

MODEL COLLABORATION WITHIN MINORITY ENGINEERING STUDENT SOCIETIES

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Abstract

The Arizona State University (ASU) Office of Minority Engineering Programs (OMEP) was established in 1993. In the fall of 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 decade prior to this, the three student organizations had 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 Coalition was defined mostly by the MEP Awards Banquet and the CEMS Leadership Retreat which were held annually in April and May. The banquet had been traditionally hosted by the three organizations and was the only event that had been a collaborative effort prior to the creation of CEMS. The retreat served as the transition point for each organization from the outgoing leadership to the incoming executive board. The collaboration and continuity from MEP provided the vehicle to provide the retreat each year. In 1997, in conjunction with WISE, OMEP and CEMS received funding for the retreat and an outreach project through the Campus Environment Team (CET) at ASU. At this point, a written definition of the Coalition was developed. Up to this point, the Coalition worked together, transitioned from leadership to leadership, and grew in strength as it continued.

Today, CEMS is not only an organization of three groups, but has now expanded to include the Society of Women Engineers. At the beginning of 1999, the four groups struggled with their desire to collaborate, formalize a “new” coalition, and what to call themselves. Realizing the strength and accomplishments of CEMS, they felt it was important to maintain that portion of the name and not “redefine” it to include SWE. Yet they felt that using CEMS/SWE was too much of an “add on” and did not truly reflect their feelings of complete collaboration. After considerable debate and reflection, they agreed to CEMSWE. What made this name appropriate was that they “shared” the “S” in the middle and it ends with “WE”. The collaborative events

now include the CEMSWE Awards Banquet, CEMSWE Leadership Retreat and the Diversity Evening With Industry (DEWI) hosted by CEMSWE.

This paper will discuss the workings of the Coalition and the collaborative events. It will also discuss industry perception of such collaboration.

I. Introduction

The College of Engineering and Applied Sciences (CEAS) established the Office of Minority Engineering Programs (OMEP) at Arizona State University (ASU) in 1993 to aid in the recruitment and retention of underrepresented minority students. Since the underrepresented minority student population within CEAS (16%) is well below the state minority population (31%), 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. In the same year, the CEAS established the Women in Applied Science and Engineering (WISE) Office to aid in the recruitment and retention of women students. This student population with CEAS at 20.5% is the furthest from parity with the state population (50.5%) and therefore, the need for assistance also continues. The goals of the WISE Program are to create a comprehensive outreach effort for pre-college girls and to expand and to improve graduate recruitment and retention programs. Furthermore, it is the goal of both the OMEP and WISE offices to build a foundation for life-long learning that will sustain students after they leave academia and through the twenty-first century.

II. 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. Four such student organizations exist in the CEAS: The American Indian Science and Engineering Society – AISES, the National Society of Black Engineers – NSBE, the Society of Hispanic Professional Engineers – SHPE, and the Society of Women Engineers – SWE. The student membership of each group is approximately 75, 40, 150, and 50 respectively. An elected executive board of student officers, who range from President to Secretary, governs each organization. Each group has an independent faculty/staff advisor not affiliated with OMEP or WISE. Each year these groups experience a change in "management" while still trying to accomplish common goals: the recruitment and retention of minority/women students into engineering and the applied sciences.

III. CEMS – the basis for CEMSWE

In 1993, the OMEP at ASU, in conjunction with the three underrepresented minority student organizations developed a collaborative relationship. This collaboration of AISES, NSBE, and SHPE, was named the Coalition of Engineering Minority Societies (CEMS). The acronym "CEMS" pronounced "SEAMS," resulted because the societies felt they were working together, all from a common base or 'material,' and their formal collaboration sewed the 'seams' of this material to make it stronger.

The purpose of this formal coalition was to strengthen all three organizations and to alleviate the cyclic nature in which these organizations existed. An elected executive board of student officers who serve one-year terms governed each organization. The constant change affected the accomplishments made in one year, which may or may not be carried out by the new board the next year. The creation of CEMS provided a formalized collaboration, enhanced opportunities to work together, reduced transition anxieties, and provided continuity to each organization. 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, after the change in "management," some accomplishments made in one year, may or may not be carried on by the new executive board. Each group experienced this cycle and struggled to achieve continuity. The coalition and the MEP provided a base for this. The coalition is comprised of the general memberships of the three organizations. The governing board, or CEMS Board, is comprised of the executive board members of the three organizations, the faculty advisors and the MEP coordinator. A definition statement for CEMS was developed in 1997 and is shown below.

The Coalition of Engineering Minority Societies (CEMS)

August 1997 - Arizona State University

The Arizona State University (ASU) Office of Minority Engineering Program (OMEP) was established in 1993. In fall 1993, the Minority Engineering Program (MEP), in conjunction with the three minority student organizations developed a formal collaborative relationship. 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. The student leaders also recognized that the stability and continuity provided by the MEP strengthens the membership as a whole and enhances the progression of the leaders through the organizations and into industry.

