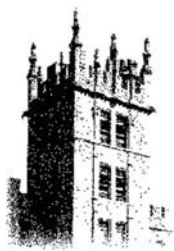


The Northern Chemist

Fall 2009

An annual newsletter for alumni and friends of the NIU Department of Chemistry and Biochemistry



NORTHERN
ILLINOIS
UNIVERSITY

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As NIU's Department of Chemistry and Biochemistry approaches the 2009-2010 academic year, we continue to be healthy and strong despite the national economic woes. In fact, in a number of critical areas, the program is performing like never before.

In the last newsletter, I reported on the April 2008 Inaugural Alumni Assembly. With 24 alumni from the classes of 1956 to 2007, the event was a rousing success. On Friday and Saturday, September 24th and 25th, we will hold our second such event, **Alumni Assembly 2009**. In addition to the Thursday evening reception, the assembly will host a bus tour of campus, a state of the department discussion, focus group meetings of which we would like all alumni to be a part, and great opportunities to reminisce. Particularly exciting this year will be the induction of the Department of Chemistry and Biochemistry's **Inaugural Distinguished Alumni Awardees**. Eight individuals who have had outstanding careers in industry, academia, and national chemistry organizations have been selected to receive these prestigious awards. More details about the event are included in this newsletter and updates may be found on our webpage, www.niu.edu/chembio/alumni/2009.

Within the last year, our staffing has seen modest changes with a few critical hires. The department welcomes new glassblower **Jason Gordon** to the department. With over 16 years of experience, Jason comes to us from Wilmad-Labglass of Connecticut. Jason and his wife, Jennifer, seem to be adjusting well to the northern Illinois environment. In keeping up with our department's technological development, our previous position of instrument and measurement technician was upgraded to that of an electronics engineering assistant. We are excited to have hired **Taesam Kim** for this position. Taesam has a doctorate in analytical chemistry from Seoul University and had been a research assistant in Professor **Chhiu-Tsu Lin's** laboratory since 2002. In recent years, we have been fortunate to hire alumni, Profs. **Frank Calvagna**, **Catherine Check**, and **Matthew Sheets**, to teach selected courses for us and help with the departmental teaching load. While **Douglas Klumpp** is on sabbatical in the fall semester of 2009, accomplished organic chemist Prof. **Timothy Hagen** will help with our organic chemistry teaching commitments. Professor Emeritus **Dennis Kevill** remains involved in the department with his continued production of publications and summer teaching of organic chemistry. Office Support Specialist **Patricia Guilfoyle** has transferred to the Department of Communications. We will miss her skills. As Pat's replacement, we welcome **Charmaine Hantsch**, a transfer from Building Services, to the department.

Congratulations go out to **Douglas Klumpp**, whose promotion to full professor became effective August 16 of this year. Additional kudos goes out to newly appointed Board of Trustees Professor **Narayan Hosmane**. Distinguished Research Professor Hosmane was among the inaugural group of three to receive this prestigious award. **Petr Vanýsek** assumed the position of director of graduate studies, taking the place of **Lee Sunderlin**. The department sincerely thanks Lee for his three years of dedicated service. Congratulations go to 2002 B.S. and 2003 M.S. alumna **Lanea Keller, M.D.**, who garnered the 2009 NIU Outstanding Young Alumni Award.

Since the June 2008 writing of the last newsletter, the faculty has experienced a plethora of extramural funding success. During that period, the department received awards exceeding \$1.4M. The following projects are among those for which funding was received: "Electron Transfer in Dynamic Protein Processes" (**Erman**); "Nano-, Magnetic Nano-, and Dendritic-Structured Carboranes and Metallocarboranes: Syntheses, Structures and Reactivities" (**Hosmane**); "Bladder Cancer Research" (**Hosmane**); "Low Outgassing Carborane-Siloxane Polymer Synthesis and BN Nanomesh Synthesis" (**Hosmane**); "Electrophiles in Synthetic Studies and Biologically Relevant Processes" (**Klumpp**); "Preparation of Fuels and Commodity Chemicals from Biorenewable Feedstock" (**Klumpp**); "X-Ray Scattering Studies of Interfaces Between Two Immiscible Electrolyte Solutions" (**Vanýsek**); and



Chair Jon Carnahan

Message from the Chair

Share your news with friends and classmates! Let us know where you are and what you are doing.

Please complete and return page 11 of this newsletter, visit the alumni & friends section of the webpage, www.niu.edu/chembio, to complete the online update form, or contact Shannon Gates at slgates@niu.edu or 815-753-1710.

Ling Bei (Ph.D., '04) is a senior chromatography specialist with EMD Chemicals, an affiliate of Merck KGaA in Darmstadt, Germany. Merck Darmstadt was founded in 1668 and has over 32,000 employees worldwide. Ling is responsible for the chromatography products which include the Chromolith, Zic-HILIC, and Purosphere columns for HPLC, UPLC, and nano LC/MS, and TCL plates in the United States and Canada.

Jeffrey S. Carver (M.S., '98) completed his Ed.D. in curriculum and instruction from Illinois State University in 2006. Last fall he accepted a position as assistant professor of science education in the Department of Curriculum and Instruction/Literacy Studies at West Virginia University. He primarily works with current and future science teachers through graduate course work and professional development opportunities. He says that his wife, Angela, and two children, Samantha and Madelyn, are adjusting well to their new surroundings, where the weather is a little nicer (not quite as cold in the winter and not quite as warm in the summer) and the views are beautiful (being located in the Appalachian Mountains). He's been working closely with several members of the WVU chemistry department on chemistry education initiatives such as chemical laboratory safety, particularly in the middle/high school level, and improving the teaching and learning of chemistry at the college level as well. He's also working with them on the development of a doctorate in chemical education research.

