

Change of Chirality: New Chair of the Department of Chemical Engineering

The Chemical Engineering Department at Northeastern University welcomes its new Department Chair, Dr. Laura Lewis, who began on January 2, 2007. Dr. Lewis, a materials scientist, brings to Northeastern her experience from 13 years at the Department of Energy's Brookhaven National Laboratory as Group Leader, Magnetic Nanomaterials Associate, Nanoscience Department Chair and Deputy Director, Center for Functional Nanomaterials. She was attracted to Northeastern's Chemical Engineering Department because of its "exceedingly collegial" faculty who she says work well as a team and seem to truly care for one another. She also sees the students in the department as enthusiastic and forthright: "I can tell the students are engaged." She believes that the CHE faculty is talented and creative and has the potential to impact world challenges.



Her plans as new Department Chair of Chemical Engineering are to first observe and understand the current department from an objective viewpoint and then to ultimately apply its manifest talents. She plans on first increasing the department's national recognition with intent to increase its international interaction, reputation and visibility.

Among her greatest joys are mentoring junior professionals and helping students live up to their full potential. When not in the lab, she enjoys travel, cooking and Jackie Chan films. An ambitious forward-thinker, Dr. Lewis brings to Northeastern potential, determination, strategy and experience, as well as lots of confidence in her new home, "I can't think of any other city that has more scientific and technological potential than Boston." The Chemical Engineering Department and Boston warmly welcome Dr. Laura Lewis!

Newest Faculty, Dr. Lisa Podlaha



The department's newest faculty member is Dr. Elizabeth Podlaha who comes to us from Louisiana State University. Dr. Podlaha got her Ph.D. from Columbia University in 1992. She has been awarded an NSF CAREER award in 2000 as well as an Alumni Association Faculty Excellence Award in 2006 while at LSU.

Her research is in the area of electrochemical engineering. Understanding of electrochemical processes is important in the development of microelectronics, batteries and protective coatings. Dr. Podlaha will be featured in our next newsletter.

Free Radical: Remarks from the outgoing Department Chair, Dr. Al Sacco, Jr.

Hello, once again, fellow alumni and friends! Calendar year 2006 has been productive for the Department, and it has been my pleasure to serve the faculty in the role of Interim Department Head during this exciting time. There were many changes during 2006. First, Laura McGann (faculty secretary) and Steve DiCiaccio (chemical engineering machinist) moved on, and we redefined both Laura's and Steve's position to better match Department needs and desires. Although longer in coming than we would have liked, we have university permission to fill the new roles, and the Department is in the process of doing so. The faculty decided to get more involved with advising of our undergraduate students this academic year, and each faculty now has a set of advisees from across graduating classes. The entire faculty is involved, and we met both divisions on their first day of classes to help them define their programs and become integrated into the Department's Community of Scholars. The "general talk" is that both students and faculty have benefited from this new initiative and we look forward to its continued success. We hired two additional faculty during academic year 2006: Lisa Podlaha-Murphy as a tenured Associate Professor and Laura H. Lewis as the Cabot Professor and Department Head (see New Department Head). Unfortunately, Prof. Gilda Barabino, a long time Department member, has decided to move south to the Georgia Institute of Technology Department of Biomedical Engineering. Gilda will be leaving us some time this summer, and we all wish her the best in her new position. Fall 2006 brought the largest entering graduate class to Chemical Engineering since 1997 with 15 new graduate students. The number of total full time graduate students is 31, 19 of whom are doctoral candidates or doctoral students. Also in 2006, for the first time ever we graduated 3 PhD students in one calendar year!!!! With the generosity of many of you, we sent the untenured faculty to the annual AIChE meeting in San Francisco California in November, and held our annual Hospitality Suite at the meeting. A number of the NEU alumni attended and everyone had a great reunion. We hope next year for even more alumni. So those alums in the Salt Lake City, Utah area and those alums attending the Annual AIChE Meeting please come and renew acquaintances with the Department students and staff. Our students and faculty continue to "rock" as the students would say. We captured a 3rd place nationally in the outstanding research paper competition, an honorable



