

CHEM NEWS

A Quarterly Newsletter:
March 2003 issue

Department
of Chemistry
UIC

THESIS DEFENSES



Enthusiastic congratulations to **Martina Bertsch** and **Erick Fuoco** who have successfully defended their Ph.D. theses and completed all the requirements for the doctoral degree in chemistry. Abstracts of their theses can be found at the end of this issue.

Martina has accepted a post-doctoral position working with Prof. Margarita Dubocovich at the Department of Molecular Pharmacology & Biological Chemistry, The Feinberg School of Medicine, Northwestern University.

Erick is also in the Chicago area. He is working as a postdoctoral research fellow for Prof. Phillip Messersmith at the Dept. of Biomedical Engineering of Northwestern University.

Looking ahead, Elsa Taxil (Newcomb group) will defend her Ph.D. thesis March 6th in C1 lecture center at 2:00 PM. . Fatma Ahu Akin is looking forward to her doctoral thesis defense on March 11th in 238 SES at 2:00 PM. Wenming Zhang (Wardrop group) is also planning to defend his doctoral thesis later this month.

GROUP ACCEPTANCE

Several more graduate students have recently confirmed their acceptance into the following research groups and are anxious to produce results. They are:

Cho Group: Jeong-Hye Hwang
Wen Tian

Crich Group: Venkataramanan Krishnamurthy

Gordon Group: Joyce Willig

Keidering Group: Josef Kapitan

Moriarty Group: Idene Saam

MAINTAINING FOCUS

On March 3rd, **Melis Altan**, **Jeong Hye Hwang**, and **Joyce Willig** will represent the Department of Chemistry at a Focus Group meeting of graduate students with the Office of Campus Environment/ Academic Affairs to discuss the state of classrooms on campus. They will be asked to share their thoughts on maintenance and how they would like to see classrooms and space in general improved. If you have any issues or suggestions that you feel are important to bring to the attention of the Group, please contact Melis, Jeong Hye or Joyce to convey your ideas or concerns.

GOLD MEDAL TEACHER

In addition to achieving her Ph.D. at UIC and teaching as a Professor of Chemistry at MacMurray College in downstate Illinois, **Nadine Szczepanski**, former graduate student of Professor Paul Young, is now the head coach of the U.S. chemistry Olympic team. Nadine is a Chicago native who initially worked in industry after graduation. One of the highlights of her tenure in industry was the patenting of two carbonless paper products. But her combined love of chemistry and people drew her to teaching. She is highly valued at MacMurray Collage where she exemplifies that "all chemistry teachers are mentors and coaches who inspire their students to higher achievement". She stresses, however that "kids need a balance in life and should both work hard and play hard". She respects their individuality and is committed to a well-rounded education "that prepares young people to change with a changing world." The "kids" know a good thing when they see it. With each passing year, the enrollment lines for Nadine's classes become longer and longer.

If you would like to meet and talk with Nadine, the opportunity will be available soon. We are pleased to announce that Nadine will be hosted by Prof. Wink as a guest seminar speaker in the Department of Chemistry this coming Fall.

A MOVING EXPERIENCE

Donald Dobyne, our Duplicating Machine Operator, and the super, heavy-duty, "paper-pushing" Xerox 5892 copier have moved. Don is now open for business to photocopy all of the big, multiple-copy jobs for our general chemistry courses in the Stockroom, 4320 SES.

Even though **Emily Lam**, our Accountant of long-standing, may be petite, she has

definitely outgrown her current office space. Emily will soon be taking up residence in 4540 SES (formerly the duplicating room) in order to accommodate her many files, reference materials, and office machinery.

FACELIFT

Unbelievable but true, a long-awaited renovation of the Faculty Conference Room (4440 SES) has just begun. With previously allocated funds, **Silvia Solis** is masterminding the operation which is beginning with the application of new wallpaper. **Carrie Pavloski** has already donated two perky plants that will spruce up the place. Other improvements are on the near horizon.

TIMELY REMINDERS

Abstracts for the **Sigma Xi** poster session are due March 7th. **Graduate Student Progress Reports** are due March 15th.



ASK THE PROFESSOR

Q: Why do chemists wear lab coats?

