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Our Commitment to Diversity

Draft Diversity Report
September 22, 2004

The objective of this report is to identify some goals and strategies for improving faculty, staff and student diversity in the Department. The report first assesses where the CEE Department stands with respect to diversity by comparison with nat national trends and with similar departments in other universities. Based on these comparisons, a SWOT analysis identifie strategies for emphasizing our strengths, ameliorating our weaknesses and exploiting our opportunities while recognizing

The results of the diversity comparisons lead to the conclusion that diversity in the CEE Department needs to be enhance comparisons with peers and other data, realistic but aggressive goals are set for gender and minority diversity within the student body. The focus will be on effective strategies to move the Department toward the goals..

Faculty Diversity:
Internal and National Comparison:
The data for the CEE Department are compared to the data for the College of Engineering, University and Nationwide CEE table below. The National data were obtained from the ASEE Profiles of Engineering Colleges for Fall 2003. The compariso the CEE Department is clearly below the University and national percent minority values and somewhat below the Univers values for women.

Table I. Internal and National Comparison of Faculty Diversity.

	MTU CEE Department	College of Engr	University	National CEE
Number of Faculty	24	129	327	3431
Percent Minority	0	24	17	25.1
Percent Women	8.3	10	22	11

Comparison with Peer Programs:
Table II below summarizes the faculty diversity for several CEE peer programs selected based on their similarity to Michig Department. Criteria for selection included research emphasis, size, and location. The National Data were obtained from t of Engineering while the peer university data were estimated from the CEE faculty listings on the various Departmental w

Table II.Comparison of Faculty Diversity with Peer Programs

School	**Number of Faculty**	**% Women**	**% Asian**	**% African American**	**% Hispanic**	**% Native American**
U.S. Engineering	23,700	9.9	19.2	2.1	3.2	na
U.S. Civil	3320	10.9	16.9	2.1	6.1	na
U.S. Environmental	111	14.7	9.8	4.9	2.9	na
MTU CEE	*23*	*8.3*	*0*	*0*	*0*	*0*
UW Madison CEE	33	6.1	9.1	0	6.1	na
Michigan State CEE	21	4.8	14.3	0	4.8	na
Iowa State CCEE	40	2.5	12.5	0	2.5	na
Clarkson CEE	19	21	21	0	0	na
UM Rolla CE	23	0	4.3	0	13	na

The data indicate that even though Michigan Tech CEE is clearly below the national average in faculty gender diversity, it better than most of the peer departments with respect to faculty gender diversity. However, with respect to overall faculty diversity Michigan Tech CEE ranks below every one of the peer departments. While the African American, Hispanic, and N minorities are under represented minorities (i.e. their representation on faculties is less than their representation in the g population), the Asian minority is well generally well represented on CEE faculties.

The October 1, 2002 to September 30, 2003 AAP Report for Michigan Tech lists the number of faculty in each department numbers of women and minorities on each departmental faculty. That report sets faculty hiring goals based on the fractio minorities estimated to be in the hiring pool. For civil and environmental engineering the estimates for 2002-03 were: 12. and 24.5% women. It is interesting to note that part time faculty hires count in the statistics and because we hired an As faculty as one of three faculty hires for 2002-03, we technically met the goals for hiring of minorities and women. In esta goals for the future, it will be important to focus on regular tenure track faculty. The AAP Report indicates that both gend balance needs to be improved in the CEE Department.

Student Body Diversity:
Internal Gender Comparison:

Table III compares the gender diversity of the CEE student body with the College of Engineering and University. The gend broken down by graduate and undergraduate and this makes it possible to separate these groups. This distinction is of va recruitment strategies for undergraduate students differ from those used for graduate students.

Table III.CEE Student Body Gender Balance, Internal Comparison

	Number, Fall 2003	**Number, Fall 2004**	**Fall 2003, % Female**	**Fall 2004, % Female**
Civil Undergrad	425	457	19	19
Env. Undergrad	104	81	53	54
CEE Undergrad	529	538	26	24.5
Civil Graduate	47	40	20	25
Env. Graduate	55	54	42	44
CEE Graduate	102	94	31	37
CEE Total	631	633	27	26.4
College of Engr Total	3713	3705	19.5	18
University Undergraduate & Post Degree	5208	5285	23.9	22.6
University Graduate & Special	1357	1251	29	29
University Total	6565	6536	25	23.8

In keeping with national trends (Engineering Trends, 2004), the Civil undergraduate enrollment increased slightly while th Environmental undergraduate enrollment decreased sharply from 2003 to 2004. The Environmental Engineering program enroll over 50% women and the decrease in Environmental undergrad enrollment adversely affects the gender balance of body. National trends (Engineering Trends, 2004) for engineering as a whole indicate that over the past few years, fewer entering undergraduate engineering programs and this also appears to apply to Michigan Tech. However, the outlook is b graduate level. Again, in keeping with National trends, the gender balance at the graduate level improved for both the civi environmental graduate programs.

Internal Minority Comparison

Table IV compares the minority composition of the civil and environmental engineering student body with that of the enti fall 2003 and fall 2004.

Table IV. Minority Composition of Student Body

	% Asian American	% African American	%Hispanic American	% Native American	% Multi-Racial	% Internatior
CEE 2003	0.1	0.1	1.0	1.3	0.5	7.7
CEE 2004	0.5	0.8	1.3	1.4	0.5	6.6
University 2003	1.2	2.0	1.1	0.8	0.6	10

University 2004	1.1	1.9	1.3	0.9	0.5	9.3
National Engr 2004	11.8	6.1	8.0	0.6	nr	nr

Except for the fraction of Native Americans, the CEE and total Michigan Tech student body is much less diverse than the f Engineering student body.