mention (2nd place nationally) in the AIChE National Design Competition, 6th place nationally in the Chem-E-Car competition, and presented the largest number of posters and papers (16 by faculty, graduate and undergraduate students) in Department history. I am especially proud to announce that my nomination for Richard Schoenfeld (BSCHE'71) for the Outstanding Engineering Alumni Award was accepted. Richard, a strong support of

the University and Department, will be recognized on February 14, 2007 for his outstanding contributions in the application of Chemical Engineering Principles to the production of proteins as pharmaceuticals in the biotechnology industry. Additionally, Bill DiPietro (see spotlight) has made another outstanding donation to support the research activities of DiPietro Professor Katherine S. Ziemer. Once again, the Department's goals are to graduate 50 Baccalaureate degrees per year, 10-12 Masters (mostly part time) and to have 5 PhDs conferred annually. During these large staffing and mission changes, the Department's vision continues to be true: to give the best chemical engineering education that is possible. So whether you were an undergraduate (like myself) or a graduate student in Chemical Engineering, you have much to be proud of in your alma mater. As I leave the headship, I thank-you all for supporting me and the Department through 2006.

Alumnus Spotlight, William O. DiPietro, E'42

William O. DiPietro graduated from Northeastern University's Chemical Engineering program in 1942. He is currently president of Tek Specialties, a company based in Wilmington, MA producing induction heating and melting equipment. He has founded and served as president of both Spectro-film Inc. and Vacuum Specialties. Mr. DiPietro is a very active supporter of the University, College and Department. He has established numerous scholarships including the William O. DiPietro Scholarship in 1967, the William O. DiPietro Engineering Legacy Scholarship in 2000 and the endowed DiPietro Engineering Scholarship in 2006. He has supported a number of junior faculty members in the Chemical Engineering Department by establishing the William O. DiPietro Professorship in 1988. Past professors to hold this professorship include Dr. Ronald Willey, Dr. Gilda Barabino, Dr Carolyn Lee-Parsons and, most recently, Dr. Kate Ziemer. Mr. DiPietro donated an additional \$100,000 in research equipment to support Professor Ziemer's nanomaterials research. Northeastern has 2 laboratories that bear his name, a Physics Research Laboratory in the Dana building (1975) and a laboratory in the Snell Engineering building (1984).



Mr. DiPietro feels that the confidence level he achieved with fundamental Chemical Engineering concepts at Northeastern was the most valuable thing he took away from his experience as a student. Among his CO-OP experiences at Northeastern was a stint at Spaulding Moss Co. making blueprint paper. He said that this experience convinced him to study harder, and ultimately made him a better student. He is always anxious to approach new challenges and attributes this attitude to his early training at Northeastern. Besides work, Mr. DiPietro has maintained an interest in concert music throughout his career and is particularly fond of Mozart and Beethoven. A self-described "workaholic" and "strange dude," Mr. DiPietro sincerely enjoys his work and has never considered retiring, despite numerous opportunities, and has no plans to stop any time soon. Students and faculty alike thank William DiPietro for his interest in, and support of, the University and Chemical Engineering.

Department Spotlights

Undergraduate student, Brian McMahon is one of the most active members of the Chemical Engineering undergraduate body. A senior, he has held leadership roles in both AIChE (president) and Chem-E-Car (co-captain). He has also been an active participant in numerous intramural sports leagues at Northeastern, including whiffleball and soccer. Brian has been the recipient of the Ralph A. Buonopane Award, an award given to a Junior every year since 2002 based on excellence in experiential learning as demonstrated in CO-OP and unit operations laboratory. He was honored in 2006 as the Chemical Engineering Department's Student of the Year by Boston's professional chapter of AIChE. Brian believes that the best part of NU's Chemical Engineering Department is its size: Large enough to have diverse research, but small enough "to get to know the professors on a personal level as well as not being overlooked in class." After graduation, Brian plans on continuing his education and attending graduate school.



