

SCSE Multicultural and Diversity Committee (SCSE Unit Change Team) 2015-2016

Members of the Multicultural Diversity committee

Biology	Brianna Gross, Shannon Stevenson
Chemical Engineering	Elizabeth Hill
Chemistry and Biochemistry	Jacob Gauer
Large Lakes Observatory	Kathryn Shreiner
Civil Engineering	Rebecca Teasley
Computer Science	Arshia Khan (Chair)
Earth & Environmental Sciences	Christina Gallup
Electrical Engineering	Jing Bai
Mathematics & Statistics	Rachel Breckenridge
Mechanical & Industrial Engineering	Ona Egbue (Representative on Campus Climate Change Team)
Physics	Jonathan Maps

Staff member:

Michele Hatcher, Senior Academic Advisor

Student member:

Fatima Alwan (graduate student)

Associate Dean Liaison – Richard Maclin

Executive Committee Rep – Christina Gallup

Background:

The multicultural and diversity committee was charged with a wide range of issues in SCSE such as improving recruitment and retention of female and diverse faculty, K-12 outreach, improving retention and recruitment of undergraduates, improving retention and recruitment of graduate students, and overall creating a positive climate for women and diverse communities in SCSE. The committee has been asked to identify goals relating to diversity and make recommendations of action items with respect to institutional enhancement strategies, structures and policies needed to meet these goals. The group came up several suggestions for the goals and voted on these ideas to pick three top-ranked aims. Subcommittees, examined individual goals and came up with recommendations.

Broad Goal #1: To understand and improve retention of underrepresented groups among SCSE students and faculty. Because this goal is so broad, we decided to focus this year on important ways the college could first understand and then work to improve retention of SCSE students.

Action Item #1: Understand Attrition of Underrepresented Groups in SCSE Student Body

Outcome: This subcommittee has multiple recommendations for the College to improve data gathering on students who are:

- a. Leaving their major in SCSE for another major within the College
- b. Leaving their major in SCSE for another major within the University
- c. Leaving their major in SCSE and dropping out of UMD

To address student group (a): An Intent to Change Major Form is already required in SCSE for students who are changing majors within the College. This subcommittee recommends explicitly asking students on this form why they are changing majors within the College.

The subcommittee also recommends an exit interview with students and their academic advisor when they are leaving their major for any reason (student groups a-c). While students do already fill out paperwork, often the reason for their leaving is unclear and no data is collected as to their reasons. An exit interview

with their academic advisor with pre-written questions would lead to consistent data on *why* students are leaving and *where* they are going.

Action Item #2: Improve Retention of Underrepresented Groups in SCSE Student Body

Outcome: The major recommendation made by this subcommittee as an effort to improve retention of underrepresented groups is to establish a formal mentoring system for students identified as being in “at-risk” groups for leaving SCSE. This could include students of color, first-generation college students, women, LGBTQ-identifying students, non-traditional college students, and other groups. Research has shown that when students from underrepresented groups can identify with a mentor who is of their group they are more likely to complete their degree.

Broad Goal #2: Identification and designation of Safe Space’s for LGBTQ+

Action Item #1: Revive/Revise Safe Space Training to be SCSE Faculty Friendly

Outcome: With the resignation of former LGBT Services director Angie Nichols, the previously existing Safe Space Training materials for UMD were no longer available. Working alongside the interim staff in LGBT Services (Erin Olson, Students in Transition; Julian Vela, Student Intern), an outside consultant was brought in (Aaron Wainman, M.S.) to develop a new Safe Space training including LGBT history at UMD. This training material was developed with the busy lives of faculty in mind. The resulting Safe Space program can now be completed in 50-90 minutes with additional resources provided through Google Drive.

Potential Barriers: N/A.

Action Item #2: Increase the number of Safe Space Trained Faculty in SCSE.

Outcome: The Multicultural and Diversity Committee became the inaugural cohort for the newly revised Safe Space Training. This training was facilitated by LGBT Services on March 28th, 2016 with 11 committee members participating from the following departments: Biology, Chemistry and Biochemistry, Computer Science, Earth and Environmental Science, Mathematics and Statistics, and Physics. The participants spanned several university ranks, including a graduate student, both tenure track and non-tenure track faculty, and an associate dean. All participants left training with a placard to post outside their office, designating their office as a safe space.

Potential Barriers: N/A

Action Item #3: Develop a plan for further dissemination throughout SCSE

Outcome: For Safe Space Training to be most effective, more SCSE faculty must be trained. The revised Safe Space Training was developed for UMD with the intention of offering additional training sessions. Thus, SCSE faculty from all departments must be encouraged to attend. This goal can be most clearly achieved by “word-of-mouth”. With representatives from 6 of the 11 departments in SCSE being trained, knowledge of and interest in the training should disseminate quickly.

Potential Barriers: The clearest barriers to Safe Space Training for SCSE faculty are two-fold: 1) not knowing the training exists, and/or 2) lack of time.

We aim to address the first barrier (lack of visibility or knowledge of the training) by training several representatives across SCSE in the inaugural cohort. Due to scheduling conflicts, however, representatives from engineering programs have not been Safe Space Trained. In studies on LGBTQ+ STEM student experiences, engineering has been highlighted as a field with the least LGBTQ+ representation. Creating a climate across SCSE that is LGBTQ+ inclusive will require participation from engineering faculty, and as such, extra emphasis will be placed on Safe Space Training engineers.

