# Chemistry Department
Newsletter

**Fall/Winter 2008**
http://www.dickinson.edu/departments/chem

# Remarks by the Chair

**Professor Mike Holden**



It's easy to figure out the "big news" for this year's newsletter: Over the summer, the department moved into its new home in Stuart and James Halls, part of the Rector Science Complex. The move was the culmination of six years of planning and construction…and meant hauling lots of equipment, instruments, and chemicals across College and Louther Streets! It was definitely worth it as our new home is a magnificent place, with modern labs and teaching spaces, innovative and sustainable design features, and lots of study space for our students. I encourage you to come and visit us so we can show you around.

Since the last newsletter, the department has hired two new faculty. Kristi Humphreys joined us for the fall of 2007 in a new position that was created to be shared between Chemistry and the Biochemistry & Molecular Biology program. Sarah St. Angelo, known to some of the recent grads know from her two-year stint as a visiting assistant professor, has accepted a tenure-track slot and is now in her first year of that appointment. The department now has seven full-time faculty and adjunct help, including long-time adjunct Katie (Jones) Barker.

There are also new faces in the departmental staff. Jann Ernst has moved over from the Conferences and Special Events office to become the Departmental Coordinator. Since there are two faculty from Psychology and four from Biology housed in the new building, Jann has her hands full trying to deal with three departments and their particular ways of doing things. Jim Kuenzie has been hired as an instrument technician, overseeing the care of the many instruments housed in the new complex. Ken Egolf continues to run the stockroom and purchasing realms, and also oversaw the move of the stockroom from Althouse.

The members of the department continue to serve the College in both service and teaching in a number of ways. Amy Witter is currently in her second year as an elected member of the Faculty Personnel Committee, which is charged with making recommendations on all faculty personnel issues to the administration. Cindy Samet has worked hard with Lauren Ashworth '09 to reinvigorate the Chemistry Club and Gamma Sigma Epsilon, the chemistry honor society. (Members of both groups took leading roles in the recent dedication of Rector a few weeks ago when the College Trustees were on campus.) I, along with Dave Crouch (in his role as coordinator of the B&MB program) serve on the Science Executive Committee. I remain the on-campus coordinator for the study abroad program in Australia and Dave Crouch is now the on-campus coordinator for the program at the University of East Anglia; he will

lead the program, relocating to Norwich, in the 2010-11 and 2011-12 academic years. Pam Higgins is teaching her First Year Seminar, "The Science of Being Human" for the second time. Sarah St. Angelo has created an offering in Nanochemistry, which is being taught for the first time this semester, and Kristi Humphreys has developed a course in Bioinorganic Chemistry to serve both chemistry and B&MB students.

The department has been very busy since last spring working on a proposal to restructure the chemistry major. There are a fair number of changes that we are proposing but a few stick out. For instance, we are hoping to return to a two-semester introductory sequence for most students but are maintaining a one-semester intro course for those students who are well-prepared and do not need two semesters. We also are proposing to create two tracks for the major. One track will be for a BS degree and will confer ACS certification, just as our present pathway does. The second pathway would lead to a BA degree and would allow students to take several fewer classes with more focus on particular areas of chemistry. We see this second track as a potential pathway for pre-health students and others who do not necessarily need the full treatment that an ACS-certified degree requires. The proposal has been submitted and we hope to start the new program next fall.

Thank you for taking the time to read this newsletter. I hope that it helps you to feel connected to the department and the College. And please, stop by whenever you are nearby!

# Faculty Reports

## David Crouch

Work in my lab continues to focus on the very different areas of organic chemistry and nanotechnology.

In the field of organic synthesis, Rebecca Driessen '09 worked on a new method using acidic ionic liquids and microwave irradiation to quickly and efficiently deprotect silyl ethers. This project is ongoing.

Jie Gu '08 studied the use of a class of compounds called precipitons to understand the process of crystal formation in hydrogels. Precipitons undergo isomerization to an insoluble form when irradiated with light. This allows us to induce precipitation by simply shining light on the molecule. We are interested in the factors that affect the size and stability of crystals and hydrogels allow us to isolate the particles. This project is also ongoing.

Wai Lin '09 studied green methods to add bromine to alkenes. This method could be used as an environmentally-friendly laboratory for organic chemistry classes. Currently, Wai is working with Yurina Shim '09 to use our scanning tunneling microscopes to image organic molecules on graphite.

Greg Guldin '09 is working on the development of a microwave mediated Favorskii reaction. This old organic reaction involves the contraction of a ring. But typically it takes hours for the reaction to go to completion. Microwaves have been shown to accelerate chemical reactions and we hope to develop a method to accelerate the Favorskii reaction.

