

UMD CHEMICAL ENGINEERING

JUNE 2010

Department Head Update



Greetings from the Department of Chemical Engineering at UMD. We hope this newsletter finds you well in these struggling economic times. We feel we are entering the decade of the Chemical Engineer. With our training and tools we are poised to make significant contributions towards solving the worlds energy and environmental problems. New and prospective students are recognizing our position and are flocking to the program.

We continue to attract some of the best and brightest students at UMD. This year we surpassed our record enrollment exceeding 200 majors for the first time. We are pleased to welcome Dr. Guy Sander, a UMD 2003 graduate to our faculty to help us with the increased enrollments. Guy strengthens our faculty expertise in the area of bioengineering.

We hosted a team of accreditation visitors in the fall of 2009 following an intense year of preparation. We are pleased to report that the department was accredited for another six years by ABET. We are grateful to our alumni for your assistance with our assessment process – from serving on our industrial advisory committee to completing surveys and hiring our students and graduates for internships, coops, and full-time positions. Many thanks also for providing industrial projects for our senior design students and donations of equipment that enhance our laboratories.

Our faculty continues to excel in teaching, service, and research, winning awards and presenting our findings at national and international meetings. You can read more about the faculty and student activities in this newsletter. We enjoy hearing from you and sharing your news with our alumni. We are proud of the accomplishments of our graduates and wish you continued success in your careers and aspirations.

SPECIAL POINTS OF INTEREST:

- ◆ Senior Design Projects include economic and environmental impact studies.
- ◆ Awards and Highlights
- ◆ Students participate in Internships and Co-ops
- ◆ Alumni—Where are they now?
- ◆ Master of Engineering (MEng) Degree
- ◆ Faculty receive grant and awards

Congratulations 2008/2009 and 2009/2010 Graduates

Fall 08—John Kallemeyn, Elizabeth Kokesh, Marcus Thompson.

Spring 09—Nathan Bosquez, Adam Bye, Adam Clark, Brady Clavel, Christopher Edgcumbe, Jeremy Elbers, Jason George, Jaimes Hulsebusch, Stephanie Jares, Andrew Klym, Andrew Onken, Fernando Ramirez, Luke Schoenecker.

Fall 09—Justin Finke, Muhammad Hamza, Jack Keeney, Stephanie Morrisette, Sarah Schoeller, Zain Sutarwala.

Spring 10—Matthew Anderson, Scott Beard, Emily Bell, Anthony Brunstad, Adam Campbell, Ryan Den Herder, Joseph Falknor, Elizabeth Franzwa, Brent Haekenkamp, Jacob Hemberger, Joshua Lauer, Justin McGurty, Carla Petrich, Zachary Richards, Adam Sersha, Keito Shimoyama, Beau Thurman, Seth Urtel, Andrew Vasilakes.

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“Do not go where the path may lead; go instead where there is no path and leave a trail”— Ralph Waldo Emerson

AIChE Update

It's been a great year at the UMD Chapter of AIChE. In the fall, we had a picnic at Chester Bowl, for which we were lucky to have unseasonably nice weather. We toured the Lake Superior Brewery facility and Head of the Brewery, Dale, gave us a great description of the process and how chemical engineering is utilized there. We also cleaned up our stretch of Highway 33 outside of Cloquet. Finally, we had our Winter Banquet at Grandma's Sports Gar-

den, which was a lot of fun. This spring we toured Charter Films in Superior, WI. Most of us had never seen this type of process and it was awesome to see that type of manufacturing. We were able to get a group of Chem E's to a Sunday afternoon game at Target Field. I'm sure everyone has seen the pictures, but the park is even more amazing in person. Most recently we cleaned up Highway 33 again. We are looking forward to the Spring Picnic at Chester Bowl

and the Spring Banquet at the Dry Dock. All in all, it's been an awesome year for the Chemical Engineer's here at UMD.

“MOST OF US HAD NEVER SEEN THIS TYPE OF PROCESS AND IT WAS AWESOME TO SEE THAT TYPE OF MANUFACTURING.”

