Statement of Commitment

As a part of the Johns Hopkins community, the Department of Materials Science and Engineering (DMSE) in the Whiting School of Engineering (WSE) is committed to developing and maintaining a culture of diversity and inclusion that allows its members to achieve and sustain excellence in all areas related to its mission. We firmly believe that superior achievements in the world of materials scholarship and engineering translation can best be pursued by recruiting and maintaining a diverse group of students, faculty and staff and by developing and preserving a climate of respect that is supportive of their efforts. A climate that fosters diversity, inclusion and excellence is essential to advancing the boundaries of scientific and engineering understanding as well as to the creation and dissemination of that knowledge. Taken together, these values are consistent with those of JHU as a whole and DMSE fully supports them at all levels. We recognize that the responsibility for excellence, diversity and inclusion lies with the faculty, staff and students of the Department and that we must work together to create an environment that openly displays these values.

1. Current Status of DMSE Diversity (Fall 2017)

   Faculty: Focusing on underrepresented groups (URGs), there are 2 women out of 14 total members of the tenured/tenure-track faculty in DMSE. This fraction (14%) approaches the corresponding national average for materials/metallurgy programs (17.2%, ASEE 2016). Among highly-regarded, research universities, representation of women in DMSE appears to be significantly lower than at the University of Illinois Urbana-Champaign but approximately the same as at Stanford University. Including lecturers and research professors, representation increases to 4 out of 17 (24%). As for underrepresented minorities (URMs), DMSE has 2 tenure-track faculty members who are African-American or Hispanic. Unfortunately, the pending departure of one of our faculty members will reduce the representation of both women and URMs.

   Students: At the undergraduate level, there are 68 students who have materials as their primary major. Of these, 23 are women (34%), 10 are Hispanic (15%) and 7 are Black or African-American (10%). Representation of URMs among our undergraduate students nearly reaches percentages in the national population. The percentage of Hispanic students is nearly the same as in WSE as a whole (14%) while the percentage of Black or African-American students is twice that of WSE as a whole (5%). Representation of women over the past 5-10 years has consistently been in the 30-35% range (based on unofficial counts) and is in line with national averages for women in materials/metallurgy programs (28%, ASEE 2016) and is approaching the overall percentage of undergraduate women in WSE (37%). It should be noted that DMSE has little control over the demographics of our undergraduate population since JHU Admissions is responsible for ensuring that institutional priorities are reflected in the admissions process.

   At the graduate level, there are 15 women among the 57 Ph.D. students in the program (29%). This representation is in line with levels in DMSE over the last 5-10 years (30-35% based on unofficial counts) and is essentially equal to national averages for women in materials/metallurgy (26.1%, ASEE 2016). Representation of Hispanic students (4%) and Black or African-American students (1%) falls well below the levels in our undergraduate program but are comparable to levels in WSE overall (3% for Hispanic students and 2% for Black or African-American students) and are approaching overall representation of URMs in engineering disciplines nationally (5.7% for Hispanic students and 4.4% for Black or African-American students, ASEE 2016). Of the 26 students in our residential (full-time) M.S. program, 7 are women (27%) and 1 is Hispanic (4%). There are no Black or African-American students currently in this program. Data are not available for the Engineering for Professionals (part time) M.S. program in Materials, but representation of
URMs in this degree program has been strong historically. It should be noted that DMSE has more control over the diversity of students in our graduate programs than in the undergraduate program since admissions decisions are made entirely within the department itself.

**Staff:** University-approved data related to diversity of the DMSE staff were not available when this Diversity Status review was conducted.

2. **Long Term Aspiration.** To promote excellence in our program and to compete effectively for the most talented people in the future, we must ensure that a diverse and inclusive environment exists and is maintained in our department. We aspire to develop representation in our faculty (principally women and URMs) that more directly reflects the composition of our program’s student body. Moreover, we should develop and maintain recruiting processes that result in a graduate student population that more closely reflects the representation we have in our undergraduate program. The importance of diversity among our graduate students should not be underestimated since the impact of our program on the broader materials community could be increased significantly if we produce a more diverse cohort of researchers than do our peer institutions.

3. **Near Term Goals**

   **Diversity.** The areas where we can have the most direct impact on diversity are related to recruiting of faculty members and graduate students. Once successful, the hard work of recruiting needs to be followed up by having a departmental culture that fosters personal growth. Near term goals in all these areas need to be pursued simultaneously to ensure positive changes in our program.

   **Faculty Recruiting:** Currently, the Diversity Advocate is responsible for reviewing applications for faculty positions ensuring that candidates from URGs and URMs are fairly considered and are represented in the pool of interviewees. They are responsible for documenting processes and procedures that were followed in evaluating all applicants. These activities are necessary but not sufficient and we should commit ourselves to increasing the diversity of our applicant pool. The following goals address this aspect of recruiting.

