The 2007/08 Academic Year is fading away and a new group of students is getting ready to lead our Chapter to National excellence. The May commencement ceremony will honor some of the current officers and will open the door for a fresh leadership of our Chapter. I am happy to report that our Chapter is financially strong and has had a fruitful year.

We have not been in touch with you for more than a year. Many things have happened since our last newsletter. Our Chapter hosted the Regional Conference of student chapters in Spring 2007. I believe we all had a wonderful time. The organization of the conference was superb, even the weather behaved! I would like to personally thank Susan Simmons for being our keynote speaker, Dr. Kim Henthorn and Dr. Yangchuan Xing for judging the paper competition, and everyone who donated their time to judge the Chem-E-Car competition. The Chemical and Biological Engineering Department hired Prof. KB Lee who has been a refreshing addition to our Faculty. Last June, the Faculty was instructed to consider a potential merging with the Chemistry Department.

After careful deliberations and with an active participation of several students and some alumni, we decided that we would like to continue being a separate Chemical Engineering Department. Our position was accepted by the Administration. 2007 ended with our participation in the National Conference in Salt Lake City. The Chem-E-Car finished 13th for the second year in a row. I am not a superstitious man but sometimes I wonder....

The current semester has been eventful too. The Chapter is going through some major changes, including the re-structuring of its officers’ positions to better serve the rest of the student body. In a time when assessment has become a key word, the Chapter has started discussions to redefine its mission to be able to continue attracting the brightest of UMR (I am sorry, but I am too old to change names) students into our Department.

The Department itself is going through changes. Our current Chair, Prof. Judy Raper, will return to her beloved Australia after July 1st. Thus, we have started a search for a new Chair to replace her. We are looking for a natural leader who will increase the prestige of our Department, and thus, the prestige of the AIChE student chapter.

We anticipate a Fall semester with plenty of exciting events. The officers of the Chapter and the Chem-E-Car team will go to Philadelphia, representing us in the centennial anniversary of our professional organization. We would like to send as many students as we can to the National Meeting and for that we need your help.

I would like to express my gratitude to those of you who have financially helped the Chapter and to those that have made room in their always busy schedule to come to Rolla to talk to our students. I would like to encourage those of you who have not come to Rolla recently to make an effort and visit with us. The interaction of our students with established professionals is critical for their professional development. I look forward to continuing my interaction with student leaders this coming Fall and to seeing you when you stop by UMR.
The Chem-E-Car team has made some major changes to the car and its design. In the previous years, the car has been powered by a lead-acid battery, stopped by cutting the circuit by dissolving a magnesium strip in hydrochloric acid, and has always run in an arc instead of a straight line. This year most of the car has been re-vamped and remodeled.

Just as a refresher, the Chem-E-Car competition occurs twice per year – once at the AIChE Regional Conference and once at the AIChE National Conference. The basis of the competition is to design an RC-sized car that starts and stops with a chemical reaction without human interaction. The car must travel SAFELY to a variable distance with variable additional weight within two minutes. The distance and the additional weight are announced one hour before the competition begins, and the teams must decide what amount or concentration of reactants should be used to get as close to that distance as possible.

Missouri S&T’s Chem-E-Car, the UMR Ghost, tried to find something new to triumph over the opposition at the latest competition. The team searched for a new way to stop the car – a way not seen in recent years. The new idea was to produce a gas and displace water with it. The gas displaces water into a separate section of the car. A bobber in the water container rises, blocking the circuit to the small electric motor of the car and stops it. The team tried several acid and carbonate reactions to produce CO₂. The final decision was to use phosphoric acid and calcium carbonate.

The team ended up having custom glassware blown and made a complex circuit for the car. Also, the car has a nice adjustable piece mounted to the front axels so it can go straight. The team would like to thank Mr. Mike Myers for blowing the glassware and Mr. Dean Lenz for making the axle supports for the car. The team was so proud of their new baby that they named it in remembrance of UMR. The clear glassware and white sheets of PVC gave them the ‘ghost’ idea.

