



# Chemistry Department Newsletter

Summer 2003

<http://www.dickinson.edu/departments/chem>

Volume 1

## Remarks by the Chair

**Professor Cindy Samet**

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Greetings from Carlisle and welcome to our first ever Chemistry Department Alumni Newsletter! I am currently wrapping up my 15<sup>th</sup> year back here as a Professor – I graduated from Dickinson in 1982, and went to graduate school at the University of Virginia. I returned to Dickinson in 1988 and have been here ever since!

It is hard to believe how different the chemistry department is now. It is my hope that this news-letter will catch you up and get you reconnected. As you will be able to tell from the descriptions of faculty-student research that follow, our department is a very active one. Our curriculum and research programs are dynamic. Since the start of my career, all of the professors I knew as a student have retired, and so we are a whole new department. I encourage you to get to know us – from this newsletter and also from our chemistry department web site, and, of course, we always welcome visits from you!

We are dedicating this first newsletter to Gretchen Franck, Class of 1998, who passed away on September 11, 2002. Gretchen was a terrific student (a chemistry major) and was a very active member of our department. After graduation, Gretchen attended the Duquesne University School of Pharmacy while also working in her parents pharmacy. But through it all, Gretchen was experiencing severe headaches, and in May 2000 had a 17-hour operation to remove a brain tumor. She was well for a while, but her tumor returned. Gretchen's courage and dedication are truly inspiring. Gretchen's mother wrote the following in a letter to me after Gretchen died:

“Gretchen's four years at Dickinson were possibly the happiest years of her life. She met some wonderful friends who would stay by her through the years that followed with her surgeries and treatment regimens...she completed enough coursework and graduation requirements while undergoing an experimental drug treatment last spring that she received her Ph.D. in pharmacy from Duquesne – a dream come true. “

# Faculty Research

## Ashfaq Bengali

My current research focuses on studying the interaction between solvent molecules like THF, benzene, etc. and coordinatively unsaturated transition metal organometallic complexes. I am particularly interested in measuring the strength of weak metal-solvent bonds using kinetic methods. We have studied the substitution chemistry of molecules like  $\text{CpMn}(\text{CO})_2(\text{THF})$ ,  $\text{CpMn}(\text{CO})_2(\eta^2\text{-benzene})$ ,  $\text{Cp}^*\text{Re}(\text{CO})_2(\eta^2\text{-benzene})$  and more recently  $(\text{CO})_5\text{Cr}(\eta^2\text{-benzene})$ . We investigate the reactivity of these complexes over a wide range of timescales from hours to microseconds using techniques such as time resolved UV-VIS spectroscopy and laser flash photolysis. Over the years several students have been involved in these projects and have seen their work published in various chemistry journals. More recently, Trent Stumbaugh ('03) co-authored a study on the reactivity of the  $\text{Cr}(\text{CO})_5(\eta^2\text{-benzene})$  complex with a variety of methylsubstituted THF molecules and presented his results at the 225th American Chemical Society in New Orleans. I am also interested in developing experiments for our advanced laboratory offerings like Chem 352 and with the help of two former students Kim Mooney ('99) and Samantha Charlton ('02) we have published three experiments in organometallic chemistry in the *Journal of Chemical Education*.

While I keep in touch with some of our chemistry graduates I would like to hear a lot more from you! Please drop me a line now and then so I can remain updated on your current activities. My e-mail address is: bengali@dickinson.edu

## David Crouch

Research in Professor Crouch's lab continues to focus on the selective deprotection of silyl ethers, the topic of his 1996 review in *Synthesis*. In 1998, we published a paper describing a simple method for selectively removing silyl groups from protected phenols in *Tetrahedron Letters* with co-authors Mike Stieff '98, Jess Frie '01, Amy Cadwallader '01 and Dan Bevis '99. In 2002, a method for selectively removing silyl groups from alcohols without affecting silyl-protected phenols was published in *Tetrahedron Letters* with co-authors Joanna Polizzi '02, Rebecca Cleiman '02, Jamie Yi '01 and Candice Romany '03. Candice has continued working in our lab and has been joined by Anna Kreshock '03. Their current project involves the use of bismuth salts as Lewis acids in removing silyl groups.

A small project that arose from some findings described in the 1998 paper involves the use of the same method to remove acyl-protecting groups. This work, co-authored by Jen Burger '01, Amy Cadwallader '01, Jamie Bedison '01, Magda Smielewska '01 and Karolina Zietek, has recently been accepted for publication in *Synlett*.

An area of ongoing interest is the development of new experiments for the Synthesis & Reactivity lab. Candice Romany developed an experiment based on the Darzens condensation and presented a poster describing this experiment at the 225th meeting of the American Chemical Society in New Orleans in March of 2003. This experiment is also the basis of a submission to the *Journal of Chemical Education*.