Xi Chen (M.S., '93) is a chemist at Genzyme Corporation and lives in Acton, Maine.

Tod Engelskirchen (B.S., '64) currently resides in St. Michaels, Md., where he is enjoying his retirement from Nalco Chemical Company, Naperville, Ill.

Daniel M. Haswell (B.S., '09) landed a teaching job at Glenbard West High School teaching chemistry, physical sciences, and forensic chemistry. He is also the proud new father of Morgan Grace Haswell.

Ronald R. Hennis (M.S., '69; Ph.D., '72) writes that it was nice to attend the inaugural event for the chemistry and biochemistry department. "Old memories flowed back when I stepped into the R&D lab that I spent in working for Charles Spangler." He said seeing Joe Vaughn and Morley Russell brought back many positive moments during his time at NIU. He is still a consultant for Fontarome Chemicals (St. Francis, Wis.), and enjoys the challenges given to him.

Kellen L. Hunter (B.S., '05; M.S., '07) is currently working for the Illinois State Police as a forensic scientist in the firearms section. He graduated from Professor Carnahan's research group in 2007.

Raymond A. Lohr, Jr. (B.S., '70; Ph.D., '77) is a chemist at Flexsys America, Akron, Ohio, and resides in Avon, Ohio, with his wife, Leela.

Alumni Assembly 2009

See page 9 for more information

In honor of the College of Liberal Arts and Sciences celebrating 50 years, we will host the Department of Chemistry and Biochemistry Alumni Assembly 2009 on **September 24-25**. Please join us!

We're Connected

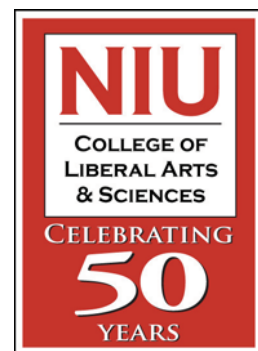
Join the **NIU Chemistry Alumni** Group on LinkedIn, www.linkedin.com. Sign-up on LinkedIn (it's free!) then "search groups" for NIU Chemistry Alumni. Any questions, contact Shannon Gates, slgates@niu.edu.

Heather M. Miller (Ph.D., '02) has been working for the Drug Enforcement Administration in their Chicago lab for over five and a half years and was promoted to senior forensic chemist last year. She and her husband, Mitch, reside in Joliet and are the proud parents of Colin Nicholas, born March 22, 2009.

Larry D. Schnorr (B.S., '69; M.S., '72) reported last fall that he was in his 40th year in education and at that time teaching chemistry and AP Calculus at Byron High School. Throughout his years of service, he was named the ACS Rock Valley Section High School Teacher of the Year (1985), received the Byron CUSD 226 Outstanding Contribution Award (2004), and the Byron PTA Outstanding High School Teacher Award (2005). He and his wife, Michele, have eight children spread across the country with grandchild number 13 on the way.

Kevin D. Senn (B.S., '09), began his classes at Ross University School of Veterinary medicine this summer at Basseterre, St. Kitts, in the West Indies. He will be down there for the next seven semesters and then will return stateside for a clinical year.

Christopher A. Simkus (M.S., '03) and his wife are the proud new parents of Ethan Christopher, born on April 8, 2009.



Outstanding Young Alumni Award

Lanea Marie Marcelle Keller, M.D.



B.S. Chemistry, 2002
B.S. Biological Sciences, 2002
M.S. Chemistry, 2003
Resident Physician, Department of Radiation Oncology, Fox Chase Cancer Center, Philadelphia

Dr. Lanea Marie Marcelle Keller has always had a passion for science. Her thrill for discovery led her to the chemistry and biology labs at Northern Illinois University and later to Rush Medical College in Chicago.

In 2005-2006 Dr. Keller took a fellowship position at the National Institutes of Health (NIH) as a Howard Hughes Medical Institute-National Institutes of Health Research Scholar, where she discovered the field of radiation oncology and developed a passion for the treatment of cancer patients and interest in cancer research. In 2008 Dr. Keller graduated from Rush Medical College in the top five percent of her class, and she is currently completing her intern year at Resurrection Medical Center in Chicago. In July of 2009 she will begin her

categorical training in radiation oncology at the Fox Chase Cancer Center in Philadelphia.

While at Northern Illinois, on a Faculty Funded academic scholarship, Dr. Keller was involved in the Sigma Kappa Sorority, Lambda Sigma National Honor Society, Mortar Board Senior Honor/Service Society, Chemistry Club, Pre-Professional Association, Peer Connections Program, Golden Key International Honour Society, Phi Kappa Phi National Honor Society, and Campus Activities Board. Dr. Keller continued to volunteer throughout medical school at the Rush Community Health Clinic and the Franciscan House of Mary and Joseph homeless shelters.

Dr. Keller is a member of the Radiological Society of North America and has been the recipient of numerous awards including the 2008 James G. Clark, M.D., and Ruth E. Schmidt, R.N., Endowment Fund for Medical Education Scholarship given to the Rush Medical College student who has demonstrated clinical and academic excellence, the Nathan M. Freer Prize, awarded to the outstanding senior Rush Medical College student, and the Isabella Coler Herb, M.D., Award for Outstanding Achievement, presented to women of Rush Medical College who graduate in the top 10 percent of their class and have demonstrated promise to impact the field of medicine.

