

ASEE Student Chapters: Lessons Learned from the First Five Years

**Eric Mulkay, Sara McComb, Robert Kiesow,
Douglas Boyd, William Oakes, James Jones**

**Schools of Engineering
Purdue University**

Abstract

The objective of this paper is to document the successes and struggles of the first ASEE student chapter during its first five years. The first student chapter of ASEE was formed at Purdue University in the spring of 1993. The primary function of the student chapter has been to provide seminar series for both the undergraduate and graduate engineering student populations. Implementation of these programs has required an engineering-wide organizational structure of graduate students. This paper documents the successes and struggles of the Purdue chapter of ASEE, highlighting issues such as chapter organization, communication structure, program funding, graduate and undergraduate seminar series, and a newsletter over the first five years. This retrospective of the first five years offers both the perspectives of participating graduate students and the faculty advisor. The three most important lessons learned are 1) delegate responsibilities broadly, 2) develop effective communication protocols, and 3) seek startup funds. For students and faculty interested in starting a new chapter, it is recommended to start small, find a committed core of interested graduate students and a faculty advisor, and solicit initial startup funds from your school or college.

Introduction

The objective of this paper is to document the successes and struggles of the first ASEE Student Chapter during its first five years. The first student chapter of ASEE was formed at Purdue University in the spring of 1993 (Hamaker, *et al.*, 1993) with a three fold mission: (1) to mentor graduate students interested in engineering education, especially those considering academic careers, (2) to educate undergraduate students about graduate school, and (3) to encourage underrepresented groups such as women and minorities to seek advanced degrees and academic careers. As with any pioneering effort, there have been many challenges and barriers to overcome during the formative years of the Purdue ASEE student chapter's existence.

This paper seeks to document the successes and lessons learned through five years of experience as a student chapter. The following paper is organized with three main sections. The first section describes the infrastructure of the chapter and addresses issues such as organization, funding and communications. The second main section illustrates three of the most successful programs undertaken by the chapter, namely two sets of seminar series and a semiannual newsletter. Finally, the last section gives the advice and perspective of a faculty advisor. This section is specifically included to address the questions and concerns of other faculty who might be interested in helping students establish a student chapter at another university.

Chapter Infrastructure

The following three sections describe important issues relating to the functional aspects of the Purdue University student chapter of ASEE. In the first section, details regarding the organization of the Purdue student chapter are presented along with the responsibilities of the key leaders of the organization. The first section also points out some of the lessons learned regarding the organization of chapter programs. In the second section, the purpose of and the process followed to obtain funding for the chapter is detailed. Finally, in the third section, the difficulties encountered and the solutions generated relating to communications issues are discussed.

Organizational Structure

The Purdue Student Chapter of ASEE has developed an organizational structure that allows it to implement the programs outlined in the following sections. This structure has evolved over the first five years of the chapter's existence. A constant over that time has been the fact that most of the responsibility and activity has centered on a core group of graduate students leaders whose number has remained around five to eight people. One of the challenges, which the chapter has continually faced, is the inability to attract a larger number of actively involved graduate students. However, the chapter has learned to adapt to this constraint, producing a vibrant chapter and a substantial level of activities.

The core group of graduate students essentially comprises the executive board of officers. The officers who serve on the executive board are listed along with their primary duties.

- *President* – Sets the overall direction of the chapter and to ensure events are properly coordinated. The president sets the agenda for the executive meetings and acts as the chapter representative when such a representative is required.
- *Vice-President* – Assists the president with setting direction of the chapter and oversees the organizing of the seminars and other events.
- *Treasurer* – Maintains financial records and oversees the writing of grant proposals for funding of the chapter events.
- *Secretary* – Serves as the official communication link for the chapter by monitoring email and maintaining contact with other ASEE chapters and ASEE organizations at the regional and national levels. This person also records and distributes the minutes from the executive meetings.
- *Publicity* – Oversees publication and distribution of the publicity for all chapter events.
- *Membership* – Oversees membership lists of active students and oversees activities to recruit new students.
- *Newsletter Editor* – Oversees the publication and distribution of the chapter's newsletter each semester.

A key to functioning with a small group of active members has been to learning to delegate responsibility to individuals as much as possible. Initially, the entire core group would be involved in planning the events and in making the decisions, but one or two people would perform the majority of the work. This situation led to an unproductive environment that produced burnout in the key leadership. In recent years, the core group has served in an

oversight capacity for events but individual coordinators carry out the detailed planning and execution. The event coordinator updates the executive board on the progress of events at the monthly business meetings and requests help when needed, but it is left to that individual to ensure the event is successful.

