Massachusetts Institute of Technology
School of Engineering
2022 Diversity, Equity and Inclusion Plan in Alignment with the ICEO Strategic Action Plan for Belonging, Achievement and Composition (BAC)

The mission of the MIT School of Engineering is to educate the next generation of engineering leaders, to create new knowledge, and to serve society. The intellectual, cultural, and social diversity of our faculty, staff and students is vitally important to the distinction and excellence of our academic and research progress. We embrace MIT's values of excellence and curiosity, openness and respect, and belonging and community. We aim to be a community that is open, where all are treated with respect and all achieve their potential. The School of Engineering (SoE) seeks to attract and nurture the talents of a diverse community and create a space where all members of our community thrive. We would like to thank the members of the School of Engineering Diversity, Equity and Inclusion Committee for their work in creating this strategic action plan.

Focus of this document

In the following document, we seek to focus on school-wide structures, activities, programs and people, and school-wide metrics. Each SoE department is preparing a diversity, equity and inclusion (DEI) plan, with metrics, that aligns with this School DEI plan and with the MIT Strategic Action Plan structure of *Belonging, Achievement and Composition (BAC)*. The timescale for this plan is expected to be three years after the foundation year.

This document is to map the school-level efforts to the MIT structure of achievement, belonging and composition as part of the foundation year. Each way of organizing the programs, people and structure brings richness to the conversation and one way is not preferred relative to the other way. In each section, the programs are organized along all entry points into the MIT community (K-12, Undergraduate, Graduate, Postdoctoral Scholars, staff, faculty). In addition, an overall metric in each area is suggested.

The details of the school-wide programs cited below can be found in the Appendix 1. The links to the DEI plans for each department can be found in Appendix 2. The resources necessary to sustain this work at steady state is in Appendix 3.

Below we have defined for our school, with the assistance of the School of Engineering DEI committee, what the three pillars mean for us. It is through this lens that we will assess our programs.

Belonging

The School of Engineering is a community of builders and problem solvers who share a sense of purpose that we are here to create systems and technologies through interdisciplinary collaboration and innovation to find solutions to the most challenging of humanity's problems. The School of Engineering seeks to create space for all members – staff, faculty, postdoctoral researchers, undergraduate and graduate students – to be their true selves, express their ideas and questions freely, and find a place to explore their ideas and identities.

Achievement

The School of Engineering will make equity central to how opportunities are presented and assessments are conducted for all members of the community. The community we want is one where opportunities are open to all and where all are treated with respect. We aspire to eliminate barriers to achievement and chart equitable pathways to success for everyone. The SoE believes this approach will ensure great achievements from members of the community.

Composition

The School of Engineering views composition as the requirement for thoughtful attention to the recruitment of individuals from diverse talent pools – at every level from high school to faculty and staff – who will ultimately join our community.

In order to achieve these pillars, the School of Engineering has set the following high level goals:
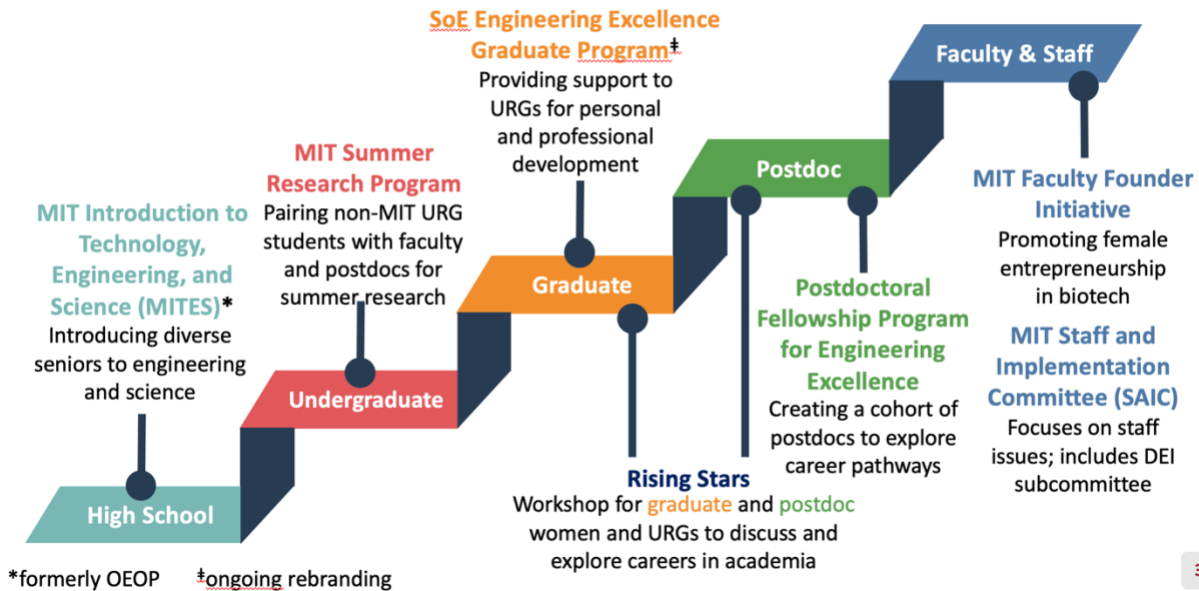
Goal 1: Create and support an environment where students, staff, postdoctoral scholars, and faculty are able to thrive.