Board of Trustees Professorship

Distinguished Research Professor Narayan S. Hosmane

Last fall **Narayan S. Hosmane** was named an inaugural recipient of the NIU Board of Trustees Professorship.

The NIU Board of Trustees established the professorships to recognize faculty who have achieved a consistent record of excellence in teaching, academic leadership and service and outreach.

Hosmane joined the NIU Department of Chemistry and Biochemistry in 1998 and was awarded the Presidential Research Professorship three years later. He has an extensive record of accomplishment, including publication of more than 245 peer-reviewed manuscripts, the presentation of 100 papers and 130 seminars worldwide, and more than \$5 million in research awards from funding agencies that include the American Chemical Society, the National Institutes of Health and the National Science Foundation.

In 2001, the Alexander von Humboldt Foundation of Bonn, Germany, presented Hosmane with the coveted Humboldt Research Award for senior scientists (with a stipend of about \$70,000). The award is presented to scientists worldwide as a tribute to their lifelong accomplishments. The Humboldt Foundation then last year extended a rare second invite to bring him back to Germany for further collaborations.



Hosmane has received other international awards including the BUSA Award for Distinguished Achievements in Boron Science; the Pandit Jawaharlal Nehru Distinguished Chair of Chemistry at the University of Hyderabad, India; and the Gauss Professorship of the Göttingen Academy of Sciences, Germany.

Students are involved in Hosmane's scholarship as well. He has directed the research of 41 post-doctoral fellows, eight Ph.D. students, 11 master's students, 52 undergraduates, and 12 high school students.

"The training of undergraduates, and preparing them for the real world, I think that is my real accomplishment," Hosmane said. "I believe the science of chemistry can only be taught in a research lab where fundamental questions on the frontiers of chemistry are probed. In my view, both researching and teaching are integral parts of the learning process."

NIU President John Peters announced the appointments during the 2008 State of the University Address. Each BOT Professorship is accompanied by a \$10,000 stipend, renewable annually during the five-year term.

Elizabeth R. Gaillard, associate professor with a joint appointment in the Department of Biological Sciences and adjunct professor in ophthalmology at Columbia University, New York, served as the chair of a joint American Society for Photobiology – Radiation Research Society symposium at the American Society for Therapeutic Radiology and Oncology meeting in Boston (September 2008). She presented at the European Association for Vision and Eye Research meeting in Portoroz, Slovenia (October 2008). She gave an invited lecture at the Center for Vision Science, University of Rochester, Rochester, NY (April 2009). Gaillard's research group also gave three well received presentations at the Association for Research in Vision and Ophthalmology Annual meeting, Fort Lauderdale, Fla. (May 2009).



Jason Gordon, glassblower, joined the department in January with over 16 years of scientific glassblowing experience in semiconductor, medical, analytical, and labware fields. He currently provides students and faculty with glassware made to their own specifications, and repairs all broken and damaged glass back to its original state. Gordon moved from Connecticut with his wife, Jennifer, who works as a veterinary technician and is enrolled in the NIU nursing program. He enjoys spending time with their dog, Bagger, and playing professional disc golf with the PDGA, locally and nationwide.

Narayan S. Hosmane, inaugural Board of Trustees professor and distinguished research professor, enjoyed a month long lecture tour of Germany this summer (May-June 2009). Among the six universities Hosmane visited were Universität Karlsruhe, Universität Leipzig, and Universität Muenster, with an additional stop in France at the Institute European de Chimie et Biologie of Université Bordeaux I. He is also the 2009 chair-elect of the local Rock-River section of the ACS.



Taesam Kim assumed a new role this year as electronics engineering assistant. He repairs and maintains the chemical instrumentation in the teaching and research labs; installs and implements new hardware and software; and trains faculty, staff, and students in the use of such hardware and software. With four patents and more than 30 publications, Kim is an excellent addition to the staff and has already begun a number of new

departmental initiatives. He resides in DeKalb with his wife, Sarah, and two children, Suzie (16) and Monica (14). In his free time, Kim enjoys playing the Janggu (a Korean drum).

Chhiu-Tsu (C.T.) Lin, distinguished teaching professor and distinguished research professor, is an inaugural recipient of the Technology Development Fund award. Offered by the Division of Research and Graduate Studies, the fund encourages and advances the development of novel applied technologies which have a near-term potential for licensing and commercialization. Lin has developed a unique thin film coating containing nanomaterials for use in heat management for electronic devices, especially nanoelectronic devices. Lin will use the award to continue his research and the development of the molecular fan in commercial parts and devices.

Victor V. Ryzhov, associate professor, spent the fall semester of 2008 in Australia, in the laboratory of Prof. Richard A. J. O'Hair, an internationally recognized gas-phase ion chemist. Ryzhov worked in the Australian Research Council Centre of Excellence for Free Radical Chemistry and Biotechnology housed in the new Bio21 Institute of Molecular Science and Biotechnology at the University of Melbourne to explore the novel chemistry of sulfur-based radical cations. This work has produced several presentations at national and international meetings. Two papers have been published with a couple still in preparation. This collaboration also resulted in an accepted proposal to NSF for a beam time at the state-of-the-art free-electron laser facility located in the Netherlands. Ryzhov's Ph.D. student, Sandra Osburn, will visit there in November to perform these exciting experiments.

Petr Vanýsek, professor and director of graduate studies, has been elected to serve as the regional representative of USA for the International Society for Electrochemistry for a two-year term, 2009-2011. In October, at the 214th Meeting of the Electrochemical Society, Vanýsek was presented a certificate of appreciation for serving as the secretary of the Electrochemistry Society for a four-year term, 2004-2008.

