

Chapter 2

Staying the Course

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The student chapter of the American Chemical Society (ACS) at Morehead State University (MSU) has been recognized with awards from the ACS almost every year since 1995. The focus of the club changes from year to year depending on the areas the officers would like to emphasize. While tradition is essential to the long-term health of the club, variation and creativity are highly valued. The organization has been involved with a myriad of activities in the areas of outreach, service, fundraising, professional development, philanthropy, and fun (i.e., social activities). Activities over the years have included giving the president of the university a pie in the face to raise money and awareness for the American Cancer Society, cleaning local hiking areas, tutoring students in chemistry, conducting demonstrations for area elementary, middle, and high school students, holding raffles to raise money for national meeting trips, hosting speakers and alumni to talk about career paths, running 5K races to support Alzheimer's research, taking trips to area industries and seminars, and, of course, selling periodic table cupcakes during National Chemistry Week. This chapter, like all others, has its challenges but has managed to “stay the course” by promoting chemistry and doing its best to excite, inform, and engage those individuals interested in science.

Introduction

Morehead State University (MSU) is a public, regional university with an enrollment of about 10,000 students. It is located in the Daniel Boone National

Forest in rural eastern Kentucky. Morehead Normal School was originally founded in 1887 and became Morehead State University in 1966. The chemistry program is part of the Department of Biology and Chemistry and has approximately 60 students, with an average graduating class of four to seven majors each year. The vast majority of the chemistry majors are pursuing preprofessional studies for careers in health fields such as medicine, pharmacy, optometry, and dentistry. The chemistry program's faculty consists of five tenured/tenure-track faculty, one instructor, and one staff member (lab coordinator/instructor).

The earliest record of the Student Affiliates of the American Chemical Society (ACS) dates to 1969 as a Mu Sigma Chi chapter. This chapter required the completion of general chemistry. Another chemistry club, Beta Chi Gamma, which included math and physics, has also been referenced (1). Dr. Mike Adams, currently at Xavier of Louisiana, reenergized the chapter in the early 1990s and was able to put the chapter back on the path to success. He left Morehead State in 1998, and Dr. Zexia Barnes took over during 1998 and 1999. Dr. Mark Blankenbuehler took over in 2000 and is still chapter advisor. Dr. Brandon Van Ness has recently come on board as a co-advisor. The chapter has seen regular success since 1995.

ACS recognition since 1995 includes the Commendable Award in 1995, 2003, 2006, 2007, 2009, 2010, 2011, 2012, 2013, 2014, and 2015 and the Honorable Mention Award in 1996, 1997, 2001, 2004, 2005, 2008, and 2016. The Certificate of Achievement was awarded in 2002 and the Green Chemistry Award in 2013.

Success over Time

What Makes It Possible for a Student Chapter To Stay Active and Maintain the Effective and Appropriate Level of Activity?

Of course, every chapter is different, and various strategies may be employed to keep a chapter on track and moving forward. The following should be considered when deciding how best to help put the chapter on the right path.

Who Should Serve as the Faculty Advisor?

Consistent, energetic, and effective leadership is essential. Finding the correct person to serve as the faculty advisor makes all the difference.

The advisor must be familiar with university regulations regarding chapter functions, which includes rules for everything from fundraising, travel, and the safety of students and the public to finances, communication, and food usage. A student organization handbook should be available, but the first resource is always the faculty advisor. The advisor can provide the best guidance to help students determine what can and cannot be done and how best to accomplish their desired goals according to the regulations set forth by the university. Some organizations may try to operate under the saying "It's better to ask forgiveness than permission," but this is a slippery slope that should be avoided.

Patience is a virtue and the advisor must be well-versed in it. Chapter officers are still students, and as such, are still learning how to become leaders, and most do not possess these skills before taking on the mantle of peer leadership. Supportive coaching and instruction are necessary tools that the advisor must employ to develop each student officer as an independent, confident leader.