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.

The coalition is comprised of the general memberships of the three organizations. The governing board, CEMS Board, is comprised of the executive board members of the three organizations, the faculty advisors and the MEP director and coordinator. The CEMS Board oversees the coordination of one (1) account maintaining funds for joint activities as well as the CEMS Room, ECG 316. The management and ultimate responsibility for both the account and room are maintained by the OMEP. There is collaboration and partnership between SWE/WISE and CEMS/MEP.

The definition statement was careful not to discuss voting rights or the creation of bylaws. This was intentional and done by the members as well as the MEP coordinator. It is important to note that the reason CEMS works in an organizational form is because these things are not required. It may be contradictory to the meaning of an organization. However, since the Coalition is comprised of three organizations, it was important not to impose too much structure. One of the important aspects of CEMS, possibly one of the reasons it is so successful, is that there is such a strong emphasis placed on the need for collaboration, while maintaining each organization's autonomy. Therefore, in a very democratic sense, nothing is done unless all three organizations have an officer present to vote on behalf of their organization and everything is divided evenly three ways.

IV. CEMS Center

Not only did the Coalition increase student cooperation, it also provided the organization and structure of the new minority engineering student center which debuted in October 1993. The student center was appropriately named the "CEMS Center." Under the direction of the MEP, any member of CEMS may utilize the room 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 who want to bring information about their companies.

This former classroom (which houses six PC's with network connections and two printers) is conveniently located across the hall from the OMEP office and offers easy access to any of the OMEP staff or resources. The Center serves as the "hub" of activity during the school year and gives the students a place to call "home" when they are on campus for long hours. Often times the students will go from class to the Center, then to another class and back to the Center. Students have indicated that the most unique feature about the Center is that there are no cultural barriers there and that they can always find someone willing to help them solve a problem or give advice.

A similar student center for SWE and the women in the College is located one floor below the CEMS Center and appropriately named the WISE Center. Both of these Centers serve as support space for the underrepresented groups in engineering at ASU.

V. CEMSWE Leadership Retreat

The student leaders of the individual organizations had always seen the need for leadership development and continuity within their societies, yet they had not found the most effective means of producing this continuity during the most critical time, the transfer of executive boards. Through the collaboration, the MEP hosted the first CEMS Leadership Retreat in 1995. The CEMS students felt that it was necessary to have an information exchange each year from the outgoing to the incoming executive board members. They also felt that it was necessary to have the MEP involved since it brings stability and continuity. They felt that the MEP involvement strengthened the membership as a whole and enhanced the progress of the leaders through the organizations and into industry. In 1996, the Society of Women Engineers (SWE) joined the CEMS students at the retreat since they share common issues and collaborate on many events.

The event is currently titled (in 1999) the CEMSWE Leadership Retreat and is a tremendous success.

The retreat is planned for both incoming and outgoing board members as attendees bringing the total number of invited students to about 30. During the retreat, the students have an opportunity to: participate in ice-breaker activities, get to know each other better, to define what they have done well as a group in the last year, and to identify what they can help other groups do in the upcoming year. The students also have seminars to discuss how to structure effective meetings at both board and membership levels and to plan the activity calendar for the next year (maximizing collaborative activities). Both the OMEP and WISE staff members, as well as the students, agree that the retreat is more than just an opportunity to plan and set goals; more importantly, it is an opportunity to get to know each other on a different level and to appreciate each organization's goals. This is the success formula of the retreat, just enough discussion and work to accomplish goal setting and combined calendars with long breaks of time for them to bond as CEMSWE members.

For the three prior years, SWE had been invited to participate in the leadership retreat, which provided an opportunity for personal bonding of students from SWE and CEMS. In this setting SWE events were coordinated with those of CEMS but not totally incorporated. One of the successful events that the four organizations hosted, as a result of SWE's participation in the retreat, was their invitation to include CEMS in the SWE sponsored "Evening with Industry." This resulted in the CEMS/SWE sponsorship of the "Diversity Evening with Industry" or DEWI.

VI. Diversity Evening with Industry (DEWI)

The ASU Career Services hosts an annual "Career Fiesta" in the fall. This career fair session is a university wide event and draws a number of corporations to ASU to recruit candidates. The Diversity Evening with Industry or DEWI is held during this four day event. The event includes a mini career fair and banquet dinner with an invited keynote speaker. The purpose of DEWI is to provide the CEMS and SWE students an opportunity to get to know more about the companies and their hiring needs and to establish or widen their networking. At the same time, DEWI provides industry an opportunity to recruit engineering students with very diverse backgrounds. In addition to their participation in DEWI, industry representatives are given the opportunity to obtain a resume book containing the resumes from the members of all four organizations.

The CEMSWE students plan this event during the annual leadership retreat and throughout the following summer. A contract of responsibilities is signed by the four organizations and they share equally in the profit/non-profit of the event. This event has provided the CEMSWE students through the years with many opportunities for interaction with industry, leading on many occasions to, internships (including freshman), Co-ops and permanent employment positions.