In Memoriam

Ed J. Kush, retired assistant store supervisor, passed away January 26, 2009.

Alfred A. Schilt, faculty emeritus, passed away January 9, 2009.

Passing with high marks...

During this past year, the department successfully underwent three different program reviews, including an eight-year internal program review, last done in 2000; a rigorous external review (in fact, we were the first department at NIU to undergo this kind of external review); and the re-accreditation review by the National Science Teachers Association of our chemistry teacher certification program.

Chemistry Students Will Benefit From Pair of NIH Grants

Two of our own researchers have each won National Institutes of Health grants of more than \$200,000 that will enable undergraduates and graduate students to work on basic research projects in chemistry and biochemistry.



Professor Douglas Klumpp won an Academic Research Enhancement Award of \$217,500 over three years. His research projects will involve as many as a dozen students at the undergraduate and graduate levels.

“We’ll be developing new chemistry and biochemistry that hopefully could be applied to the synthesis of pharmaceutical compounds,” Klumpp said. “Ultimately, we

hope to find more cost-effective ways to produce drugs or ways to make drugs that are more effective.

“This type of experience for our students is invaluable,” he added. “It certainly helps in a job search upon graduation and also when they’re applying for post-secondary education.”

Did you know?

Over the past eight years, the number of students participating in undergraduate research has almost tripled, from 26 to **73 researchers in 2008-2009.**



James Erman, former chemistry chair and now interim vice president for research and graduate studies, won an Academic Research Enhancement Award of \$211,200 over three years.

Erman will use the funding to work with between six and 12 undergraduates. They will investigate protein-protein interactions involved in carrying out electron transfer reactions within a cell.

Electron transfer is an important component in the basic energy metabolism of all living organisms, yet many aspects of these reactions are still incompletely understood.

“The importance of this research, and the funding from the National Institutes of Health to allow the research to go forward, is not only to increase our understanding of fundamental biological processes but also to train students in the art of research,” Erman said.

“The Department of Chemistry and Biochemistry really emphasizes undergraduate research, and two emphases within the program require students to do at least one full semester of research with a faculty member,” Erman said. “So these awards are particularly useful as we line up students for research projects that potentially will have real-world value.”

Staff Spotlight

In each issue of *The Northern Chemist*, we plan to “spotlight” at least one member of our staff. Although their work is often behind the scenes, it’s an integral part of the department.

In April, Laboratory Manager **Andy Small** celebrated 20 years of service at NIU. Recalling the year he began in the Department of Chemistry and Biochemistry, Small explains with amusement, “I first applied to NIU in 1988 to work on the grounds crew, but was told that I was not qualified. In 1989 I applied again to NIU for the chemistry lab manager position and was hired April 17, 1989.” As the lab manager, Small is responsible for the department’s accounting, purchasing, safety, work orders, and general business operations.



Contrary to his namesake, Small is considered a “big” man on campus. He has served on the NIU Operating Staff Council since 1990, including a two-year term as president in 1998 and 1999. He will continue to serve on the council through at least 2012, as he was re-elected for another three-year term. In recognition of his dedication and service to the university and staff council, Small received the 1997 NIU Outstanding Service Award.

Small’s involvement extends well beyond campus and throughout the community. He served as an alderman on the DeKalb City Council from 1999-2003, as a member of the District 428 School Board from 2003-2009 (president in 2005 and 2006), and he continues to serve as a member of Kishwaukee Kiwanis (president in 2008).

Outside of work at NIU and his involvement in the community, Small enjoys family time with his wife, Lisa, and their three children – Shelby (14), Lizzy (11), and James (8).

Spring 2009 Awards

ACS Introductory Chemistry Award	Katelyn Kozinski, Jessica Cox & Kristina Keyes
Freshman Chemistry Achievement Award	Tressa Sharma
Freshman Chemistry Achievement Awards Honorable Mention:	
Ashley Breeden	Margaret Hasan
Caitlyn Calder	Jaelyn Hudzinski
Patrick Galvin	Jamie Jeffers
Michael Haas	Scott Kessler
Sarah Moyer	Philip Persino
Brandon Poen	Joshua Van Dorin
Outstanding Sophomore Award.....	Todd Hasenstein & John Little
Outstanding Junior Award.....	Joshua Dykstra
ACS Undergraduate Award in Analytical Chemistry	Meka Francis & Tanya Zafirooulos
Chemistry Alumni Undergraduate Scholarship	Daniel Renfus
Van Acker–Duminy–Kovarik Scholarship.....	Leanne Marcus
Rosalie Reynolds Memorial Scholarship.....	Amy Pagurko
John D. Graham Scholarship.....	Chien-Chung Teng
Kevin Cull Memorial Teaching Awards	Laura Murdaugh & Matthew O'Connor
Joe W. Vaughn Teaching Award.....	Jay Barre
Dean's Award	Amy Dalby
NIU Chemistry Club Edwards-Hyland Award	Daniel Renfus
NIU Chemistry Club Outstanding Undergraduate Research Award	Matthew Hurt
ACS Rock River Section Research Award	Matthew Abbott & Keith Hermann
American Institute of Chemists Student Award	Keith Hermann
Outstanding Senior Award.....	Jessica Marston
Outstanding Graduate Student Award	Robert Hoey & Rangika Wickramaratne Gunasekera
Howard Johnston Award for Graduate Student Travel	Laura Murdaugh
2009 Dissertation Completion Award.....	Laura Murdaugh
Dissertation Completion Award Alternate	Barada Dash
Dissertation Facilitation Award	Chi-Kai Lin & Michael Recchia
Outstanding Women Student Award.....	Laura Murdaugh & Erin Post