A: In earlier days of chemical history, medium-sized black dogs from eastern Canada were used as carrier messengers to take samples from chemist to chemist. The dogs liked the scientists so much that when they arrived with the samples they would jump on the scientists and soil their clothes. To protect their clothing, chemists began wearing lightweight, knee-length jackets. Since the dogs were from Labrador, the term "lab coat" was born.

VERITUS EMERITUS



Throughout its years of existence, the Department of Chemistry at UIC has been privileged to employ some of the most accomplished and hard-working faculty who have shaped and inspired the evolution of teaching and research in their area of specialization. Some are currently and actively employed here; some are actively retired. Still others have passed on. But one thing remains – our sincere appreciation and the many fond memories that still make us smile. Therefore, as a way of keeping in touch, we are establishing a new column in *CHEM NEWS* entitled "Veritus Emeritus" as a way of recognizing our roots and keeping in touch with unforgettable friends.

The best place to start is at the beginning – with the letter "B". **Ronald J. Baumgarten** ("RJB"), Professor Emeritus, began his career at UIC in 1965 as a teacher and researcher in organic chemistry. With the passage of time RJB focused more and more on teaching and became one of the most popular instructors on campus. Officially he has won nine Silver Circle Teaching Awards by a popular vote of students. In the beginning he was quite a radical – a sort of professional flower child who promoted peace and "conscientious chemistry". To this day, we believe that practically every environmental organization that exists has his name on its mailing list.

After retiring in 1999, RJB temporarily returned to the Department to teach organic chemistry in the Spring of 2000. He affirms, "It was a great return, since I had a stimulating class of students. In addition, I was free of other obligations such as teaching other courses so I could concentrate on this one great group. It was mostly loads of fun!"

RJB has always enjoyed traveling and continues to do so. In the past, he has traveled as far as New Zealand. (Ask him about getting sprayed with insecticide as he and the other passengers de-planed in Auckland. Whoa!) Recently his travels have found him primarily in U.S. cities such as New York City, Bloomington, Indiana and Madison, Wisconsin. He highly recommends the "Around Lake Michigan" group tour to "several charming and little known locations" on the lake shores of Michigan, Wisconsin, Indiana and Illinois.

It seems that RJB will never grow old. He engages in hiking, volunteer work, attending concerts, theater and films, reading, reunions, various social activities and eating a substantial amount of poppyseed cake. Although he is retired, he stops by almost every week just to say "hello" and to let us know that he's thinking about us. Needless to say, we're thinking about him too.

ABSTRACT ART



Separating contributions from multiple structural isomers in anion photoelectron spectra: Al_3O_3^- beam hole burning

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Contributions from two structural isomers in the photoelectron spectrum of Al_3O_3^- have been isolated using an anion beam hole-burning technique. A kite-shaped structure having a lower electron affinity than the bent rectangle isomer was partially bleached from the ion beam just prior to the photoelectron spectroscopy interaction region. Further, we have performed studies varying the time allowed for cluster formation along with density functional calculations on a feasible structural intermediate that suggest that the kite structure may actually be a precursor to the rectangle structure. ©2003 American Institute of Physics.

RECENT PUBLICATIONS FROM THE DEPARTMENT

November 1, 2002 – January 31, 2003

Prepared by M. Krumpal

Roles of catalytic domain residues in interfacial binding and activation of group IV cytosolic phospholipase A2. Das, Sudipto; **Cho, Wonhwa**. *Journal of Biological Chemistry* (2002), 277(26), 23838-23846

Diastereoselectivity in the Cyclization of Alkene Radical Cations Generated under Non-Oxidizing Conditions: Contact Ion Pairs and Memory Effects. **Crich, David**; Ranganathan, Krishnakumar. *Journal of the American Chemical Society* (2002), 124(42), 12422-12423

Fluorous Dimethyl Sulfide: A Convenient, Odorless, Recyclable Borane Carrier. **Crich, David**; Neelamkavil, Santhosh. *Organic Letters* (2002), 4(23), 4175-4177

The effect of the base in the fragmentation of nucleotide C4' radicals. **Crich, David**; Suk, Dae-Hwan; Hao, Xiaolin. *Tetrahedron* (2002), 58(29), 5789-5801

The fluororous Swern and Corey-Kim reactions: scope and mechanism. **Crich, David**; Neelamkavil, Santhosh. *Tetrahedron* (2002), 58(20), 3865-3870