## Mike Holden

Mike Holden continues to work with iron arene salts, looking to find new reactions. He is also opening up new avenues of research, including the use of ionic liquids as solvents for organometallic reactions. Recently he and a student started a project to synthesize a ferrocenyl analogue of the anti-malarial agent proguanil.

## Pam Higgins

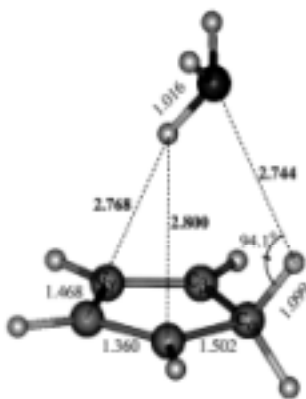
Greetings from the newest chemistry faculty member! I came to Dickinson last year after teaching for four years in various colleges in the Lehigh Valley to serve as the resident biochemist in the chemistry department. The faculty, staff and students have been wonderful in making the past year a fairly easy adjustment for myself. I have accepted a tenure-track position here at Dickinson, so you will be hearing from me for quite some time in the future. My research interests lie in the field of developing metal-chelating amino acids to probe protein-nucleic acid interactions. Two of my student researchers last semester were successful in synthesizing two different unnatural amino acids and comparing their ability to cut DNA.

## Cindy Samet

The main focus of my research program is the study of weak hydrogen bonds. My students and I are currently studying the important C-H...N and C-H...O linkages that form between hydrocarbons (supplying the C-H) and nitrogen (N) or oxygen(O) bases. The technique I use to study these systems is called matrix isolation - the freezing of guest molecules at very low temperatures in an inert host gas. The frozen sample or matrix is studied using Fourier Transform Infrared (FTIR) spectroscopy. My research program involves students at every stage. I have received funding from outside sources such as Research Corporation and the National Science Foundation (NSF). My students and I publish in the Journal of Physical Chemistry, A. We have accomplished several "firsts" in the field, and this has been very exciting. What follows is a brief "nugget" of our major accomplishments. This nugget will soon appear on the National Science Foundation's home page. For more details, see my web page!

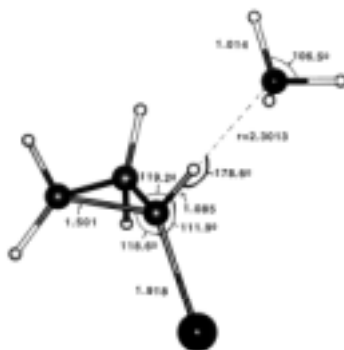
The concept of the hydrogen bond remains one of the frontiers of our knowledge of chemical bonding and intermolecular interactions. The late Linus Pauling recognized early that these bonds which he referred to as "velcro bonds" would be central to chemistry and biology.

Using the Matrix Isolation technique combined with Fourier Transform infrared spectroscopy (and Gaussian-94 for ab initio calculations), Professor Samet and her undergraduate researchers have formed some of the weakest C-H...N (O) hydrogen bonds yet. These bonds, which we call "post-it-note" bonds, push the limit of traditional hydrogen bonds and existing C-H...N(O) hydrogen bonds.



The [cyclopentadiene-ammonia](#) complex (above) represents the first example of an  $sp^3$  - hybridized carbon on a hydrocarbon taking part in a C-H...N hydrogen bond.

The **bromocyclopropane-ammonia** complex (below) represents the first example of a cyclopropane acting as a proton donor and only the second time an alkane has taken part in a C-H...N hydrogen bond



### Amy Witter

Professor Amy E. Witter and students will continue work this summer examining the effect of nutrient limitation on extracellular carbohydrate expression by marine phytoplankton. Phytoplankton play an important role in fixing atmospheric carbon dioxide and producing organic carbon during photosynthesis. Much of the organic carbon produced is uncharacterized at the molecular level, and the effects of nutrient limitation on the dissolved organic carbon pool are not well understood. As carbon dioxide levels in the atmosphere continue to increase due to fossil fuel burning, there is a great deal of interest in trying to understand how the ocean will respond to these increased CO<sub>2</sub> levels. The work has been funded in the past through a Cottrell College Science grant from the Research Corporation and is currently funded through the American Chemical Society Petroleum Research Fund. Denise M. Sharbaugh, '03 has been instrumental in the success of this project during her four year involvement, and will be a co-author on the publication that results from this work. She recently attended the 225th National American Chemical Society Meeting in New Orleans to present her research results. Denise is currently deciding between Ph.D. programs at the University of Washington, Arizona State, University of Arizona, and the University of Florida.

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## Scholarly Research (2000-2003)

### Ashfaq Bengali

#### Publications

"Displacement of the Benzene Solvent Molecule From Cr(CO)<sub>5</sub>(benzene) by Piperidine: A Laser Flash Photolysis Experiment", A. A. Bengali and S. B. Charlton\*, *J. Chem. Educ.*, **77**, 1348, (2000).

