Swenson College of Science and Engineering  
Change Unit Team Report  
Date: May 6, 2012

UCT Members: M Imran Hayee (Electrical & Computer Engineering), Shannon Stevenson (Biology), Richard Maclin (Computer Science), Jonathan Maps (Physics)  
UCT Chair: Michele Hatcher (SCSE, co-chair) and Ahmed Heikal (Chemistry & Biochemistry; co-chair)

Role of SCSE Change Unit Team:  
(a) Develop and recommend equity and diversity action plans to Campus Change Team as appropriate.  
(b) Re-examine the Vision, Targets, and Approach of UMD SCSE on diversity as we Move Forward.  
(c) Report to and Consult the Dean of SCSE on Diversity-Related Issue and Implementation of the recommended action plan.  
(d) Respond to and work with the Campus Change Team.  
(e) Construct Assessment Rubric in order to Measure SCSE Diversity Outcome.  
(f) Act as a Resource for the College for All Participating Units on this Diversity-Related Mission.

Number of Meetings: The UCT had its first two meetings in Fall 2011 and during Spring 2012 has met bi-weekly with nine total meetings to date. These meeting took place in 140 Engineering.

2011-2012 UCT Priority 1: Define the role of diversity in SCSE and its mission

SCSE Mission Statement on Diversity
SCSE is committed to creating “a climate of diversity and inclusion” as an essential part of its mission. The college recognizes the importance of recruitment and retention of a diverse community of students, staff and faculty to increase the talent pool and broaden thought that would best prepare our graduates for success in the evolving demographics of our society as well as the global market.

Why Does Diversity Matter to SCSE and Its Mission?
1. Diversity Enhances our Global Perspective and Prepares our Students for a Global Workforce: A college campus is like opening the door to the entire world without traveling anywhere else. Diversity stimulates deep learning and expands preparedness to thrive in an increasingly diverse and global workforce.
2. Diversity Enhances Awareness of Issues Related to our Multicultural Society: Interacting with people from a variety of groups widens our students’ social circle by expanding the pool of people with whom they can associate and develop relationships. A diverse college experience helps challenge stereotypes and biases, broadens perspectives, and sharpens critical thinking skills among our students. Diversity provides a broad range of intellectual, cultural, and demographic perspectives, which ultimately leads to new ideas.
3. Diversity Promotes Creative Thinking: Diversity expands your capacity for viewing issues or problems from multiple perspectives, angles, and vantage points, which in return promotes creative thinking.
4. Diversity Enhances Self-Awareness and Self Discovery: Learning from people whose backgrounds and experiences differ from your own sharpens self-knowledge and self-insight. It also liberates us from an ethnocentric and egocentric viewpoint.
5. Diversity is Linked to the Ultimate Social Justice and Equal Opportunity for All: It is hard to imagine how we could expect the very best from anyone, as a productive member of our society (institution) if they are denied the right to be themselves or be different. Equal opportunity and social justice are a long-term investment for the well being of our society. They provide the means to create role models in order to inspire future generations without disenfranchising or excluding anyone.

2011-2012 Priority 2: Current and Future Outlook of Diversity in SCSE:

(a) Current: According to 2011-data from the University of Minnesota (UMTC) Reports, the percentages of various groups of interest (as identified in those reports) in various units are shown in the Table below. The statewide numbers, based on US census data, are also shown.

<table>
<thead>
<tr>
<th>Group</th>
<th>UMD SCSE</th>
<th>UMD</th>
<th>UMTC</th>
<th>UMTC Science &amp; Engineering</th>
<th>MN</th>
</tr>
</thead>
<tbody>
<tr>
<td>American Indian</td>
<td>0.8</td>
<td>1.2¹</td>
<td>1.2</td>
<td>0.7</td>
<td>1.1</td>
</tr>
<tr>
<td>Asian</td>
<td>4.1</td>
<td>3.3</td>
<td>9.4</td>
<td>8.5</td>
<td>4.0</td>
</tr>
<tr>
<td>Black</td>
<td>2.1</td>
<td>1.8</td>
<td>4.8¹</td>
<td>2.6</td>
<td>5.2</td>
</tr>
</tbody>
</table>
In terms of underrepresented groups, these results indicate that SCSE has slightly higher percentages of Asian Black, and International students. However, the college has slightly lower percentages of American Indian and Hispanic students, which provide an opportunity for further improvement.

The results also highlight a more troubling statistic in the SCSE current standing, where very low percentage of female students can be found in the computer science and engineering departments. Overall, however, the SCSE percentage is better than the corresponding group at the University of Minnesota, Twin Cities.

(b) SCSE Goals on Diversity:

After lengthy discussion, the team identified several enrollment targets achievable over the next five years. First, SCSE should increase the percentages of American Indian, Black and Hispanic students to become more in line with our university (American Indian and Hispanic percentage) or with UMTC (Black percentage). Second, the college should increase the percentage of female students by several percentage points, while understand the underlying cause for such disparity. Having said that, we concur that there is no obvious benchmarks in terms of gender in SCSE. Yet, we should aspire to reach the overall level of female participation in SCSE to the UMD level. Third, since the UMTC does not separate the question of ethnicity (Hispanic or not) from race, we would request that the University updates its procedures on this issue in order to be in line with other institutions around the country.