## Mike Holden

My research focus had remained in the field of bioorganotransitionmetal chemistry, generally in the area of the synthesis of organometallic analogs of biologically interesting compounds. The longest-running project in this area is the synthesis of an iron-containing analog of the anti-malarial compound proguanil. In the last newsletter I commented on the "glacial" pace of progress – the glacier has not sped up since then, although some progress has been made. Recently, several students (Matt Manganaro '09, Adam Lick '09 and Hai Xu '10) have been involved in the beginnings of a project to create iron-containing versions of fatty acids. This project is in the beginning stages, as starting materials are being made at this point. Sharon Perrone '11 and Felix Fisher '10 have also been part of similar projects.

Paul Titchenell '08 worked for a year on a "green chemistry" project, the development of a sulfamic acid-based Knoevenagel reaction. This effort yielded some positive results and, with the addition of a few more good yields, should be publishable.

For those of you who remember my family, son Chris has graduated from Kenyon College in May with degrees in philosophy and music and now works in Washington, DC. Daughters Mel (a junior physics major at Kenyon) and Megan (11$^{th}$ grader looking at art/graphic design schools) have grown up all too quickly.

## Pamela Higgins

During my sabbatical last summer, I presented a talk at the ACS meeting in Boston (attended by Anna Wiliams '06!) regarding the professional writing exercises I have developed over the years in the biochemistry course. In the fall, I began an investigation of the specific mechanism of how a novel lysine-ferrocene compound (synthesis published this fall in J. Organometallic Chemistry) cuts nucleic acid molecules. I am currently composing a manuscript to report those results, while a new research student, Assia Daskalova, is investigating the compound's potential antibacterial properties in my new research space in the new science building! I continue to teach biochemistry (with some new integrative class exercises), as well as introductory and organic chemistry labs. I am also teaching a first year seminar this fall entitled "The Science of Being Human". I still find a little time to enjoy the outdoors and hit the rock wall!

## 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**.

I am also interested in the area of chemical education research that involves hands-on learning in the classroom and laboratory. I enjoy developing laboratory activities and Case Studies for both introductory and advanced course offerings. I have published work in the Journal of Chemical Education.

## Amy Witter

Professor Witter was on sabbatical for the 2005-2006 academic year. During this time, she began a new project studying the effect of land use changes (urbanization) on the chemical composition of a local stream, the Conodoguinet Creek. The study involved spatial and temporal monitoring of polycyclic aromatic hydrocarbons (PAHs) and sterols in sediments taken along a 90-mile stream reach which encompasses agricultural, urban, and pristine forested areas. Polycyclic aromatic hydrocarbons are ubiquitous chemicals found in the environment as a consequence of fossil fuel combustion and many are EPA priority pollutants. The questions she is investigating are: How does urbanization affect the quantity and identities of chemical constituents found in the stream? Can the assemblage of PAHs detected be used to identify major sources of PAHs to the sediments? Are there unique sources of PAHs identified within the Conodoguinet watershed? She is collaborating with Professor Peter Sak of the Dickinson College Geology Department who is defining the degree of urbanization at each site using geographic information system (GIS) data. Dickinson chemistry/math double-major Sunil Baidar ('09, shown at left) was instrumental in helping to collect, extract, and analyze data during the Summer of 2007. Sunil performed Soxhlet extractions on the sediments followed by gas chromatography-mass spectrometry on the Chemistry Department's new Agilent 7890 GC-MSD, which was purchased through funding obtained from the Sherman-Fairchild Foundation. In Fall 2006, Professor Witter took over as Chemistry Department Chair for 1.5 years, until she relinquished that role to Professor Holden. She is currently a member of the Faculty and Personnel Committee (FPC).

## Sarah St. Angelo

My current research interests involve the synthesis, characterization, assembly and spectroscopic properties of novel metal nanoparticles. Sunil Baidar ('09) has been working in my lab on synthesizing and characterizing a colloidal Au solution that, according to the literature, should have a large percentage of triangular shaped particles. Au and Ag nanoparticles are known to exhibit strong enhancement of the typically weak Raman scatter, known as SERS (surface enhanced Raman scattering). When an analyte molecule is adjacent to such a nanoparticle, greatly enhanced Raman signal may be observed. We are trying to generate solutions that are monodisperse in triangles by avoiding formation of "contaminant" spheres or by removing the spheres after their formation. We will also investigate coreduction and sequential reduction of Ag to test multi-metal affects on the surface enhancement of the Raman scatter. I look forward to using self-assembled monolayers (SAMs) to modify the surface of the triangular particles and using the inter-particle forces to influence 2-dimensional and possibly 2-dimensional particle self-assembly.