VII. CEMSWE Awards Banquet

This last year, CEMS leaders decided that they wanted to include SWE in their Spring Banquet, similar to the invitation that SWE extended to CEMS for DEWI. A spring banquet had been held by CEMS for several years, but SWE did not hold one. This remarkable inclusion of SWE

into the CEMS event was a result of the partnership between CEMS and SWE that had been built through the two other events that CEMS and SWE jointly sponsored. The preparation for the banquet began in January. When the students of the four organizations began working on the banquet, they started wondering what to call themselves. The students rejected the new alliance being called CEMS/SWE as if SWE was just a tag on. Instead, they felt very strongly that their new name should reflect their feelings of complete collaboration and cooperation. The student leaders decided that both CEMS and SWE should share the 'S' and their joint organization should be known as CEMSWE. Although this banquet is planned by all four organizations, each organization is allowed a part of the program to present awards and to recognize their own members.

VIII. Collaborative Funding Opportunities

In 1997, CEMS, SWE, MEP, and WISE submitted a collaborative funding request to the ASU Campus Environment Team (CET). The requirement of the grant was collaboration, communication, and cooperation.

The proposal was accepted and provided the first joint funding for CEMS and SWE. The funding was granted by the CET because in their words the, "collaborative effort made the proposal stand out." The funding supported the joint CEMS/SWE Leadership Retreat and Collaborative Outreach for Engineering Diversity (COED).

The MEP and WISE programs also received a generous collaborative donation from Hewlett Packard (HP) in the form of HP equipment. Once again, the funding agency indicated that the collaborative nature of the proposal was the reason that funding was granted. The donation provided computers for the CEMS and WISE Student Centers as well as provided color printers and a digital camera for OMEP and WISE. HP celebrated the success of the collaboration and they encouraged OMEP, WISE, and Recruitment to submit an additional collaborative proposal in the next funding cycle.

Both of these experiences enhanced the awareness of the CEMSWE members of the advantages they have through collaboration. In addition, some other examples have done the same. The IBM Campus Representative, through the IBM Executive Group Member who sponsors ASU as a Team Talent School, donated four lap top computers (one to each organization). She attended the CEMSWE board meeting to make the presentation and stated that the collaboration that occurs between the organizations is what makes them powerful and effective. The Arizona External Education K-16 Director for Motorola SPS has expressed the wish that the diversity groups at Motorola could collaborate as the CEMSWE groups do. She uses the CEMSWE model to demonstrate to her diversity groups the power in collaboration. Just recently Intel provided funding for a CEMSWE Collaborative Outreach Event and for a CEMSWE tutor, who will hold hours in both the CEMS and WISE Centers.

IX. Conclusion

Today, CEMS is not only an organization of three groups, but has now expanded to include the Society of Women Engineers. At the beginning of 1999, the four groups struggled with their desire to collaborate, formalize a "new" coalition, and what to call themselves. Not only do we have the unique CEMS collaboration, but the students took the collaboration one step further by

including SWE in three main events a year and chose to call themselves CEMSWE. Through this collaboration, the student leaders have recognized that the stability and continuity provided by the OMEP and the WISE Offices strengthens the membership as a whole and enhances the progression of leaders through the organizations and into industry. The creation and operation of CEMSWE has not only fulfilled the above goals of community, academic excellence, and awareness of lifelong learning, but the collaboration has built and strengthened the teaming skills required of engineers in a diverse setting, as well as providing rich personal experiences in diversity. In addition, our industry partners are both impressed and pleased with the CEMSWE effort. They are impressed because it is unique and serves as a model for collaboration. They are pleased since they can make one contribution instead of four to support the diversity effort in the CEAS.

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Maria A. Reyes is the Director of the Office of Minority Engineering Programs. She is a graduate of the Minority Engineering Program (MEP) at ASU, where she obtained a BS in Civil Engineering and a Master’s degree in Geo-Environmental Engineering. She spent two years as a staff engineer at a local consulting firm. Maria developed the Minority Bridge Program. She also developed and teaches a seminar course for entering minority engineering students. Maria was recently honored with a Student Appreciation Award for staff, one of only six university staff members to be so honored.

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Mary R. Anderson-Rowland is the Associate Dean of Student affairs and Special Programs in the CEAS at ASU. She earned her Ph.D. from the U. of Iowa. She has received several awards for her support of diversity including the ASU-CEAS Alumni Chapter Honorary SOAR Award for support of Student Organizations in 1999 and the University Achievement in Gender Equity Progress Award, Faculty Women’s Association, in 1995. She is the director of a successful Graduate Career Change Program in IE. She is a frequent speaker on the myths of mathematics and engineering and of the career opportunities in engineering, especially for women and minority students.

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Mary Ann McCartney served as the Student Support Liaison Offers as well as the Directory of the OMEP for the CEAS at ASU for five years. Prior to joining ASU, she spent 18 years at IBM serving her last five years as Program

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