

# Final Report: MSE Strategic Plan Refresh and Implementation

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# Refreshing the MSE Strategic Plan

The MSE Strategic Planning Committee began work in 2019 to examine the current MSE Strategic Plan, developed in 2013, and refresh its activities based on the outcomes from a recent strategic planning exercise in the College of Engineering (COE). Using these outcomes, the MSE committee developed and began implementation of five initiatives within the School:

- Support staff to pursue professional development and mentoring activities
- Infrastructure for our international students and scholars in MSE
- Faculty mentoring of undergraduate students
- Support of graduate students in advising relationships
- Provide time for faculty professional development opportunities

These initiatives were complementary to MSE's 2013 Strategic Plan and did not replace the objectives and actions in that document.

## Motivation for Reexamining MSE's Strategic Plan

In 2018, the College of Engineering (COE) at Georgia Tech undertook a strategic planning exercise, disseminating the results in 2019. The COE strategic planning working team consisted of representatives from the eight COE Schools, GT Strategic Consulting, the student body, and assistance from an outside firm, Greenway Strategy Group. The exercise culminated in a direction for the future titled Strategic Direction: Adapt and Accelerate. The Strategic Direction was built on six core strategies to guide activities across the college. These core strategies

and their corresponding objectives are given below and at [https://coe.gatech.edu/sites/default/files/page/2019/10/georgia\\_tech\\_college\\_of\\_engineering\\_strategic\\_direction.pdf](https://coe.gatech.edu/sites/default/files/page/2019/10/georgia_tech_college_of_engineering_strategic_direction.pdf).

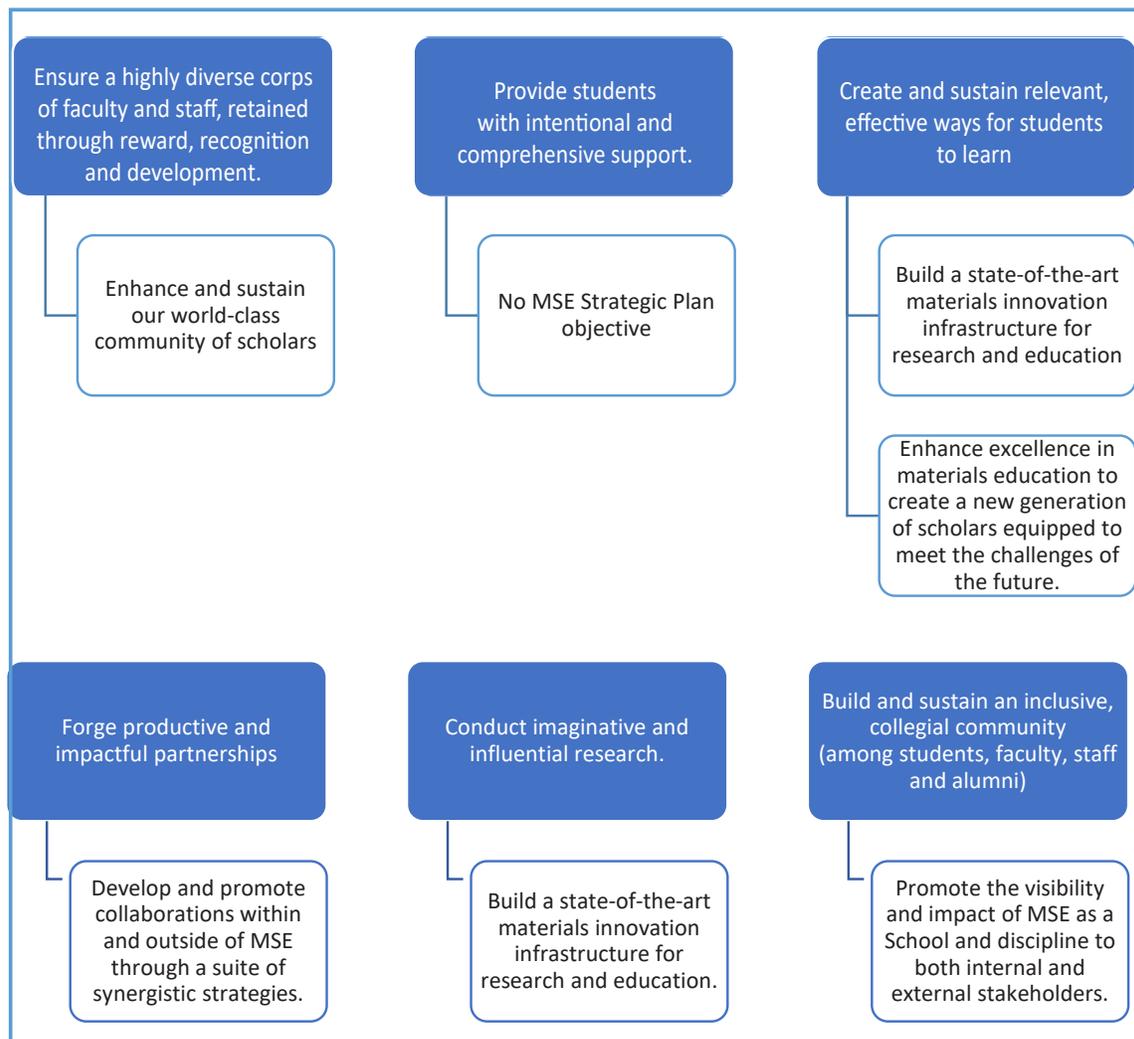
- Ensure a highly diverse corps of faculty and staff, retained through reward, recognition and development
  - Incentivize and provide pathways for faculty and staff to lead and innovate
  - Create a desirable workplace by promoting respect, engagement, and success
- Build and sustain an inclusive, collegial community among students, faculty, staff and alumni
  - Increase awareness of and investment in the value of individuals as members of the College family
  - Increase inclusivity and culture among faculty, students, staff, and alumni
- Provide students with intentional and comprehensive support
  - Increase utilization and impact of programs and services that support health and well-being for students
  - Improve the quality and effectiveness of advising
- Create and sustain relevant, effective ways for students to learn
  - Improve the relevance and impact of the classroom experience
- Forge productive and impactful partnerships
  - Increase interactions with external partners to engage opportunities beyond the scope of a single organization
  - Enhance the efficiency and impact of the technology transfer pathway
- Conduct imaginative and influential research
  - Foster fearless innovation in research



