associate Dean Henderson on the implementation of the Faculty Development Workshop. However, these topics are not included in this report.

## Guiding principles

The IEDE Committee recognizes that achieving diversity, equity, and inclusion (DEI) is a long-term goal that requires a sustained commitment over time as well as continuous improvement. Improving the climate in the College will require the same vigor and commitment we apply to achieving every other dimension of engineering excellence. As such, the recommendations in this report or other initiatives that the College undertakes should not be considered as standalone or one-time activities. Efforts should be focused on addressing the core, underlying issues, not merely the symptoms. Likewise, efforts to improve the climate should not be seen as the responsibility of only a few devoted individuals, although a set of individuals may lead DEI efforts. Instead, DEI efforts should support the College's long-term DEI vision and strategic priorities and be part of a larger commitment. Additionally, the Committee recognizes that DEI efforts address systemic and structural issues, and as a result, it is important for the College to prioritize *processes and policies* as they relate to DEI. The College should regularly assess and review College-wide DEI efforts in a spirit of continual improvement.

## Five pillars for supporting DEI in the College

The IEDE Committee recognizes that addressing the culture and climate and ultimately establishing an environment that all find welcoming and inclusive requires a multi-dimensional and sustained effort. In identifying a set of recommendations, the Committee discussed several dimensions that DEI efforts in the College should take. These five pillars lay the foundation for improving the climate in the College and serve as strategic goals that should be supported by strategies and initiatives.

1. Build communities and learning spaces to create an inclusive environment and foster dialog.
2. Increase the importance of understanding and implementing DEI across the College community.
3. Expand the application of DEI concepts by actively promoting participation of the entire College community.
4. Value and celebrate engineering achievements made by members of our College community towards DEI.
5. Build mechanisms of accountability and transparency for addressing DEI initiatives in the College.

## Committee Recommendations

### 1. Training, evaluation, and expectations for faculty and staff

**Recommendation 1:** Faculty and staff participate in annual training to support inclusion, equity, and diversity.

The Committee notes that there are several models for faculty and annual staff training, including repeating training courses on a regular basis in the College, taking a defined number of hours of training from a variety of different DEI courses across campus, and organizing training at the department level. The Committee recommends establishing a baseline of training to be taken by all faculty and staff in the College, such as the WISELI Breaking the Bias Habit, faculty mentor training, and cultural sensitivity training. The Committee recommends that departments select and organize training based on department priorities and set aside time in faculty meetings or regular colloquium times for this training. The College can support and coordinate these efforts by identifying training resources from which the departments can select and distributing these opportunities to department chairs. Furthermore, extending portions of this training to the orientation of new faculty and staff members will lead, over time, to an improvement in the culture of the College.

The Committee stresses that training should not focus only on applying best practices. There is a need for faculty and staff to deepen their understanding of DEI-related topics, reflect on these topics, and engage in dialog on these topics with each other. Ongoing training and diversity initiatives are more likely to create a sense of community and a sense of belonging if they involve dialogue, which would address some of the issues reported in the University Health Services (UHS) “Healthy Minds” survey (<https://www.uhs.wisc.edu/healthy-minds/>). Training that supports community building should be prioritized.

**Recommendation 2:** The DEI mission of the College needs the contributions of all faculty and staff in the College. These contributions need to be evaluated by various committees. As a result, contributions and achievements in DEI should be included in:

- annual reviews and merit exercises,
- promotion packages,
- tenure dossiers,
- College award nominations, and
- five year post-tenure reviews

The relevant committees need to develop standards for expectations and evaluation. These standards should strive to value all types of contributions to diversity, including participation in trainings, events, recruiting, mentoring, service to the broader community and our professions. Proscriptive standards, counting training processes, and other similar approaches may not appropriately value the diversity of contributions across the College. The Committee noted that including DEI achievements in a narrative instead of a list may better capture their impact.

## 2. Training for students

**Recommendation 3:** Develop education about inclusive teams that is part of the required undergraduate engineering curriculum and embedded in the introduction to engineering courses and senior design courses.

An inclusive teams curriculum could include topics regarding the value of diverse teams, an understanding of team dynamics, instruction regarding how to construct effective and diverse teams, how to lead as a team, and how to lead as an individual team member. This curriculum enhancement would provide routine training to all undergraduate students. Other topics can be included as necessary to support student training in other courses as appropriate.

**Recommendation 4:** Create an online training module for incoming engineering freshmen about inclusive education in engineering.

Currently, all incoming first-year undergraduate students are required to take “Our Wisconsin,” an online training module that focuses on inclusion education (<https://inclusioneducation.wisc.edu/our-wisconsin/>). The goal of this module is to raise awareness of the diversity within our student population and to create an environment in which students are free to share their experiences and identities. A second training module that builds on the Our Wisconsin training and connects its messages to engineering will fill an education gap and convey the expectation that all incoming undergraduate engineering students are to contribute to a welcoming and inclusive learning environment. Online training is a preferred format to be consistent with other training.

**Recommendation 5:** Create and deploy a study partners program, where undergraduate students in required courses are assigned to study groups.