Ph.D. Graduate Student Siricharn Jirapongphan, or **Sunny** as he is called by everyone, came to Northeastern in 2002 from Chulalongkorn University in Bangkok, Thailand. He was advised by Dr. Sacco and worked in the CAMMP lab until his graduation in December of 2006. His research deals with molecular modeling of chiral separations utilizing a modified microporous zeolite. In drug development, this research may help to obtain the desired forms of important pharmaceutical compounds (e.g., AIDS drugs). He has enjoyed his stay at Northeastern and believes the Chemical Engineering Department's greatest asset is its people. Sunny was very busy in 2006 with 3 professional presentations at ACS, AIChE and ZMPC conferences. He also published 1 paper and currently has 3 in review. "2006 was a golden year for me," says Sunny, attributing his success to Dr. Sacco's guidance, and Dr. Julo Warzywoda, a Senior Research Scientist at CAMMP. A truly hard-working, ambitious scientist, Sunny has no plans to slow down, "I need development every single day." Sunny is now working for Aspen Technology Inc. in Cambridge, MA.



Assistant Professor Rebecca Carrier received her Ph.D. from MIT in 2000, and after working at Pfizer, joined Northeastern in 2003. She is studying transport phenomena in drug delivery via development of theoretical and tissue-engineered cell culture models. For her tissue-engineered models, her group is attempting to re-create the micro-topology of the native intestinal basement membrane using microfabrication and chemical vapor deposition, and testing the influence of this topology on cultured intestinal epithelial cells. For computational model development, she is designing system-based models of the drug delivery environment in the form of kinetic equations and mass balances as well as molecular models of the mucus lining biological barriers. Prof. Carrier believes that Northeastern's Chemical Engineering Department's greatest attribute is its combination of classroom study and practical experience. "This emphasis on education as well as scholarship is very much in line with my professional goals." Prof. Carrier also loves outdoor sports and has even participated in a few triathlons.



2006 AIChE Annual Conference

Northeastern University was well represented at the 2006 American Institute of Chemical Engineers (AIChE) National Conference. The conference took place on November 12-17 in San Francisco, California. Northeastern's Chemical Engineering Department was as visible as ever, competing in numerous competitions, receiving awards, and presenting current research. For the third consecutive year, Northeastern's student chapter of AIChE received an outstanding chapter award. Dennis Callahan, a Junior undergraduate student, placed third in the National Student Paper Competition. The title of his project was "Characterization of parameters for self-calibration of a whole-cell bacterial biosensor."

This was the 4th time in 5 years that Northeastern's Chemical Engineering Department has had a student represent the Northeast Region in this national event. Also for the 4th time in 5 years, the



Stephanie Duncanson, Brian McMahon and Prof. Kate Ziemer



Dennis Callahan

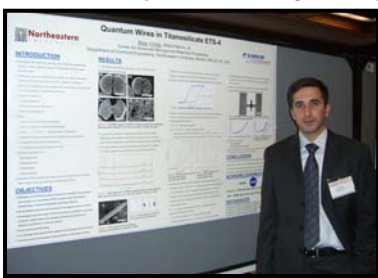
Chem-E-Car team placed in the top 10 nationally, finishing 6th in San Francisco out of 31 teams. Northeastern students Jon Leong, Gordon Freeman and Eddy Viveiros received an honorable mention in the National Design Competition, which means they wrote the second best design project in the

country!!!. Also, Whitney Jablonski represented Northeastern presenting her project on "Novel Iron Oxide- Molybdate Aerogels: Synthesis and Characterization of Structure with Intent to Define



Jon Leong, Eddy Viveiros, Gordon Freeman and Prof. Eric Thorgerson

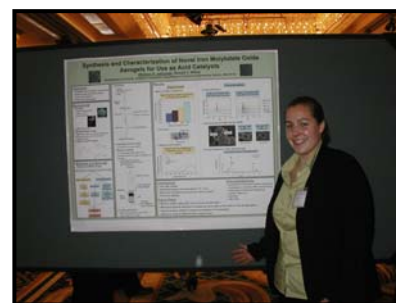
Industrial Purposes" in the Undergraduate Poster Competition. In the Graduate Poster Competition, Bilge Yilmaz received 3rd



Bilge Yilmaz

place nationally. Our ChemE department also had an impressive 9 graduate students present their research in San Francisco. These students were Zhaoxia Ji (Ivy), Siricharn Jirapongphan (Sunny), Ece Gamiz, Trevor Goodrich, Zhouhua Cai, Jimmy Minnicucci, Bilge Yilmaz, Christian Richter and Lin Wang.