"Determination of the Regiochemistry of Di-substituted Arenes Generated By Addition of a Carbanion to the ( $\eta^6$ -anisole)Cr(CO)<sub>3</sub> Complex", A. A. Bengali, C. Samet, and S. B. Charlton\*, *J. Chem. Educ.*, **78**, 68, (2001).

"Observation of the ( $\eta^5$ -C<sub>5</sub>H<sub>5</sub>)Mn(CO)<sub>2</sub>(toluene) Complex By Low Temperature IR Spectroscopy and Determination of the Mn-toluene Bond Strength", A. A. Bengali, *Organometallics*, **19**, 4000, (2000).

"A Kinetic and Mechanistic Study of the Displacement of  $\text{H}_2$  Coordinated Arenes From  $\text{Cp}^*\text{Re}(\text{CO})_2(\eta^2\text{-C}_6\text{H}_5\text{R})$  [ $\text{R} = \text{-H, -CH}_3, \text{ and -C(CH}_3)_3$ ]: Evidence for a Dissociative Mechanism and Estimation of the  $\text{Re-(H}_2\text{-Arene)}$  Bond Strength", A. A. Bengali, A. Leicht\*, *Organometallics*, **20**, 1345, (2001).

"Estimating the  $(\text{CO})_5\text{Cr-(}\eta^2\text{-benzene)}$  Bond Dissociation Enthalpy: Reaction of the  $(\text{CO})_5\text{Cr(H}^2\text{-benzene)}$  Complex With a Series of  $(\text{CH}_3)_n\text{THF}$  ( $n = 0, 1, 2, \text{ and } 4$ ) Ligands", Ashfaq A. Bengali, Trent F. Stumbaugh\*, *J. Chem. Soc., Dalton Trans.* 354, (2003).

"Synthesis, Kinetics, and Thermodynamics: An Advanced Laboratory Investigation of the *cis/trans* Isomerization of  $\text{Mo}(\text{CO})_4(\text{PR}_3)_2$  ( $\text{R} = \text{Et, n-butyl}$ )", Ashfaq A. Bengali, Kim E. Mooney\*, *J. Chem. Educ.*, **80**, 1044, (2003).

\* student co-authors

### Presentations

"Estimating the  $(\text{CO})_5\text{Cr-(}\eta^2\text{-benzene)}$  Bond Dissociation Enthalpy: Reaction of the  $(\text{CO})_5\text{Cr(H}^2\text{-benzene)}$  Complex With a Series of  $(\text{CH}_3)_n\text{THF}$  ( $n = 0, 1, 2, \text{ and } 4$ ) Ligands", Ashfaq A. Bengali, Trent F. Stumbaugh\*, 225th National Meeting of the American Chemical Society, New Orleans, LA, March 23rd, 2003.

"Displacement of the Benzene Solvent Molecule From  $\text{Cr}(\text{CO})_5(\text{benzene})$  by Piperidine: A Laser Flash Photolysis Experiment", A. A. Bengali, Samantha Charlton\*, 220th National Meeting of the American Chemical Society, Washington, DC, August 19th, 2000.

"Research in Organometallic Kinetics", A. A. Bengali, University of Minnesota, Minneapolis, MN, February 4th, 2000.

"Organometallic Kinetics", A. A. Bengali, Carleton College, Northfield, MN, February 3rd, 2000.

### R. David Crouch

#### Publications

Todd D. Nelson, R. David Crouch. "Cu, Ni, and Pd-mediated Homocoupling Reactions in Biaryl Synthesis: The Ullmann Reaction" *Organic Reactions*, in press

R. David Crouch, Jennifer S. Burger '01, Karolina A. Zietek, Amy B. Cadwallader '01, James E. Bedison '01, Magda M. Smielewska '01. "Removal of Acyl Protecting Groups Using Solid NaOH and a Phase Transfer Catalyst" *Synlett*, **2002**, 991 - 992.

R. David Crouch, Joanna S. Polizzi '02, Rebecca A. Cleiman '02, Jihae Yi '01, Candice A. Romany '03. "Deprotection of silyl ethers using  $\text{ZnBr}_2$  and  $\text{H}_2\text{O}$  in  $\text{CH}_2\text{Cl}_2$ " *Tetrahedron Letters* **2002**, 43, 7151-7153.

R. David Crouch, Michael S. Holden. "An Organic Puzzle Using Meldrum's Acid," *Journal of Chemical Education*, **2002**, 79, 477 - 478.

Michael S. Holden, R. David Crouch. "The Biginelli Reaction," *Journal of Chemical Education*, **2001**, 78, 1104 - 1105.