## Kristi Humphreys

Since I arrived here in the fall of 0f 2007 I've been working on the synthesis of a distamycin-linked copper complex for studying superoxide reactivity using DNA as a substrate. The following students have assisted in this work; Trevor Marshall (BMB, '08), Claudia Shuba (Chem, '08) and Kelly Maers (BMB, '11). Trevor Marshall presented the results of his work on a poster at the college Science Dinner in May of 2008. Laura Winterberger (BMB, '08) and Helen Li (BMB, '08) in the spring of 2008 initiated a project characterizing the binding of small copper complexes to DNA. This project was continued by Yurina Shim (Chem, '09) who was the first student in the department to use the new LC-MS instrument.

Since arriving here I was also able to wrap up my postdoctoral work from UC Berkeley and currently have a manuscript submitted to the Journal of the American Chemical Society entitled "Galactose Oxidase as a Model for Reactivity at a Copper Superoxide Center" (Authors are Humphreys, Kristi J.; Mirica, Liviu; Wang, Yi; Klinman, Judith P.). The manuscript received favorable reviews and should be published in the next few months following some revisions.

# Scholarly Research

## David Crouch

**Publications**

- R. David Crouch. "Pyridinium Bromide Perbromide" In *The Electronic Encyclopedia of Reagents for Organic Synthesis*; L.A. Paquette, ed.; John Wiley: New York, 2008.
- R. David Crouch. "Zirconium Tetraisopropoxide" In *The Electronic Encyclopedia of Reagents for Organic Synthesis*; L.A. Paquette, ed.; John Wiley: New York, 2008.
- R. David Crouch, Amie Richardson '05, Jessica L. Howard '07, Rebecca L. Harker '07. "The Aldol Addition and Condensation: The Effect of Conditions on Reaction Pathway" *Journal of Chemical Education*, **2007**, *84*, 475 - 476.
- Rebecca L. Harker '07, R. David Crouch. "Microwave-accelerated Suzuki-Miyaura Coupling Reactions using Potassium aryltrifluoroborate" *Synthesis* **2007**, 25 - 27.
- R. David Crouch, Jessica L. Howard '07, Jennifer L. Zile '04, Kathryn H. Barker. "Microwave-mediated Synthesis of Lophine: Developing a Mechanism to Explain a Product" *Journal of Chemical Education,* **2006**, *83*, 1658 – 1660.
- Amie Richardson '05, Amanda Janiec '07, Benny C. Chan, R. David Crouch. "Synthesis of Silver Nanoparticles: An Undergraduate Laboratory Using A Green Approach" *The Chemical Educator* **2006**, *11*, 331 – 333.

- R. David Crouch. "A Course in Nanotechnology for Non-science Majors" *The Journal of College Science Teaching*, **2006**, *36 (1)*, 40 – 44.

- R. David Crouch, Alexander Tucker-Schwartz '05, Kathryn H. Barker. "Iodolactonization of 4-Pentenoic Acid" *Journal of Chemical Education*, **2006**, *83*, 921 - 922.

**Presentations**

- **R. David Crouch**, Craig S. Wilcox. "Precipitons in Aqueous Systems" presented at the 40th National Organic Chemistry Symposium, Durham, NC, June 3, 2007. A-58

- **R. David Crouch**. "Nanotechnology for Non-science majors" presented at the 233rd Meeting of the American Chemical Society, Chicago, IL, March 25, 2007. CHED 1722.

- **R. David Crouch**, Amie M. Richardson '05, Jessica L. Howard '07, Rebecca L. Harker '07, Kathryn H. Barker. "Aldol addition and condensation reactions. The effect of conditions on reaction pathway" presented at the 233rd meeting of the American Chemical Society, Chicago, IL, March 25, 2007. CHED 206

- **R. David Crouch**, Amie Richardson '05, Nicole Perry '07, Matoli Vifansi '07, John Aryeetey '09 "Nanotechnology for Non-Science Majors" presented at the Northeast Regional Meeting of the American Chemical Society, Binghamton, NY, October 5, 2006. Abstract 99.

- **R. David Crouch**, Benny C. Chan, Amie Richardson, Amanda Janiec, John Aryeetey. "Nanoparticles from biomatter: an easy and green synthesis of Au and Ag nanoparticles in the undergraduate laboratory" presented at the Middle Atlantic Regional Meeting of the American Chemical Society, Hershey, PA, June 7, 2006. Abstract 536

- **R. David Crouch.** "Nanoscience for Non-science Majors" presented at the Middle Atlantic Regional meeting of the American Chemical Society, Hershey, PA, June 5, 2006. Abstract 171

**Student Presented Posters**

- **Rebecca L. Harker '07**, R. David Crouch. Microwave-accelerated Suzuki-Miyaura coupling reactions using potassium aryltrifluoroborates" presented at the 233rd meeting of the American Chemical Society, Chicago, IL, March 26, 2007. CHED 612

- **Michele Kondracki '07**, Amanda Janiec '07, R. David Crouch, Benny C. Chan**. "**A comparison of fluoride analytical methods: a traditional ISE versus a nanotechnology method" presented at the Middle Atlantic Regional Meeting of the American Chemical Society, Hershey, PA, June 5, 2006. Abstract 172.

