

**Developing Collaboration and Leadership
within Minority Engineering Student Societies**

**Maria A. Reyes, EIT
Mary Ann McCartney
Dr. Mary R. Anderson-Rowland**

Arizona State University

Abstract

The Arizona State University Office of Minority Engineering Programs (OMEP) was established in 1993. In Fall 1993, the OMEP, in conjunction with the three minority student organizations developed a formal collaborative relationship. The result was the creation of the Coalition of Engineering Minority Societies - CEMS, which is comprised of the three minority engineering student organizations: the American Indian Science and Engineering Society - AISES; the National Society of Black Engineers - NSBE; and the Society of Hispanic Professional Engineers - SHPE.

In the past, the three student organizations had only collaborated during their annual awards banquet. This coalition strengthened their cooperation in other areas, including the organization and structure of the new minority engineering student center that debuted in October 1993, appropriately named the "CEMS Student Center".

The student leaders of the individual organizations have always seen the need for leadership development and continuity within their societies, yet they had not found the most effective means of creating this continuity during the most critical time, the transfer of executive boards. Through their collaboration with the OMEP, the planning for a leadership retreat began. The students recognized the importance of an information exchange from the outgoing executive board members to the incoming and the need to share experience. The student leaders also recognized that the stability and continuity provided by the OMEP strengthens the membership as a whole and enhances the progression of leaders through the organizations and into industry.

A pilot **retreat** was held for two days in a remote area of Northern Arizona to allow time to focus on mutual priorities. The activity required participation from both the outgoing and incoming executive board members of all three CEMS organizations. This paper will include discussion about the creation of the coalition, the benefits and the challenges that have been overcome. The discussion will also include the need for the collaborative atmosphere that the student center brings to a coalition such as this. Finally, a discussion about the leadership retreat, the resulting benefits and follow-up activities will be included.

Introduction

The minority population of individuals 16 years and older living in the state of Arizona is 16.1% Hispanic, 4.3% American Indian and 2.6% African American (based on 1990 Census Data, Affirmative Action Office, ASU). The Phoenix metropolitan area is home to Arizona State University, the fifth largest



university in the United States, with an enrollment of approximately 43,000 students. The College of Engineering and Applied Sciences (**CEAS**) represents four schools: the School of Engineering, the School of Technology, the Del E. Webb School of Construction and the School of Agribusiness. Total enrollment in the college for the Fall 1994 semester was approximately 6300 students including 4200 undergraduate and 2073 graduate students. The female undergraduate students (792) represented 18.9% of the total undergraduate student population, while the female graduate students (384) represented 18.5%. The underrepresented minority (**African American, Hispanic and Native American**) enrollment in the Fall 1994 in CEAS was 546 undergraduate students or 13% and 85 graduate students or 4.10%. The Hispanic students represent the majority of the underrepresented minority students within the CEAS with a total of 380 (9.0%) undergraduates, followed by 86 (2.0%) **African American** students and 80 (1.9%) Native American students.

The **Office** of Minority Engineering Programs at ASU was established by the CEAS in 1993 to aid in the recruitment and retention of underrepresented minority students. Since the underrepresented minority student population within CEAS is well below the state minority population, the need for assistance continues. Specifically, the goals of the OMEP are to build a community of minority students that are academically prepared to pursue baccalaureate and graduate degrees within the CEAS and to create a climate that develops and promotes academic excellence, technical competence and marketable skills. Furthermore, it is the goal of the OMEP to build a foundation for life-long learning that will sustain students after they leave academia and through the twenty-first century. These goals are realized through comprehensive programmatic support for both recruitment and retention of underrepresented minority students. The recruitment program targets K-12 students through the efforts of the Mathematics, Engineering and Science Achievement (MESA) Program. The retention goals are supported through the Minority Engineering Program (**MEP**) where students can find assistance in adjusting to the demands of university life and the rigors of technical curriculum.