R. David Crouch, Michael S. Holden, Jennifer S. Burger '01. "Oxidation of Benzoin to Benzil Using Alumina-Supported Active MnO<sub>2</sub>," *Journal of Chemical Education*, **2001**, 78, 951 – 952.

#### Poster Presentations

**R. David Crouch**, Michael S. Holden, **Candice A. Romany '03**. "Darzens Condensation: Structure Determination Through Spectral Analysis and Understanding Substrate Reactivity" presented at the 225th meeting of the American Chemical Society, New Orleans, Louisiana, March 24, 2003. CHED 274

#### Cindy Samet

##### Recent Publications and Presentations:

Matrix Isolation Infrared and ab Initio Study of the 1:1 Complexes of Cyclopentadiene with Nitrogen and Oxygen Bases: C-H---N(O) Hydrogen Bonding Involving an sp<sup>3</sup>-Hybridized Carbon, C. Samet, M. A. Hilfiker (95), E. R. Mysak (01), and A. Maynard, *J. Phys. Chem. A.*, Vol. 105, No. 13, 2001.

Determination of the Regiochemistry of Di-substituted Arenes Generated By Addition of a Carbanion to the (h<sub>6</sub> - anisole)Cr(CO)<sub>3</sub> Complex, A. Bengali, C. Samet, and S. Charlton (01), *J. Chem. Educ.*, Vol. 78, No. 1, 2001.

Matrix Isolation Infrared and ab Initio Study of the 1:1 Complexes of Bromocyclopropane with NH<sub>3</sub> and (CH<sub>3</sub>)<sub>3</sub>N : Evidence for a Novel C-H---N Hydrogen Bond, C. Samet, B.L. Bedell (98), L. Goldfarb (91), E. R. Mysak (01), and A. Maynard, poster and talk, presented by Cindy Samet and Erin Mysak (01) at the Gordon Research Conference on the Physics and Chemistry of Matrix Isolated Species, July 1999, Plymouth, N.H..

Matrix Isolation Infrared and ab Initio Study of the 1:1 Complexes of Bromocyclopropane with NH<sub>3</sub> and (CH<sub>3</sub>)<sub>3</sub>N : Evidence for a Novel C-H---N Hydrogen Bond, C. Samet, B.L. Bedell (98), L. Goldfarb (91), E. R. Mysak (01), and A. Maynard, *J. Phys. Chem. A*, Vol. 103, No. 23, 1999.

(Note: Student co-author graduation class year is given in parenthesis)

#### Other Professional Interests and Activities

I am a member of the American Chemical Society (ACS) at large and of the Physical Chemistry Division and Chemical Education Division.

#### Amy Witter

##### Recent presentations

Co-chaired a symposium in Chemical Education at the 225th National American Chemical Society Meeting, March 23-27<sup>th</sup>, 2003, entitled "Program Impact of a One-semester general chemistry course" with Dr. Linda Doerrer of Barnard College.

**Witter, A.E.**, \*Sharbaugh, D., and D.A. Hutchins, March 2003. Effects of nitrogen limitation on the composition of phytoplankton-derived dissolved organic matter revealed through carbohydrate analysis. 225th American Chemical Society Meeting, August 23-27, New Orleans, LA. Poster presentation.

#### External Grants Funded

American Chemical Society Petroleum Research Fund Type GB starter grant (\$35,000).

Society for Analytical Chemists of Pittsburgh (\$10,000 for undergraduate student support).

2001 Pittsburgh Conference Memorial National College Grants Program (\$9,000; matched with \$9,000 from the Dean's Fund at Dickinson and used to purchase a new departmental Varian atomic absorption spectrometer.)

Cottrell College Science Grant, Research Corporation, Fall 1999. (\$35,755; matched with \$17,737 from Dickinson College).

#### Publications

**Witter, A.E.,** \*Klinger, D., Fan, X., Lam, M., Mathers, D. and Mabury, S.A. Quantitative determination of nicotine and cotinine in urine and sputum using a combined SPME-GC/MS method, *Journal of Chemical Education*, **79**, 1257-1260.

#### Supervised student research/honors projects

Supervised 18 student research experiences since 1999 including most recently:

|                  |                            |                                                                                                                   |                        |
|------------------|----------------------------|-------------------------------------------------------------------------------------------------------------------|------------------------|
| Julie M. Vastine | Fall 2002 - Spring<br>2003 | Investigation of triclosan<br>degradation during sewage<br>treatment - Honors research<br>(environmental science) | Senior at<br>Dickinson |
|------------------|----------------------------|-------------------------------------------------------------------------------------------------------------------|------------------------|

\*denotes Dickinson co-author

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## Chemistry Club Update

President, Denise Sharbaugh '03

Since the chemistry club's re-founding in the spring of 2002, the group has attempted to organize events that incorporate both students and faculty with a large amount of something different. This year the club has organized after class movies in Althouse as well as student/faculty barbeques at the home of our very own senior students Nick Ferenz and Brian Wellington. Also, our department now has an official T-shirt! As expected, this year ended well with all graduating seniors moving on to bigger and better things. We wish them all the best of luck and hope they stay in touch! Finally, for next year, much is expected of the rising sophomore, juniors, and seniors. Hopefully they will keep tradition alive and strive for much more departmental functions. Maybe even get Professors Bengali and Crouch to go skydiving! Again, the best of luck to all and enjoy!