Undergraduate engineering students have higher levels of academic success and report higher levels of self-efficacy if they have a sense of belonging. A study partners program would introduce a mechanism to build community to support academic achievement and increase the likelihood of diverse study groups later in the junior and senior years. A model for the program has been initiated at the University of Illinois- Champaign Urbana from which we can learn some best practices (<https://idea.illinois.edu/giant/giant-project-selections-2020>).

The intention of this recommendation is to create a study-partners program on an equal peer-to-peer footing. One student in a majority community and one in a marginalized community, for example, are matched as study partners as they move through a key, didactic core course in the sophomore or junior year of their engineering major. Ideally, some relationships in the program would create friendships and extended networks that would be retained after the initial course. Initial discussions at UW-Madison indicate that some type of brief refresher training on cultural sensitivity prior to students being matched for the study partners program would support successful outcomes of such a program.

### 3. Best practices for the College and departments

**Recommendation 6:** The College sponsors at least one industry or alumni speaker each academic year to speak specifically about the importance of diversity, equity, and inclusion in the engineering industry as part of the Dean’s Distinguished Lecture Series.

College events about DEI provide opportunities for students to engage in larger conversations about DEI. Sponsorship by the College, along with the marketing for such events, sends a strong message to students, faculty, and staff that DEI is valued and that students are expected to support an inclusive climate in the College. The Committee notes that speakers from industry, including government, national laboratories, and non-profits, can motivate the need for engineering students to learn about inclusive teams and operate with diversity in mind. The Committee recommends giving the speaker an honorarium, perhaps set slightly lower than the Hilldale Lecture award, to compensate the speaker for their effort. Additionally, the speaker could meet with the Leadership Council or with a small group of student leaders for additional learning opportunities.

**Recommendation 7:** The Dean’s office emails faculty and instructional staff a list of inclusive teaching resources prior to the beginning of each academic year semester.

The Committee notes the value of “just in time” teaching resources to support the application of best practices. There are many resources on campus to support inclusive instruction that can be circulated on a regular basis to enhance instruction. Assistant Dean Rachel Jones has been sending a “Mental Health/Wellness Resources to Support Students” email to faculty and instructional staff prior to each academic semester that includes wellness resources from campus, the UHS Red Folder, and sample syllabus statements to support wellness. This email is an excellent resource for College instructors. We recommend a second email with instructional resources be sent to faculty, ideally from CEETE. This email can include, but is not limited to, the possible resources:

- CEETE Inclusive Teaching Resources <https://ceete.engr.wisc.edu/resources/inclusive-teaching/>
- MRSEC Inclusive Teaching Practices <https://education.mrsec.wisc.edu/inclusive-teaching-practices/>
- Health Academics Toolkit <https://www.uhs.wisc.edu/healthy-academics/strategies/>
- Pronouns Matter <https://lgbt.wisc.edu/education/pronouns-matter/>
- Outpages <https://outpages.lgbt.wisc.edu/>

### 4. Best practices for departments

**Recommendation 8:** Consider DEI across a cross-section of department activities, including recruiting faculty, students, and staff; evaluations of performance; teaching; seminars and events. Departments should expand DEI efforts as necessary.

This recommendation reflects several issues discussed by the Committee. First, the Committee noted the broad range of departmental activities that require attention from a DEI perspective. Second, many stakeholders should participate in departmental DEI efforts, although not all subgroups need to

participate in all DEI efforts. For example, efforts regarding faculty recruiting may naturally be led by faculty members.

**Recommendation 9:** Departments should develop mechanisms to engage all levels of stakeholders, including undergraduate students, graduate students, post-docs, administrative and research staff, and faculty, in DEI discussions and decision-making. Clear, consistent communication, accountability, and engagement in building an inclusive climate requires the engagement of all members of the unit.

Many College departments have created a committee that considers DEI activities. While the composition of such a committee varies by department, such committees should consider feedback from a range of stakeholders in their efforts. Additionally, each department should improve their communication, transparency and accountability regarding DEI efforts and achievements, since they are crucial for improving the climate.

**Recommendation 10:** Develop equity case studies across the engineering curriculum to be embedded in required engineering courses.

Training students in DEI is a multi-faceted effort. Part of this effort should connect issues of DEI to the engineering curriculum through innovative examples and case studies that create opportunities for students to engage with DEI topics and ethics in their required courses in an interdisciplinary manner. Case studies can be added to the curriculum incrementally over time as instructors develop or update teaching materials. This approach has been successfully implemented at the University of Massachusetts-Amherst, which provides a road map for making these curriculum enhancements (<https://engineering.umass.edu/deans-diversity-equity-inclusion-curriculum-challenge>). A goal may be to have one case study per course, with half of required undergraduate courses per major having such a case study after three years. Training for faculty and instructional staff may be required for this to happen, and departments could organize training for creating case studies. The Committee's recommendation complements efforts in the College to enhance engineering ethics education in the curriculum, and this requirement could be paired with similar engineering ethics efforts.