AIChE Picnics



Spring 2010



Spring 2009

Senior Design Projects

Sappi Cloquet Project

Group (Jeff Shrack, Paul McHale, Kipp Laulainen, Tony Brunstad) worked on three processes that will optimize the disposal of non-process elements from the black liquor cycle. Leaching, crystallization, and ion exchange treatment of electrostatic precipitator (ESP) ash were analyzed against the current purge method of diluted ESP ash. The systems available were researched thoroughly and cost estimates were generated to understand further whether the current method, being the simplest method, is economically best.

Cargill Optimization Project

Group (Scott Beard, Beth Franzwa, John McComb, Carla Petrich) worked on investigating the opportunities for energy integration and optimization of the germ drying process in the wet corn mill at Cargill's Eddyville, Iowa site. The group proposed the installation of three heat exchangers to recover heat from the wet scrubbers associated with each of the three steam tube dryers. They also recommended the addition of three variable frequency drives, one for each of the germ mechanical dewatering presses in the wet mill. By imple-

menting these changes, we project the plant will see a savings of over \$1 million with a payback period of less than four months.

Fond Du Lac Project

Group (Joseph Chilala, Sam Whitney, Lee Schaefer, Zach Richards) The main objective for this project was to scale up the pilot Biomass Gasification process at the Fond Du Lac Reservation. The poster included the modified version of the block flow diagram, process flow diagram (PFD) and both existing and scaled-up economics.

“THE ECONOMIC ANALYSIS REVEALED A PROCESS THAT IS A POTENTIALLY PROFITABLE ALTERNATIVE FUEL OF THE FUTURE.”

Verso Paper Project

Group (Matt Anderson, Emily Bell, Joe Falknor, and Jake Hemberger) studied a paper machine's heat exchanger network at Verso Paper in Sartell, MN. The main goals of this project were to examine the existing system, reduce steam usage and investigate the effects of new exchangers installed in the system. The project re-

sulted in a method of energy integration to reduce steam usage.

Fueling the Future Project

Group (Adam Sersha, Beau Thurman, Rory Brecke, and Ryan Den Herder) simulated the synthesis of dimethyl ether (DME) from carbon monoxide and hydrogen (syngas) using a slurry bed reactor consisting of

a catalyst. The economic analysis revealed a process that is a potentially profitable alternative fuel of the future. DME is part of the long term green solution to the growing fossil fuel energy crisis.

Wastewater Treatment Project

Group (Adam Campbell, Andrew Vasilakes, Melissa Estrada, Michael Christenson) In southern Minnesota getting permits for water can be expensive and hard to get. One solution is using partially treated wastewater and treating it. Zero liquid discharge (ZLD) is an approach that treats and utilizes all in-

coming water. Our design cleans a pre-specified water source to within the limits of an ethanol plant's process and cooling tower water requirements.

Sand/Peat Filter Project

Group (Tony Bauer, Brent Haekenkamp, Josh Lauer, and Justin McGurty) Phosphorous removal is gaining attention in the field of wastewater treatment to prevent eutrophication

of bodies of water. Sand/peat filters have been used in the past to remove phosphorous but little is known about the removal mechanism or the removal efficiency. This study helps to characterize what materials act as adsorbents for the phosphorus including taconite tailings, a waste material from local mining operations in northern Minnesota.

Scholarship and Academic Achievement Awards

Ryan Den Herder received a scholarship award from the National Academy for Nuclear Training for the 2008-2009 school year.

Emily Bell received the National Othmer Award for outstanding student.

Ben Cook received the Myles Brand All-Academic Distinction Award. The honor is bestowed upon senior student-athletes who competed in the Northern Sun Intercollegiate Conference in March 2010, have a GPA of 3.75 or higher, and are on track to graduate after the season.

Evan Hunter received a Minnesota Power New Generation Scholarship for the 2010-2011 school year. The award is given to students with an excellent academic record.