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## Department News

### Nobel Prize winning Chemist receives honorary degree

John Fenn was awarded the 2002 Nobel Prize in Chemistry for a pioneering technique he invented that allows researchers to "weigh" large biological molecules, such as protein, with unprecedented accuracy, contributing to the development of new pharmaceuticals. At Dickinson's 2003 Commencement, he received an honorary doctor of arts and sciences.

He joined Virginia Commonwealth University in 1994 as professor of analytical chemistry after more than 20 years at Yale University. He received his bachelor's degree from Berea College in 1937 and his doctorate from Yale in 1940.

Prior to his time in academia, he worked for more than a decade in process development at Monsanto Co. and Sharples Chemical in Michigan and then spent seven years in Richmond at a small company that specialized in combustion engines. In 1959, he was named director of Project SQUID, a U.S. Navy program of basic and applied research in jet propulsion administered by Princeton.

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## Jennifer Zile '04: Dickinson's First Beckman Scholar

In the spring of 2003, Jennifer Zile '04 was chosen as Dickinson's first Beckman Scholar. Funded by a grant to the College from the Arnold and Mabel Beckman Foundation. The award affords her the opportunity to begin work with Professor David Crouch during the summer of 2003 and continue working during the 2003-04 academic year and through the summer of 2004. In addition to a stipend and summer room and board, Jenn received money for supplies and travel to meetings as well as all-expenses-paid trips to the annual Beckman Scholars Symposium in Irvine, California in July of 2003 and 2004. At the 2004 symposium, Jenn will present the results of her research.

Jenn's project involves the synthesis of potential adrenergic agents which contain a cyclopropane ring. Various receptors in the human body respond to adrenaline and norepinephrine and, in recent years, structural differences have been observed in the receptors in different tissues of the body. Recently, researchers at GlaxoSmithKline found that compounds which have specific substructures can stimulate  $\alpha_{1A}$  receptors in the bladder neck, increasing the tone of smooth muscle which may eventually lead to a new treatment for incontinence. Jenn's project involves building analogs of the GlaxoSmithKline compounds in which an oxymethylene group is replaced by a cyclopropane ring. This creates a more rigid molecule with slightly different electronic characteristics that can be used as a probe of the receptor. When she completes the synthesis of a small series of these compounds, Jenn will send them to Professor Nancy Kanagy of the Department of Cell Biology and Physiology at the University of New Mexico School of Medicine where Dr. Kanagy and her co-workers will assay the biological activity of these new compounds.

The Beckman Scholarship is arguably the most prestigious honor for undergraduate science students. Of the 209 colleges and universities that were invited to apply, Dickinson was one of 13 - only two of which are liberal arts colleges - selected to participate in the program. And, only four Dickinson students from chemistry, biology and biochemistry/molecular biology will be Beckman Scholars under the 3-year grant.

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## Recent Graduate Spotlight

### Kim Dulaney-Mooney '99

After graduating from Dickinson in 1999, I moved to D.C. and jumped right into the laboratory of Dr. Michael J. Wagner at the George Washington University. I am now in the fourth year of my doctoral candidacy, I live in Maryland with my husband and our rabbit, and I am beginning to see the light at the end of the tunnel.

The research in this group centers around inorganic materials. While other group members are researching ways to improve lithium ion batteries, my research focuses on the synthesis of materials by the method of alkalide reduction. The method uses a solvated alkali metal anion, so it is both air- and water-sensitive and requires ambient/sub-ambient temperatures to prevent decomposition. (Feel free to contact me for more information!) Needless to say, I had to quickly gain and perfect my abilities with dry boxes and vacuum lines/apparatus.

On one hand, I am synthesizing a wide range of nanoscale alloys or materials that are of interest for a wide range of applications. Right now, the primary targets are magnetic materials. I have made nanoscale  $\text{CoFe}_2\text{O}_4$  (the cobalt ferrite), and it has properties not previously reported in the literature. This material has an MS reaching ~94% of the bulk value with an HC that appears to exist solely because the sample is a packed powder. I recently gave a talk on these results at the Nano2002 International conference in Orlando, Florida. While we work on that publication, I have moved onto other ferrites ( $\text{ZnFe}_2\text{O}_4$  and  $\text{MnFe}_2\text{O}_4$ ) as well as  $\text{CoFe}_2$  and  $\text{GdCo}_2$ . One of the exciting things about working with the magnetic materials is that we do the measurements on the SQUID instrument at the National Institute of Standards and Technology.