## Pam Higgins

**Publications**

- Pamela J. Higgins. *Investigational Writing Exercises for Undergraduate Biochemistry Experiments*. Presented at the 234th American Chemical Society National Meeting (Boston, MA), August 2007

- Amanda M. Gellett, Paul W. Huber, and Pamela J. Higgins. Synthesis of the unnatural amino acid $N^{a}$-$N^{e}$-(ferrocene-1-acetyl)-l-lysine: a novel organometallic nuclease. *Journal of Organometallic Chemistry* **693** (2008): 2959-2962

## Mike Holden

**Publications**

- Holden, M.S., Crouch, R.D., Barker, K. "Formation of a-Tetralone by Intramolecular Friedel-Crafts Acylation," *J. Chem Educ*. **2005**, *82*, 934.

**Presentations**

- Holden, M.S. "Enhanced Podcasts as Tutorials in Organic Chemistry," 38th Middle Atlantic Regional Meeting of the ACS, Hershey, PA, June 5, 2006.

## Cindy Samet

**Publications**

- A Capstone Course in Nanotechnology for Chemistry Majors, C. Samet, *J. Nano. Educ.,* in press.

- Matrix Isolation Infrared Spectroscopic and Density Functional Theory Study of the 1:1 Complexes of Bromocyclohexane with NH3: Evidence for a Weak C-H---N Hydrogen Bond, K. Hess (08) and C. Samet, *Spectroscopy Letters*, Vol. 41, No. 4, **2008**, 179-188.

- Pentachlorocyclopropane/Base Complexes: Matrix Isolation Infrared Spectroscopic and Density Functional Study of C-H---N Hydrogen Bonds**,** C. Samet, A.B. Baker (04), J.T. Lyon, and L. Andrews, *J. Phys. Chem. A.,* Vol. 109, No. 37, **2005,** 8280-8289.

- Napoleon's Buttons: Teaching the Role of Chemistry in History**,** C. Samet and P. J. Higgins, *J. Chem. Educ.,* Vol. 82, No. 10, **2005,** 1496-1500.

## Amy Witter

**Publications**

- Witter, A.E (2005). You are what you eat: the quantitative determination of butylated ydroxytoluene (BHT) in chewing gum by GC/MS. Journal of Chemical Education, 82(10), 1538 - 1541.

- Scott, B.F., MacDonald, R.W., Kannan, K., Fisk, A., Witter, A.E., Yamashita, N., Durham, L., Spencer, C., and D.C.G. Muir. (2005) Trifluoracetate (TFA) Profiles in the Arctic, Atlantic, and Pacific Oceans. Environmental Science and Technology, 39: 6555-6560.

## Sarah St. Angelo

**Publications**

- "Template Synthesis and Assembly of Metal Nanowires for Electronic Applications" St. Angelo, S. K.; Mallouk, T. E., in Nanoparticle Assemblies and Superstructures, Kotov, N., Ed., CRC Press, 413-435, (2006).

# Department News

## Gamma Sigma Epsilon

Gamma Sigma Epsilon, the chemistry honor society, continues to grow and develop. We are planning many exciting events for the coming year including a lab coat sale, demos at the dedication of the new Rector Science Complex and Parent's Weekend, a holiday party for faculty and students and monthly donuts and juice to raise awareness for Gamma Sigma Epsilon.

Additionally, Gamma Sigma Epsilon is working to reinstate the Chemistry Club this year for any students with an interest in chemistry. The club will work together with the honor society in many of their ventures as well as perform other duties which include improving faculty-student communication, bringing in speakers, and tailoring electives based on student interest.

Lauren Ashworth
President

**Table 1. Gamma Sigma Epsilon Inductees 2006**

| | NAME | MAJOR(S) |
|---|---|---|
| **Class of 2006** | Sara Baszczewski | BMB |
| | Amanda Gellett | |
| | Kelly Hoberg | BMB |
| | Louis Lazar | BMB |
| | Natalie Martin | BMB |
| | Theodore Nowicki | BMB |
| **Class of 2007** | Eric Barth | BMB |