Most of the officers assume the role of event coordinator on a rotating basis. This rotation gives students a chance to delve into an area that they are interested in or to make contacts with speakers from other areas. Because there are publicity concerns for every seminar or event sponsored by the chapter, the publicity officer does not take a turn as an event coordinator but rather serves as a resource for all the events. This reliance on individuals has created situations where events had to be cancelled. However, our experience has been the activity level has increased substantially by delegating responsibility, and that much more is being done even with the occasional cancellation. Also, the chapter has been able to conduct several diverse efforts at once without such a high burnout risk.

Funding

Another administrative aspect of a student chapter is funding. Many programs do not require a large amount of money. Typical expenses include printing the newsletter, seminar promotional fliers, and travel expenses for out-of-town speakers. The Purdue chapter has been very successful at securing funds, which has allowed the chapter to support higher cost activities. Examples include scholarships to the national ASEE conference and refreshments at seminars, such as pizza and soft drinks.

The financial needs of the organization have been met through several different sources. The Dean of Engineering provided start-up funds totaling one thousand dollars. The Dean was eager to assist the start of a new organization and this amount was adequate to initiate the two seminar series discussed below. Once the seminar series was shown as a viable idea, additional multiyear funding was sought. A proposal to the GE Foundation was submitted and granted for twenty thousand dollars. From this grant, the chapter was able to support the basic and higher cost chapter activities for four years. During this time, an additional grant for a project to reach underrepresented students was submitted to and awarded by the Allied Signal Special Grants Program at Purdue. This two thousand-dollar grant allowed a representative from the chapter to host a seminar to educate undergraduates about graduate school at a Society of Women Engineers regional conference. In order to sustain the undergraduate seminar series, the chapter is currently in the process of securing recurring funding from the Dean of Engineering. Although the Dean's general policy is not to provide recurring funding to student organizations, the undergraduate seminar series has proven a valuable service in educating students about graduate study in engineering. For this reason, our funding request was supported as an exception to the policy.

The parent ASEE organization has been a source of support by giving nonmonetary support. Examples of in-kind support include a booth at the ASEE annual conference, column space in *Prism*, and complementary copies of *Prism* magazine to distribute at "call-out" events. Various divisions of ASEE have also offered support. There are several key divisions of ASEE that can be of special assistance to new chapters: the Educational Research Methods (ERM) Division, the Graduate Studies Division (GSD) and the New Engineering Educators (NEE) Division to name three. The ERM and GSD have already begun to financially support ASEE student chapter activities. The ERM division has jointly funded (with our Purdue ASEE chapter) a seminar for

our graduate students about "Innovative Teaching Methods in Engineering Education" with an out-of-town speaker. They also support an Apprentice Faculty Grant (AFG) program aimed at providing travel support to the annual ASEE meeting for some of the country's most promising graduate students interested in academic careers. The GSD division has provided some support directly to ASEE student chapters for graduate student travel to the annual conference and has begun to sponsor conference sessions specifically for student chapters. The NEE division is an important division because it is the most likely starting place for new educators to begin their careers in ASEE. In addition, NEE is planning to start a mentoring program for students attending the national conference. On an individual basis, ERM, the Graduate Studies (GSD), and the New Engineering Educators (NEE) divisions have assisted with the chapter participation at the annual ASEE conference by providing scholarships to attend the conference, hosting student paper sessions, and sponsoring a mentorship program for students attending the conference.

Communication

Communication issues have been some of the most critical and biggest hurdles to overcome as a chapter. These issues involve communicating both within and external to Purdue University.

Communication within Purdue has been a major challenge because the chapter involves students from all the engineering disciplines. Most preexisting communication networks are isolated within single departments. Email has proven to be the best means for the chapter to communicate in coordinating efforts or in publicizing events. At one point the chapter had the ability to email all undergraduate or graduate students from a central location. Unfortunately, this ability has been lost due to bureaucratic changes in the organization that oversees the computing facilities. To overcome this obstacle, students acting as department representatives have been tasked with establishing communication links within the departments. Email is first transferred to the department representatives and then distributed to their respective departments. This decentralization has also increased the number of people who must follow through on their commitment to effectively publicize events, and therefore created a potential weak link in the publicity process.

External communication has also been a challenge. Two changes have streamlined this effort making it much more manageable. The first is the establishment of a permanent email account for the chapter with an address of asee@ecn.purdue.edu. This address remains the same as officers come and go. The lack of a permanent email address has been a point of frustration in contacting student chapters at other universities when individual students are listed as contacts and then graduate or become inactive in the chapter.