Katelyn Kozinski & Jessica Cox



Daniel Renfus



Jay Barre



Laura Murdaugh



Tressa Sharma



Introduction of Chemistry Graduates



Jessica Marston

Degrees Awarded in 2008-2009

Undergraduate Degrees

AUGUST 2008

Calvin R. Gibson
Daniel Joseph Lauten
Eric Radzik

DECEMBER 2008

Austin Lee Gille
Marc Rodney Griffis
Kyle James Hershberger
Nicholas James Brock Kyser
Seth Louis Lamb
Edward Martinez
Timothy Jeffery Pfeiffer
Julien P. Verboom



MAY 2009

Matthew Paul Abbott
Kevin Joseph Chong
Kruti Dave
Gloria Beth Deutsch
Joshua D. Dykstra
Adam Jacob Ekstedt
Nathan Charles Grobe
Daniel Morgan Haswell
Brian Julius Horn
Matthew R. Hurt
Dharti M. Joshi
Jason Reese Lowry
Jessica Ann Marston
Jason Thomas Mittelheuser
Christina Maria Munguia
Sean Robert O'Donnell
Esther Youra Ok
William David Pittluck
Erin Christine Post
Kevin D. Senn
Matthew Joseph Tokarz
Brittany Marie Wade

Graduate Degrees (*Faculty Advisor in Italics*)

AUGUST 2008

Hao Guo (Ph.D.) - *Elizabeth R. Gaillard*
Surender Rao Mandal (M.S.) - *Elizabeth R. Gaillard*
Rosemary Sue Rakers (Ph.D.) - *Chong Zheng*

DECEMBER 2008

Daniel Joseph DeSchepper (M.S.) - *Douglas A. Klumpp*
Pierre Paul Eleniste (Ph.D.) - *Oliver Hofstetter*
Elliott Javier Franco (Ph.D.) - *Oliver Hofstetter*
Robert John Mishur (Ph.D.) - *Rathindra Bose*
Kyung-Shin Suh (M.S.) - *Elizabeth R. Gaillard*

MAY 2009

Adam Elliott Dill (Ph.D.) - *Jon W. Carnahan*
Hua Fei (M.S.) - *Elizabeth R. Gaillard*
Kyoung-Ho Park (Ph.D.) - *Dennis N. Kevill*

Did you know?

Over the past eight years, the number of undergraduate majors in chemistry and biochemistry has more than doubled, from 87 to **201 majors last fall.**

Graduate Student Highlights

Jay K. Barre (M.S. candidate) presented at the 41st National Organic Chemistry Symposium held June 7-11, 2009, in Boulder, Colo. He presented a poster on his research, entitled "Design and Synthesis of Novel Alkene-Based Liver X Receptor Ligands as Probes of LXR Pharmacology."

Courtney A. Cherok (Ph.D. candidate, August 2009) completed her degree under Professor Carnahan and accepted a chemist position with Chattem, Inc. in Chattanooga, Tenn.

Barada Prasanna Dash (Ph.D. candidate) presented at the 238th ACS National Meeting held August 16-20, 2009, in Washington D.C. The title of his oral presentation was "Novel Carborane-Appended Symmetrical Conjugated Pi-Systems." Dash also recently co-authored two papers: "Synthesis of a New Class of Carborane-Containing Star-Shaped Molecules via Silicon Tetrachloride Promoted Cyclotrimerization Reactions," Barada Prasanna Dash, Rashmirekha Satapathy, John A. Maguire and Narayan S. Hosmane, *Organic Letters*, 2008, 2247-2250; and "Boron-Enriched Star-Shaped Molecule via Cycloaddition Reaction," Barada Prasanna Dash, Rashmirekha Satapathy, John A. Maguire and Narayan S. Hosmane, *Chemical Communications*, 2009, 3267-3269.

Robert J. Hoey (M.S. candidate) received first place at the 2009 Sixth Annual Sigma Xi Graduate Student Presentation Competition.

Martin Kocanda (Ph.D. candidate) continues his research in the fabrication and development of nanostructured ceramic materials that are employed as chemical sensors. Two specific ceramics, barium strontium titanate and anodized aluminum oxide have been investigated by his research group and are currently under development as components of portable instrumentation. Additional research has been performed on the AAO materials for alternative sensing applications. A paper has been accepted for publication and presentation at the IEEE Sensors 2009 Conference held October 25-28 in Christchurch, New Zealand: "Enhanced Hydrogen Sensing Employing Electrodeposited Palladium Nanowires Enclosed in AAO Nanopores," Kocanda, M., Potluri, L., Bose, A., Haji-Sheikh, M., Ballantine, D. S.

Gregory J. Sonneson (M.S. candidate) submitted "Hapten-Induced Dimerization of a Single-Domain VHH Camelid Antibody," a paper examining an anti-hapten VHH antibody, which was accepted for publication as a *Biochemistry Rapid Report*.

Michael A. Zickus (Ph.D. candidate) presented at the 57th ASMS Conference On Mass Spectrometry held May 31 - June 4, 2009, in Philadelphia, Pa. He presented a poster on his most recent work, entitled "The Thermochemical Studies of Protonated Amine-Crown Ether Complexes: Extension of the Kinetic Method."

Teaching Experiment Leads Students to Important Discovery

Great teaching often leads to discovery—as in the “aha moment” that a student experiences when a complex lesson clicks.

But in the case of an organic chemistry class taught last spring by Professor Douglas Klumpp, an extraordinary teaching effort actually led to a discovery that might help fight cancer.