Just like any student in any class, there are times in which the student officers will let the chapter or advisor down. While these events are rare, there are two schools of thought for the faculty advisor to employ. The advisor can pick something up and get it done, or let the officers fall flat on their faces to prove a point. An advisor is supposed to be a mentor to the students and develop their leadership skills and foster an environment focused on responsibility. The old adage “Leaders lead from the front” is something that should be remembered by the faculty advisor.

Many variations exist on the way to produce effective chapter leadership, and the advisor must be willing and able to adapt. The advisors are not there to run the clubs and do everything themselves, although every now and again, it will feel that way. Guide the students and assist them whenever they need it. Prod them when needed and be ready with a swift kick in the pants for failures, and everything will work out for the best.

The advisor must have a real interest in seeing the chapter succeed and the students in the chapter grow and learn. Taking on this service activity requires long-term dedication. Energy and enthusiasm are required to get the most out of the students and pull off the kinds of activities that impact the department, campus, and community in positive ways. Often, great advisors were once ACS student chapter officers as well. Dr. Blankenbuehler served as the vice president and president of his undergraduate institution student chapter. The opportunity to serve in that capacity had a lasting impact on him. He learned many valuable lessons, but perhaps most important was how an engaged, enthusiastic, knowledgeable faculty advisor (Dr. Sally Hunnicutt) can make all the difference in a successful student chapter of the ACS.

Who Should Serve as Officers? What Should Be the Method of Elections?

This, of course, varies depending on a variety of factors. The way this has been conducted at MSU has not varied much over the years.

A formal election conducted with the ACS members has occurred only once since 2000. The MSU chapter has been able to fill all officer positions through a more informal process. Students interested in becoming officers discuss this with the current officers and the advisor. Only students who have been active members the previous year and student members of the ACS are eligible for a leadership position. The student must be involved in a majority of the club events to be considered active. Formal documents detailing the duties of each position in the chapter are available, and they are shared with each prospective officer candidate. Those students who are qualified and desire to serve as officers then gather in committee to discuss in which positions they want to serve. If, after the initial discussions, more than one person wishes to run for the same office, elections are

held. The norm is that the students agree to serve in different positions and all that is required is approval by acclamation. This can be an entirely new set of officers each year, which can cause some discontinuity. Every effort is made to encourage active freshman to serve as officers when they are sophomores, but usually, active sophomores serve when they are juniors. Having an entire slate of officers who are seniors may produce a very active year, but the next year is a huge challenge. There are no automatic officer tracks, such as vice president serving as president the next year, although the vice presidents typically become presidents the following year.

The chapter has experimented over the years with additional officer positions with varying amounts of success. Typically, the chapter has the four standard positions (president, vice president, secretary, and treasurer). Additional experimental officer positions have included public relations, historian, fundraising, community service, and co-vice presidents. These attempts were made to provide additional weight to the position to encourage those in these experimental positions to be more active. This initiative was ineffective and was abandoned. The chapter usually leaves the leadership of the areas that fall outside the typical duties of the four standard officer positions to that of committees, in which a student can act as chair.

How Can the Chapter Become Financially Stable and Maximize Its Impact for Chapter Members, the University, and the Local Community?

While obtaining random grants or having fundraisers for specific individual activities, events, or travel is admirable, the development of consistent funding sources, whether ongoing grants or dependable, regular fundraisers, is essential to the financial survival of the organization.

The primary fundraising for the MSU chapter is through the sales of chemistry laboratory manuals and laboratory aprons and goggles at the beginning of each semester. With approximately 600 total students enrolled in general and organic chemistry courses, this fundraiser serves as a solid foundation of regular funding. At the end of each semester, unwanted and used aprons and goggles are collected in each laboratory section from those who wish to donate them to the chapter. These used aprons and goggles are recycled and sold at a discount the next semester.

Other regular fundraising efforts include the selling of ACS exam study guides (2) and obtaining ACS travel grants (3). Typically, the chapter can sell about 60–75 ACS study guides each semester, which makes this a modest fundraiser but still regular income. Every year, the chapter applies for a \$300 travel grant from ACS for students to attend the spring national ACS meeting. Other fundraisers are more random and are held at the discretion of the officers and membership. Recently, a new fundraiser was attempted and determined to be beneficial for the chapter, which will lead to its use more often in the future. Local restaurants allow the chapter to collect a portion of the proceeds on a given day. This usually involves minimal work on the part of the chapter by contacting the restaurant and setting up the event with management. These have typically raised about \$150 per occurrence. Fundraisers such as raffles; bake sales; and t-shirts, jogger pants, and

graduation stoles sales have been conducted with varying success and generally raise from \$50–150 each.