The second change in structure has been to designate the secretary as the external communication link. The email account is monitored by the secretary who has the authority to act and respond on behalf of the chapter when appropriate. This delegation of authority has freed the president to concentrate on setting a vision and direction for the chapter. The secretary position also becomes more desirable since it allows the secretary to make contacts that may be valuable in the future.

A web page has also been constructed and serves as an information center and an archive for important chapter information. The web page can be found at <http://ME.www.ecn.purdue.edu/~asee/>. Individuals may be directed to the web page when they have questions about the chapter or chapter events.

Chapter Programs

The next three subsections describe the most successful chapter programs. The purpose of these sections is to demonstrate effective activities to accomplish the chapter goals. In the first section, a seminar series targeted at graduate students interested in careers in engineering education is discussed. In the second section, a seminar series for an undergraduate audience to address questions about the process and pitfalls of graduate school is presented. The third section explains the purpose of a newsletter produced by the chapter.

Graduate Seminar Series

The graduate seminar series was the first program sponsored by the student chapter at Purdue University (McComb, *et al.*, 1996) and is designed to inform graduate students about three areas of their career development process: (1) attaining the right position upon graduation, (2) succeeding in an academic career, and (3) developing a personal educational philosophy. These seminars are designed to provide graduate students with a source of information based on the experience and expertise of the presenters. Seminars highlighting the process of attaining the right position upon graduation range from broad topics, such as the differences among careers in academia, industry, and government to narrow topics targeted at an audience interested in academic careers, such as what to expect during an academic interview. The skills necessary to succeed in academia are covered in the second class of seminars. Topics such as proposal funding, the publication process, and the promotion and tenure process are covered. Finally, young faculty must develop their own personal educational philosophy. Seminars of this type discuss subjects such as trends in engineering education, the future of the research institution, and balancing research and teaching priorities. Workshops have also been conducted to introduce concepts such as designing a course, administering exams, and how learning styles may influence the way in which an instructor must present material.

The seminar series has been extremely successful. Experience has shown that the most highly attended activities are those discussing how to attain the right position upon graduation and those offering advice on how to succeed in an academic career. Students attend these seminars in order to get information that is more immediately useful and they may be unable to get anywhere else. The seminars that draw the smallest audience are the seminars in the area of developing a personal educational philosophy. While these seminars may be of future benefit, they are not viewed by the graduate student audience as immediately applicable, and therefore are not as highly attended. However, contrary to this lack of attendance, longer workshops covering these types of topics held at Purdue have been very successful. Two workshops have been conducted to date by seasoned engineering educators from other universities. Dr. James Stice from the University of Texas at Austin presented the first workshop as part of the Illinois/Indiana ASEE Sectional Conference in spring 1995, and the second was presented by Dr. Alisha Waller formerly of Macallester College and held on a Saturday in spring 1997. Each workshop was well attended with audiences in excess of seventy people.

Several of the seminars have been so successful that they are repeated every other year. For example, two panel discussions, one of young faculty and the other of Purdue's department heads, are held in alternating years. The focus of both of these panel discussions are on a variety of aspects of academic careers such as the application process, the tenure and promotion process, etc. A seminar on preparing your curriculum vitae and another on academic interviewing are another example of a pair of seminars held in alternate years. This schedule has been established

for two reasons. Each of these four seminars is very popular and therefore merits repeating on a regular basis. Also, the natural turnover in the graduate student body allows seminars offered every two years to expose a new audience each time it is presented.

Undergraduate Seminar Series

Four seminars have been developed to educate undergraduates about the process and pitfalls of the graduate school experience. The four seminars “Graduate Study in Engineering: To Go or Not to Go, That is the Question!,” “Helping Engineers Prepare for the General Graduate Record Exam (GRE),” “Approach and Helpful Hints on the GRE Engineering Exam,” and “Strategies for Applying to National Fellowship Programs.” Details of the content and format of these seminars can be found in (Oakes, *et al.* 1996; Oakes, *et al.* 1997).

The logistics involved in putting on a successful seminar series has proven to be crucial. The format that has been most effective is to have the presenter coordinate the seminar with a committee of assistants. The coordinator is ultimately responsible for the seminar, but can delegate necessary responsibilities to the assistants. Typical responsibilities include distribution of handouts and refreshments, preparation of a sign-in roster, collection of evaluation forms, etc.