# Translating the COE Core Strategies to MSE's Strategic Plan

The initiatives developed by the committee followed an analysis and comparison of MSE's 2013 Strategic Plan and the COE Core Strategies. The comparison is shown below, where the MSE Strategic Planning Objectives are given below the corresponding COE Core Strategies. Initiatives were planned for prioritized areas not covered by MSE's Strategic Plan, either at the objective level or as additional activities under an objective. Examples:

- We did not find a direct match between the COE Core Strategy "Provide students with intentional and comprehensive support" and the 2013 MSE Strategic Plan, so specific initiatives for undergraduate advising and graduate student support were developed.
- Actions relating to education and research infrastructure from the 2013 plan had been completed through establishing the Materials Innovation and Learning Laboratory (MILL) and the Materials Characterization Facility (MCF), so the committee focused on how to support students and personnel under these the corresponding Core Strategies instead of supporting facilities.



## Initiative 1

# Support staff to pursue professional development and mentoring activities

### Goal

Intentionally support staff in pursuit of professional development and/or mentoring activities. MSE recognizes staff as one their most valuable resources and strives to make the most of our human talent and potential. This goal corresponds with the COE core strategy of community - to ensure a highly diverse corps of faculty and staff, retained through reward, recognition and development. MSE encourages staff members to complete eight hours of professional development and/or mentoring activities per year. These development/mentoring activities may take the form of job-associated conferences, in-person learning, online courses, or other means, through many different providers.

### Expected outcomes

Through our emphasis on professional development and mentoring activities, we endeavor to create a supportive environment, foster a culture of learning and self-improvement, and enhance professional satisfaction.



### Moving into action

In Fall 2020, the initiative was presented to the MSE administration and MSE staff, along with an extensive list of professional development and mentoring opportunities. Links to many of these options can be found at <https://hr.gatech.edu/learning-development> and <https://diversity.gatech.edu>, although activities are not restricted to that provided by Georgia Tech. Staff members, with the help of their supervisors, will choose development and/or mentoring opportunities based on professional goals and ambitions. These development plans are to be included in the goal setting section of their yearly performance evaluation.

