

## **2006-564: PLANNING FOR DIVERSITY AT ALL LEVELS**

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# Planning for Diversity at All Levels

## Abstract

In the spring 2005 semester our institution undertook a college wide strategic planning process to address diversity at all levels of the college. A committee of faculty, students, and staff looked at the institution's current status for women and minorities at all levels. Included in this study were students (both undergraduate and graduate), faculty, staff, and advisory boards. In part, this process was to determine our current status with respect to our peer institutions in the participation of women and minorities at each level. This process also involved research on best practices from other institutions to determine which of these practices might be applicable to our institution. This paper will present the findings of this study, the goals developed by this institution, and the strategies that are being put in place to address these goals.

## Introduction

With the hiring of a new dean of engineering in January 2005, the Bagley College of Engineering undertook a strategic planning process for all aspects of the college. Of particular interest and focus was the issue of diversity in the college at all levels. Part of the strategic planning process involved developing strategies to help move the college forward in this area. Because of the geographic location of Mississippi State University, the college chose to focus its minority diversity efforts on African-American students. Part of this strategy is a recognition that efforts which can help recruit and retain African-American students will also help in the recruitment and retention of other minority groups as well. In addition, our geographic location in a state where 36.3%<sup>2</sup> of the population is African-American and the fact that we are a public institution drove us to consider this population since the mission of our institution is to serve the citizens of our own state.

## The Initial Data

Not surprisingly, the participation of women varies significantly across the different disciplines within the college. The percentage of women undergraduate students ranged from 6.6% (mechanical) to 45.5%(biological). Three programs – chemical engineering, biological engineering, and industrial engineering – have a significant percentage of women in the program. Overall, our college of engineering has 17.57% women at the undergraduate level, compared to 17.68% nationally<sup>1</sup>.

The participation of minority students also varies between programs in the college. However, this variance is much smaller than that for women with the participation rates varying from 5.1% (civil) to 22.6% (industrial). Overall for the college, the percentage of African-American students at the undergraduate level was 11.25%. This compares with a national average of 6.04%<sup>1</sup>. However, the percentage of African-American students for Mississippi State University as a whole is 19% and climbing, whereas the percentage in the college has been dropping for the

past four years. One of the biggest issues among minority students from our study appears to be a retention issue. In one cohort, only 8% of the African-American students who started in engineering graduated in an engineering field within 6 years. More recently, since new admissions standards were adopted for the college, the retention rate for African-American students has improved, but still lags behind the retention for white students.

Two bright spots in our college are the number of female faculty members (12%), compared to 9.88% nationally<sup>1</sup>, and the number of female administrators (33%). In addition, the number of minority graduate students (5.86% for MS and 4.35% for PhD) is approximately double the national rates (3.13% MS and 2.02% PhD). These numbers are also higher than our peer institutions and are continuing to climb.

The final area that we attempt to address in the strategic plan developed for the college is the diversity of representation on the departmental and college advisory boards. Three of our departmental advisory boards have no African-American representation at all. Those that do have representation have only one member who is African-American. The numbers are slightly better for women with only two departments having no women members and one department (Agricultural and Biological Engineering) having 33% of its board being made up of women.

### **The Planning Process**

In the spring 2005 semester, the dean of engineering convened a group of faculty, students and staff from across the college to put together a strategic plan for moving the college forward in diversity at all levels. This committee was led by the Assistant Dean for Diversity and Student Development and had representation from most of the eight departments within the college. One undergraduate student and one graduate student also served on the committee to represent the student perspective. The committee included the Associate Dean for Academics and Administration as well since many of the implementation strategies that would be developed would fall under her jurisdiction.

This committee met throughout the spring and summer of 2005 and in the fall put forth a plan to the dean for addressing diversity at all levels. The committee studied the statistics to see where Mississippi State University stood relative to its chosen peer institutions. In addition, the committee contacted personnel at other institutions as well as consulting the recent literature to determine what strategies have been successfully used to increase the diversity at other colleges of engineering. This plan has been accepted by the dean and we are beginning to implement its strategies.

### **The Goals**

The overarching goal agreed upon by the committee was “To be recognized as a top 50 engineering program by 2010 in US News and World Report.” This goal is consistent with the overall goal for the Bagley College of Engineering established by the dean in the overall strategic planning process for the college.

Specifically with respect to diversity, the committee developed two subgoals to help achieve diversity at all levels within the college. The first of these deals with the representation of women and minorities on the faculty. Specifically, this subgoal is:

Subgoal 1: The Bagley College of engineering will continue to recruit and retain exceptional faculty members. This includes recruitment of faculty from top-tier research universities, retaining successful faculty members at Mississippi State University, national recognition of faculty excellence, and providing a work environment conducive to excellence in teaching and research.