Since many undergraduates are pressed for time and may not be certain whether they should attend the seminars, the chapter has found it effective to use refreshments as an incentive for attendance. Refreshments such as pizza and soft drinks require a modest investment, but have proven helpful in drawing undergraduate students to the seminars. The refreshments allow students to eat dinner while participating in the seminars, thus maximizing their time investment.

The seminar series is typically offered during the third and fourth weeks of classes. This avoids most student organization call-outs, which mostly occur during the second week of classes, and the evening exam schedule, which begins late in the fourth week of classes.

In order to judge the effectiveness of the seminar series, evaluation forms have been prepared and are collected following each seminar. Both qualitative and quantitative comments have been useful to document the positive outcomes of the seminar series and to identify areas in need of improvement (Oakes, *et al.*, 1997). The accumulated evaluations have proven invaluable in demonstrating the success of the seminar series.

Finally, one of the more interesting results from the seminar evaluations is the difference in the demographics of students attending the fall and spring semester seminars. The spring seminars are mostly attended by juniors who are beginning to consider their after-graduation options. The fall seminars are mostly attended by seniors who are just beginning their post-graduate planning. Co-op students, who are off-campus every other semester, further complicate the demographics. Together, these reasons justify offering the seminar series in both the fall and spring semesters because the target audience changes.

Newsletter

The Purdue student chapter of ASEE publishes a newsletter twice per year, once each in the fall and spring semesters. This newsletter is used to disseminate information about student chapter programs and academic careers. Distribution includes on-campus membership and all engineering faculty members through campus mail. The newsletter is also made available at our graduate seminars. In addition, the chapter has found the newsletter to be a useful medium through which chapter activities can be shared with other organizations at events such as ASEE conferences. Articles are related to engineering education and information about getting and

maintaining an academic position. Typical information presented in the newsletter includes a listing of ASEE student chapter officers and department contacts, a calendar of events, summaries of past events and human-interest stories. Examples of human-interest stories include several articles written by former ASEE student members who have been successful in their search for an academic position and who share their experience and thoughts on their new life in academia. A column called "Spotlight on Teaching" has also recently been added which is intended to become a regular feature of the newsletter through which new and innovative teaching ideas can be transmitted.

Article ideas usually result from brainstorming sessions at monthly meetings and responsibility for preparing the articles is delegated to individuals at that time. The newsletter editor is then responsible for compiling the articles into a final format that satisfies the readers' needs. Experience has shown that only a limited knowledge of desktop publishing is required in order to provide an engaging and useful newsletter to the membership. The main challenge for the editor is to provide new and useful information to the membership and to expand the core of people involved in writing articles and preparing the newsletter for publication.

Faculty Advisor's Perspective

The faculty advisor's role in the student chapter is a critical one, especially during the formative years. There are three main areas that an advisor's assistance can be most helpful: interactions with the engineering administration and faculty, interactions with ASEE, and interactions with the student chapter leaders.

Since the concept of student chapters is so new, many administrators and faculty do not understand the purpose and role of an ASEE student chapter. This problem is further aggravated by the fact that student chapters are engineering wide organizations open to all disciplines. With the rigid departmental boundaries in most universities, faculty members are naturally skeptical about anything outside their department. The role of the faculty advisor is to help the chapter to establish credibility with the administration and the individual departments. It is especially helpful if the advisor has established a good reputation outside his or her own department. In addition, the advisor's assistance can be critical in securing some startup funds to initiate a new chapter.

In addition to helping with administration and faculty interactions, the advisor can also be of great benefit with contacts at ASEE, especially if the advisor is an established member of ASEE. Knowledge of the primary interests of the various divisions of ASEE can be instrumental in assisting the fledgling chapter to take advantage of the resources offered by the parent organization such as those previously detailed in the funding section. Hence, the advisor can facilitate several important relationships with key ASEE leaders and divisions which would be difficult for students to do alone because of their lack of knowledge of the inner workings of the ASEE parent organization.

Besides the interactions with key ASEE divisions, the students may also need some assistance in linking with the ASEE headquarters. There are several ways in which the headquarters can assist student chapters. In some cases, they may be able to help provide some initial startup funds. Unfortunately, this is dependent upon available funding, which is always tenuous. ASEE has also been helpful in providing complementary copies of the *Prism* magazine for student call-outs, and allowing the chapter to publish several short articles about some of our ASEE activities in the *Prism* magazine. Most recently, we have begun to submit manuscripts about our activities

to the *Journal of Engineering Education* (Berger, *et al.*, 1997, Oakes, *et al.*, 1997). In all of the ASEE interactions, the key role of the faculty is to help the ASEE officers understand what is possible and guide them in building strategic relationships.