*BMB = Biochemistry and Molecular Biology

**Table 2. Gamma Sigma Epsilon Inductees 2007**

| | NAME | MAJOR(S) |
|---|---|---|
| **Class of 2007** | Michael Gortakowski | |
| | Amy Grunbeck | |
| **Class of 2008** | Eric Blazar | |
| | Daniel Condit | BMB |
| | Jie Gu | BMB/Chem. |
| | Jennifer Kilpatrick | BMB |
| | Christina Lakin | BMB |
| | Robert Marshall | BMB |
| | Catharine Quirk | BMB |

| | | |
|---|---|---|
| | Sarah Timm | BMB |
| | Paul Titchenell | BMB/Chem. |
| | Christopher Tolmie | BMB |
| | Laura Winterberger | BMB |
| **Class of 2009** | Sunil Baider | Chem. |
| | Yurina Shim | Chem. |

**Table 3. Gamma Sigma Epsilon Inductees 2008**

| | | |
|---|---|---|
| **Class of 2009** | Adam Lick | BMB |
| | Wai Lin | BMB |
| | Matthew Manganaro | BMB |
| **Class of 2010** | Alejo Lifschitz | Chem. |
| | Elyssa Prager | Chem. |
| | Jeffrey Rodgers | Chem. |
| | Joseph Sandoe | Chem. |
| | William Schaffenburg | BMB |
| | Adnan Solaiman | BMB |
| | Hai Xu | BMB |

*BMB = Biochemistry and Molecular Biology

# 2007 Awards

| | |
|---|---|
| ACS Outstanding Senior Chemistry Major Award | Laura Bahorich |
| ACS Division of Polymer Chemistry Award | Lauren Ashworth |
| AIC Outstanding Senior Major Award | |
| Chemistry | Amy Grunbeck |
| Biochemistry | Michele Kondracki |
| The Merck Index Award | Eric Barth |
| ACS Undergraduate Award in Analytical Chemistry | Sunil Baidar |
| John E. Benson Handbook Award | Rebecca Harker |
| CRC Freshman Chemistry Achievement Award | Elyssa Prager |
| Horace E. Rogers Scholarship Award | Sunil Baidar |
| Richard Sheeley Memorial Scholarship | Jie Gu |
| Vuilleumier Scholarship | Yurina Shim |
| Hypercube Scholar 2007 | Eric Barth |

# Class of 2008 Graduates

| Biochemistry & Molecular Biology | Chemistry |
|---|---|
| Helen Li | Claudia Shuba |
| Laura Winterberger | Megan DeLuca |
| Jie Gu | Jie Gu |
| Jennifer Kilpatrick | Paul Titchenell |
| Amanda Heim | Kyle Hess |
| Paul Titchenell | |
| Shanna Berry | |
| Eric Blazar | |
| Christina Lakin | |
| Rachel Hodge | |
| Robert Marshall | |
| Sarah Timm | |
| Catherine Quirk | |
| Devy Emerador | |
| Adil Solaiman | |
| Christopher Tolmie | |

# Alumni Spotlight

**Don Thomas, Physics and Chemistry Major, '70**

After Dickinson, Don continued graduate school at what is now the Oregon Graduate Institute of Science and Technology and the University of Hawaii Dept. of Chemistry. He now has a faculty appointment at UH - Hawaii Institute of Geophysics and Planetology and serves as the director of the Center for the Study of Active Volcanoes (http://www.uhh.hawaii.edu/~csav/). The latter, in cooperation with the US Geological Survey's Hawaiian Volcano Observatory, offers training for scientists and technicians from the developing nations in the technology of monitoring active volcanoes. They also offer a summer course, Field Methods in Volcanology, for advanced undergraduates and early graduate students that focuses on the methods of assessing and monitoring volcanic hazards and offers students an opportunity to get hands-on experience with modern earth sciences technologies. He continues to pursue research in the hydro geochemistry of deep groundwater systems in an ocean island environment. With a large team of earth science researchers, last year they completed a 3500 m deep borehole into Mauna Kea on the Island of Hawaii and he's currently working on the chemistry of the deep fluids to develop a model of their circulation through and interaction with the deep basaltic formation.

Don lives on the Island of Hawaii - he abandoned the big city of Honolulu ten years ago to live in Hilo, a town on the (wet and green) east side of the island, that is about the same size as Carlisle was when he graduated from Dickinson in 1970. The Hilo campus of the University of Hawaii is also about the same size as Dickinson was in the 1970's.

# Alumni News

## Class of 1960

**Ken Lacy**

After graduation he worked for a division of Allied Chemical as a research analytical chemist for three years...then, he went into the business world after receiving an MBA at Wharton.

## Class of 1964

**Joel M. Barish**

After Dickinson, Joel went to Jefferson in Philadelphia, residency and fellowship at UCLA, and another fellowship at UW in Settle. He practiced and taught medicine in San Diego for 18 yrs. then joined the faculty at Columbia University. Joel partially retired in 2003 and has been teaching medicine in Tokyo for the past six months. When not in Japan, he lives in San Francisco.