As a part of this subgoal, the college plans to increase the number of African-American faculty members in the college from 1 to 5 and to increase the percentage of women faculty from 16% to 25% with all academic departments and research centers having at least one female faculty member.

The second subgoal is aimed at the undergraduate and graduate student populations as well as the make up of the departmental advisory boards. Specifically, this subgoal is:

Subgoal 2: The Bagley College of Engineering will become a nationally recognized producer of high quality engineering graduates at all degree levels. Degree production will rank in the top 25% of doctoral granting universities at the B.S., M.S., and Ph.D. levels. Mississippi State University Engineering students will be actively recruited by major multinational companies and top research universities.

As a part of this subgoal, the college plans to be in the top 5% of doctoral granting universities in the production of African-American engineers at the B.S., M.S., and Ph.D. levels. In addition, the college plans to increase the percentage of undergraduate women students from 17% to 25%. As a part of this subgoal as well, the college plans to diversify the make up of its departmental advisory board to more accurately represent the diversity of each department's student body.

## **The Strategies**

Specific strategies were developed to address the diversity goals within each demographic group. Each of these strategies was assigned a leader and a set of metrics were identified to use in determining progress in each of these areas.

Faculty: Five specific strategies were developed to help increase the diversity of the faculty to the targeted levels.

- Strategy 1 – Target recruitment through strategic placement of faculty ads in outlets targeted at minority groups (Society of Women Engineers, National Society of Black Engineers, etc.).
- Strategy 2 - Maintain a constant and positive presence among minority and women's engineering groups through attendance at national conferences.

- Strategy 3 - Initiate a PhD exchange program with other engineering colleges.
- Strategy 4 - Provide funding to departments for startup packages for minority and women candidates
- Strategy 5 – Follow best practices identified by the planning group including those identified in a recent *Journal of Engineering Education* article<sup>4</sup>.

Graduate Students: Nine specific strategies were developed to help increase the diversity of the graduate student population.

- Strategy 1 – Create a graduate student round table
- Strategy 2 – Initiate a seminar series targeting underrepresented groups that focuses on careers with advanced degrees
- Strategy 3 – Provide funding for students from underrepresented groups to present papers at conferences
- Strategy 4 – Create a web site to be used as a clearinghouse for information for potential students at all levels.
- Strategy 5 – Encourage departmental collaboration in graduate student recruiting events.
- Strategy 6 – Establish a graduate seminar program focusing on internal graduate student recruitment
- Strategy 7 – Establish a traveling seminar series where Bagley College of Engineering faculty visit engineering departments at other institutions to present seminars at institutions with high percentages of underrepresented student groups.
- Strategy 8 – Provide funding to attend a conference for graduate students who identify and successfully recruit another student to graduate school in the Bagley College of Engineering.
- Strategy 9 – Provide funds for departments to host potential graduate students from underrepresented groups to visit campus.

Undergraduate Students: Seven specific strategies were developed to help increase the diversity of the undergraduate student population.

- Strategy 1 – Increase community college transfers.
- Strategy 2 – Provide funding for faculty to integrate undergraduate students in their research projects.
- Strategy 3 – Produce an informational campaign targeting underrepresented groups at the K-12 level.
- Strategy 4 – Establish partnerships with corporations having a strong commitment to diversity.
- Strategy 5 – Develop a faculty led task force for undergraduate diversity to help in recruitment efforts.
- Strategy 6 – Develop a student diversity team to increase student awareness of benefits of diversity.
- Strategy 7 – Increase undergraduate scholarships through solicitation of funds that would be available specifically to underrepresented groups.

Departmental Advisory Boards: Two specific strategies were developed to help increase the diversity of the departmental advisory boards.

Strategy 1 – Encourage department heads to become active in discipline appropriate organizations for underrepresented groups.

Strategy 2 – Solicit nominations for advisory board members from national minority and women organizations.

### **Assessing The Program**

In order to measure our progress towards implementing this plan, specific metrics were identified for each of the strategies listed above. In part, these metrics address the specific target numbers for each of the groups addressed (e.g., the percentage of minority students in each major in the college, the number of minority faculty members). In addition, some of the metrics use qualitative assessment of the activities proposed through survey information collected from participants (e.g., surveys of participants at recruiting events). This assessment information will be used to improve events and to focus efforts on events which provide a good “return on investment” with the participants.

### **Where We Are In The Process**

In the fall 2005, the percentage of women and African-American students at the undergraduate level in the college dropped slightly again. It is clear that the implementation of this plan must be a priority in the coming year. On the positive side, two more female faculty members were hired to begin in the fall 2005 semester continuing an encouraging trend in this area. However, no progress has been made to date in hiring African-American faculty members. The Bagley College of Engineering hopes to be able to report at future ASEE meetings about the success of its endeavors to increase the diversity of the college.

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