“Most organic chemistry experiments tend to be like following a cookbook—mix a little of this with a little of that, and then you get a product from the chemical reaction,” Klumpp says. “It is not much different than baking a cake.”

To make the class more interesting, Klumpp decided the last two experiments each semester would be research oriented. Students were excited about the plan. It was a welcome change from the typical cookbook projects.

In the spring of 2008, students in CHEM 339 got a taste of success. It was a small class, with just five students enrolled. They were given several types of experiments involving imidazole compounds, a type of chemical structure present in a large number of clinically important drugs.

“The students obtained great data,” says Matthew Sheets, one of two lab teaching assistants. “And most of the experiment worked.”

Sheets, Klumpp and their group of student researchers discovered a simple method for preparing diarylalkylimidazoles, a class of compounds known to be aromatase inhibitors and

consequently possessing activity against certain forms of cancer. With the support of a \$330,000 National Science Foundation research grant, studies of the compounds were then completed by Sheets and teaching assistant Ang Li, with guidance from Professor Klumpp.

The resulting research manuscript was published in the Feb. 12 issue of the *Journal of Organic Chemistry*. All students enrolled in CHEM 339—Edward A. Bower, Andrew R. Weigel, Matthew P. Abbott, Robert M. Gallo, and Adam A. Mitton—are listed as co-authors.

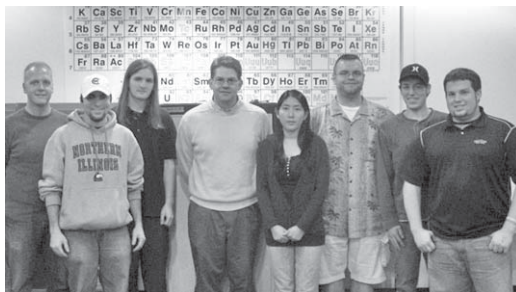
“It’s not something you normally see—an entire lab class listed as authors on a research paper,” Klumpp says. “We’re excited about the results. One of the sets of compounds we made certainly could be used in fighting cancer, particularly breast cancer. In the past, it was difficult to

make these compounds. Our study identifies a process that makes it a lot easier.”

The undergraduate students also gained important real-life laboratory experience.

“It gave me the opportunity to see what practical laboratory research is like, such as the time it takes to develop an experiment, the complications that come with performing the experiment, and the tools and instruments used to analyze the results,” says Robert Gallo, a senior chemistry major.

“I think that anyone can perform a book experiment,” he adds. “But when you are part of a research team that can potentially get results that have meaning in today’s world, there is much more of a sense of accomplishment.”



Continued from page 1

Message from the Chair

“Nanoarchitected Photoanode for Dye-Sensitized Solar Cells” (Tao Xu). In a joint departmental proposal, Research Technologist Manager Heike Hofstetter, Ph.D., and Profs. Hosmane, Dmitry Kadnikov, and Klumpp, combined to obtain funding for a project entitled “Upgrade and Cyber-Enhancement of a 500 MHz NMR Instrument Console.” This, coupled with support from the College of Liberal Arts and Sciences and the Office of the Vice-President for Research to purchase a 300 MHz NMR, will help meet departmental NMR needs for the foreseeable future.

In the 2008-2009 academic year, the department continued its substantial growth in undergraduate majors. We recorded a record 73 registrations for undergraduate research (CHEM 498 and 499H). The fall semester chemistry major count was 201. This represents a 30-student increase from just the previous year and a 141% increase from the 87 majors of the

fall of 2000. With 21 American Chemical Society certified graduates in the 2003-2004 academic year, the department reached the top 25 in the nation. In the 2008-2009 academic year, we graduated 32 students, 25 of whom were certified by the ACS. It is hoped that, when the data is tabulated by the ACS, we will again be listed in that top 25 group in terms of degree productivity.

The department continues its outreach efforts. The Chem Club held its annual Mole Day event on October 22 (one day before October 23....10²³). The theme this year was “Having a Ball with Chemistry,” in line with National Chemistry Week. In March, the Chem Club hosted another evening of demonstrations, “Chem Blast ’09.” As the name implies, the public was treated with a number of exothermic displays. In addition, on October 25, the department joined forces with the Department of Physics and Patricia Sievert of NIU’s Science, Technology, Engineering and Mathematics (STEM) Outreach

Continued from page 8

Message from the Chair

Program to host "Spooky Science Saturday." The event drew 1,700 attendees who were treated to activities ranging from glow-in-the-dark face paints to take-home slime synthesis. The department thanks the Chem Club, Chem Club Faculty Advisor **David Ballantine**, Coordinator for Recruitment and Public Relations **Shannon Gates**, and Laboratory Manager **Andy Small** for their assistance in this endeavor.

The department mourns the loss of two of its valued former members. Professor Emeritus **Alfred A. Schilt** passed away in January of this year. Al was a professor in the department from 1962 until his retirement in 1989 and helped guide the department's growth to where it is today. **Ed J. Kush**, stores supervisor assistant from 1989 to 2000 and devout Green Bay Packers fan, also passed away in January. We send our continued thoughts and prayers to their family and friends.

The department and students truly appreciate the donations received from alumni. As you may be aware, these funds are placed in two types of accounts at the NIU Foundation. The first is a general fund used primarily to support graduate

and undergraduate student travel to national meetings. The educational gains are obvious. The primary requirement is that the student presents a poster and/or talk at the meeting. The other funds are placed in scholarship accounts. This year, more than \$5,600 in scholarships was awarded to our top chemistry students to support their education. You can read more about the specific scholarship funds on page 12 of this newsletter.