The other side of my research is actually the part over which I feel the most possessive/proud. I have designed and built a stopped-flow system (in a drybox) for studying alkalide reduction reactions. I also built a cooling system for the stopped-flow assembly, assembled a spectrophotometer, and brought the drybox up to working condition (which required designing a new regeneration/circulation system capable of handling the solvents used in the reactions). After about three years of machining and assembly, the system is finally ready to collect data. At the moment we are performing "verification" studies on gold, but once these are done, we will move on to mixed-metal syntheses. It is hoped that our studies will elucidate the kinetic pathways for inorganic material synthesis by our method. This should enable the design of rational synthetic procedures and a wider range of potential products, rather than limiting materials synthesis to the thermodynamically stable products typically obtained by the traditional method.

As I mentioned before, I am beginning to believe that my time in this laboratory will end. I have begun to put pen to paper in an effort to have my dissertation ready for the addition of data, and I am keeping a watch on the forensic positions and research opportunities that seem to come available on yearly cycles. When I am done here, my husband and I hope to move to a quieter location in either Pennsylvania or Massachusetts.

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## 2003 Departmental Awards

ACS Outstanding Senior Chemistry Major Award  
ACS Division of Polymer Chemistry Award  
AIC Outstanding Senior Major Award  
Chemistry  
Biochemistry  
The Merck Index Award  
ACS Undergraduate Award in Analytical Chemistry  
John E. Benson Handbook Award  
CRC Freshman Chemistry Achievement Award  
Horace E. Rogers Scholarship Award  
Richard Sheeley Memorial Scholarship

Trent Stumbaugh  
Alex Tucker-Schwartz  
  
Nicholas Ferenz  
Sarah Kolnik  
Trent Stumbaugh  
Jennifer Zile  
Brian Wellington  
Natalie Martin  
Jennifer Zile  
Andrew Rosenthal  
Alex Tucker-Schwartz

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## Class of 2003 Graduates

### Biochemistry & Molecular Biology

Jacey Bennis  
Kristin Bretz  
Kristen Farwell  
Nicholas Ferenz  
Michael Freitag  
Damien Garbett  
Marissa Houtz  
Sarah Kolnik  
Laura Kosak  
Anna Kreshock

Nicole Niebudek  
Manisha Patel  
Aaron Roberts  
Candice Romany  
Jamshid Sharifi  
Rehab Tabchi  
Chad Talarek  
Alyssa Thompson  
Valerie Trabosh

### Chemistry

Nicholas Ferenz  
Sanaz Fereshteh  
Matthew Hart  
Hong Mei Li

Denise Sharbaugh  
Trent Stumbaugh  
Brian Wellington

### Where will they go from here?

Jacey Bennis - Will be working as a research assistant in a cell physiology lab at the University of North Carolina at Chapel Hill

Kristin Bretz - (February '03 grad) is working in a forensic lab in Germantown, MD called Orchid Cellmark which does private forensic work for law enforcement agencies

Nicholas Ferenz - Ph.D. program in Molecular and Cellular Biology at the University of Massachusetts

Hong Mei Li – 2 year commitment with Teach for America in Baltimore after which will attend UC Santa Barbara

Denise Sharbaugh - Will be attending the University of Florida in Gainesville for my PhD in Analytical Chemistry. Everyone is more than welcome to visit once the dreary weather of Carlisle creeps in again!!!

Valerie Trabosh - Ph.D. program in Biochemistry/Molecular Biology at Georgetown University.

Brian Wellington - Commissioned as an officer in the US Navy this past May and is attending the Philadelphia College of Osteopathic Medicine starting this August, class of 2007, on a full scholarship from the US Navy.

## Alumni News

### Class of 1940

Elmer Tewksbury

Retired after 34 years on the faculty at Penn State.

### Class of 1955

Ron Jones

Now retired, spent 1968 and since on environmental programs, primarily advising industry on how to comply.

### Class of 1956

Joan Howell (Jones)

Taught various subjects primarily for nurses for 25 years.

### Class of 1959

Kenneth Egolf

Retired from teaching chemistry at Carlisle High School. Currently chemistry department technician and adjunct professor at Dickinson.

### Class of 1961

Marshall Cohen

I retired from Polaroid Corp. in 1996 after working there for 22 years in both research and manufacturing. I now split my time between Cape Cod, Massachusetts and Farmville, Virginia.