## Class of 1965

**Dr. John Griswold**

Received M.S. and Ph.D. in Chemistry from Lehigh University. Between degrees, he served as an oceanographic officer in the United States Navy. Since 1975 he has been with the Chemistry Dept. at Cedar Crest College teaching primarily Organic Chemistry and serving as Department Chair. He received the Alumnae Award for Distinguished Teaching in 1994 and 2007, and has been involved in placing many graduates in Ph.D. and M.D. programs. He plans to retire in June 2009.

**Jim Sharf, Ph.D.**

Jim got his PhD in industrial psychology and headed to DC where he spent his entire career inside the beltway. He started off teaching at both American and George Washington University's business school faculties. He then went into government, authoring federal fair employment testing standards and testifying in Federal court as EEOC's chief psychologist and spent two stints in consulting firms. A decade ago, he incorporated his own consulting practice located in Alexandria and has public and private-sector clients nationwide for whom he has developed, implemented and defended employment testing. In '02, for example, he was given ten weeks to develop the Transportation Security Administration's selection procedures used to screen 1.7m applicants on-line, test 355k, and hire 55k airport security screeners. He has published extensively on testing and the law, lectured nationwide and is a fellow of both the Society of Industrial / Organizational Psychology and the American Psychological Association. He and his wife Charlotte have restored several properties now on the National Trust for Historic Preservation in Old Town and on the Eastern Shore of Maryland.

## Class of 1966

**Ismail Noaman**

Worked as chemistry teacher for one year in his hometown at Aden College-where he studied before coming to Dickinson. He then became the first South Yemen Ambassador to the UN in New York, 1968-1970. During this period in New York, he attended President Eisenhower's funeral and visited Senator Fullbright-the founder of Fullbright Scholarships (Ismail was a Fullbright scholar and was the 2nd Fullbright graduate scholar from Aden & South Yemen). He then worked in the oil and gas business: Aden,Abudhabi/Uae: (adnoc) and Sanaa Ministry of Oil and Gas /Yemen Oil & Gas Corporation: Sanaa-Uemen. He is now retired, but has his own business consulting firm in oil & gas.

## Class of 1971

**Michael Ross, M.D**.

He received his MD from George Washington Univ. in '75. He practiced medicine in Northern Virginia and was Chair of the OB-GYN Dept. and Hospital Executive Committee. He is currently on the CDC Comm. for Prevention of Breast and Cervical Cancer. Michael has been President of a Generic Pharmaceutical Co. for 2 years and is enjoying the change of pace as well as using some of his Chemistry background. He is married to Susan Elliott, a dermatologist in Wash,DC, and they have 3 children.

## Class of 1976

**Kenneth Cohen, MD**

Is currently a physician practicing Internal Medicine in Evergreen, Colorado. He also serves as the Medical Director of his group, New West Physicians, a 60 physician primary care organization in Golden, Colorado. Additionally, he runs a clinical research center for the group where they participate in international clinical trials as well as research on drugs in development. They were awarded a Best Practices by the CDC this year for their work on tobacco cessation, and published original research on osteoporosis screening and management in the Journal of Clinical Densitometry this year.

**John Taylor**

He went to the Tuck School at Dartmouth for his MBA and after a first-half of career in the IT, consulting, and product management positions, he joined the advocacy group for venture capital and technology innovation. For the past 12 years, he's been part of the team that has led great reform and improvement in the capital gains taxation, government funding of basic R&D, patent reform, entrepreneur support, and small business deregulation areas.

## Class of 1978

**Wayne K. Geller, MD, FAAFP**

Is am a Family Physician who practiced medicine in Philadelphia for nearly 9 years before working for J & J in Drug Development (Associate Director, Patient Safety). After 7 years at J & J, he became a Medical Director in Patient Safety at AstraZeneca Pharmaceuticals in Wilmington, DE. He still maintains a great interest in Chemistry and Biochemistry, as well as Geology and Mineralogy. He is grateful to his Dickinson College Chemistry professors, especially Dr. William Schearer, a truly gifted teacher who introduced him to Organic Chemistry. If he had it all over again to do today, he wouldn't have done it any other way or elsewhere!

## Class of 1980

**William (Bill) Gray, MD**

He is an Interventional Cardiologist and Associate Prof of Medicine at Columbia University in NYC, and Director of Endovascular Services within the Center for Interventional Vascular Therapy. In addition to patient care and teaching, he works closely with engineers from many parts of the industry to help guide medical device development in a wide range of cardiac and vascular applications, and also with clinical/regulatory development for studies in humans.

**Kenneth P. Press, DMD**

He is an Oral and Maxillofacial Surgeon in private practice. He is also the Chairman of the Department of Oral and Maxillofacial Surgery at Morristown Memorial Hospital, New Jersey.