### Tracking our progress

Following the 2021 review period, and yearly after, supervisors will be surveyed to evaluate the professional development and/or mentoring activity outcomes. The professional development committee will analyze the results yearly to appraise effects of the initiative and modify as necessary.



## Initiative 2

# Infrastructure for our international students and scholars in MSE

### Goal

Goal: Implement an MSE-level infrastructure to create open channels of communications where issues specific to international students and scholars in MSE can be addressed. This initiative corresponds with the COE core strategy to build and sustain an inclusive collegial community, expanding access, cultivating student well-being with intentional and comprehensive support, and connecting globally.

### Expected outcomes

Expected outcomes: Establishing channels for addressing issues specific to international students and scholars will help them feel included and celebrated in MSE.



### Moving into action

During the pandemic, connection and engagement with international students/scholars was accomplished with virtual tools. In the beginning of the pandemic, they were polled to assess whether they were stranded, whether they needed any emergency support, and what their plans were for the summer and fall of 2020. Through this poll, the students were 1) made aware that there was an open channel of communication between them, as international students, and MSE, and 2) able to voice their immediate needs in addressing the myriad foreign-student-specific issues they were facing that were triggered by the pandemic shutdown.

Subsequently, we have initiated open channels of communications between our international students and postdoctoral researchers and faculty/staff, cognizant of any central office at the institute level that caters to our international student body. A faculty point-person had been appointed as liaison to the international students and scholars.

We have started topical invited lectures/workshops with specific relevance to international students and scholars and plan to continue them 3-4 times a year. Some of these activities may be initiated by the diversity, equity and inclusion (DEI) council. As an example, the MSE DEI Council held a workshop offered by Azadeh Shahshahani of Project South titled “Know Your Rights as an International Student or Scholar.”

### Tracking our progress

Progress will be monitored using surveys and polls conducted in the open forum meetings once a semester.



## Initiative 3

# Faculty mentoring of undergraduate students

### Goal

Develop tools for faculty to be more effective and efficient in mentoring interactions with their undergraduate student mentees. This initiative will help meet the COE strategic theme to provide students with intentional and comprehensive support. Specifically, it will increase utilization and impact of programs and services that support the health and well-being for students and improve the quality and effectiveness of advising.

### Expected outcomes

Developing faculty mentoring tools, including increasing faculty knowledge of undergraduate industrial career paths, will create more meaningful interactions between faculty and students. Additionally, students will be better equipped to make decisions around their education and future careers, and will be more likely to stay in MSE because they can see a positive future for themselves with a BSMSE degree.



## Moving into action

Initial activities have been focused on restructuring the assignment of students into advising cohorts based on the year they entered the program. This restructuring allows the student to remain with the same advisor throughout their degree. A sub-team of faculty has been formed to work on the initiative. Two faculty for each advising cohort have been asked to serve on the sub-team. To identify the resources that faculty would need to improve their advising, a survey was distributed and the data analyzed.



## Tracking our progress

We have developed advising resources to equip faculty to have more meaningful/intentional discussions with their student mentees. The resources are organized by the year of the student (first-fifth) and provides specific questions to ask each cohort in the following categories: personal check in, academic check in, involvement check in, specific things to consider this year and moving forward, and support that the student needs from their mentors.

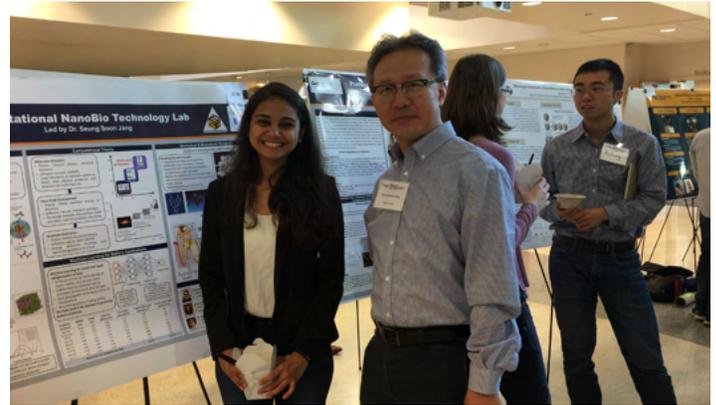
Additionally, faculty are encouraged, through targeted communication, to meet with their students at certain intervals. The faculty who are mentoring the first-year cohort students met with those students virtually during the summer and fall semesters. To make the contact information more accessible, faculty/student mentoring lists are posted on the MSE Faculty MTeams team site. Both students and faculty will be surveyed to assess the frequency and impact of the mentor-mentee interactions and changes in perceptions of faculty around their comfort and preparedness for mentoring our students.