Prof. Ziemer, Prof. Burkey, Prof. Carrier and Prof. Murthy also gave presentations at the Annual meeting. Overall, it was a great representation of our growing department, and we are proud of everyone who was a part of it.



Whitney Jablonski

Diffusivity and Mixing (Recent Events)



AIChE Lobsterfest



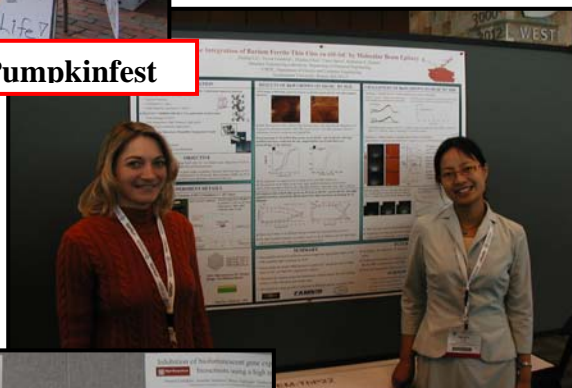
Alumnus Dick Jiberti and students at AIChE's Guppy Night



AIChE Pumpkinfest



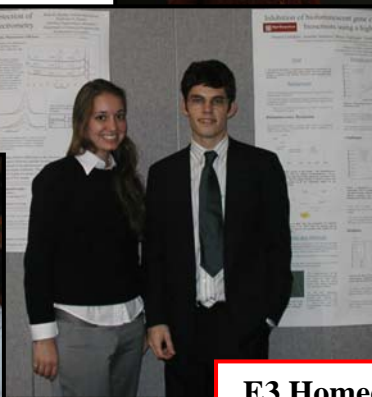
Undergraduate Reception at National Meeting



National AVS Meeting



Department Dinner at National Meeting



E3 Homecoming Expo

Special Awards



Dilek Tansoy: Honorable mention at the American Society of Mechanical Engineers Summer Bioengineering Conference 2006 Student Paper Competition.



Rebecca Harvey: National Donald F. Othmer Sophomore Excellence Award.

News from Alumni

Darcy LaClair: It has been a good time for Darcy LaClair. On April 12, 2006 she defended her dissertation and will graduate from the University of Notre Dame with her PhD in May 2006. She has been working at the Indiana University School of Medicine-South Bend since October in a research position which will now transition into a post doctoral appointment. The focus of the research is the metabolism of deoxyribonucleosides and several of their analogs used as reverse transcriptase inhibitors of chain terminators (NTRTs) in HAART therapy. In non-academic news, she will be marrying Eric Abarbanell this summer, on July 29, 2006 in Marlborough, NH, her childhood home. She can be contacted at dlaclair@nd.edu

Eric Ryszkiewicz, Class of 2002: I currently reside in St. Louis, MO. I recently defended a Masters thesis and will graduate in August from Washington University. I recently started a program at Saint Louis University and am working towards a Masters in Public Health, in the joint biostatistics/epidemiology concentration.

EDITOR'S APOLOGY: The Editor humbly apologizes for losing track of 2 other alumni personal messages. Keeping track of alumni responses will now be the responsibility of the new office support staff, and this error will not occur again. We are very sorry, and we hope that the individuals will resubmit using the form on the back of the newsletter!!

Remember this??