ChE Student Highlights 2009/2010

“STUDYING
ABROAD AND
WORKING AS AN
INTERN ARE
REWARDING
OPPORTUNITIES”



My name is Sam Whitney. I am a fifth-year senior student-athlete here at UMD. Balancing chemical engineering with football can prove to be a tough task. However, I have a passion for each and was able to find a way to make it happen. On top of being a member of the National Championship Bulldog football team, I have also taken on some undergraduate research to keep a steady income throughout the summer.

I encourage everyone to get involved at the university with enriching activities outside your major. Not only will you have fun making friends and memories, but the increase in responsibility will improve your focus and self-discipline in your studies. You will learn some things that just can't be taught in the classroom.



Hello! My name is Evan Hunter and I am a fourth-year chemical engineering student here at UMD. I am fortunate to have studied abroad at Curtin University in Western Australia. I highly recommend studying abroad. Many students (especially those in engineering) fear that doing so will delay their graduation. However, the staff members here at UMD work to ensure that this does not happen. I enrolled in several chemical engineering and economics classes which will likely work towards my degree.

Although studying abroad can be expensive, scholarships and financial aid are available for those who apply. I had two different internships. I worked as a Lab Technician intern with Flint Hills Resources and as an Engineering intern for American Engineering Testing. I learned so much in each of these two internships. Professors tell the truth when they say that studying abroad and working as an intern are rewarding opportunities.

CbE Internships and Co-ops

UMD's Chemical Engineering department encourages students to pursue co-op opportunities when possible. These opportunities provide great learning experiences that complement classroom material. Several of UMD's upper-level chemical engineering students have pursued these opportunities.

Katie Ballandby worked with Cargill in Eddyville, IA from May to December of 2009. The Eddyville plant produces high fructose corn syrup, dextrose, citric acid, glucosamine, and ethanol. She worked with filtration and maintenance within the citric acid production process for several months. Katie helped with coordinating permits, updating piping diagrams, commissioning new valves, and troubleshooting. Within the citric acid processes, Katie helped with utilities management. A wastewater treatment process was being examined to shift the process from continuously withdrawing and discharging river water to a continuous

recycling process. She examined a reverse osmosis system for treating the water, and also examined membrane fouling.

Jake Hemberger worked with Verso Paper in Sartell, MN from September to December of 2009. He was responsible for optimizing the leaching process. Sartell switched pulp suppliers, and thus, needed to implement new chemicals into several different processes. Jake identified necessary process parameter changes to introduce the new chemicals. Jake also obtained biomass samples for process control for upper level engineers and chemists.

Matt Jahnke worked at Domtar in Rothschild, WI from June 2009 to January of 2010. His daily duties included chemical and physical analysis throughout several processes. Chemical analysis included conductance, fiber charge, Oxidation Reduction Potential, peroxide content, pH, and pulp concentration measurements, while physical analysis included fiber size and viscosity meas-

urement. Matt worked on a mass balance for the pulp feed process, and an energy balance for examining various seasonal temperature set points. He also identified the source of precipitation after starch addition to a chemical feed.

Keito Shimoyama worked at Cargill in Des Moines, IA from September to December of 2009. The plant processes soybeans by drying, crushing, and flaking soybeans, and extracting soybean oil using hexane. Keito worked with stripping systems that extracted hexane out of soybean oil and vapors. Her other projects included sizing condensers and a skim-pit. She worked with managing steam traps, and eliminating non-insulated steam lines. Safety duties included managing lockout and tag-out systems, working with programmers and project planners to improve the lockout and tag-out management software system. She worked with welding and pump construction, while also learning about many valves and pumps.

“CHEMICAL ANALYSIS INCLUDED CONDUCTANCE, FIBER CHARGE, OXIDATION REDUCTION POTENTIAL, PEROXIDE CONTENT, PH, AND PULP CONCENTRATION MEASUREMENTS”

Alumni Notes

Recent graduates have gone on to many different fields. Fernando Ramirez, Stephanie (Jares) Brever, Andrew Klym, and Jaimes Hulsebusch all took jobs with Cargill. Adam Clark now works for General Electric. Andrew Onken, Nate Bosquez, Jeremy Elbers, and Zain Abbas are now pursuing their Masters in Chemical Engineering degree at the University of North Dakota. Muhammad Hamza is attending the University of Illinois-Chicago. Chris Edgcombe and Justin Finke recently got hired full time for Sappi in Cloquet, MN. Luke Schoenecker now works for Charter Films in Superior, WI. Sarah Schoeller accepted a position with Schwan Food Company in Marshall, MN.