Occasionally, funds from the Department of Biology and Chemistry, the Dean of the College of Science, or the Student Government Association are also obtained. These funds are specifically for travel for students presenting research.

Who Should Make Up the Membership of the Chapter?

Maintaining a critical mass of engaged members who are not officers is essential. No local dues are collected and chapter membership is not restricted by major, although most of the members are chemistry and biology/biomedical science majors. All students are welcome. Students are, of course, strongly encouraged to join ACS and are given pamphlets or information sheets that describe the ACS and its benefits at general meetings. Each year, the chapter typically raffles off four to six student memberships to ACS to improve the retention of student members. Typically, the MSU chapter of the ACS has 15–18 paid ACS members.

Over the years, various efforts and strategies have been employed that focus on improving the recruitment of new freshman members. The chapter participates in university organization fairs during orientation or the first week of classes in the fall. Chapter members visit the general chemistry courses early each semester to put the chapter on new students' radar. Regular chapter meetings are held every two weeks and have had a positive impact on overall member retention. The chapter meetings in which free food is provided are always the best-attended meetings.

Specific efforts that encourage students to become members from the earliest possible opportunity lead to a more stable membership composition and enhance leadership transitions. Although these efforts have not yielded an increase in membership over the years, they have been effective in keeping the membership stable. It has been observed that membership tends to dip in years when some of these activities are not done.

Year-to-Year Activity

Each year brings a new group of officers and a new set of ideas for activities. The officers and members are free to engage in activities similar to those conducted in the past but are not required to do so. Students are more likely to “buy in” and be enthusiastic about activities they have an interest in rather than just being told to do the same activities every year. Many of the activities from the previous year are scheduled each year because the students enjoy them, but the point is made that the yearly activities are not scheduled for the members in advance.

Service to the Community, University, Local Section, and Department

Many activities focus on engaging the community at all age levels and occur at varying times throughout the year, including during National Chemistry Week (4).

For many years, efforts were made to conduct demonstrations or laboratory activities in local K–12 schools throughout eastern Kentucky. The focus of the activity changed depending on the grade level. The term “magic show” was used for younger students, whereas more-detailed scientific activities were mixed in when recruiting at the high school level. In more recent years, greater limitations have been imposed by local school districts on the materials that the chapter members could bring into the schools. Although there are many demonstrations and activities that use only household chemicals and do not make any loud noises or create interesting odors, the focus had been on exposing the students to things they had not experienced or would have difficulty obtaining the supplies to do themselves. Recently, the chapter members have focused on bringing the K–12 students to MSU to overcome these obstacles in the local school districts. This shift enables chapter members and faculty to conduct demonstration activities without the stringent limitations on chemicals and equipment set forth in the local school districts and allows the chapter members a longer time period for engagement with these students. Elementary students often spend the day at MSU and conduct activities in physics, math, biology, and chemistry, resulting in a much more immersive experience than a single visit to their K–12 classrooms by chapter members. Students in the Rowan County Gifted Program were able to perform a limonene extraction from orange peels using supercritical CO₂ at MSU—an experiment that would have been impossible to perform at their school. High school students can be engaged in more-advanced experiments, such as using gas chromatography to separate a mixture of alcohols and infrared spectrometry to determine the differences between the functional groups of cyclohexane, cyclohexanol, and cyclohexanone. Informative sessions on careers in chemistry also can be conducted.

Recognizing the needs of current MSU students has been a major focus of the chapter. Advanced students who have successfully completed chemistry courses are recruited each year to be tutors. Students apply to be tutors and a faculty member advises the tutor on some things to do and not to do during tutoring. Many students have extreme difficulty in chemistry courses and the chapter tutors provide a valuable service by tutoring those students for free. Typically, chapter members provide more than 400 hours of free tutoring per semester. Tutors are provided for all introductory chemistry courses and organic chemistry including survey courses for nonmajors. Occasionally tutors for advanced physical, inorganic, and analytical chemistry can be provided.

