

Department Head Update



Hello from Duluth!

As we watch the news and see the flooding in the Midwest we worry about many of our alumni that may have been personally affected. We hope all are staying high and dry as you ride out the storms and cresting rivers!

Chemical Engineering at UMD is thriving. Our enrollments are strong, and the quality of students continues our long tradition of excellence. Our graduates are entering the workforce well-prepared for the challenges and opportunities ahead!

Many of our students are taking advantage of the expertise of our visiting faculty in biomolecular engineering and energy con-

version systems. The UROP program has given several of our students opportunities to work closely with faculty on a variety of research projects ranging from environmental field work to computer modeling.

We appreciate the strong support we continue to receive from alumni that work with their companies to recruit students for summer internships, longer coops and full-time employment. Our students are grateful, and their experiences enrich our teaching when they return.

Many of you are aware that Avis Hedin retired in February, 2008 after 9 years of service to the department, and nearly 30 years at UMD.. She will be greatly missed.

We love to hear from you! Thank you for staying in touch!

SPECIAL POINTS OF INTEREST:

- ◆ Biomimetic Formulations Course
- ◆ Cargill Donates a Heat Exchanger
- ◆ Many students are doing Internships and Co-ops this year.
- ◆ Alumni updates
- ◆ Donor appreciation

Congratulations Fall 2007 - Spring 2008 Graduates

Fall 07—Muhammad Ahmed, Jeff Balts, Emily Clark, Lucas Froehlich, Jason O'Brien and Kyle Raney.

Spring 08-Michael Claussen, Brandon Ekholm, Carl Enzenauer, Rachel Gass, Anne Kalinowski, Simon Larson, Ngoc Nhuyen, Don Nyvold, Brain St. Peter, Shaili Sharma, Laura Stranford, Chebby Villarreal and Rebecca (Becky) Walechka.



Spring 2008 AIChE Banquet

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ChE 5895—Biomimetic Formulations-

This spring, a second chance was given to students to take a course from the visiting faculty member, Dr. John Brekke. The course this semester built off of some content of the previous course, but took it in a new direction. Students with both biology and chemical engineering backgrounds got to experience hands on laboratory work, as well as lectures from various UMD faculty members. The goal was to develop a three-dimensional biomimetic hydrogel capable of supporting the differentiation of pluripotent cells into chondrocytes (the type of cells found in cartilage tissue). Stu-

dents were given the opportunity to culture human mesenchymal stem cells and attempt to differentiate the cells into the desired phenotype. In addition, much knowledge was gained through lecture, as well as research leading to a publishable paper on the research material. As a student in the course, I found the subject very interesting as well as challenging, especially with the volume of information presented to us in such a short amount of time. I had never worked with cells before, and so that was also a very exciting part of the course. Although we did not complete the paper

during the semester, we will be continuing to write and gain information in the hopes that the paper will eventually be published.

“I HAD NEVER WORKED WITH CELLS BEFORE, AND SO THAT WAS ALSO A VERY EXCITING PART OF THE COURSE”.

AIChE Picnic— by Nathan Bosquez

AIChE held the usual fall and spring picnics during the 07-08 school year. Everyone got together at Chester Park for some grilling and fun along with the typical keg. Professor Lodge brewed the beer for the spring picnic. In addition to the picnics, AIChE held a highway cleanup in the fall and

spring. Everyone wore bright orange vests as garbage was picked up along highway 33. Afterwards the volunteers went out for some food and fun.



Spring 2008 - Senior Design Projects—Shaili Sharma

Sappi Paper Mill Project

Group (Elizabeth Kokesh, Simon Larson, Marcus Thompson and Becky Waleckhka) worked on a project provided by Sappi paper Mill in Cloquet, MN. The project involved designing a method to extract hemicellulose from wood chips and utilize the remaining sugars to produce ethanol. The system is designed to be integrated with the current wood chip digesters used in the existing paper process. The technology and techniques developed will be appli-

applicable to other pulp and paper companies in the region.

CHS Oilseed Project

Group (Rachel Gass, Ngoc Nguyem, Don Nyvold and Laura Stranford) worked on a project provided by CHS Oilseed in Mankato, MN. This project involved evaluating the current miscella oil evaporation process. The group was assigned to size a replacement forward feed double or triple effect evaporator system for the removal of hexane from the miscella feed. Their design utilizes the high energy content

of a hexane vapor stream coming from an upstream operation, making it possible to completely remove the live stream in the evaporation process.