<table>
<thead>
<tr>
<th></th>
<th>Hawaiian</th>
<th>0.2</th>
<th>0.2</th>
<th>0.3</th>
<th>0.2</th>
<th>0.2</th>
<th>---</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Hispanic</td>
<td>1.1</td>
<td>1.4</td>
<td>2.5</td>
<td>1.6</td>
<td>4.7</td>
<td>---</td>
</tr>
<tr>
<td></td>
<td>International</td>
<td>2.3</td>
<td>1.7</td>
<td>7.7</td>
<td>15.6</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>32.6</td>
<td>1.4</td>
<td>51.4</td>
<td>50.3</td>
<td>---</td>
<td>---</td>
</tr>
</tbody>
</table>

1Proposed goal percentages for the UMD SCSE going forward. 2For gender numbers we actually compare with UMTC Science and Engineering and the UMTC Biological Sciences colleges combined, as this more closely matches the makeup of UMD SCSE and the gender percentage for the UMTC Science and Engineering college is significantly lower (20.8%).

2011-2012 Priority 3: Action Plan to Enhance Diversity in SCSE

2012-2013 UCT Goal: Identify a list of approved courses.

1. Students Awareness of Diverse UMD Culture: All students should be required to take a course that will expose them to multiple cultures as a part of their liberal education credits. For example, the “Intercultural Communication” course could be one choice (from an approved list) required as a core course for all SCSE students in their first 60 credits. Develop curricula, pedagogies, and research that foster diversity and cultural competency.

2012-2013 UCT Goal: Work with Dean and Department Heads to implement faculty and staff training.

2. Faculty Role in Creating an Inclusive Environment and Student Retention: Faculty advisors and instructors should pay close attention to the students’ performance, their well being, and to engage students from underrepresented groups.

3. Multicultural Awareness and Training of Faculty and Staff: Cultural training for new faculty and staff should go beyond a simple, couple of hours “orientation”. Perhaps, such required training could take place annually for all existing faculty as a refresher with case-studies (example: as part of the department retreat). Faculty must be well trained on effectively handling cultural based situations in either their classroom or laboratories.

4. Multicultural Awareness and Training of Teaching Assistants: A student-TA relationship is more problematic than student-faculty relationships when either the student or the TA is from an underrepresented group. As a result, cultural/diversity training tailored for TAs is rather critical.

2012-2013 UCT Goal: Work with Dean and Department Heads to implement GTA diversity training.

5. Promoting Cultural Exchange in the College: Cultural events promote inclusiveness, multicultural awareness and the understanding of diversity. The college will sponsor or facilitate multi-cultural events annually where all (students, staff, and faculty) are invited to participate. To encourage a wide-ranging participation in these cultural events, early and aggressive announcement is recommended.

6. Leadership Role: Following the steps of our Chancellor, Vice Chancellor, and the Dean, the departmental heads should also be committed to diversity-related issues. The department heads, for example, should discuss with their faculty members how diversity and ethics issues could be integrated into their courses (when possible). Recruit and retain diverse faculty and staff members.

2012-13 UCT Goal: Begin implementation of outreach programming

7. Taking Advantage of Existing Resources here at UMD: UCT recommend that our college learn from existing successful programs in other units here at UMD. For example, VELCRO (a student mentoring program involving UMD faculty, staff
and community members) could be replicated and implemented in SCSE. Our UCT has collaborated with Mikosa Redetzke, Academic Advisor at CEHSP’s Advising and Academic Services, and have gained detailed information on VELCRO (this program presently sponsors a small number of SCSE students). The UCT recommend that the Dean of SCSE provide funds for a staff to administer and coordinate an SCSE program to provide mentor opportunities for all underrepresented students in SCSE.

8. Focused Outreach Effort: Identify target underrepresented groups among the high schools in MN. Then, build bridges with these targeted high schools and communities for a concerted outreach effort. Each department in the college should devise their own means of outreach and recruiting effort based on their discipline. Recruit, retain and graduate a diverse student body.

9. Diversity, Equity, and Inclusiveness as a means of Success and Excellence: Diversity discussions should not be restricted to under-represented groups. The whole of SCSE and UMD have to engage all of its members, majority and under-represented groups alike, in the diversity-based goals of their Strategic Plan.

How Can CCT Help CUT?
- Emphasize why diversity matters within the context of UMD Strategic Plan.
- Bring all UMD units on board in order to advance our goals on diversity.
- Coordinate the effort of all participating units here at UMD.
- Think of means to engage the College of Pharmacy and the School of Medicine-Duluth
- Ensure that all members of UMD community (students, staff, faculty, and leadership) own this concerted effort on diversity and contribute to this mission.