Engineering Day In the fall of 2009, the UMD engineering programs put on Engineering Day. Students from all the local Junior and Senior high schools were invited to come and see what engineering is all about. The members of OXE and other chemical engineers sat with students and parents to answer any questions. There was also a student panel that had one student from each program talk about their experiences and answer questions posed by faculty and students. Afterwards, the kids were led on tours of all the departments by current engineering students. The day was capped off with various lab demonstrations put on by students.

Alumni Update

Kyle Bahls (Spring 1998) I transferred back to Decatur, IL in November 2008. Moved in to ADM's Technical Services group as a member of the Corporate Packaging Engineering team. Involved in packaging operation improvements throughout all divisions of ADM.

Laura (Wallace) Breidall (Spring 2007) Manufacturing Engineer, American Medical Systems, Minnetonka MN. Married in June 2008 to Ben Breidall, 2007 ChE UMD graduate.

Emily Clark (Fall 2007) Working for Donaldson Company Inc. as a Project Engineer in Bloomington MN.

Brian Daniels (Fall 2003) Advanced Manufacturing Engineer, 3M, Hutchinson MN. Moved back to Minnesota after four years in Missouri. Just bought a house in Hutchinson, MN and are really looking forward to being closer to our family and friends.

Tanya (Mosher) Daniels (Fall 2002) Working for 3M as a Lean Engineer in Hutchinson, MN.

John Engesser (Spring 1998) Currently teaching chemistry at the U.S. Air Force Academy. Residing in Colorado Springs CO.

Dzung Farell (Spring 2003) Engineer, Flint Hills Resources LP, St Paul MN. Doing well in the Twin Cities still. Since I graduated, I got married, had a child last year, and bought a house. On top of those personal changes, I obtained my PE license.

Andrea (Austad) Goering (Spring 2000) Manufacturing Engineer, Boston Scientific, Maple Grove MN. Currently working in the laser top assembly department with cardiovascular catheters. Welcomed the arrival of our first child in February 2008.

Chad Haglin (Spring 1995) Facilities Engineer, Marathon Oil Company, Houston TX. We were blessed to welcome our new daughter Sarah Grace into the world on September 4, 2008.

Chris Hanson (Spring 2000) Plant Manager, Poet Biorefining, Preston MN. I have been making fuel ethanol for three years now, and I love it. Always more to learn. My wife talked me into getting my MBA from Bethel University. Great program. I am enjoying it.

Charles Hawkinson (Spring 1996) Manager, Research & Development, Seagate, Bloomington MN.

Donald Hess (Spring 1993) Working at 3M in St. Paul MN in Corporate Safety & Industrial Hygiene. Resides in Cottage Gove MN.

Jason Howland (Spring 2005) Project Manager, Pace Analytical Services, St. Paul MN; supporting 3M Environmental Science and Assessment.

Mason Hughes (Spring 2005) Operations Engineer, Flint Hills Resources Pine Bend Refinery, St. Paul MN.

Jeffrey D. Johnson (Spring 1989) Maintenance Supervisor, Mosaic Fertilizer, Riverview FL. Was married in September 2008 to a high school friend. I've been working in maintenance in the Phos Acid Department for about a year now. Playing bass and singing in a worship band.

Kari Johnson (Spring 2001) Process Lead Engineer, Micron Technology, Manassas VA. Process lead for dram and nand defect analysis group.

Shawn Kallevig (Spring 2006) Product Engineer, Charter Films, Superior WI. The Minnesota Power job did not work out last May. Micron laid off 40% of the workforce last November and I asked to be laid off so I could be near my kids and find employment here in Duluth. Drove through UMD recently. It has really changed in the three years I've been away. I'm a little biased about the new Civil Engineering building they are constructing. That should be ChE's!