Goal 2: Develop metrics to appropriately assess the School of Engineering's progress towards its diversity, equity, and inclusion goals.

Goal 3: Foster an equitable and inclusive learning environment for all students.

Goal 4: Seek to increase the number of faculty, staff, and students from underrepresented groups in engineering by establishing, maintaining, and investing in programs, groups, and initiatives that broaden participation.

DEI Programs through the Stages of Academia

MIT Introduction to Technology, Engineering, and Science (MITES)*
Introducing diverse seniors to engineering and science

MIT Summer Research Program
Pairing non-MIT URG students with faculty and postdocs for summer research

SoE Engineering Excellence Graduate Program‡
Providing support to URGs for personal and professional development

Faculty & Staff

Postdoc

Graduate

Undergraduate

High School

MIT Faculty Founder Initiative
Promoting female entrepreneurship in biotech

MIT Staff and Implementation Committee (SAIC)
Focuses on staff issues; includes DEI subcommittee

Postdoctoral Fellowship Program for Engineering Excellence
Creating a cohort of postdocs to explore career pathways

Rising Stars
Workshop for graduate and postdoc women and URGs to discuss and explore careers in academia

*formerly OEOP   ‡ongoing rebranding

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The MIT School of Engineering seeks to address the important issues of DEI through a series of programs and initiatives at the school-level. These pathways into our community focuses on attracting people who have been underrepresented in engineering. The programs in the pipeline have specific foci to enhance the *diversity* of the engineering field, ensure that the people who are attracted are treated *equitably* and feel *included* in engineering at MIT.

The pipeline starts with programs aimed at DEI in the K-12 arena, follows with programs focused on both inviting and creating support for undergraduates and then finishes up the university experience with programs for graduate students. After graduate school, there is a program for postdoctoral fellows, programs for attracting and rewarding staff, and procedures for faculty recruitment and retention. Each element in the pipeline is not closed. Individuals can enter a program anywhere in the pipeline and can leave anywhere in the pipeline.

The current focus on these programs rests on high achievement at every level. The *achievements* of the people in the School of Engineering will be enhanced by engaging with diverse groups of people. Their sense of *belonging* is improved by ensuring that all people with talent are included in the School of Engineering. The *composition* of the school will be changed by the continued operation of these programs.

With this approach, it can be seen that **diversity, equity and inclusion** (DEI) and **belonging, achievement and composition** (BAC) are two alternative models for how the School of Engineering will embrace MIT's values of excellence and curiosity, openness and respect, and belonging and community.

High profile, high value cross-school ideas

While many of the programs cited below already exist, the school is undertaking a deeper investment or remaking of three programs in the pipeline. The school will track the effect and adoption of these programs across the school and into the Departments. These three programs (along with others) will greatly enhance the composition of the school, contribute to exemplary achievement, and help participants with their sense of belonging. The three programs are:

- The MIT Summer Research Program
- The SoE Program on Exemplary Mentoring (formerly the University Center for Exemplary Mentoring)
- The MIT Postdoctoral Fellowship Program for Engineering Excellence

Between these three programs, the school is attracting underrepresented students as undergraduates, providing mentoring support for underrepresented graduate students, and then postdoctoral support after graduation.

SoE Overarching Goals

Goal 1: Create and support an environment where students, staff, postdoctoral scholars and faculty are able to thrive.

Goal 2: Develop metrics to appropriately assessment the School of Engineering's progress towards its diversity, equity and inclusion goals.

Goal 3: Foster an equitable and inclusive learning environment for all students.