Ecolab Project

Group (Carl Enzenauer, John Kallemeyn, Brian St Peter and Chebby Villarreal) worked on two projects provided by Ecolab in Eagan, MN. The first project involved designing an intermediate batch process for the production of Endure 300, an alcohol based hand sanitizer. This design will allow the company to improve their

process development when scaling up from the intermediate process to a full batch process. The second project involved incorporating a packaging design for their foam alcohol hand sanitizer, Quik-Care. The suggested designs and process equipment will be incorporated at their pilot plant.



Water Sustainability Project

Group (Michael Claussen, Brandon Ekholm, Anne Kalinowski and Shaili Sharma) worked on a project provided by Mr. Dave Stark. The project aimed at designing a water sustainable system for a residential house on the North Shore. The proposed system is designed to collect and treat

rainwater for drinking purposes. Greywater from the house will be collected and treated to be reused as water in dishwashing, laundry and toilets. This system is environmentally favorable and requires little or no energy usage.



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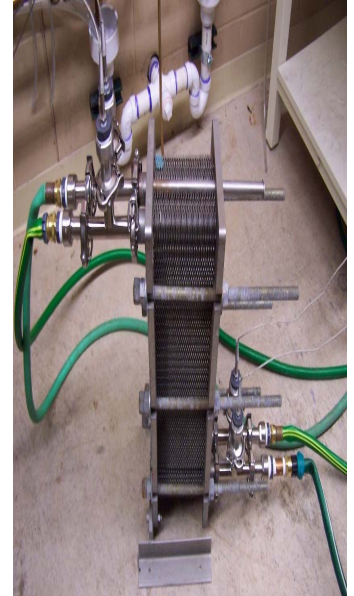
Cargill Donates Equipment to Support ChE Labs-by Andrew Klym

CHEMICAL
ENGINEERING
DEPARTMENT
RECEIVES A PLATE
& FRAME HEAT
EXCHANGER

The ChE department has received new equipment courtesy of the company of Cargill Ins. The equipment, given to us by local graduate, included three heat exchangers and a few pumps that will be used for various applications. The heat exchanger package included a plate and frame heat exchanger that will be used in one of the labs. It will be used for projects involving heat transfer and will hope to give students a more hands on approach to problems involving heat transfer.

There was also 2 shell and tube heat exchangers. Due to them

being industrial size they will be used for other applications. One may be modified into a falling film evaporator where the film will fall over tubes evaporating on touch. This application is used when there may be solids in the film which will cause them to fall as the film evaporates. Lastly, the pumps will be used for classroom demonstrations. People will get a more hands on feel of how a pump works. They can be taken apart and put back together right in the classroom. The equipment will serve as another way the faculty can help teach us chemical engineering and all the aspects of it.



ChE Student Stay Active—Laura Stranford

In spite of full course schedules, several of the chemical engineers continue to find the time to participate in UMD athletics or the UMD athletic bands as a break from the rigors of classes. This year, one ChE student participated on the UMD football team, which won 4 out of 10 games this past season. Also there was a ChE student that continues to be a dedicated

member of the women’s lacrosse team, which is in the top ten percent of teams in the country. As always, several runners in the department are members of the track and cross-country teams. A ChE headed up the men’s cross country team, which finished seventh in the conference, as captain and won the 3000 meter run in a recent meet.

A couple of the ChE students

also participated in the UMD pep band this year. The UMD pep band plays at all home football, basketball, volleyball, and hockey games, as well as various other community events, supporting the teams and entertaining the fans.

By Laura Stranford

AIChE Tours—Seth Urtel

This year AIChE went on three tours; Charter Films, Murphy Oil and Lake Superior Brewery. Everyone that went to the Charter Films said it was enjoyable and would recommend it again. The Murphy Oil tour was very informative and interesting. Once again, everyone enjoyed the Lake Superior Brewery tour as there were many free samples to try throughout the tour.



ChE Internships & Co-ops— by Justin Finke

This summer there are just fewer than 20 students from the Chemical Engineering department working internships and co-ops. Sappi, Cloquet is the largest employer of UMD students this summer. Justin Finke and Jonelle Echert are working as co-op students in the Environmental Department, Chris Edgumbe and Luke Schoenecker are serving as Tech Service interns. Another paper company, Verso Paper in Sartell, is employing Joe Falknor and Matt Anderson as co-ops during the summer and one semester. In keeping with the paper company

co-op theme, James Hulsebusch is finishing his co-op at Domtar in Nekoosa, WI. Carla Petrick and Emily Bell will round out the list of co-ops by working for Cargill for nine months each.