Kelsey Kapsner (Spring 2005) Process Engineer, FMC, Green River WY. Worked for Cargill in Wichita KS for two years as a production engineer. I've had many opportunities to travel since graduation—Guatemala, Peru, northwestern United States, Netherlands, Germany, Switzerland, and France. My activities keep me busy: softball, hockey, rock climbing, kayaking, mountain biking, skiing, plus grad school classes.

Eric Karas (Fall 2001) Field Project Engineer for Crown Iron Works Company in Minneapolis MN.

Elizabeth Kokesh (Fall 2008) Ecolab, Joliet IL. Working as production supervisor as part of their supply chain rotational program.

Nate Kowalsky (Spring 2001) Working for Barr Engineering Company as a Senior Air Quality Engineer in Minneapolis MN.

Amy (Freeman) Krohn (Spring 1992) Product Engineering Specialist, 3M, St Paul MN. Continue to work at 3M on Nexcare bandages. It seems like there are tons of new raw material and equipment projects to lead! Jim is still at Ecolab and Alissa is doing great in 3rd grade.

“WORKING FOR
BARR ENGINEERING
COMPANY AS A
SENIOR AIR QUALITY
ENGINEER IN
MINNEAPOLIS MN”
- NATE KOWALSKY

Alumni Update continued

Nick Ladin (Spring 1992) Technical Advisor, Cargill Inc., Mississauga, Ontario, CANADA. Moved to Toronto last winter to work on an acquisition for Cargill. Quite a change from sunny southern California, but an interesting and new challenge for the whole family. An international assignment, yet still in North America.

Charles Lippert (Summer 2002) Working for Mille Lacs Band of Ojibwe as an Air Quality Technician in Onamia MN.

Senja Lopac (Spring 2005) Development Scientist, Beckman Coulter, Chaska MN. Finished my master's degree in chemical engineering from Iowa State in January 2008. I'm now employed as a scientist in Beckman Coulter's Immunoassay Division, working in new product/assay development.

Mark Lorenz (Spring 1997) Process Engineer at Mesabi Nugget, Aurora MN. The company is building the first large scale DRI plant in the United States.

Cory Medalen, PMP (Spring 1995) Working for Boston Scientific as a Senior Packaging Engineer in Maple Grove MN.

Leah (Niemand) Moe (Spring 2007) Working for POET Design and Construction as a Process Engineer in Sioux Falls, South Dakota.

Alan E. Nelson, Ph.D., P.Eng (Spring 1997) Technical Manager, Dow Chemical Company, Midland MI. Working at Dow Chemical in the Engineering and Process Sciences, Fluid Mechanics and Mixing.

Brian Ott, Ph.D. (Spring 1999) Defended my dissertation in June 2009.

Anupreet Parmar (Fall 2006) Received Masters degree. Currently working at Genencor in Palo Alto, California in its R&D facility as a recovery engineer developing purification processes for enzymes.

Trent Pemble (Spring 1998) Principle Chemical Engineer, Cargill Inc. Have transferred back to Minnesota to do research of all things! Family is doing great and we are happy to be paying taxes in the land of 10,000 lakes again.

Marsha Pernat (Spring 2005) Working at Brooks, Cameron & Huebsch, PLLC as an Attorney in Minneapolis.

Justin Pettinelli (Spring 2006) Working at 3M as an Environmental Engineer.

Kevin Podominick (Fall 2004) Currently working at the Department of Energy in Colorado.

Dan Rosenthal (Spring 1990) Passed away in October 2008. He worked for the Wisconsin DNR in Superior for many years, most recently in Madison. He was a vigorous enforcer of clean air standards. Dan was devoted to his sons, and to the cause of worker justice. He enjoyed camping, the outdoors, biking, and traveling.

Aaron Schifsky (Spring 2005) QHSE Engineer—Lifting & Handling Solutions, National Oilwell Varco / Hydralift AmClyde Inc., St. Paul MN.