## Class of 1984

**Thomas C. Vancott, Ph.D.**
He is currently President & CEO of Advanced BioScience Laboratories, Inc. (Kensington, MD) and involved in international infectious disease vaccine development.

## Class of 1985

**Bob delRosario, MD**
He is currently a partner of and Vice President for Partners in Women's Healthcare-- a local Ob/Gyn practice. He is proud to say they have grown to become the largest Ob/Gyn practice in central PA. He currently resides in Camp Hill, PA with his wife and son.

## Class of 1988

**David Alexanderian**
He is an associate medical director at Vertex Pharmaceuticals working on a Hepatitis C protease inhibitor. His wife. Alexa, is an oculoplastics and pediatric ophthalmologist at Boston Childrens Hospital. They live in Arlington, MA and have 2 daughters Charlotte and Heidi.

## Class of 1991

**Thomas Burns**
Thomas is currently the Associate Provost for Academic Administration at Millersville University. He has two children (8 and 5 years old) and he and his family live in Lancaster, PA.

**Michele (Mitch) Hadaway**
She is getting married on November 23rd in Clarksville, MD. She is the Associate Director of Clinical Operations at ICON Development Solutions.

## Class of 1992

**Mark McBriar**
After 9 years as a medicinal chemist in CNS research at Schering-Plough, Mark has recently joined the law firm of Frommer, Lawrence & Haug, LLP in New York, NY as a scientific advisor, focusing in intellectual property law. His work involves patent prosecution, portfolio evaluation, due diligence and freedom to operate analysis for clients. Mark would like to hear from Dickinson Alumni in NYC.

**Dave Wynn**
Dave is the inventor on the newly issued patent US 7,416,738, "Modified Release Dosage Form". He is currently a registered US Patent Agent and manages Intellectual Property for McNeil Consumer Healthcare, an operating company of Johnson and Johnson. He is also the inventor of multiple patents and applications in the area of solid pharmaceutical dosage forms.
He would like to hear from other chem. majors from '92 @ dwynn2@its.jnj.com.

## Class of 1993

**Boyung Shim**
Bo is presently living in Cleveland with her newly wed husband, Michael Pahls (they married on August 15th, 2008). They had a fantastic honeymoon in the Canadian Rockies (Banff, Lake Louise and Jasper) filled with beautiful, scenic hikes and plenty of rest & relaxation in the mountains. After receiving her MPH from Yale University, Bo has been working in the pharmaceutical industry for the past 10 years, residing in New Jersey and returned to Cleveland 2 years ago to be closer to family. Presently, she is at

IMS Management Consulting where she consults to pharmaceutical companies on analytic studies using patient-level medical claims information. She enjoys the diversity of clients and consulting engagements and most of all, enjoys the flexibility to work remotely from her home office. Bo and Michael have plenty of family in Cleveland and love spending time with them as well as pursuing fitness-oriented activities like running, biking and yoga.

## Class of 1994

**Keith Sokoloff**

Keith currently lives in Wilmington, Delaware with his wife Julinna and three children, Kylie(5), Caden(3), and Ali(1). He is a family practice physician in solo practice in Newark, DE and currently re-training in Dermatology.

## Class of 1996

**Brent Snader**

After Dickinson, Brent went to Vanderbilt University for medical school. He graduated in 2000 and completed a dual residency in internal medicine and pediatrics in 2004 (also at Vanderbilt). He just finished 4 yrs. working at Christ Community Health Services, an inner city clinic in Memphis, TN. He has been married for 7 yrs. to Melinda and adopted two beautiful girls, Anna from China and Asha from India. Their family is in the process of moving to Kolkata (formerly Calcutta) India to work among women who are caught in the commercial sex trade. They leave Oct. 20th.

**Amelia Shillingsburg**

She is teaching part-time at Duquesne University (organic lab), and is living in Western PA with her husband and two sons.

## Class of 1999

**Tia Maiolatesi Welsh**

Tia received her Masters of Architecture from Pratt Institute, School of Architecture in May, 2008. She is currently an architect at O'Neil Langan Architects in Manhattan working on high-end retail design. She just got married to Dr. Todd Welsh, Class of 1996, on September 20,2008 and Erin Mysak, class of 2000, (from the Chemistry department) was their maid of honor! She and Todd live in Hoboken, NJ.