   **Goal 1:** Meet with prospective, junior faculty candidates at professional meetings and conferences. At many professional meetings, there are receptions for graduate students who belong to URGs. To support our department’s hiring efforts in a specific area, faculty members who attend meetings in that area should be encouraged to attend these events and interact with students. Target of one meeting per year. These faculty members should report the extent of their interactions so that the effects on the applicant pool can be assessed. DMSE needs to identify who/how/when.

   **Goal 2:** Work with diversity offices in professional societies. Nearly all professional societies have programs or offices that focus on diversity (e.g. MRS Women in Science and Engineering). Faculty members who belong to societies with these programs should contact them and determine how they can assist with developing a more diverse applicant pool. Target of one contact per year. Faculty members should report the extent of related activities. DMSE needs to identify who/how/when.

   **Goal 3:** Sponsor “Invited Talks” by DMSE faculty at HBCUs (Historically Black Colleges and Universities), HSIs (Hispanic Serving Institutions) or other universities that have high percentages of URMs among their graduate students and post-doctoral researchers. A fund should be set aside to support travel to institutions that serve URMs so that faculty members can present their research and advertise the department. One trip per year approved by the chair might be a good starting point. Faculty members should report their efforts so that the effect on the applicant pool can be assessed. DMSE needs to identify who/how/when.

   **Faculty Retention:** Mentoring plays a key role in retention of faculty members and we must ensure that our efforts in this area follow best practices especially for faculty members from URGs. Instead of assigning a single faculty member as a mentor, we should consider different mentoring structures. The goal for this part of the action plan is to define a mentoring structure (with assistance from the Whiting School) for faculty members that could lead to higher retention of URM faculty members.
**Graduate Student Recruiting:** The focus in this area should be on successfully recruiting students already in the applicant pool as well as increasing the diversity of the applicant pool.

**Goal 1:** Develop admission processes for URM students that enhances the rate of their entrance into our Ph.D. program. Currently, our department requires individual professors to back offers of admission with financial support beginning after the second semester in the program. As a result, faculty members generally restrict the number of offers they extend and take calculated risks based on availability of support as well as the likelihood that students will accept. In many cases, URM students could have multiple offers from peer institutions and in those cases faculty members might not extend offers since they run a high risk of losing the student and having to recruit less-talented students remaining in the applicant pool. This process ultimately impacts the diversity of our student population as well as its quality. We should re-visit this policy to specifically address recruiting of URM students to enhance the number of offers that are extended to these students.

**Goal 2:** Increase the diversity of the graduate student applicant pool. We should actively reach out to HBCUs, HSIs and other institutions with significant representation of URM students that focus on high-quality undergraduate education and solicit graduate applications from these institutions. Creating some sort of local “buzz” could be important and targeted-marketing approaches might be needed. Letters from the DMSE chair to counterparts at these institutions might be an inexpensive start. Social media feeds could play a part as well. This type of recruiting could also include “invited talks” at these institutions. Target one or two institutions per year and assess the impact on the applicant pool.

**Inclusion.** The first step to ensuring inclusivity is to understand the current environment in our department. The goal for this item is to develop and administer a survey to gauge the departmental climate with respect to inclusion. The survey should address aspects of the undergraduate and graduate student academic experiences, the work environment as well as the work-social nexus that is critical to healthy organizations.

4. **Key Milestones/Results.** Specific targets have been provided for all the near-term goals that have been included in this plan. If these target activities are carried out, then quantitative assessment results can be gathered and the impact of related activities can be evaluated. The key to this plan is consistent application and maintenance of the proposed activities. With this type of commitment, the likelihood of achieving our long-term, aspirational goals will be greatly increased. Even though our goals have not been stated in a way that requires comparison to peer institutions, this type of comparison can be valuable in gauging whether or not our efforts are competitive. An analysis of the diversity of our program in relation to our peers is needed to assist in the assessment of our efforts.

5. **Describe one creative approach you want to test.** Recently, the graduate applicant admissions form was revised to enhance emphasis on relevant experience. We will assess the impact this change has made on the applicant pool as well as how it influenced the diversity of students who faculty members invited to interview for positions in our Ph.D. program.

6. **Champion(s) name(s).** For the 2017-2018 academic year, the department has a Diversity and Inclusion Committee (composed of 2 faculty members, 1 staff member, 2 Ph.D. students and 2 M.S. students) that will assist in the development of recommendations to be considered by the DMSE Chair and will assist in the execution of various approved activities. Membership on this committee will be reviewed every academic year to identify members who can contribute to diversity-related efforts being pursued by DMSE. Currently, James Spicer serves as the diversity champion for the department and Kalina Hristova serves as the diversity advocate for faculty hiring.