### Class of 1964

Dennis Vance

Obtained my Ph.D. in Biochemistry at the University of Pittsburgh. After a postdoctoral fellowship at Harvard University, I took a faculty position in the Department of Biochemistry at the University of British Columbia in Canada. In 1986 I moved to the University of Alberta where I hold the Canada Research Chair in Molecular and Cell Biology of Lipids and am a Medical Scientist of the Alberta Heritage Foundation for Medical Research. I am Director of the Group on Molecular and Cell Biology of Lipids. I was elected a Fellow of the Royal Society of Canada in 1996. I have authored or co-authored 172 original research publications, 57 reviews or chapters in books. I have edited 6 advanced level books in Lipid Biochemistry and co-authored an introductory text in Biochemistry.

### Class of 1972

Gary Peiffer

I'm currently working as an Analytical Chemist with the U.S. Food and Drug Administration (FDA) in Alameda, California.

### Class of 1973

Bernard Clark

I have been a full-time faculty physician at Saint Francis Hospital and Medical Center in Hartford, CT since 1984. I am presently the acting chairman and director of the Department of Medicine and the associate chief of the Section of Cardiology.

Rob Morrow

Better Living through Chemistry! Thank you Dr. Roper, Dr Shearer, Dr. Sheeley, Dr Leyon, Dr. Benson, Dr. Crist.

Judy Stone

I am working as a senior project manager for an environmental lab - here now for 17 years. Being a chem major at D'son seems very long ago, but was a great time! Environmental business is off, was overbuilt in 80's, has shrunk back, extremely competitive. Also, Bush administration is not big on environmental issues, budget is all going to military so our market has shrunk more. Our major clients are DOE and DOD sites. Hope to see classmates at 30th reunion in June.

## Class of 1974

Michael Reuben

Received my Ph.D in Biochemistry from The University of Denver in 1980. Did my postdoctoral fellowship at Caltech from 1980 - 1982. Research area was the study of viral DNA packaging & structure using photolabile bifunctional x-linking agents. Was funded by the American Cancer Society. From 1982 - 1993 I on faculty at UCLA Dept. of Medicine. Participated in the cloning of apolipoprotein B and the beta subunit of the gastric HK ATPase. Also worked on the expression of proteins using expression vectors. Funding came from Smith Kline Beckman, American Heart Association and American Cancer Society. Published 26 papers and a couple of book chapters before retiring from science to pursue a career running my own computer consulting company. My company LA Computer Works is well established and growing. I now have 3 full time employees and a couple of part time consultants working for me. We are just moving to our new office space.

Fred Stover

I am currently working as a senior analytical chemist for Astaris LLC, a joint venture between Solutia (formerly the chemical businesses of Monsanto) and FMC. Astaris manufactures a wide range of phosphate salts and phosphoric acid. My current research interests include advanced applications of ion chromatography, novel methods of characterizing phosphate polymers, and application of statistical quality control principles to analytical calibrations. Aspects of my work that I find particularly enjoyable include interactions with analytical colleagues at our customers, identifying new methods of characterizing our process chemistries, and independence in selecting the best methods to solve analytical problems.

## Class of 1978

Elaine Brown

Great idea to have a newsletter for the department. I am a Senior Quality System Specialist for Bristol-Myers Squibb Medical Imaging in Billerica, MA. This is a fancy title for being in charge of all stability testing, Complaints, and Annual Product Reviews for the Quality department. I live in Chelmsford MA with my husband (Garth) of 22 years and three children. I think of Dickinson frequently with two of my children now in college (Justin is a sophomore at Williams majoring in Physics and Math, and Alison is a Freshman at Holy Cross majoring in Math and Physics).

## Class of 1979

Don Weiss

After graduating with a chemistry degree I spent a short stint in PhD graduate school then took a job synthesizing herbicides. This led me to conclude that although I still loved organic chemistry, I was not interested in worrying if the phosgene tank was going to leak. This led to medical school and training as an urban pediatrician. After three years on a mobile medical unit treating homeless kids in New York City I moved to St. Louis taking a position with a stationary community health center providing care to an underserved population. I pursued a master degree in epidemiology, then took a job with the St. Louis city health department concentrating on raising community awareness about the preventable epidemic of childhood lead poisoning. As one co-worker once remarked, I was tired of treated society's health problems one patient at a time. I also had the opportunity to teach public health at St. Louis University School of Public Health. In 2000 I returned to New York City taking a job with the bureau of communicable disease in the NYC Department of Health. I have been involved in a number of outbreak investigations ranging from West Nile Virus, anthrax and most recently SARS. I am also in charge of the city's syndromic surveillance program, a new technology that seeks to learn of disease outbreaks faster through novel data sources and analytical methods. I recently read Oliver Sack's memoir, Uncle Tungsten: Memories of a Chemical Boyhood and can recommend it highly to all who still believe that chemistry is life, or Alternatively, life is chemistry.