It is hoped that 2009 finds you in good health and in good spirits. We wish you nothing but the best. Lastly, please keep in touch. Just as we share the happenings in department and university, we want to hear about the developments in your careers and lives.

All the best,



Jon W. Carnahan
Professor and Chair

Alumni Assembly 2009

Department of Chemistry and Biochemistry



We invite you to return to NIU for the Department of Chemistry and Biochemistry Alumni Assembly 2009 on September 24-25. Please visit www.niu.edu/chembio for up-to-date information and details. See link under upcoming events.

Thursday, September 24

Evening Reception, 6:30-8:30 p.m., Skyroom, Holmes Student Center

Friday, September 25

Morning Meeting, Campus Life Building, Rm 100 (9-10:45 a.m.)

Check-in/Light Breakfast, 9-9:30 a.m.

Welcome and Introduction

State of the Department

Awards Presentation and Alumni Reflections

Bus Tour of Campus (10:45-11:45 a.m.)

Lunch, Ellington's, Holmes Student Center (12 noon -1 p.m.)

Afternoon Meeting, Faraday West (1:15-3:30 p.m.)

Tour of Faraday Hall/Faraday West

Alumni Focus Groups

Chem Club Demos and Closing

Kindly respond by **Tuesday, September 15**, to Shannon Gates at slgates@niu.edu or 815-753-1710. You may also submit the online RSVP form at www.niu.edu/chembio/alumni/2009. We look forward to seeing you!



Thank you alumni and friends! We want to express our appreciation for your continued support and generosity during what we know to be financially hard times. A special thanks to those who have made donations to the Chemistry Club Edwards-Hyland Award in memory of glassblower and friend Dan Edwards.

We gratefully acknowledge gifts from the following alumni, friends, and organizations during the calendar year (January - December 2008). Organizations listed below in *italics* represent corporate/matching gifts.

Michael Faraday Society (\$1,000 & above)

Charles (B.S., '68) & Ann Achilles; Michael (B.S., '73) & Norma Cornell; Ronald (M.S., '69; Ph.D., '72) & Elizabeth Hennis; Gary & Isabelle (B.S., '80; M.S.Ed., '87; M.S.Ed., '07) Kovarik

Marie Curie Circle (\$250-\$999)

Steven W. Anderson (Ph.D., '85); Robert M. Arduini (B.S., '85); Shuyu Lee & Xi Chen (M.S., '93); David (B.S., '65) & Laretta (B.S.Ed., '65) Clayton; Ellen Cull; Thor (B.S., '65; Ph.D., '72) & Darlene Jondahl; Raymond (B.S., '70; Ph.D., '77) & Leela Lohr; William (M.S.Ed., '50) & Dolores (B.S.Ed., '51) Minkema; Thomas M. Zydowsky (B.S., '75; M.S., '78); *Abbott Laboratories Fund; Commerce Bank; ExxonMobile Foundation*

Mendeleev Group (\$100-\$249)

Thomas (B.S., '90) & Kimberly Anderson; Christopher W. Connell (B.S., '03); Laura L. Doughty; Norman J. Dovichi (B.S., '76); Robert (M.S., '68) & Trudy Feldt; Richard & Diane (B.S.Ed., '73; J.D., '89) Florschuetz; Richard Gehant (B.S., '84) & Radhika Renavikar; Glenn (B.S., '56) & Nancy Green; Robert S. Gronke (B.S., '82); Charles (B.S., '64; M.S., '66) & Mary Horn; Donald Hutchinson (Ph.D., '82) & Rebecca Swenson (B.S., '77; Ph.D., '82); Warren (M.S.Ed., '49) & Doris (B.S.Ed., '51) Jenks; Ronald & Rose Johnson; Casey (Ph.D., '01) & Nicole Lohring; Colleen M. Lord (B.S., '91; B.S., '91); Ronald (B.S., '72) & Gail Mattson; James Jorgenson (B.S., '74) & Carolyn Morse; Raymond (B.S., '65) & Elizabeth Peterson; Cynthia A. Pommerening (Ph.D., '00); Mark (B.S., '92) & Lynn Potyen; Ruth N. Rolf; Robert (B.S., '81) & Sue (B.S., '81) Ross; Sharon M. Schneider (B.S., '97); Robert (B.S., '70) & Jori Smail; Paul (B.S., '64; Ph.D., '71) & Karen Taylor; Laura L. Unger (B.S., '76); Michael D. Vallone (B.S., '76; M.S., '82); Paul (B.S., '05) & Virginia Weber; Barry (B.S., '88) & Blenda Williams; *American Chemical Society NIU Chemistry Club; Bloomington Normal Jaycees; Northeast Section A.S.G.S.; Pope Scientific, Inc.*

Kekulé Ring (\$50-\$99)