Student Activities (\hat{a}_{student})

American Institute of Chemical Engineers (AIChE)

Northeastern's Chapter of AIChE had a busy semester this Fall, led by Junior Katie Megley and faculty advisors Prof. Kate Ziemer and Prof. Dan Burkey. Notable events include a speaker on biotechnology from Tufts University, Professor Kyomgbum Lee, as well as a speaker on nanotechnology from Nantero, Inc. AIChE also organized a lecture event co-sponsored by multiple college of engineering student groups and attended by students throughout the college of engineering.



This event was a speaker on the global energy crisis and energy alternatives from the MIT Laboratory for Energy and the Environment (LFEE). Together, these lectures gave young students an eclectic view of new and important technologies in the field of chemical engineering. Also this semester, AIChE raised money for the Boston Children's Hospital by holding a Halloween pumpkinfest, complete with warm apple cider. The students also organized a paintball trip and a tour of the Sam Adams brewery. Earlier in the summer, the group had a successful Lobsterfest with attendees ranging from sophomore undergraduates to retired alumni. AIChE also hosted two UNO's fundraisers to support their year-end celebration recognizing student achievements throughout the semester and at this year's National Conference in San Francisco, CA. The Northeastern chapter of AIChE is also proud to announce that they will be hosting next year's Northeast Regional AIChE Conference in the Spring of 2007.

Chem-E-Car

Northeastern's Chem-E-Car team made an incredible comeback this year. Technical difficulties



prevented them from placing in the competition at the Regional Conference at RPI in April, however, after landing a spot on the bill at the National Conference in San Francisco, they placed an astonishing 6th place out of 31 teams. Persistence and dedication paid off for this year's team led by captains Brian McMahon and Tony DeLouise. This year's captains, Tony DeLouise and Patrick McMahon, are leading an even larger team as they get ready for the Regional Competition in March

Career Fair: Showcase your Company to the Region's Best & Brightest!

NU AIChE is hosting the Student AIChE Regional Meeting on Saturday, March 31. Would you like to provide your company the opportunity to recruit the best ChEs in New England? Join our Career Fair in Matthews Arena as part of the Regional meeting! Check out our web site for more information: <http://www.coe.neu.edu/Groups/aiche//regionals/index.html>. You are also welcome to come and join us! Other events include the Paper Competition and the ChemECar Competition.

Student Activities (cont.)

International Society of Pharmaceutical Engineering (ISPE)

NU-ISPE began the academic year in September with a well-attended Open House inviting new members and planning monthly events. From that point NU-ISPE constructed a platform of speakers and scheduled events for the 2006 – 2007 school year.

In October, several members and officers attended the largest to-date annual ISPE Product Show at the Foxboro Stadium, where students explored product designs with representatives from over 100 companies! In November, Alex Busch from Shire pharmaceuticals spoke from his fresh experience about a young graduate's role in pharmaceutical research and graduate school abroad. Jonathon Royce from Millipore also discussed his experience in R&D and showcased a few devices he helped develop. Not skipping a beat, NU-ISPE officers participated in an ISPE-Boston chapter sponsored "Toys for Tots" in December and the recent seminar on statistics in January led by industry leaders from Boston Scientific and GE Healthcare.

Near future events, include a speaker in February and a Genzyme Plant Tour. Look for further details in emails, COE web-calendar, and announcements!

CO-OP Corner



John Gabriel would like this opportunity to thank all of our Alumni Employers for their strong support of Northeastern University's Co-op Program. We are very fortunate to have a variety of Chemical Engineering fields including Biotechnology, Biopharmaceutical, Nanotechnology, Alternative Fuels as well as traditional Chemical Companies. We place 95 to 100% of our Chemical Engineering students for three 6 month work sessions of course related work. They come back to classes more energized than ever to study and up to 60% will get a job offer from one of their co-op employers. If you would like to get involved in Northeastern's Co-op

Program for Chemical Engineers, please contact me, John Gabriel Assistant Co-op Coordinator at 617-373-3460. email: j.gabriel@neu.edu.