External Comparison to Peer Departments

Table V compares the gender and minority composition of the Michigan Tech CEE graduating class with those for several programs selected based on their similarity to Michigan Tech's CEE Department. Criteria for selection included research e and location. The Data were obtained from the ASEE Profiles of Engineering for 2002-03. Unfortunately, minority compos found for specific specialties.

Table V. Gender and Minority Composition of CEE Graduates, 2002-03

Program	Number of CEE Graduates	% Women	% Asian American	% African American	% Hispanic American	% Nativ America
Michigan Tech	116	26	0	0	1	3
Michigan State	100	30	2	2	2	0
Michigan	59	28	8	25	8	0
Wisconsin	100	27	2	1	0	0
Clarkson	68	16	0	0	0	1
Missouri-Rolla	78	24	1.3	2.5	0	0
Minnesota	81	22	3.7	2.5	0	0
Iowa State	151	17	1.3	0	0	0
National CE	8250	23.4	nr	nr	nr	nr
National Env. Engr	501	42	nr	nr	nr	nr
National Engineering	71,000	20.4	14	5.1	5.4	nr

While Michigan Tech's fractions of women and native American graduates are respectable, our fractions of other minority very low. It is noteworthy that our in-state competitors such as Michigan and Michigan State are doing somewhat better t gender balance and much better on minority composition.

Observations based on Engineering Trends Data:

Three advance reports obtained through Dick Heckel at Engineering Trends (www.engtrends.com) indicate that U.S. engi undergraduate enrollment is likely to become slightly less diverse in the next few years. At the same time, engineering gr enrollment is becoming more diverse.

- Total engineering enrollment is expected to peak in 2006-07 and decline slowly after that; the extent of decline will dep economic conditions.
- After increasing for two decades, the fraction of women enrolled in engineering programs began to decrease in 1999. Tl continues and is particularly evident among first year engineering students (drop from 20% to 16%).
- After increasing for two decades, the fractions of Asian and African Americans entering engineering programs are begin slightly. Although Hispanic fractions continue to grow slowly, Native American fractions are stagnant.
- Engineering graduate program enrollment shows a continuing improvement in both gender balance and minority diversi

Diversity SWOT Analysis for Michigan Tech's CEE Department

Strengths:

- Poised for enrollment growth in areas that can attract gender balance and minority diversity:
  - Nationally ranked environmental engineering program with over 50% women; likely to continue to attract a high of women
  - Nationally ranked graduate programs, likely to have high fractions of both women and minorities
- University administration supportive of diversity efforts
- Strong alumni support
- Favorable representation of native Americans
- Masters International and International Senior Design programs attract diverse students

Weaknesses:

- Limited support for graduate students hampers recruiting
- Limited financial aid for undergraduate recruitment

- Relatively high tuition
- Poor startup packages for faculty
- Faculty workloads inhibit research effort
- Dillman facilities and Dow equipment
- No formal spousal accommodation program

Opportunities:
- Future faculty retirements may create openings for diverse replacements
- Enhanced recruitment in diverse metropolitan areas such as Milwaukee, Chicago and Minneapolis/St. Paul as ind the July 6, 2004 Diversity Workshop memo.
- Enhanced recruitment of native Americans
- Formalize Global Engineering minor to add diversity

Threats:
- Minimal growth in national CE enrollments, Decline in national EnE enrollments may limit hiring diverse faculty a diverse recruitment
- Minimal University financial resources

Draft Diversity Goals:

Faculty: 17% minority, 30% women

Undergraduate Student Body:
Civil Engineering: 30% women, 2% Asian, 2% African, 2% Hispanic, 4% Native American
Environmental Engineering: 50% women, 2% Asian, 2% African, 2% Hispanic, 4% Nat. Am

Graduate Student Body:
Civil Engineering: 35% women, 4% Asian, 4% African, 4% Hispanic, 4% Native American; 10% International
Environmental Engineering: 50% women, 4% Asian, 4% African, 4% Hispanic, 4% Native American, 10% International

Draft Strategies
1. Revise CEE Charter to establish a standing Diversity and Recruitment Committee. This committee would consist of thre would be responsible for managing all faculty searches and for monitoring progress toward our Diversity Goals. Specific s involve the three Diversity Search Committee members plus an additional faculty member representing the specialty area Committee would be knowledgeable and adept in effective recruiting of minorities and women.

2. Support minority and women student groups such as the Native American Association in their efforts to increase the ni American engineering students. For example, this support could consist of travel support to national meetings of the Ame Science and Engineering Association to recruit Native American graduate students.

3. Promote the development of a rapid and agile hiring path to facilitate the recruitment of minority and women faculty. A "position control" would be a big step in this direction. In the current situation, the department hiring process is "paralyze position control system. We have lost several minority and women faculty prospects by the inability to act rapidly.

4. Emphasize our international engineering humanitarian activities such as international senior design and Masters Intern establishment of a Global Engineering minor. Experience has shown that these programs tend to attract a high fraction of minorities.

5. Promote the development of spousal accommodation for hiring minority and women faculty. Experience has shown tha accommodation is necessary and effective in hiring and retaining women and minority faculty.

6. Work with the Educational Opportunity office to develop a departmental contact program for promising students.

7. Cooperate with the College of Engineering on additional college-wide strategies.

10/25/2006

If you have comments, corrections or suggestions send them to: cee@mtu.edu