Richard & Nancy Lee (B.S., '71) Arntzen; Benjamin (B.S., '78) & Sandra Athneil; Ralph & Ewa (Ph.D., '98) Bucher; Gary (B.S., '75) & Molly Buckley; Patrick (B.S., '70; M.S.Ed., '76) & Barbara (B.S.Ed., '71; M.S.Ed., '73) Cain; Dale (B.S., '64) & J. E. Edmondson; Tod Engelskirchen (B.S., '64); Edward (M.S., '84) & Jean Fujimoto; Steve & Bettycep (Ph.D., '00) Gailbreath; Robert (B.S., '73) & Lois Garcia; David J. Grampovnik (B.S., '76); Michael (B.S., '63) & Katherine (B.S., '65) Guerin; Irma C. Hernandez-Lyon (M.S., '90); Michael (B.S., '75) & Mary Holland; John C. Jensen (B.S., '65); Lee & Simone (B.S., '82) Konner; Marc & Margaret Losiniecki; Gale (B.S., '72) & Kris (B.S., '73) Moline; Gaylen & Cherie Parker; Edward L. Safford (B.S., '58); Michael (B.S., '82) & Sandra Schick; Christine N. Schweitzer (B.S.Ed., '02); Gary (B.S., '69; M.S., '73); & Lois (B.S., '69; M.S.Ed., '71) Seiler; Eliot (B.S., '72) & Lynn Slovin; Richard V. Snyder (B.S., '68); Grant & Jilann Stauter; Dee (B.S., '71) and Mary (B.S., '71) Stumphy; Timothy Sullivan (B.S., '80) & Diane Dungey (B.A., '81); Paul & Judith (B.S., '87) Swanson; Raymond M. Sylvester (B.S.Ed., '53); John & Ginette (B.S., '88) Tolleson; Harold J. Vickery (B.S., '73); YongqianYing (M.S., '98) & Taolin Wei (B.S., '94; M.S., '98); *Biogen Idec, Inc.*

Lavoisier Associates (\$49 & under)

Richard S. Banick (B.S., '82); Ralph & Mary Benbow; Frederick (B.S., '71; M.S., '76) & Vera (B.S.Ed., '74) Clayton; Robert E. Drzymala (B.S., '72); Benjamin & Kristy Funk; John R. Grawe (B.S., '67); James A. Hayashi (B.S., '48); David Hedin & Mary Gendusa-Hedin; Joseph & Betty Hilmer; Theodore & Marilyn (B.S., '67) Hofman; Dan & Diane Malone; Joseph Olszar & Diana Chinchilla (Ph.D., '95); Kevin & Wendy Reilly; David A. Schabacker (B.S., '95); Robert C. Schroeder (M.S.Ed., '66); David (B.S., '77) & Laura Simnick; Gordon & Linda Smith; Ronald & Donna Stafford; William & Shirley Stahnke; David (B.S., '70) & Anne Barrett (B.S., '70) Swanson; Jamal (Ph.D., '94) & Itimad Tayh; Jennifer L. Taylor; Otto & Cindy Volker; Herbert (B.S., '69) & Linda (B.S., '67; Ed.D., '82) Wetherbe; Daniel (B.S., '71) & Sandra (B.S.Ed., '73) Wiczer; *Allstate Foundation; Hospira*

2009 CAUS Recipient
Daniel Renfus with
Professor Hosmane



We make every effort to acknowledge the generosity of our alumni and friends (the above is in recognition of donations made during the 2008 calendar year). We regret any errors and omissions. If for any reason you wish to remain anonymous, please tell us on your contribution form, or when the volunteer from the Huskie Telefund contacts you.

Let Us Hear From You...

Please update information about yourself. We look forward to hearing from you and hope you will also consider making a contribution to the department.

Yes! I would like to help the Department of Chemistry and Biochemistry achieve its goals by making a contribution. **Please use my gift of \$_____ for:**

NAME

- General contribution in area of greatest need
- Chemistry Alumni Undergraduate Scholarship (CAUS)
- Kevin Cull Memorial Scholarship Fund
- John D. Graham Memorial Scholarship Fund
- Chemistry Club Edwards-Hyland Award
- Rosalie Reynolds Memorial Teaching Scholarship
- Van Acker-Duminy-Kovarik Scholarship Fund

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Will your employer match funds?

- Yes (if so, please include with this form the matching gift form from your personnel office)
- No Don't know

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E-MAIL ADDRESS

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DEGREES RECEIVED

AT NIU:

DEGREE YEAR

We can also accept contributions on Visa, MasterCard, or Discover:

- Visa MasterCard Discover

DEGREE YEAR

OTHER:

DEGREE/INSTITUTION YEAR

CARD NUMBER EXPIRATION DATE

DEGREE/INSTITUTION YEAR

NAME ON CARD

NEWS ABOUT YOURSELF AND/OR YOUR FAMILY:

Please send form, and check if applicable, to:
Shannon Gates
Department of Chemistry and Biochemistry
Northern Illinois University, 1425 W. Lincoln Hwy.
DeKalb, IL 60115-2828

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Top Scholars of 2008-2009

On April 30, the department held its annual Chemistry Club Awards Banquet, recognizing our top chemistry students for their academic achievement, service, and leadership. Thanks to the generosity of our alumni and friends, many student awards were presented including the following endowed scholarships:

Chemistry Alumni Undergraduate Scholarship (CAUS) is awarded to a continuing undergraduate based on overall academic excellence. The 2009 recipient is *Daniel Renfus*.

Kevin Cull Memorial Teaching Awards are presented to outstanding graduate teaching assistants at all levels of instruction. The 2009 recipients are *Laura Murdaugh and Matthew O'Connor*.

John D. Graham Scholarship is given to a graduate student based upon scholarship, including both academic and research achievements. This year's winner is *Chien-Chung Teng*.

NIU Chemistry Club Edwards-Hyland Award is given to a junior who is an active member of the Chemistry Club. The winner is *Daniel Renfus*.

Rosalie Reynolds Memorial Teaching Scholarship is given to a junior or senior based on overall grade point average and intention to pursue a career in teaching. The 2009 recipient is *Amy Pagurko*.

Van Acker-Duminy-Kovarik Scholarship is awarded to an incoming undergraduate or graduate student with preference given to students planning to study inorganic chemistry and/or pursue a career in teaching. The 2009 recipient is *Leanne Marcus*.

For a complete listing of awards and recipients, see page 6 or visit www.niu.edu/chembio/giving.