Selective deprotection of either alkyl or aryl silyl ethers from aryl, alkyl bis-silyl ethers. Ankala, Sudha V.; **Fenteany, Gabriel**. *Tetrahedron Letters* (2002), 43(27), 4729-4732

Transition Metal-Catalyzed Hydro-, Sila-, and Stannastannation of Cyclopropenes: Stereo- and Regioselective Approach toward Multisubstituted Cyclopropyl Synthons. Rubina, Marina; Rubin, Michael; **Gevorgyan, Vladimir**. *Journal of the American Chemical Society* (2002), 124(39), 11566-11567

Novel cyclourethane-derived HIV protease inhibitors: a ring-closing olefin metathesis based strategy. **Ghosh, Arun K.**; Swanson, Lisa M.; Liu, Chunfeng; Hussain, Khaja Azhar; Cho, Hanna; Walters, D. Eric; Holland, Louis; Buthod, Jim. *Bioorganic & Medicinal Chemistry Letters* (2002), 12(15), 1993-1996

Chelation-controlled ester-derived titanium enolate aldol reaction: diastereoselective syn-aldols with mono- and bidentate aldehydes. **Ghosh, Arun K.**; Kim, Jae-Hun. *Tetrahedron Letters* (2002), 43(32), 5621-5624

β -secretase as a therapeutic target for inhibitor drugs. **Ghosh, Arun K.**; Hong, Lin; Tang, Jordan. *Current Medicinal Chemistry* (2002), 9(11), 1135-1144

Experimental and theoretical studies of the channel phase in the coherent control of molecular processes. Billotto, Richard; Khachatryan, Ani; Zhu, Langchi; **Gordon, Robert J.**; Lefebvre-Brion, Helene; Seideman, Tamar. *ACS Symposium Series* (2002), 821(Laser Control and Manipulation of Molecules), 47-60

Mechanism and Biological Role of Nitric Oxide Binding to Cytochrome c'. Mayburd, Anatoly L.; **Kassner, Richard J.** *Biochemistry* (2002), 41(39), 11582-11591

High-energy, high-density, polycyclic hydrocarbons and azido derivatives. **Moriarty, R. M.** *Advances in Chemical Propulsion* (2002), 23-40. Editor(s): Roy, Gabriel D. Publisher: CRC Press LLC, Boca Raton, Fla.

Shah and Sine Convolution Fourier Transform Detection for Microchannel Electrophoresis with a Charge Coupled Device. McReynolds, Jennifer A.; Edirisinghe, Praneeth; **Shippy, Scott A.** *Analytical Chemistry* (2002), 74(19), 5063-5070

Assessment of Relative Stabilities of Positional Isomers of Polyhedral Heteronuclear Clusters via a Simplified Method of Bond Energy Calculations Based on Tight-Binding Approach and Adjacent Matrix Method: Applications to Binary Icosahedral Clusters. **Teo, Boon K.**; Strizhev, Alex. *Inorganic Chemistry* (2002), 41(24), 6332-6342

Formation of an ordered Si dimer structure on HfB₂(0001). Singh, Rasdip; **Trenary, Michael**; Tanaka, Takaho; Sen, Prasenjit; Batra, Inder P. *Physical Review B: Condensed Matter and Materials Physics* (2002), 66(15), 155416/1-155416/8

Alkylidenecarbene insertion at anomeric C-H bonds. Synthesis of 3-deoxy-D-arabino-2-heptulosonic acid (DAH) and 3-deoxy-D-manno-2-octulosonic acid (KDO). **Wardrop, Duncan J.**; Zhang, Wenming. *Tetrahedron Letters* (2002), 43(31), 5389-5391

Properties of selected S-nitrosothiols compared to nitrosylated WR-1065. Whiteside, William Michael; Sears, Devin N.; **Young, Paul R.**; Rubin, David B. *Radiation Research* (2002), 157(5), 578-588

Human, Rat, and Mouse Metabolism of Resveratrol. Chongwoo Yu, Young Geun Shin, Anita Chow, Yongmei Li, Jerome W. Kosmeder, Yong Sup Lee, Wendy H. Hirschelman, John Pezzuto, Rajendra G. Mehta, and Richard B. van Breemen. *Pharmaceutical Research*, 2002, 19(12), 1907-1914