On March 28, 2008, the UMR Ghost competed in the AIChE Midwest Regionals Competition in Lincoln, Nebraska and won first place! Since the top three schools from every regional competition advance and compete at the national competition, the AIChE Chem-E-Car will be competing in Philadelphia, Pennsylvania in the fall.
The conference began with the Chem-E-Car Competition. Our team competed against many other teams from across the Midwest and won first place. The next day of the conference started with professional presentations, followed by the Paper Competition. Missouri S&T biochemical engineering student Andrea Cascio competed with her paper entitled, “The Effect of Glycosylation on the Stability of Transgenic Antibodies.” The highlight of the last night was a banquet featuring keynote speaker Dr. William H. Velander and his presentation entitled, “Cloning and Stem Cells and How that Might Affect your Life.” Following the banquet and concluding the conference, the attendees were entertained by the magician and comedian, Chris Linn.

This conference was a very rewarding experience for all who were able to attend. Not only did it allow our CBE Department the chance to spotlight its students and all of their hard work, it also gave those students opportunities to learn more about their fields of study by interacting with their peers and speaking with professional engineers. MS&T came home from the conference with a trophy, but more importantly, it came back with a group of students who will be able to use this experience to become better engineers for the future.

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Changes to the AIChE Student Chapter

Brent Patrick

The UMR American Institute of Chemical Engineers Student Chapter no longer exists. We are now the Missouri University of Science & Technology AIChE Student Chapter! Since we have a new name, we decided to change how our chapter operates by transforming the officers’ structure and function. By doing this, we hope to increase alumni involvement, increase student participation in chapter activities, and accelerate the growth of the chapter.

The upper officers’ core now consists of a president to preside at all meetings and to lead AIChE in new directions, an internal vice-president to run the committees, an external vice president to run all of the activities involving alumni and companies, a treasurer, and a secretary. The lower level officer core consists of an external activity coordinator (Student Council Representative), a national liaison coordinator to promote interactions between the Chapter and AIChE Nationals and local sections, a historian who updates the website and keeps the Chapter records, and a recruitment officer who oversees freshman registration and organizes Open House days at MS&T. These lower level positions are designed for freshmen and sophomores to get a start in the AIChE Chapter activities. These positions are geared to helping underclassmen make connections in industry.

A Corporate Mixer was added last semester to our regular fundraising activities. Fall 2007 Vice-President Stephanie Hurtado began the program as a new way to earn funds for the national and regional conferences. Representatives from three companies joined AIChE members for an evening of resume building, networking, and question and answer sessions. Companies donated $100 to the Chapter for the opportunity to interact with top-tier students. Students got the chance to learn what companies look for when hiring and ask candid questions about interviewing, work, and life after college. In all, the event proved to be a success and we hope to continue it in the future.

Finally, we have planned plant tours to both Anheuser-Busch and Conoco-Phillips for next Fall. We hope that these tours will continue with at least one per semester. If you or your company would be interested in participating in future events or speaking at an AIChE meeting, please feel free to contact us at aiche@mst.edu.
A Semester of Speakers, A Lifetime of Knowledge
Claire Lehman

Inviting chemical engineering alums from industry to speak at our general meetings is a long-standing tradition of the MS&T AIChE Chapter. Each semester, several former chemical engineering students make the trek back to Rolla to pass on their knowledge to our current students. So who were the people who took the time to share their wisdom this semester? Here is a look back at the speakers from Spring 2008.

On February 6th, Tova Becker from Mustang Engineering spoke about her work in the consulting industry. She gave a brief overview of her company and the opportunities available to chemical engineers at Mustang. The next meeting on February 20th brought alum Kendra King from Cargill. Kendra talked to students about working in a production plant, the casual attire she gets to wear everyday, and what Cargill can offer graduating chemical engineers.