Maggie (Fasteland) Skelton (Spring 2005) Chemical Engineer at Minnesota Power in Coleraine MN. Resides in Cohasset MN.

Brandon Smith (Summer 2008) Water Quality Engineer, Minnesota Pollution Control Agency, St. Paul, MN.

Mark Suchomel (Spring 2007) Automation Engineer, Cargill Inc., Blair NE. Transferred from the Eddyville, Iowa plant to the ever-growing plant in Blair, Nebraska. My wife Megan and I live in Omaha with our crazy dog Allie. Continued success to all in ChE!

Susalyne (Sowada) Truckenbrod (Spring 1998) Senior Product Engineer, Medtronic, Brooklyn Center MN. Over the past ten years I've moved from IBM (commercial) to General Dynamics (military) to Medtronic (medical) and all within Minnesota! I've been at Medtronic now for over two years and have had opportunities in many areas of device manufacturing from development of new medical devices to currently supporting capacitor manufacturing as a senior product engineer. There has been a lot of learning which is great. Had our first child in May 2008, Calen. He's been keeping us on our toes. If you're a 1998 graduate drop me a line, it would be good to hear from some of you crazy ChE's, monetbelle@hotmail.com

AUTOMATION
ENGINEER, CARGILL,
BLAIR, NEBRASKA.
TRANSFERRED FROM
THE EDDYVILLE,
IOWA PLANT
— MARK SUCHOMEL

Alumni Update continued

“FOUNDING
PARTNER OF
CAMPBELL NELSON
WHIPPS IN 2006, A
PATENT LAW FIRM IN
ST PAUL, MN”

- BRIAN WHIPPS

Chebby Villarreal (Spring 2008) Working for Cargill Inc. as a Production Supervisor in Gainesville GA.

Joel Weitgenant (Spring 2001) Maintenance Manager, CHS, Mankato MN.

Brian Whipps (Spring 1993) Attorney, Campbell Nelson Whipps LLC, St Paul MN. Founding partner of Campbell Nelson Whipps in 2006, a patent law firm in St Paul, Minnesota representing fortune 100 companies in the chemical, biotech, semiconductor, and medical device arts.

Anders Willberg (Spring 2001) Working for Rosemount Inc. as a Sales Representative in Centennial, CO.

Thomas Zak (Spring 2002) working as a Chemical/Research Engineer at Applied Colloids, Inc. in St Paul, Minnesota.

Industrial Advisory Committee

We are grateful to the following members of our Industrial Advisory Committee (IAC) for their service to our faculty and students. The IAC assists the Department in maintaining a healthy environment for teaching and research; in achieving good and relevant relationships with industry; in maintaining an understanding of the constraints and opportunities involved in accomplishing its Mission. The IAC typically meets once each year on the UMD campus and holds discussions with faculty and students. Please contact Dr. Richard Davis for more information if you are interested and available to serve on the department's industry advisory committee.

Mike Ausmus—Tate and Lyle
Tim Bauer—Cargill
Brian Ball—Medtronic, Inc.
Paul Brunfelt—Polymet
Errin Brungardt—NewPage Corporation
Jeff Hagen—3M
Anita Heinemann—Cargill
Jason Howland—Pace Analytical Services, Inc.
James Jarvi—U.S. Steel
Amy Jespersen—Verso Paper Company
Amy J. Krohn—3M
Senja Lopac—Beckman Coulter, Inc.
Sarah Mattila—U.S. Steel
Mike O'Brien—NewPage Corporation
Trent Pemble—Cargill
Josh Skelton—Allete/MN Power
Jack Swanson—Cleveland Cliffs
Jeff Udd—MN Pollution Control Agency

New Professional Master Of Engineering (MEng) Degree

A new Iron Range/UMD Graduate Engineering Education Program began fall 2009 with financial support from the Iron Range Higher Education Committee. Classes are held at UMD and Mesabi Range Community and Technical College in Virginia and taught by UMD faculty. Upper division/graduate engineering courses are designed to meet the specific needs of those engineers needing to maintain licensure, upgrade their engineering skills, or broaden their areas of employability. The Professional Master of Engineering emphasizes the practice of engineering. The program focuses on developing competencies in the areas of engineering design, problem solving, and practice beyond what can be achieved in earning a Bachelor of Science degree in a given engineering discipline. A MEng graduate student is expected to have a focus and degree designation in one of the UMD engineering disciplines.