The chapter has also found ways to financially support the university and community. The regularly conducted fundraising permits the chapter to fund the Richard Hunt Memorial Scholarship and purchase chemistry equipment as needed. The scholarship, solely funded by the chapter, provides up to \$400 per semester for a qualified chemistry major to use on textbooks. Donations are also made to a variety of local and national organizations depending on member preference and

fundraising success. Recent cash donations to local organizations have included the Rowan County Soup Kitchen (5), The People's Clinic (6), and the Blessing Hands organization (7). Blessing Hands supports educational outreach efforts in China. The chapter was able to sponsor a Chinese student interested in science and also provided age appropriate science books to a Chinese elementary school library. National organizations, such as the American Cancer Society and the Alzheimer's Association, have also been supported.

Because MSU is located in the Daniel Boone National Forest, the chapter regularly engages in efforts to keep the area clean. Each year, the chapter members perform organized clean-up activities that remove debris from popular hiking areas, which creates greater awareness for environmental stewardship. These activities are often conducted during Earth Week (8). The activities provide opportunities to collaborate with other organizations at MSU. Most of the club members are also members of other related clubs in biology, physics, and geology. Those members always seek out opportunities to work together on appropriate projects.

What Is a Chapter without Some Fun?

Activities reserved for members only are important to building community in the chapter and enhancing retention and recruitment efforts. Each semester, picnics are held at either a local shelter or at Cave Run Lake. These picnics provide a chance to eat, talk about future plans, or take in a game of volleyball, basketball, bocce ball, or frisbee golf. Potluck events, movie nights, elemental bingo, white elephant gift exchanges, intramural volleyball, soccer, and basketball, or forming a team to run in a local 5K race are all great ways to have fun.

Professional Development

Efforts to enlighten chapter members regarding career opportunities and also build skills that will be beneficial beyond the student's time in higher education are important.

One event that chapter members really enjoy is alumni night. MSU graduates are invited back to talk about their experiences in their professions. Individual and panel discussions are typical. Most of the returning alumni are in professional schools and provide valuable insight into the application, interview, and acceptance process. A variety of alumni are always invited to ensure students have someone in their career path to speak with.

Chapter members also invite local scientists to present their research. This provides an opportunity for members to invite speakers with areas of research of interest to them. Opportunities are also made for students to talk with speakers about their research, graduate opportunities, and career opportunities.

Efforts are made to attend ACS Lexington local section meetings (9) as well as the national ACS meeting to provide opportunities to learn more about careers in chemistry and to network. However, participation in local section activities are rare due to the 75-minute drive to Lexington and the fact that those events are

generally held during the week at 6 p.m. Faculty and students are not done with labs until after 5 p.m. most days. Still, the occasional carpool trip is made.

Students who conduct research at MSU present a research poster as well as a successful chapter poster at the national ACS meeting every spring. Depending on interest and financing, chapter officers and other chapter members make the trip as well. Financing the trip, which can be a substantial investment, is a challenge. Hotel costs are covered by the regular fundraising efforts. Students going on the trip conduct additional focused fundraisers. Departmental support for registration fees is also typical for those presenting research. Additional funds are occasionally obtained from other campus sources, like the Office of Research and Sponsored Programs and the Student Government Association. Getting to the meeting, however, is usually the responsibility of the student. Almost every meeting requires a flight from Kentucky. Every effort to defray the costs for students is made to enable them to experience this important event. Shorter trips to local industries for tours are also popular and give members a first-hand look at the facilities and the opportunity to learn more about future career paths.

Conclusion

The ACS chapter at MSU has managed to create a culture of success over the past 20-plus years. The road has never been easy, but it has been rewarding for the faculty and students. While faculty advisors are an important resource, ultimately, the students have made it happen. Their work ethic and enthusiasm for science are to be commended.

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