Department of Mechanical Engineering
Diversity, Equity, and Inclusion Plan

As a department we seek an inclusive environment that recognizes individuals for their ideas, respects people for their differences, and actively encourages participation by students of diverse learning approaches and backgrounds. Toward this goal, faculty and staff will engage students to accomplish the following in the 2020-2021 academic year.

Hire a Diversity Coordinator to Support the ME Department

**Rationale:** A staff member dedicated to diversity and inclusion can help focus the efforts of faculty and staff to build a more diverse and inclusive department.

**Implementation:** A diversity program administrator position has been created to support the Mechanical Engineering and Computer Science Departments. This individual will report to Ellise Lamotte (director of the Center for STEM Diversity) and interface closely with the ME and CS department staff, faculty, and students to aid in deploying best practices for inclusion, to interface with students and student groups to promote inclusion, and to support DEI-focused faculty education and outreach efforts. This individual will also be a point person for students who wish to report or discuss a grievance anonymously.

Explore Alternative Evaluation Methods

**Rationale:** Stereotype threat has been identified as a factor that can tilt the playing field such that a seemingly objective test may in fact be biased against a stereotyped group.

**Implementation:** Instructors will consider a range of evaluation methodologies, including not only homework and tests, but also projects, labs, reflections, and portfolios. Although high-stakes evaluations are sometimes necessary and productive, faculty will also look for opportunities to inform their instruction via formative assessment methods that carry lower stakes and are aimed at identifying and responding to student learning needs.

Discuss and Disseminate Best Practices for Team Formation

**Rationale:** Students from groups that are underrepresented in engineering or at Tufts sometimes experience isolation microaggressions, where they are not invited to join social groups or teams within courses.

**Implementation:** Faculty will identify and record best practices for inclusive team formation in group projects. Faculty will also consider how to train student team members in inclusionary practices and structure team deliverables to encourage inclusion.

Re-examine Social Context of Curricular Content

**Rationale:** When students from underrepresented groups do not see issues and problems relevant to their backgrounds and lives included in the curriculum, they are further marginalized.
**Implementation:** Implementing curricular change will be a multi-year process requiring significant instructor effort, and as such we will target a three-year horizon for implementation (with salient course updates by Spring 2023). We will consider addressing a wider spectrum of contexts for engineering problems, more diversity in the historical figures discussed, and more work on ethics including, for instance, discussion of negative impacts of engineered technologies on people of color.

**Promote DEI in Graduate Recruitment**

**Rationale:** Although the department has a limited role in undergraduate recruiting, we are much more involved in the graduate recruiting process, so we have an opportunity to build a diverse community through more thoughtful, more equitable graduate recruiting.

**Implementation:** Faculty will work with the Center for STEM Diversity to perform outreach in graduate recruiting. Possible actions include networking through the NSF Louis Stokes Alliances for Minority Participation (LSAMP) program or the National GEM Consortium to recruit students. We will also advocate SoE to create MS fellowships to promote diversity. Faculty will seek transparency and equity in agreeing to mentor MS projects and research, for instance by introducing a clearer process for connecting students to faculty mentors via a new Grad Student Research event in Fall term.

**Attend to Systematic Bias**

**Rationale:** Systematic biases can occur in any organization. In a university, for instance, grading practices may unintentionally result in a grade distribution that disproportionately disadvantages an underrepresented group.

**Implementation:** In cases where evidence of a systematic grading bias appears, faculty will discuss the matter and advocate for an equitable solution. We will be vigilant towards identifying other forms of systematic biases at work in the department, such as those that might occur in matching students with research opportunities or connecting them with potential employers.

**Encourage Culture of Invited Constructive Criticism and the Chance to Apologize**

**Rationale:** Concerns about “saying the wrong thing” can inhibit technical and social discourse.

**Implementation:** Faculty and staff will encourage free speech with the caveat that free speech should be accompanied by inviting constructive criticism. Criticism may include speaking out to identify language, action, or inaction as hateful, marginalizing, or biased. Faculty and staff will work to explain and model that responses to criticism need not be defensive but can instead focus on apology and a commitment to do better.

**Revise and Enhance this Diversity Plan**

**Rationale:** Diversity considerations should be embedded in everyday practice; our department DEI plan will need to adapt and improve to progress toward this goal.

**Implementation:** Faculty and staff will engage students to discuss diversity and inclusion, and equity and justice, and to identify potential problems and promising initiatives for the future. Faculty and staff will continue to engage in learning: for instance, through DEI case studies, through the engineering-education literature, and through interactions with the American Society of Engineering Education (ASEE). We will continue to update, refine, and improve this plan in future years.