## Initiative 4

# Support of graduate students in advising relationships

### Goal

Provide support to graduate students with focus on the student/advisor(s) relationship. Specifically, to establish open communication pathways and enable regular discussions on expectations to enhance the Ph.D. experience and to deliver a relevant, effective Ph.D. education. Means to achieve these goals include: providing training resources to help faculty in their interactions with Ph.D. students; introducing a formal mentorship program for Ph.D. students that is separate from their interactions with the advisor(s); establishing different advisory matching systems that do not require students to find advisors before coming to campus; developing stricter deadlines for Ph.D. proposals to encourage early involvement of mentors; and conducting regular town halls for Ph.D. students. This initiative aligns with two of COE's core strategies: (1) to build and sustain an inclusive, collegial community among students, faculty, staff and alumni; and (2) to provide students with intentional and comprehensive support.



### Expected outcomes

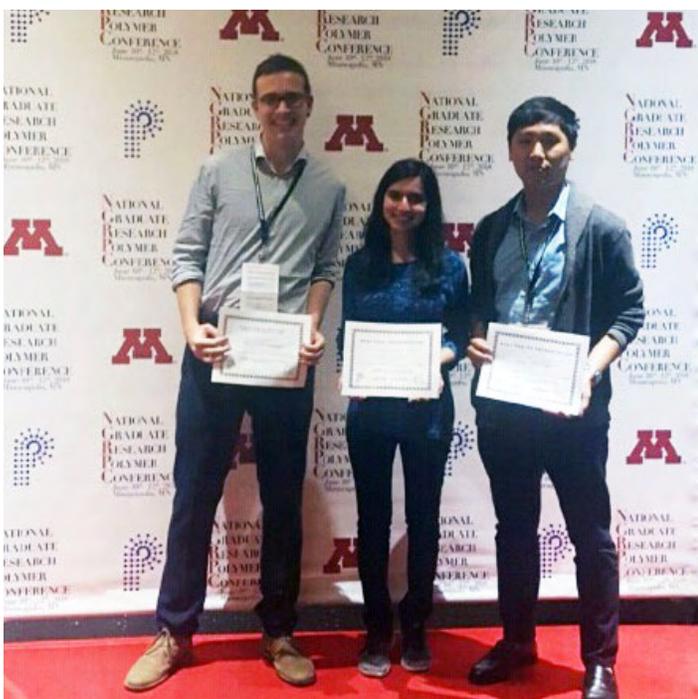
To contribute to the transformation of Ph.D. education via (i) intentional, targeted and comprehensive support and resources to Ph.D. students and faculty; (ii) delivery mechanisms to improve the quality and effectiveness of advising; and (iii) building a greater awareness of the value of diverse individuals, especially Ph.D. students, as members of the MSE family

### Moving into action

In Fall 2020, the initiative was presented to the Graduate Committee and three concrete action points were taken: (i) to hold regular town halls on “being a Ph.D. student”; (ii) to implement a policy whereby Ph.D. students must have multiple faculty mentors in place by the Ph.D. proposal deadline; and (iii) to update the Graduate Handbook relevant links to ‘resources related to conflict avoidance and resolution’ and ‘grievance pathway’, enforced by occasional emails to graduate students.

### Tracking our progress

The activities will be assessed by the Graduate Committee. The efficacy of specific actions will be assessed each semester, including student involvement. The overall effort will be assessed annually, with opportunities to amend existing actions, if required, and introduce new ones according to our goals outlined above.