Liz Kokesh will be spending the summer with ECOLAB in Eagan. Andrew Klym is working for Donaldson Company, and Adam Clark is working for 3M, and Seth Urtl is at Aspen Research in Maple Wood. Jeremy Elbers is working for Hutchinson Technologies, a heavy employer of UMD ChE students. Sarah Schoeller is working for Schwan's in Marshall, MN. Fin-

ishing the list of interns, Mark Thompson is working up on the Range at Minntac for the summer.

Where do ChE students go after graduation?—by Fernando Ramirez

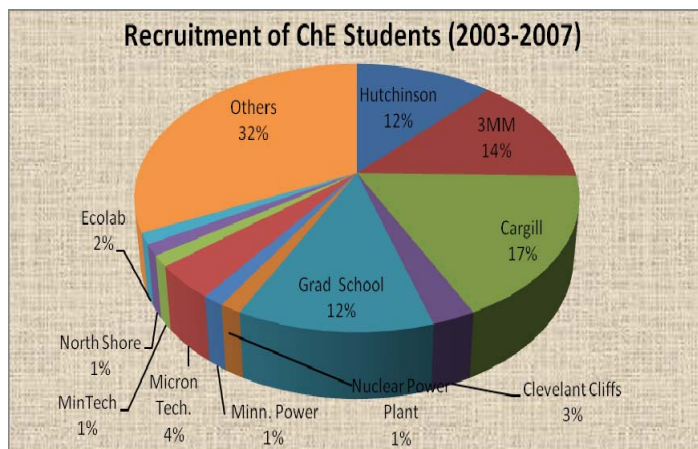
The majority of ChE students settle in the state of Minnesota. However, there are students among us that called themselves “winter haters”. These type of ChE students usually prefer to relocate in the south of the country or simply get out of the country to enjoy different cultures. Others just would like to

enjoy the endless life of the big cities of West and East Coast right beside the cold Pacific or the warm Atlantic.

According to the ChE Department’s information at UMD, companies such as Cargill, Hutchingson, and 3 MM are the most preferable workplaces by ChE students after graduation.

Others prefer to continue their education in graduate schools as chemical engineers.

“WHERE DO
CHEMICAL
ENGINEERING
STUDENTS GO
AFTER
GRADUATION?”



Alumni Update

“WORKING IN
SHANGHAI, CHINA,
MANAGING EHS
FOR 3M CHINA
MANUFACTURING
OPERATIONS”
- DON HESS

Dan Aagenes (Spring 2006) Staff Brewmaster, Anheuser-Busch, St. Louis, MO. Recently promoted to Staff Brewmaster in the World Headquarters.

Jeff Balts (Fall 2007) I accepted an offer at a company in Mora, MN called C.E. Rogers. It is a smaller company that makes evaporators and spray dryers, mostly for the dairy industry.

Kyle Bahls (Spring 1998) I transferred from Decatur, IL to Granite City, IL in Nov '07. New position with ADM as Plant Manager of a packaged oils plant. Quite a change from working with spray dryers producing soy protein isolate to packaging veg oil!

Whitney (Berry) Berg (Spring 1996) Solutions consultant, Oracle, Eden Prairie MN. The company I worked at for 7 years was acquired by Oracle in March '07. It has been a good transition and interesting going from 500 employees to 50,000. I am still a systems engineer/solutions consultant, which means I am involved in the technical side of the sale. I demo and help customers visualize the value of our software. We expect baby #2 in a couple weeks (Sept '07). Our 4 yr old boy, Gavin, anxiously awaits his baby brother.

Damian Bjerketvedt (Spring 2002) Technical Sales Rep, Kemira Chemicals, Superior WI. I've been traveling the Midwest selling performance chemicals and dyes to the paper industry. I married Heather in 2005 and settled down into a new home in Superior WI. We had our first baby (a girl) in July of 2007.

Errin Brungardt (Spring 1995) Working for my fourth employer and I haven't left my office. Things are busy and challenging as usual.

Michael Claussen (Spring 2008) Cargill

Jim Conway (Spring 1999) Project Engineer, ADM, Cedar Rapids IA. Got married and passed the P.E. exam in 2007.