The Student Organizations

Student chapters of professional organizations have helped meet the needs of underrepresented groups by increasing the visibility of those groups, supplying a support network which reduces feelings of alienation, providing role models, and facilitating the transition into industry. Three such student organizations exist in the CEAS: The American Indian Science and Engineering Society - AISES; the National **Society** of Black Engineers - NSBE; and the Society of Hispanic Professional Engineers - SHPE. The student membership of each group is approximately 75, 50 and 150 respectively. Each organization is governed by an elected executive board of student **officers** who range from President to Secretary and all have one year terms. Each group has an independent **faculty/staff** advisor not **affiliated** with OMEP. Each year these groups experience a change in "management" while still trying to accomplish common goals; the recruitment and retention of minority students into engineering and the applied sciences. However, too **often** student organizations with similar goals work independently of one another and compromise their effectiveness.

CEMS - Coalition of Engineering Minority Societies

In Fall 1993, OMEP, in conjunction with the three minority student organizations developed a formal collaborative relationship. The result was the creation of the Coalition of Engineering Minority Societies - CEMS - which the students symbolically named by pronouncing the acronym as "seams". The societies feel they are working together, all from a common base or "material" and their collaboration is sewing the "seams" of this material to make it stronger. In the past, these organizations had collaborated through the sponsorship of an annual awards banquet, however, even this collaboration had suffered over the years and was dependent on the membership of the strongest group each particular year. The purpose of



this formal coalition was to strengthen all three organizations and alleviate the cyclic nature in which these organizations existed. For example, one group may have a good year writing proposals and raising funds for their programs, while another might show success in recruiting members and increasing participation. However, through the next year and after change in "management", any accomplishments made in one year may or may not have been carried on by the new executive board. Each group was experiencing this cycle of development and found no continuity. The coalition brought the opportunity to work together, to reduce transition problems, and the OMEP provided the continuity through the change of executive boards and throughout the year.

The CEMS Student Center

Not only did the Coalition increase student cooperation, it also included the organization and structure of the new minority engineering student center which debuted in October 1993. The student center was appropriately named the "CEMS Student Center". The CEAS identified a classroom for use by the minority student population and allowed OMEP to govern its use. Under the direction of the OMEP, the room is utilized by any member of CEMS for meetings, study groups, socializing, gatherings or simply a place for quiet study. In addition, all minority CEAS students are encouraged to use the room for study or social purposes. The student center is also used for seminars hosted by local **industry** representatives wanting to bring information about their companies to the students. In addition, the room contains three personal computers with various software packages available so that students may complete their course assignments.

CEMS Leadership Retreat

The student leaders of the individual organizations have always seen the need for leadership development and continuity within their societies, yet they had not found the most effective means of accomplishing this. Through the collaboration with the **OMEP**, the planning for a leadership retreat began. Foremost, the students recognized the importance of an information exchange **from** the outgoing to the incoming executive board members and the need to share experience. Therefore, the retreat was planned for both incoming and outgoing board members as attendees. This would bring the total number of invited students to about 30. The student leaders also recognized that the stability and continuity provided by the OMEP strengthens the membership as a whole and enhances the progression of the leaders through the organizations and into industry. Therefore, the retreat included representation from the MEP as well as the MESA program.

The retreat was held at **Arizona** State University's Camp Tontozona, an off-campus site in a remote area of Northern Arizona with room and board facilities. This site was chosen in order to create an atmosphere of focused collaboration and mutual priorities. The retreat was held in late June, a good time for students because the newly elected officers were eager to prepare for the upcoming year. The retreat began Friday evening with and concluded the following Sunday morning. This activity gave students the opportunity to work together in a relaxed atmosphere and to have time for bonding experiences.

The retreat began with cabin assignments and a barbecue cookout. Once everyone had relaxed and settled in, there were ice-breaker and sharing activities to allow the students to know each other better. In the late evening on Friday, the students began their work by defining what they felt they had done well as a group in the past year and what they felt they could help other groups do. In addition, the groups outlined what they would like to improve in the upcoming year. The sessions ended after 11:00 p.m.