Creeping Along



Alumnus **Jeffrey Pierce** (right), Class of 2003, is currently a graduate student attending Carnegie Mellon University. As an undergraduate, he enjoyed his experience on Northeastern's Chem-E-Car team so much that he has started a team CMU. He is pictured here with Northeastern's current Chem-E-Car advisors Prof. Ziemer and Prof. Burkey.

WE NEED YOUR HELP FOR ABET!!

The accrediting board for **your** degree visits us every 6 years – and Fall of 2007 is our visit. In preparation, we need your help to give us feedback on our program. If you have filled out an alumni survey and given one to your employer, **THANK YOU VERY MUCH!!** Unfortunately, we have only heard from 21 alumni and 6 employers – not statistically significant. Please visit the web site:

www.che.neu.edu

click “**Alumni**” in the upper button bar

Please either complete an on-line form, or download the PDF or Word Document and send it in to us at the address below:

K. Ziemer, ABET Coordinator
Northeastern University Department of Chemical Engineering
360 Huntington Avenue
342 Snell Engineering
Boston, MA 02115

Or email: kziemer@coe.neu.edu

If you are an Alumnus **and** an employer of alums, please fill out both survey forms.

In addition, we are specifically looking for feedback to the following questions, and would appreciate your thoughts:

Feedback from students, employers, and faculty alike has indicated the need for more mathematics in the undergraduate program. It seems as if the math courses, while covering the required material, do not create the context necessary for students to bring their higher math skills to the chemical engineering courses. Although we have been attempting to incorporate the math in the core courses to provide this context, both students and professors seem frustrated with the ineffectiveness of this approach. Therefore, we are working on a chemical engineering math course to be offered during the middler year. However, if we choose to add this course, something must be removed. It has been proposed to incorporate the concepts in the Process Control Course with Unit Operations Experiments and as part of Design I and II in order to make room for the Chemical Engineering Math course. So..... we would like to hear your thoughts on this proposal. You may answer these questions as part of the ABET survey, or simply send an email to kziemer@coe.neu.edu with the subject: ABET.

- 1) **Process Control: A whole course or part of Design and Unit Operations Laboratory?** What aspects of process control do our graduates use? Can the needed process control concepts be incorporated through hands on LabView applications in Unit Operations and process design applications in Design I and II? What would our curriculum be losing if we no longer required a 4 SH process control course, and made it an elective instead? What are the most important elements of process control that we need to ensure all of our graduates receive?
- 2) **Chemical Engineering Math Course: Worth giving something up to incorporate?** What aspects of mathematics/calculations do our graduates use? What understanding is needed to appreciate the meaning of results obtained by computer calculation or simulation programs?

We really appreciate your help and support!!

Just For Fun.....

There is one spelling mistake in this issue. Can you find it? If you think you have, send the answer to kziemer@coe.neu.edu. We will publish the name of the first to find it!

Ways to Get Involved.....

Alumni are always welcome to come and visit, and we have many opportunities for you to get more involved:

- AICHE Career Fair for New England Region ChE students, March 31, 2007
<http://www.coe.neu.edu/Groups/aiche//regionals/index.html>
- AICHE Alumni Panel: April 4th 11:45. Contact Matt Marino (marino.mat@neu.edu) if interested in participating
- ABET surveys – help with the continuous improvement of your program
<http://www.coe.neu.edu/Depts/CHE/alumni.html>



We Want to Hear From YOU!!

Get a new job? Trying to contact old classmates? Getting married? Earning a grad degree?

Would you like to post a personal in the next issue of the alumni newsletter? If so, please fill out the following form and return it to the address provided at the bottom!

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Name: _____

Contact e-mail: _____ Publish Do not publish

News/announcement:

.....
Feel free to send in an additional form if you need extra space!

Please return to:
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Northeastern University Department of Chemical Engineering
360 Huntington Avenue
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Next Issue:

Faculty Spotlight: Dr. Lisa Podlaha
Alumni Spotlight: Richard Schoenfeld, Class of 1971
Graduation Highlights for Class of 2007

Special Thanks to Dennis Callahan, Class of 2008, for putting together this Newsletter!!