The second barrier has largely been addressed by revising the training to occur in a shorter timeframe (~50 min). An abbreviated training, however, does mean less content is delivered during the training. This limitation will be overcome by providing additional resources through Google Drive.

Broad Goal #3: Convince administration to revise the UMD academic calendar in a way that is more family friendly (e.g. corresponds better with the ISD 709 calendar).

Actions Item #1: On 12/4/15, the committee provided a letter to the Faculty Council that detailed faculty perspectives on the inclusion of family issues as well as instructional balance issues caused by changes to 2015/16 calendar.

Outcome: The Faculty Council's draft set of recommendations to the University Coordinating Council was met with some reservations. As of this update, calendar change plans have been tabled. Per Coordinating Council Chair, Marc Seiger, a small sub-group will look at the calendar issue in the coming months to enable more input from the staff and athletics department.

Broad Goal #4: Encourage underrepresented groups in SCSE to better understand the depth and diversity of science and engineering as well as the majors/minors that help them develop their interests in a career

Action Item #1: Solicit ideas from committee members

Outcome: List of 10 potential approaches to this issue including 1st year research experience for minority students, dedicated classes and use of existing classes to expose students to other disciplines (see appendix below).

Potential Barriers: Barriers appear to be numerous. For nearly every approach, there is some reason (historical or logistical) why these approaches might not be viable within SCSE. We caution that implementing any of these approaches will require actual changes in resource expenditure, attitudes, or territoriality regarding undergraduate majors. This cannot be avoided and must be dealt with through either a top-down or bottom-up approach, or a combination of the two.

This subcommittee recommends that research into potential approaches be conducted in a systematic manner in the future as a part of committee work (i.e., continuing this research rather than moving on to new priorities) or as a task assigned to a single faculty or staff member as a part of their workload. It is also recommended that SCSE faculty and staff in general be surveyed (at least informally) to see if some of these ideas have been tried before or if some ideas are already being implemented.

Action Item #2: Support the Math Prep for STEM (Science, Technology, Engineering, and Mathematics) Careers program which is a free summer bridge program offered to incoming UMD freshmen from underrepresented groups in STEM (American Indian, African American, Asian/Pacific Islander, Native Hawaiian, and Latino/Chicano; women students interested in computer science, engineering, or physics; low-income students; first generation college students). The program consists of two parts: informal online math classes prerequisite to Calculus I (Basic Math and Intro to Algebra, College Algebra, or Precalculus Analysis) and an optional six-day camp. Breckenridge has run the program since summer 2013 with the assistance of internal grants and SCSE support.

Outcome: This year the MCD committee has supported this program.

Appendix

Goal #4, Action Item #1 Potential Approaches: (Note that approaches 9 and 10 are more oriented towards retaining students in their chosen majors than to exposing them to other majors)

1. Using existing courses - Setting aside time in large intro courses for visits/demos from other departments/majors
2. Making a new or expanding the scope of existing dedicated course - Utilizing the UMD seminar as a vehicle for a broad introduction to other departments/majors; Utilizing CNED (Michelle

Hatcher's course) as a vehicle for a broad introduction to other departments/majors; A new one-credit course (a variation on the two above) that would NOT replace a current course; Seminar class with guest speakers from among the faculty; Project based learning; A three credit general to introduction to engineering course (in lieu of OR in addition to those that exist); A PSEO or other targeted to HS students course

3. More intentional showcasing of senior class research and projects as a way to introduce incoming students to different areas - Move UROP Showcase to later in the semester, with freshmen encouraged to attend; Good Model: MIE sr. design showcase invites parents, companies, underclassmen, etc.
4. All majors taking 1st year intro CS course (modified to improve retention)
5. 1st year research experience open to all female & minority underrepresented groups
6. Summer Camps interaction across departments - Expand scope to make undergraduate mentorship of these camps a way to also explore other majors? Other ideas on how to better use them to show diversity of possible majors to the camp participants?
7. Passport system similar to and/or modified from LSBE: <https://lsbe.d.umn.edu/passport> - Couple this with existing things; UROP Showcase, Sr. Design poster shows, E-fest, Bio/Chem/Math/Geo Seminar series, faculty candidate talks, etc.; Better communication of when events are occurring across departments!; Grad students as "stampers" of passports?
8. Outreach to K-12? (a little out of the scope of this goal, but perhaps a good strategy) – UT Austin Model from Rich's contact.
9. Self-selecting of students into sections of math/science tied to their "major" interests (again, this might be more focused on retention than diversification, and so is a bit out of scope for this goal) - i.e. Mechanical engineers encouraged to schedule together into the same section of Gen Chem 1, Calc 1, etc.
10. Small learning communities through linked introductory courses (again, this might be more focused on retention than diversification, and so is a bit out of scope for this goal) - Reference: "Analyzing Longitudinal Performance from Multi-Course Alignment for 1st Year Engineering Students: Calculus, Physics, and Programming in MAT- LAB", Liron *et al.*, 2015