In the morning, they discussed and demonstrated how to run an effective meeting at both board and general membership meetings. **This** was modeled after the Motorola University training which provides a



structure for effective meeting practices. The workshop sessions began with the question, “What goals do you want to accomplish as a group by June 1996?” The students discussed topics such as recruitment, retention, participation, public relations and fundraising. Following this, the students had a two-hour break for lunch and **free** time, which they spent exploring in the nearby wilderness.

In the afternoon, the students participated in a two-hour workshop in groups discussing what activities they could sponsor or coordinate to accomplish goals outlined in the morning session. Immediately after this the students chose one area they wanted to focus on and began planning these actual events. This was an important step to take prior to leaving the retreat, because it allowed the group to feel as though they had accomplished event and/or calendar planning while at the retreat and not just long-range or strategic planning.

Following dinner there was a closing session with discussion and evaluation of the retreat. The students shared their thoughts and suggestions for improvement. They all agreed that the retreat had given them an opportunity to do more than just plan and set goals; more importantly, it gave them the opportunity to know each other on a different level and to appreciate each organization’s goals.

The CEMS Fall Orientation

While there were many goals and initiatives brought forth by the leadership retreat, the critical element to the students was recruitment activities. While at the retreat, the student leaders developed activities they saw as recruitment tools to assist new students in their transition to the university. The students planned and prepared a day-long agenda for orientation to the university, the CEAS, the OMEP and to their societies.

The essence of their fall “recruiting activities” began in the summer when they returned from the retreat. Over the next two months, the OMEP and CEMS leaders made a concentrated effort to reach every incoming minority student to the CEAS by letter and by phone. In the evenings the OMEP staff would keep the office open late and the CEMS students would come in to call each incoming student personally. The OMEP also sent multiple letters introducing the program to these new students and inviting them to attend the upcoming CEMS Fall Orientation.

The CEMS Fall Orientation gave students an opportunity to meet with “seasoned” students about becoming a successful engineering student. The agenda included interaction time in small discussion groups and an **informal** student panel in which students were encouraged to enroll in **SHPE**, **NSBE** and **AISES**. An overview of the benefits of membership was shared along with encouraging time management, group study, and academic advisement. New students were able to listen to candid assessments about the CEAS. Subjects included access to tutoring, cluster housing for engineering students, scholarships, industry interface, support for conference attendance, professional development workshops, etc.

- The most important feature of the program was the immediate development of community. Students have communicated that coming onto the ASU campus was initially intimidating but with the orientation prior to the start of school, the feeling of isolation was instantly dispelled.

Discussion

By all accounts the CEMS Leadership Retreat was a success; however, improvements in certain areas can and will be made prior to the retreat in 1996. Foremost is the collaboration with the Society of Women



Engineers (SWE) and partnering with the Women in Applied Science and Engineering (WISE) program. The students felt that coordination with SWE and WISE was the vital element missing in the retreat. Second, although the retreat was held in June, it was held in late June. The students feel the retreat should be held in late May and or early June to allow more time for follow through and continuous improvement throughout the summer. **Third**, the students felt the two day format was not enough time to complete **all** the sessions. Therefore, the 1996 retreat will be expanded to a **three day** format beginning Thursday evening and ending Sunday morning. Fourth, the students felt their introduction to running effective meetings was worthwhile and have asked that this element be expanded. As a result, Motorola University has been invited to attend the retreat to serve as facilitators and trainers throughout the activity. This will be an in-kind donation **from** Motorola. Finally, the students felt the number of people invited should be expanded to include freshman and/or sophomore students who show leadership potential to participate and shape the goals to include elements that are critical to them. The combined total participants including SWE and new students will be well over 50.

References

Anderson-Rowland, Mary R., McCartney, Mary Ann, and Reyes, Maria A. Academic Excellence for Minority Students. FIE 95 Conference Proceedings. Session 2A45.