Brandon Ekholm (Spring 2008) US Steel Minntac, Mt. Iron, Minnesota

Rachel Gass (Spring 2008) Praxair, Auburn, WA

Don Hess (Spring 1993) EHS Manager, 3M, Shanghai, China, Currently working in Shanghai, China managing EHS for 3M China manufacturing operations. My family and I moved here September, 2006. Should be here for 2-3 years. It has been a wonderful experience so far.....

Greg Howe (SSII 1995) St Manager, Global Regulatory Affairs—Chemistry, Manufacturing & Controls, Schering Plough. I'm still on the east coast living life and loving it. My son Brandon is almost two, I can't believe how fast the times flies by.

Anne Kalinowski (Spring 2008) GE, New York

Ben Kardlik (Spring 2006) Project Development engineer, Neuro-Ortho Div., PMT Corp, Chanhassen MN. As the project development engineer and lead R & D for the Neuro Ortho Division, I continue to assist PMT in the development, manufacture, and marketing of medical/surgical devices. I have daily interactions with neurosurgeons from around the country regarding custom projects and have even sat in on a craniotomy.

Zach Knase (Spring 2000) Took a position with Appleton Papers. Brenda and I relocated to Appleton, WI March 2007. We had our second daughter this fall and she's keeping us busy.

Greg Kramer (Spring 2005) Working for ME Global as a Process Engineer, Duluth, MN

Simon Larson (Spring 2008) Siemens

Kraig Melin (Spring 1991) Paper Production Manager, SAPPI Fine Paper, Cloquet MN. Both kids in college now...empty nest...and empty pockets! Been a fun and exciting year learning a new mill, new business and how to make the best coated paper. Deanna and I celebrated 20th anniversary this year! Hi to everyone.

Ngoc Nhuyen (Spring 2008)

Jeremy Nihart (Fall 2002) I now work for Arkema in King of Prussia PA, chemical Vapor deposition design engineer.

Donald Nyvold (Spring 2008) Hormel Foods

Katherine (Nelson) Olig (Fall 1995) I just celebrated my 8th year with Medtronic. I am still working within Cardiac Surgery and am currently leading a project for pediatric bypass devices.

Robert Quigley (Spring 2007) Just thought I would send you an update on how I am doing here. Our project is taking off and we are engineering a brand new plant in Isanti. Biodiesel magazine just came out with an article about our process: http://www.biodieselmagazine.com:80/article.jsp?article_id=2381&q=&page=all
I hope everyone is doing well up there and I hope all the faculty grilled the Design teams as badly as we got grilled..

Shaili Sharma (Spring 2008) Graduate School, Purdue University IN

Brian St. Peter (Spring 2008) Ecolab, Inc. Joliet, IL Production Quality Supervisor

Alumni Update continued

Jeff Rust (Spring 1998) Run Plant Engineer, Cargill Ind./Nature Works, Omaha NE. Changed jobs within Cargill in April '07. Production engineer for the fermentation area of the lactic acid plant. Approximately 400 tons of lactic acid are made into biodegradable poly-lactic acid each day. Raw material is dextrose from corn.

Laura Stranford (Spring 2008) Cargill

Chebbly Villarreal (Spring 2008) Cargill

Rebecca (Becky) Walechka (Spring 2008) Cargill Inc. Eddyville IA

THANK YOU

2007-2008

DONORS

Lindsey (Mohr) Wanderschild (Spring 2000) Iowa State University Power Plant, Plant Engineer, Ames IA. Got married in December 2007 to Paul. Have two stepsons, ages 10 & 12, and expecting our first child January 2009!

Jennifer (Marinoff) Wilson (Spring 1996) Nursing Student, Rogers MN. I am busy being a mom and nursing student. I graduate in May '08 with my RN (after the state boards). I hope to work in a hospital and possibly combine nursing and engineering. I want to further my education down the road. My kids are 7 & 5 and keep me very busy with all their sports and activities. We live in Rogers MN and love it.

Gifts to Chemical Engineering

We wish to acknowledge and thank these special friends
2007—2008 Donors to Chemical Engineering

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Please share any news or information about yourself, career, family, etc. that we could include in a department newsletter or the UMD Bridge.

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The mission of the Department of Chemical Engineering at the University of Minnesota Duluth is to offer students a high quality educational experience that includes engineering theory, application, experimentation, and design. The department is dedicated to achieving recognition for excellence in engineering education through continuously improving its program, to add to the body of knowledge through research, to provide an environment for professional development, and to serve the profession.

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