The third and final role of the ASEE advisor is to be an encourager, especially during the formative stages of the chapter development. Anytime you pioneer a new concept, there are always skeptics who question the value of your ideas. Sometimes students will need help in maintaining their vision of what their chapter could be as opposed to a critic's vision of what it is not. If a program or activity doesn't go well, students may get discouraged. It is important to remind them of the positive impact that they are having on campus. Also, the advisor can help guide the chapter by serving as a sounding board for potential ideas the leadership is considering. Finally, the advisor must know when to step in and assist the leadership and when to step back and let the leadership struggle on its own.

Conclusions and Recommendations

This paper has been a retrospective of the experiences and lessons learned during the first five years as a student chapter of ASEE at Purdue University. The three most important lessons learned by the chapter involve organization, communication, and funding. Effective delegation of responsibility and authority has been a key to the success of the individual programs sponsored by the chapter. By giving a different member of the executive board the stewardship of a given event, the chapter has been able to support many successful programs without overburdening any one individual. Timely publicity of events has also been vital to the success of chapter activities. Advanced planning of a routine publicity channel (e.g., email announcements) greatly enhances the chance of successful publicity. Finally, start-up funds for a new student organization are much easier to obtain than recurring funds. Nevertheless, if the chapter can demonstrate value to the institution, recurring funds are possible to secure.

Three of the most successful programs pursued by the chapter have been the two seminar series and the newsletter. The graduate seminar series has helped graduate students prepare for careers in engineering education, and has been the primary means of attracting membership to the chapter. The chapter has provided the undergraduate seminar series as a service to education undergraduates about graduate school. This is a valuable service to the institution, especially during times when the U.S. economy is growing and jobs are plentiful, because many students tend not to give serious consideration to graduate school without encouragement from the faculty or graduate students. The newsletter has been an excellent means to report to both chapter members and faculty about the activities of the chapter. It has also provided a forum for useful information on a variety of topics related to engineering education.

The following list of recommendations is intended for those who want to start up a student chapter at another university:

- Start small. Pick one set of activities to pursue and do it well. The Purdue chapter started with the graduate seminar series in order to attract membership.
- Find a good faculty advisor. As indicated above, the advisor's role can be crucial to the success of a new chapter.
- Find a dedicated group of graduate students willing to set the tone for the chapter.

- Seek startup funds from your school or college. Department Heads and Deans are typically willing to give one-time funds for different things.

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Biographies

ERIC MULKAY is currently a Ph.D. candidate in M.E. at Purdue University. He received his A.S. degree from Ricks College in Rexburg, Idaho and B.S.M.E. and M.S.M.E. at Brigham Young University. Eric's research at Purdue has focused on the development of adaptive algorithms for nonlinear optimization. He received the 1997 Apprentice Faculty Grant from the ERM division of ASEE and the 1997 ASME Graduate Teaching Fellowship.

SARA MCCOMB is a Ph.D. candidate in Industrial Engineering at Purdue University. Her research is in the area of engineering management. She came to Purdue after 11 years at GM. She received her B.S. from GMI Engineering & Management Institute and her M.S. from RPI. She has been very active in the ASEE student chapter at Purdue University most recently serving as the chapter president.

ROBERT KIESOW is a Ph.D. candidate in Mechanical Engineering at Purdue University. His research is focused on experimental investigations of a shear-driven 3-D turbulent boundary layers. He received his B.S. from Virginia Tech and his M.S. from Purdue University. He has been very active in the ASEE student chapter at Purdue University most recently serving as the chapter newsletter editor.

DOUGLAS BOYD is an M.S. student in Mechanical Engineering at Purdue University. His research is the area of turbomachinery. He received his B.S. from Purdue University. He is a recipient of an NSF graduate fellowship. He has been very active in the ASEE student chapter at Purdue University most recently serving as the chapter's president-elect.

WILLIAM OAKES is an Assistant Professor in Freshman Engineering at Purdue University. He received his Ph.D. in Mechanical Engineering from Purdue while earning his B.S. and M.S. from Michigan State University. He has worked as a design engineer for GE Aircraft Engines for 5 years and is a P.E.. He has received the Apprentice Faculty Grant from the ERM division of ASEE and the ASME Graduate Teaching Fellowship.

JAMES JONES is an Associate Professor in the School of Mechanical Engineering at Purdue University. He has been the driving force behind the formation of ASEE student chapters and currently serves as the faculty advisor to the Purdue Student Chapter. He has been active in research of teaching methods, particularly in the area of the use of cooperative learning, as well as in the area of acoustics.