The third meeting on March 6th was a joint meeting with the Society of Petroleum Engineers. Dr. Atique Malik from ConocoPhillips spoke about the past, present and future of the oil industry. He highlighted the different production methods in use and on the horizon. Finally, he took a look at the economics of getting a barrel of oil out of the ground and into the gas tank. Andy Jones from Ash Grove cement was the fourth speaker of the semester on March 19th. Andy introduced students to the cement manufacturing industry and the role chemical engineers play in making cement.

The April 9th meeting brought Saritha Sathyanarayanan from Black & Veatch. As a Ph.D. chemical engineering graduate of the former UMR, Saritha offered an insight into the jobs available for chemical engineers with graduate degrees. She also spoke about the many areas in which her company provides services.

Dr. KB Lee from the MS&T Chemical and Biological Engineering department rounded out the semester with his presentation on April 23rd. Dr. Lee introduced students to the exciting field of polymer research. He reviewed some of his many patents and talked about the new polymer products his lab makes.

The AIChE Chapter would like to thank all of the speakers who took the time to share their thoughts with us. Your dedication to the Chapter enriches student professional development and gives us the chance to ask candid questions about what we can expect in the future. Thank you!
This semester has been an exciting semester for the AIChE Student Chapter concerning its involvement in campus affairs. For the first time, we were able to procure direct student funding from Student Council. The process required to obtain student funding is quite long, and includes interviews, in-depth budget development, and several meetings worth of review by an independent funding board that reports to Student Council. After all of this is done, the funding must finally pass through Student Council with a majority vote, a meeting that usually includes long debates that last well into the night and early morning. After all of this scrutiny, the AIChE Chapter was finally awarded much needed student funds.

Another exciting development was the very first joint meeting between AIChE and The Society of Petroleum Engineers (SPE). A speaker addressed the two groups about oil recovery and processing, and the economic demands that have allowed technical innovation in both streams. Overall, the meeting was very beneficial for both groups. We hope this meeting was only the beginning of joint programs between the two organizations.

Twice a semester the students in the AIChE Chapter donate their afternoon to make the cruise down Interstate 44 more enjoyable. They spend a couple of hours picking up trash on the side of the interstate so that drivers have a nice scenic drive to their destination.

Highway clean-up is a program sponsored by the Missouri Department of Transportation (MODOT). Groups such as the American Institute of Chemical Engineers-MS&T Chapter, volunteer to clean-up a stretch of interstate or highway three times each year. In return, MODOT gives the group orange safety vests and trash bags. At the end of each clean-up the group leaves the bags on the side of the highway, calls MODOT and has MODOT pick up the trash the following day.

The first highway clean-up event of the spring semester was done in early April. Starting at the mile marker 180, the students slowly and carefully walked along the westbound side of the highway picking up the trash along the side of the road. They picked up anything from pieces of blown tires and clothes to the everyday restaurant cups that get thrown out the window when they are no longer in use. The job is obviously a dirty one, even with the poles that were made to spear the trash. Those poles couldn’t grab everything so the students often found themselves bending over to pick up the trash that eluded the spears causing a lot of sore and dirty bodies after coming in contact with so much trash.

The students finished their section of highway at mile marker 178. Students filled approximately twelve total trash bags, not counting large pieces of rubber that would not fit inside the bags, and left them for MODOT to pick up. As a reward for the students that came out to help clean I-44, the Chapter bought everyone Wendy’s afterward. Students will head back out to the highway two more times in the Fall 2008 semester to help MODOT and the environment.
Each semester AIChE is fortunate enough to receive generous donations from alumni and companies. These donations allow us to continue sending large groups of students to the Regional and National AIChE conferences, compete in the Chem-E-Car competition, go on plant trips and tours, and plan activities for all students in the Chemical and Biological Engineering Department. The AIChE student chapter would like to thank the following donors for giving to our organization this year:

- Missouri University of Science & Technology Mechanical Engineering Department
- Conoco-Phillips
- Phillip Ling
- Jason Brinker
- Eastman Chemical Company
- The Academy of Chemical Engineers

Thank you again and we look forward to seeing you the next time you are in Rolla!