## Class of 1981

Kazi Javed

I am a chemistry professor at Kentucky State University. I primarily teach physical chemistry at KSU. KSU is a small regional liberal arts institution with no graduate program in chemistry. I enjoy teaching. I spend my summers doing research at the University of Kentucky in the area of carbon nanotechnology. I find it interesting that I am implementing "inquiry" based chemistry and physics, similar to "Workshop Physics" at Dickinson. I fondly remember all my teachers at Dickinson. Like to extend an open invitation to all friends visiting this area.

## Class of 1989

Daniel Brown

I am an assistant professor of Radiology and Surgery at the Mallinckrodt Institute of Radiology which is part of Washington University Medical Center in Saint Louis, MO.

## Class of 1990

Patricia McQueeney

Hello everyone! After several years spent stumbling after graduation, I managed to combine my love of science with my love of reading. I am now a registered patent attorney living and working in Fort Lauderdale, Florida. I would love to hear from Chris, Kathy and Abby!

Richard Pennock

I currently work for Kelly Scientific Resources.

## Class of 1991

Thomas Burns

Married Dr. Margret Owen on Dec. 31, 1997 Ph.D., Physical Chemistry, August 1998, Vanderbilt Univ. Two children: Owen, born 10/10/2000 Zara, born April 25, 2003.

## Class of 1992

Mark McBriar

I received my M.S. from UCLA in 1995, and finished my graduate studies at the University of Pennsylvania in 1999 receiving a Ph.D. in organic synthesis. From there, I went on to work in the department of medicinal chemistry at the Schering-Plough Research Institute. Presently I live in Annandale, New Jersey with my wife Lisa and my two sons, Joshua and David. Great to hear all of the exciting developments in the chemistry department at Dickinson!

Brad Shust

Living in NJ, currently working as a pharmaceutical validation consultant and attending Seton Hall Law School part-time.

David Wynn

I am a product development scientist and patent liaison for Johnson and Johnson. The Chemistry Department was one of the best parts of my experience at Dickinson. I would be interested in hearing from other Chemistry majors from my class.

## Class of 1993

Shelly Lukon

I am currently working as a Systems Analyst, have my MS in Information Science, and am working on another MS in Computational Mathematics.

## Class of 1996

Karen Ellis (Klenk)

I am currently a postdoctoral fellow at the University of Maryland, Baltimore. I am working in a structural biology lab that uses NMR to determine the structure of proteins. Back in November I had my first child, Emily Catherine. In June I'll be moving down to Memphis, TN.

Michael Kinney

I worked for two years as a Research Chemist before accepting a position in Technical Sales. Currently I am the Manager of Product Assurance at Glatfelter. My wife and I live in York, PA with our two year old little girl.

Amelia (Span) Shillingsburg

I finished my Ph.D. at Princeton in 2001, and have been a postdoctoral researcher at IBM Almaden Research Center in San Jose, CA since then.

## Class of 1998

Kevin Ryan

I still have the bumper sticker from the day I declared my major...."Experiment with a Chemist" – its hanging in my office.

## Class of 1999

Jodi (Coleman) Wiegand

I was married in May 2002.

## Class of 2000

Dominick Cerminaro

I currently live in Charlottesville, VA and work for Johnson & Johnson as a cancer product specialist.

## Class of 2001

Erin Mysak

This is my second year in the graduate program at UNC-Chapel Hill. I joined the Analytical Division of the Chemistry Department, and have been working for Dr. Tom Baer of the Physical Chemistry Division. My project involves a mixture of analytical, physical and aerosol chemistry. My dissertation focuses on the studying heterogeneous reaction of atmospheric interest, both at UNC and at the Advanced Light Source at the Berkeley National Lab.

Mary (Alles) Robinson

I am in my second year of the combined degree VMD/PhD program at U. of Penn in Philadelphia. Since graduation, My husband Kevin and I bought our first house last March. I will be doing my PhD in pharmacology so anyone interested in that area is also welcome to contact me. I would like to hear about what other Chem/B and MB majors are doing. Hello to everyone that knew me! I hope to come back for a visit at some point.

Jason Yi

Since graduation, I have been employed at Cellular Genomics Inc., in Branford, CT generating genetically engineered mice for the study of specific kinases. I will be enrolling at Duke University's Cellular and Molecular Biology program this fall to pursue a Ph.D.

## Class of 2002

Amanda Leicht

I'm currently a first year medical student at Thomas Jefferson University in Philadelphia. If any current students or alumni have questions about medical school or Jefferson specifically, don't hesitate to contact me.

Dana MacGregor

Everything is well here at the University of Chicago. I am busy making peptides and running mass spec's in lab. Congrats Amy on your Petroleum Research money and to Cindy and Mike for the Beckman Foundation award and lastly to Dave et al. on the publication!!!

Joanna Polizzi

Graduate Student at Hershey Medical in Biochemistry and Molecular Biology.