## Initiative 5

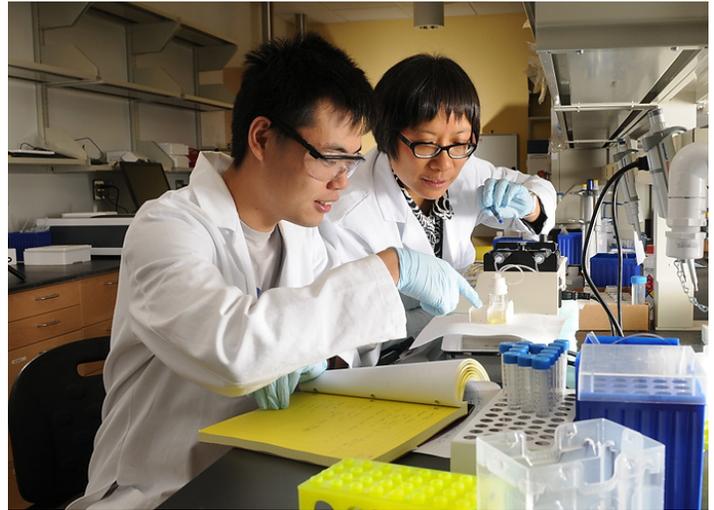
# Provide time for faculty professional development opportunities

### Goal

Provide faculty with the time and space needed to develop new research ideas, directions, and collaborations by implementing a faculty professional development assignment program in MSE. The program will provide a mechanism to accommodate scheduled releases from teaching and service for a period of one fall or spring semester and would be available to all tenured faculty with a majority appointment in MSE. This initiative addresses two COE core strategies to forge productive and impactful partnerships and conduct imaginative and influential research.

### Expected outcomes

Faculty leave will enable new research and scholarly activities that promote thought leadership and new external funding (including interdisciplinary center-level activities), ultimately raising the profile of MSE and Georgia Tech and leading to increased job satisfaction for faculty. New, creative research directions would impact educational activities through inclusion in existing course content and opportunities to develop new classes.



### Moving into action

In Fall 2020, the initiative was presented to the Faculty Advisory Committee and the MSE faculty at large. Implementation began in Spring 2021. Proposals for leaves were solicited from eligible faculty to be evaluated by the MSE chair. Leaves are expected to begin in the 2021-2022 academic year.

### Tracking our progress

The efficacy of the program at the individual faculty level would be assessed annually by the MSE chair and participating faculty using scholarly products as a measure of success. Every three years, the MSE chair and Faculty Advisory Committee will evaluate the program overall and suggest changes as needed.



# The Path Forward

Implementation activities are underway for the five initiatives under the supervision of MSE standing committees and administrative personnel/managers. These entities will be responsible for tracking and assessment of outcomes.

Beyond these five initiatives, the committee worked to identify other complementary initiatives occurring within MSE that were included aspects of some of the COE Core Strategies. Those initiatives are listed under their corresponding COE Core Strategy:

- Ensure a highly diverse corps of faculty and staff, retained through reward, recognition and development
  - Faculty mentoring program and workshops
- Build and sustain an inclusive, collegial community among students, faculty, staff and alumni
  - Student organizations such as Women in MSE (WiMSE), Materials Advantage, Polymers Undergraduate Network or Students (PUNS), and Materials Research Society (MRS)
  - School-wide informational, social, and community building events – town halls for the MSE Community, first year student events, MSE-specific graduation and awards celebrations
  - StrengthsFinder workshop for faculty and staff in May 2019
  - MSE Diversity, Equity, and Inclusion Council established in July 2020
  - Creating Resistance to Sexual Harassment Committee established in November 2019
- Provide students with intentional and comprehensive support
  - Include and support transfer students and those seeking MSE minors/certificates
- Create and sustain relevant, effective ways for students to learn
  - Constructing a physical space for graduate students to gather – repurposing of MRDC 2503
  - Identifying MSE foundational concepts in UG curriculum
  - MSE Teaching practicum
  - Changes to Ph.D. core courses and structure of M.S. program
  - Expansion of the MILL
  - Open Polymer Active Learning Laboratory (OPALL)

As this effort was underway, the Institute undertook a Strategic Planning exercise, following the appointment of President Ángel Cabrera. The resulting plan was titled “Progress and Service for All” was released in November 2020 and contained six areas of strategic focus.

- Amplify Impact
- Champion Innovation
- Connect Globally
- Expand Access
- Cultivate Well-Being
- Lead by Example

These areas are consistent with several initiatives within MSE such as expanding the seminar series to neighboring institutions, including those within the Atlanta University Center; efforts to bring MSE communities together through events that incorporate social distancing protocols; and community awards that recognize faculty and staff. As future initiatives are planned, these areas of strategic focus can be considered more fully.