Goal 4: Seek to increase the number of faculty, staff and students from underrepresented groups in Engineering by establishing, maintaining and investing in programs, groups and initiatives that broaden participation.

By monitoring the metrics below, the school expects to see significant progress on these goals within three years.

Structures, Activities, People, Programs

The School of Engineering plans to accomplish **Belonging, Achievement, and Composition** through the following structures, activities, people, and programs and will track the success with appropriate metrics:

Level & Program	Metrics
K-12 ● MITES-Minority Introduction to Engineering and Science (MITES) ● MITES -Saturday Engineering Enrichment and Discovery (SEED) ● MITES -MIT Online Science, Technology and Engineering Community (MOSTEC)	● Demographics of applicant pools of all programs ● Number of MITES student applications to MIT, number admitted and enrolled ● Track student enrollment in ANY college ● Track student enrollment in highly selective colleges, especially MIT and peer institutions ● Track bachelor degree attainment @MIT and beyond ● Track STEM bachelor degree attainment @ MIT and beyond ● Track 4 and 6 year college graduation rates ● Track enrollment in graduate school at MIT and beyond ● Collect pre and post data on changes in attitudes towards STEM degree attainment, self-efficacy, and belonging in STEM ● Conduct focus group with students and instructors on improving the academic experience in programs, including inquiry on climate within programs and positive relationships with adults which leads to improved retention in STEM
Undergraduate ● The MIT Summer Research Program (MSRP)	● Number of MSRP students who apply and are admitted to MIT ● The number and diversity of the applicant pools for MSRP ● Number of MSRP students who report receiving effective mentoring

- The SoE Students Advisory Group (SAGE) - School of Engineering undergraduate student recognition programs, including fellowships, scholarships, and awards	- The offer and acceptance rate by underrepresented students and women for School of Engineering graduate student fellowships, including fellowships specific to these groups - The flow of people from one program to another and the flow to external programs
Graduate - UCEM/SoE Program for Exemplary Mentoring (PEM) - The SoE Graduate Students Advisory Group (GradSAGE) - School of Engineering graduate student recognition programs, including fellowships, scholarships, and awards	- The number and diversity of the applicant pools for UCEM/SoE PEM - Number of SoE PEM participants who report receiving mentoring - Time to degree, qualifying exam pass rates and post-graduation outcomes for the all underrepresented graduate students - The number of women and underrepresented graduate students who are nominated for and receive fellowships, scholarships, and awards - Library publications for graduate students - Awareness of the IDHR Bias Incident Reporting - Pulse survey data on belonging in the various programs
Postdocs School of Engineering Postdoctoral Fellowship Program for Engineering Excellence	- The number and diversity of the applicant pools for this program - Exit survey of SoE postdocs participants who report receiving effective mentoring - Postdoc placements from the school-wide program (after completion of their MIT appointments) in addition to units within in the school
Staff	The number and diversity of applicants for staff positions

- The Staff Advice and Implementation Committee (SAIC) - SOE DEI Officers in the Departments and SoE Associate/Assistant Dean positions for DEI - The Diversity, Equity, and Inclusion Distinguished Speaker Series - The SoE Diversity Equity and Inclusion Committee *Leverage Sloan's Open and Inclusive training offering for staff	- Promotion and Retention rates for underrepresented staff - The number of School level talks and events and number of participants - QoL survey data that reflects on belonging in the School as well as other QoL questions that affect belonging - The data from focus groups annually among different stakeholder groups - The identification and exchange of best practices between and across Departments - The frequency of data exchanges and what data is exchanged between the DEI Officers and the SoE Assistant Dean for DEI - Tracking staff achievement and promotion: Staff turnover, exit surveys (staff, postdocs, grads, etc.)
Faculty - Diversity Statements for faculty candidates - Intentional tracking of faculty hiring across the school - The SoE Faculty Gender Equity Committee - The MIT Faculty Founders Prize Competition	- Faculty participation in training for effective search practices. - Development and use of rubrics for diversity statements - Percentage of SoE faculty engaged with the Teaching and Learning Lab Equitable Teaching program - Analysis and mitigating actions for gaps in tenure rates for faculty - Number of women faculty who start companies