Gifts to Chemical Engineering

We wish to acknowledge and thank these special friends
2008-2009 and 2009-2010 Donors to Chemical Engineering

Special Thanks to Samuel & Ardis Beard
Samuel & Ardis Beard Scholarship

Samuel and Ardis (Peterson) Beard grew up in northern Minnesota and met at UMD. Mr. Beard graduated from UMD with a BA degree (chemistry major, mathematics minor). Mrs. Beard studied Biology while a student at UMD. Mr. Beard then received a BS degree in Chemical Engineering from the University of Washington. He later received an MS degree in Management from MIT.

Mr. Beard's entire career was spent working in the nuclear industry, first as a chemical engineer and finally in various management positions. He retired as President, Chairman of the Board and Chief Executive Officer of Exxon Nuclear Company, Inc., (at that time an Exxon Corporation wholly owned affiliate).

Mr. and Mrs. Beard established this endowed scholarship with the hope that promising students will be motivated by this scholarship to seek a career in Chemical or Nuclear Engineering.

THANK YOU

2008-2009

2009-2010

DONORS

Alumni Donations

Kevin F. Ace
Matthew M. Archambeau
Brett A. Ballavance
Timothy J. Bauer
Samuel & Ardis Beard
Nicole M. Buss
Mark W. Carlstrom
Dr. Jamie A. Hestekin
Amy J. Krohn
Nick M. Ladin
Kristina J. Lilly
Jeffrey C. Lind
Jacqueline A. Mulder
Daniel J. Musser
Srikanto H. Paul
Trent H. Pemble

Brian J. Pogainis
Matthew L. & Leah M. Sanders
Patricia J. & Bruce E. Tait
Susan Truckenbrod
Chebby A. Villarreal
Joel J. Weitgenant
Karen L. White

Organizations

3M Foundation
Cargill, Inc.
Emerson Electric Co.
FMC Corporation
Hormel Foods Corp.
Medtronic Foundation
Verso Paper LLC

*Faculty News***Carol Horabik receives Grant for Collaboration with the St Louis River Alliance**

Carol Horabik, ChE instructor, teaches multiple sections of Introduction to Environmental Engineering, which attracts a wide range of student majors from across the campus. Carol has coordinated with the St. Louis River Alliance to provide student assistance in sample analysis. She received a mini-grant through the UMD Office of Civic Engagement to purchase lab equipment. Her current plans are to continue this cooperation and expand the types of analyses done.

The St. Louis River Alliance is a volunteer group that does stream sampling and monitoring of local streams feeding the St. Louis River and parts of Lake Superior. This activity supplements the activities of the Minnesota Pollution Control Agency. Students from across several disciplines benefit from real-world experiences and become fully engaged in the course knowing that their service learning is making a positive impact on the local efforts for environmental preservation. In a creative change of pace, Carol collaborated with Professor Bill Payne from the drama department in developing a multidisciplinary documentary on water use, reuse, and value as the next "oil" in society. The Introduction to Environmental Engineering class provided reports on water issues in northern Minnesota, including topics such as the introduction of exotic species from ship ballast water, storm water overflow, and mercury emissions affecting fish consumption.

Dr. Gregory Rutkowski left the department in January for an industrial position as Senior Engineer with Emergent BioSolutions where he will be applying his bioengineering expertise to the development of vaccines for anthrax. We appreciate his service to our department and wish him well in his new career.

Dr. Rother receives 2010 SCSE Young Teacher Award

Dr. Michael Rother was recognized for his outstanding contributions to teaching in the Swenson College of Science and Engineering with the 2010 Young Teacher Award. Following are excerpts from his letter of nomination. Dr. Rother joined our faculty in fall of 2004. Dr. Rother met and exceeded our goal of revitalizing our capstone design courses using modern pedagogy for teaching and learning. He began by soliciting partnerships with industry sponsors to provide students with real-world design problems. Our seniors were provided opportunities to engage with practicing engineers across the state and country to find solutions to problems that were mutually interesting and current in the industry. Students frequently comment that "real" problems are more practical, educational, and interesting than artificial problems from a textbook.