## 4. Infrastructure, information, and resources to support inclusion

**Recommendation 11:** Set aside physical spaces in engineering buildings to support community building that fosters a sense of belonging.

Allocating physical space in buildings requires long-term planning. Physical spaces, such as departmental lounges and multi-purpose spaces, could be used to create community. Having a physical space to foster a sense of community could be transformational to DEI efforts in the College.

**Recommendation 12:** Participate in College-wide student climate surveys on a regular basis (e.g., at least every four years) so trends can be understood.

College climate surveys create an important informational resource that can be used to monitor climate in the College, to assess progress, and to identify gaps.

**Recommendation 13:** Establish mechanisms to frequently report DEI information broadly to students, departments, and various College communities; and design and communicate mechanisms for broad participation in DEI efforts. Information to communicate can include:

- data on DEI efforts, such as participation in required trainings and climate survey results,
- plans to address key areas in climate surveys,
- progress on DEI efforts,
- policies and procedures,
- resources available to improve DEI efforts, and
- opportunities for student, staff, and faculty participation.

## Unfinished Business

The committee recognized several topics and issues that should be prioritized and considered by the College or the IEDE Committee in future years.

1. The College, departments, and award committees need criteria and a process for evaluating contributions to DEI and contributing to an inclusive College environment for merit review (see Recommendation 2).

It is important to recognize here that positive individual contributions to the College climate can come in many forms, most of which are small and intangible, unlikely to be self-reported, and/or are difficult (or impossible) to quantify or compare. It is therefore critical that criteria and processes associated with the reporting and evaluation of personal contributions to the College climate for the purposes of merit review be developed and implemented in ways that do not unintentionally discourage or penalize positive actors by overweighting emphasis on items that can be easily reported or quantified, but that may not actually contribute directly to improvements in climate.

2. The committee agreed that a commitment to recruit and retain staff and faculty members who represent diverse identities and support an inclusive educational environment in the College is important. Lack of representation is a structural barrier to students who have underrepresented identities. The committee noted that staff, particularly student services staff, often interact with students and make important contributions to the College climate. However, the committee did not discuss recruiting and retention in detail this past year due to other priorities.
3. The IEDE Committee composition may require changes with the new office of IEDE that is being created in the College. Likewise, the IEDE committee may require coordinating its efforts with other efforts led by the IEDE office.
4. This report makes several recommendations for training undergraduate students. Graduate students, depending on whether they are appointed as RAs or TAs, have very different collegiate experiences, circles of interactions, and responsibilities. In contrast to undergraduates, the graduate student population has a substantial international composition. In some fields of

engineering, particularly in computational and theoretical areas, the level of participation of U.S. nationals, regardless of race or gender, is worryingly low. This has important ramifications in the pipeline to research jobs that require U.S. citizenship and that are often linked to national security. The problem is unique to the graduate student body and should be discussed in greater depth within the Committee. These issues may necessitate other mechanisms of training for graduate students specific to their requirements.

5. Bias often creeps into the process of evaluating scholarship as it relates to faculty recruitment, promotion, and tenure. Ideas and intellectual property generated by underrepresented groups must be acknowledged, protected, and given due credit. Given the inequitable impact of the COVID-19 pandemic on faculty across the College, training efforts to reduce bias in evaluating scholarship may be an important topic for consideration in the near future.
6. Once DEI efforts are in place, the College may consider the creation of a Diversity Initiative or Institute. Having DEI activities under the umbrella of an overall initiative with a website and branding could have a positive impact in terms of the College's commitment to DEI. It would increase the visibility of College DEI efforts and be an effective communication strategy to students, prospective students, and our peers.
7. A department and College culture that practices and supports an inclusive environment requires community building. Some specific suggestions for building community are included in this report, however, departments and the College could expand upon this idea more generally. Dialogues and discussions could take place in department trainings, in forums, or in small groups following seminars centered on DEI and social justice. These conversations could be part of classroom activities, recruitment, and department-themed events. They can be organized by the College and departments, or they could be grassroots.

## Other resources

Campus resources to support DEI training and efforts include the following:

- Delta Program <https://delta.wisc.edu/events/> Culturally aware mentor training
- CEETE training on accessibility and inclusion
- WISCIENCE Courses and mentor training <https://wiscience.wisc.edu/faculty-staff> and <https://wiscience.wisc.edu/mentor-training>
- McBurney Center training on accessibility <https://mcburney.wisc.edu/training/training-for-campus/>
- UW Diversity Forum <https://diversity.wisc.edu/diversity-forum/>
- UW Diversity Initiative <https://diversityinventory.wisc.edu/>
- UW MLK Symposium <https://morgridge.wisc.edu/events-calendar/uw-madison-mlk-day-celebration/>
- Online suicide prevention training: <https://www.uhs.wisc.edu/healthy-academics/faculty-staff-training/>
- UHS Red Folder Program
- Pronouns Matter slideshow and training <https://lgbt.wisc.edu/education/pronouns-matter/>
- UHS Presentations: <https://www.uhs.wisc.edu/mental-health/outreach-services/>