Appendix 1

Committee	Charge	Secondary Info
GradSage	The GradSAGE (Graduate Student Advisory Group for Engineering) is a group of SoE graduate students selected by a subset of the GSC leadership with guidance from the Dean that serve as a conduit between the Dean and the engineering graduate student population to advance engineering education, student engagement, research, and student life at MIT.	
Sage	The Student Advisory Group is a group of SoE undergraduate students that serve as a conduit between the Dean and the engineering undergraduate student population to advance engineering education, student engagement, research, and student life at MIT.	
MIT Faculty Founders Prize Competition	The Faculty Founders Initiative was created in 2020 to increase the number of female faculty members who start biotechnology companies. The first installment in this initiative is a bimonthly series of inspiring conversations with successful academics who have started companies to translate technologies from their laboratories into therapeutics, medical devices, and diagnostics for unmet medical needs.	
MIT Postdoctoral Fellowship Program for Engineering Excellence	The MIT Postdoctoral Fellowship Program for Engineering Excellence seeks to discover and develop the next generation of faculty leaders to help guide the MIT School of Engineering toward a more diverse and inclusive culture. This SoE program is designed to help postdoctoral fellows develop in multiple dimensions. In addition to an emphasis on research, it will focus on providing resources and opportunities, and building a professional network for its mentees.	The program will arrange a set of professional development opportunities as presentations and discussions for the cohort, along three career paths: Academic – coordinated with the school's departments and an overall faculty lead. This will include strategic workshops or sessions including choosing research projects, grant writing and networking, building your mentoring community, academic job searches, crafting a job

Committee	Charge	Secondary Info
		application package (with rounds of feedback), navigating bias in the job search, and strategies for addressing career bias, among others. Engineering Leadership – supported by the Gordon Leadership Program. There will also be connections established with specific companies that may provide placement for postdocs following completion of the program. Entrepreneurship – supported by The Engine in collaboration with the academic track, this will include grant writing, running a research group, and teaching, as well as how to engage in successful research. Postdocs will participate in a set of talks from founders to prepare and assist them with terminology. The postdocs will then be eligible to participate in The Engine program called Blueprint. Blueprint is a twice annual 5-week program that prepares individuals to start a company.
MIT Summer Research Program (MSRP): Engineering Expansion	The MIT Summer Research Program (MSRP) seeks to promote the value of graduate education; to improve the research enterprise through increased diversity; and to prepare and recruit the best and brightest for graduate education at MIT. MSRP began in 1986 as an institutional effort to address the issue of underrepresentation of African Americans, Mexican Americans, Native Americans, and Puerto Ricans in	

Committee	Charge	Secondary Info
	engineering and science in the United States. Today, this program's goal is to increase the number of underrepresented minorities and underserved (e.g. low socio-economic background, first generation) students in the research enterprise. MSRP seeks to identify talented sophomores, juniors, and non-graduating seniors who might benefit from spending a summer on MIT's campus, conducting research under the guidance of MIT faculty members, postdoctoral fellows, and advanced graduate students. Students who participate in this program will be better prepared and motivated to pursue advanced degrees, thereby helping to sustain a rich talent pool in critical areas of research and innovation.	
MIT Introduction to Technology, Engineering and Science (MITES)	***Our vision*** Making science and engineering careers accessible to all. ***Our mission*** To diversify the science and engineering community by serving students from underrepresented and underserved backgrounds and empowering these students to develop the skills and confidence needed to pursue careers in technical fields. Engage ~400 7th-12th grade students annually in one of three programs, MITES, MOSTEC, SEED Academy	Our values Transformation A truly impactful experience can change a student's entire life. Learning The skills needed to succeed in science and engineering fields are a strong foundation for success in all professions and life in the 21st century. Diversity Solving the world's problems requires contributions of people from all walks of life, areas of expertise and perspectives. As a unit in the MIT School of Engineering, we share its commitment to diversity and equity. Access

Committee	Charge	Secondary Info
		Society needs a diverse, expanding body of scientists and engineers to develop innovative solutions. Community A positive, educational environment committed to building strong relationships is critical for our students' success.
Staff Advice and Implementation Committee (SAIC)	The SAIC will be organized into three working committees, plus a steering group composed of the leaders of the three committees. In addition to the chairs of the three working committees, leadership from the SoE Dean's Office will also serve on the SAIC steering committee. The steering committee will convene on a monthly basis to discuss progress and ensure that the goals and priorities of each area are being met and continue to be aligned with the mission and goals of the School of Engineering. Committee members must commit to attending monthly meetings as well as to work individually and in small groups between meetings. This requires a commitment of 3-5 hours per month.	Charge to SAIC: Each member of SAIC will serve on one of the following three working committees: ***Diversity, Equity & Inclusion Committee*** This committee assists in creating a development plan for SoE staff that integrates existing institutional and national best practices in the areas of diversity, equity and inclusion. The committee will research and identify key diversity and inclusion core competencies and make recommendations to help SoE staff increase their knowledge, skills and awareness in these areas with the aim of fostering a diverse, welcoming, equitable and inclusive environment. ***Professional Development Committee*** This committee assists in creating and implementing customized workshops for SoE staff to enhance existing and develop new professional skills. The committee will assist in identifying resources most sought after by SoE staff and