His skillful classroom teaching and enthusiasm for his subjects attracts students to his research program. Dr. Rother has averaged three undergraduate research assistants each year, building up to eight students working under his guidance this past year. Since we do not have a graduate program, students benefit from direct interaction with an expert in his field of fluid mechanics. Indeed, students regularly seek him out for opportunities to work in his research group.

Once, talking about his Peace Corps experience, Mike mentioned how meeting people with limited opportunities for learning has made him appreciate his access to education and his responsibility to use his education to serve others. Mike is deeply interested in student learning and dedicates himself to their development as professionals. One of our alums wrote, "Thanks Mike! You're awesome – a great addition to our faculty!" Mike's example of quality teaching and mentoring makes us all strive to be better. He is an asset to our college, and is well deserving of the SCSE Young Teacher award.

Dr. Rother Promoted to Associate Professor. Congratulations to Dr. Rother for his promotion to the rank of Associate Professor with Indefinite Tenure by the University of Minnesota Board of Regents.

Dr. Steven Sternberg receives 2009 Chancellor's Outstanding Faculty Advisor Award

Dr. Steven Sternberg has a long record of outstanding advisement activity for undergraduate students in chemical engineering, and has extended his role as advisor to serve other students in the college, including service as the academic advisor for students in Chemical Engineering and Environmental Science, faculty advisor for the student chapter of our discipline's professional society, the American Institute of Chemical Engineers, charter faculty advisor for the student chapter of the Minnesota Society of Professional Engineers, and faculty advisor for the Environmental Science club.

Steve is also active advising and mentoring students involved in undergraduate research experiences. He has accompanied several students to make presentations at the National Council for Undergraduate Research (NCUR) annual meetings. Steve published two refereed papers with his students in the past five years. Indirectly, Steve has supported student advisement by serving on the UMD Student Teaching Evaluation Committee to develop new teaching evaluation forms that were recently adopted. Steve Sternberg has a strong record of student-centered activity beyond the classroom and is a deserving recipient of the Outstanding Advisor award. Congratulations!

SCSE Academy of Science and Engineering Nominations

Please consider nominating your former outstanding UMD Chemical Engineering classmates for induction into the UMD Swenson College of Science and Engineering Academy. The Academy of Science and Engineering was established in 2002 to give public recognition to distinguished alumni and special friends of the Swenson College of Science and Engineering, who have achieved distinction through their participation, commitment, and leadership in their chosen profession. Send your letter of nomination to Dr. Richard Davis, and include the name, contact information, and brief description of the accomplishments of the nominee.

**SWENSON COLLEGE OF SCIENCE & ENGINEERING -
UNIVERSITY OF MINNESOTA DULUTH**

Chemical Engineering

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The Department of Chemical Engineering strives for nationally recognized excellence in engineering education and research by using modern, hands-on, and active learning experiences to prepare undergraduate students for professional success, and to hold paramount the safety, health and welfare of the public and protect the environment in performance of their professional duties.

The mission of the Department of Chemical Engineering is to produce chemical engineers with a strong foundation of technical, communication, teamwork, and problem-solving skills required for professional success, consistent with the following objectives.

- *Pursue careers where they apply their engineering and problem-solving skills*
- *Pursue advanced studies or other forms of continuing education, and*
- *Value their UMD chemical engineering education and endorse the program and its students.*

**We're on the web:
www.d.umn.edu/che**

ChE Website Resources (www.d.umn.edu/cbe)

- OUR MISSION
- CHE HOME PAGE
 - * HIGHLIGHTS
 - * IRON RANGE GRADUATE PROGRAM
 - * STUDENT SPOTLIGHT
- FACULTY AND STAFF
- ALUMNI RESOURCES
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