Committee	Charge	Secondary Info
		recommend ways to share them with the SoE community. ***Social Events & Wellness Committee*** This committee assists in planning and implementing social events and wellness activities for SoE that build and foster a strong sense of community.
SoE Diversity Equity, and Inclusion Committee	Comprised of faculty, staff and students from across the School, the Committee's mission is to communicate and coordinate with each department, and create a repository of best practices and mechanisms to ensure continued progress on a diverse, equitable, and inclusive environment at all levels across the school. The Committee will report out annually to the Engineering Council and will work closely with Departmental DEI officers, as well as the SoE Assistant Dean for DEI and the ICEO office. The committee is operational since September 2020.	
SoE Faculty Gender Equity Committee	The School of Engineering Faculty Gender Equity Committee is made up of faculty representing all School of Engineering departments, including the Institute for Medical Engineering and Science (IMES), and reports to the Dean of Engineering. The committee is charged with monitoring and reporting to the Dean on the status of gender equity for faculty in the school. The committee also provides recommendations on best practices to the Dean and facilitates effective dissemination of relevant activities and policies to faculty within their respective units.	
SoE Program for Exemplary Mentoring (PEM)	The Program for Exemplary Mentoring (formerly University Center for Exemplary Mentoring) program's goal is to increase the number of underrepresented students into seven various Ph.D. programs. The program	• The UCEM/PEM program works closely with MIT to expand the institution's current recruitment efforts and develop partnerships that look to

Committee	Charge	Secondary Info
	creates a robust infrastructure of resources, people, and support that helps students integrate into the broader MIT community.	holistically recruit underrepresented minority students into STEM fields. • The program also supports diversifying academia but aiding the recruitment of URM doctoral students into academic and faculty positions.
SoE student, faculty, and staff awards and recognition programs	Faculty • Capers & Marion McDonald Award for Excellence in Mentoring and Advising • MathWorks FRIF • Research Support Committee • Seegal Prize • Spira Award Student • Graduate Student Award for Extraordinary Teaching and Mentoring • Henry Ford Scholar II Award • Barry M. Goldwater Scholarship Staff • Ellen J. Mandigo Award for Outstanding Service • Infinite Mile Award	

Appendix 2. Departmental Diversity, Equity and Inclusion links

Aeronautics and Astronautics

https://aeroastro.mit.edu/about-us/diversity-equity-inclusion/

Biological Engineering

https://be.mit.edu/about/dei-collaborative

Chemical Engineering

https://cheme.mit.edu/about/diversity-and-inclusion/

Civil and Environmental Engineering

https://cee.mit.edu/about/diversity-and-inclusion/

Electrical Engineering and Computer Science

https://www.eecs.mit.edu/community-equity/dei/

Institute for Medical Engineering and Science

https://imes.mit.edu/about/diversity-equality-inclusion-and-justice-deij

Materials Science and Engineering

https://dmse.mit.edu/about/diversity

Mechanical Engineering

https://meche.mit.edu/people/diversity-equity-and-inclusion

Nuclear Science and Engineering

https://web.mit.edu/nse/about/DEI-resources.html

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Appendix 3:

Resources for Operation in Steady State

Each of the programs in the school has some level of resources. There are three kinds of resources that each program needs:

1) Staff time
2) Financial operational resources
3) Faculty commitment

The oversight of programs in the school is by the Associate Dean and the Assistant Dean for DEI.

Oversight	Staff	Finances	Faculty
	Assistant Dean for DEI		Associate Dean
	Communications officer - 5%		
	Data analyst - 10%		
Postdoc Program for Engineering Excellence	Program coordinator - 100%	Financial support for two cohorts per year plus community building funds	Associate Dean
Program for Exemplary Mentoring	Fellowship coordinator - 50%	Money for supplemental payment to PhD students	Faculty Lead
Hosting Recruitment events for programs at every level	Assistant Dean for DEI and departmental DEI officers and grad admins		