## Class of 2001

**Amy Cadwallader, Ph.D.**

After graduating from Dickinson, she attended Virginia Commonwealth University and obtained a master's degree in biology/forensic science. Her work focused on assessing alternative biological matrices, such as insects and hair, for toxicological analysis using mass spectrometry. After completing the master's degree, she moved to Salt Lake City to attend the University of Utah for a doctoral degree in Pharmacology and Forensic Toxicology. Her work at the University of Utah focused on determining the mechanism of action of anabolic-androgenic steroids and finding better methods of detection of anabolic steroid abuse. She did some mass spectrometry, but really developed her molecular biology skills and became a well-rounded scientist. In Salt Lake City, she worked in a certified World Antidoping Agency Laboratory (her former mentor was the Medical Director for the Olympics when they were in SLC); she had an absolutely incredible experience there! After completing her doctoral degree she decided to accept a position at another World Antidoping Agency (and Italian Federation Sports Team) Lab in Rome, Italy. Here, she is developing new biological assays (as an alternative or compliment to mass spectrometry) for the detection of sports doping, as well as assessing the potency and toxicity of novel steroids and steroid-like compounds.

**Beth Hengst Gillespie**
Is finishing her last year of Ophthalmology Residency at Case Medical Center in Cleveland Ohio. She and her husband Rob are expecting their first baby in just a few short
weeks!

**Mary Alles Robinson**
Had a son, Bryce Edward Robinson, October 27th, 2006 and took a year off from her VMD/PhD program to stay home with him. Now she is finishing up her thesis "Oxygen-mediated regulation of Nitric Oxide production by cytokine-stimulated macrophages" in the Graduate Group of Pharmacological Sciences at the University of Pennsylvania. Then she will return to the School of Veterinary Medicine at UPenn to finish her clinical requirements for her veterinary degree; expected graduation is May 2010. Her post-graduation plans are to remain at the large animal facility, New Bolton Center in Kennett Square PA, where she plans to study laminitis in horses, as a post-doc and possibly combined with a pathology residency. Her long-term goal is to remain at the veterinary school to pursue a career in research, veterinary medicine, and teaching veterinary students.

## Class of 2002

**Danielle Klinger**
Graduated with honors from the University of the Sciences in Philadelphia with a Doctor of Pharmacy Degree in May of 2006. She started working at Eli Lilly and Company in June of 2006 in the Global Patient Safety Department as a Surveillance Associate for Neuroscience products. She is primarily responsible for Cymbalta. She was married on June 21st 2008 to Kevin Sean Rogers Jr. (Villanova University - 2001). We live in Westfield, Indiana.

**Dana MacGregor**
On July 8th, she defended her Ph.D.thesis entitled "The roles of LRD2, sugars, and the hormones ABA and auxin in regulating Arabidopsis lateral root formation" at theUniversity of Chicago. The paper from her work will be coming out soon in Plant Cell as MacGregor et al. As of August 18th, she stated her post-doctoral position at the University of York, UK working on determining the mechanism by which temperature inputs into the circadian clock in plants.

## Class of 2003

**Alyssa Thompson**
She published, for the first time, earlier this year as a first author for a review article on neurogenesis in *Genes, Brain, and Behavior*, which she wrote during a break from medical school (I'm now in my 3rd year), and she just got engaged to Edwin Jousma in July and is getting married on Sept. 12, 2009 in Cincinnati, OH.

## Class of 2004

**Carly Drahus, DO**
Just graduated from Lake Erie College of Osteopathic Medicine on June 2nd, 2008. She is now doing an Emergency Medicine Residency at Albert Einstein Medical Center in Philadelphia, PA.

**Treasure Walker**
Is a 4th year medical student at the University of Maryland-Baltimore where she is currently applying for a residency in Obstetrics and Gynecology. She will graduate in May of 2009.

**Jenn Zile**
Recently graduated from the University of Maryland School of Pharmacy with a Doctorate of Pharmacy (PharmD) degree. She relocated to Delaware, where she is in the midst of a 1year pharmacy residency program at the Alfred I duPont Hospital for Children.

## Class of 2005

**Laurel Blair**
Is preparing to graduate from Jefferson Medical College this school year (May 2009). She is interviewing for a residency position in General Surgery.

**Casey DelConte**
Has just received a master's degree from the department of Molecular, Cellular, and Developmental Biology at Yale University and is in the process of finishing up her PhD at Yale from the same department.

**Jeffrey Heath**
Is currently working for Merck as a biologist in the Department of Automated Biotechnology in North Wales, PA. They develop and miniaturize assays for High Throughput Screening.

**Melissa Moidel**
Is a 4th year medical student at Drexel University College of Medicine in Philadelphia PA. She recently got married to Anthony Burgess '05 (Political Science) on August 9, 2008 in Pittsburgh, PA, who recently graduated from Duquesne Law School in Pittsburgh, PA ('08). They currently live in Philadelphia PA.

**Sarah Wallett**
Is preparing to graduate from Jefferson Medical College this school year (May 2009). She is interviewing for a residency position in Obstetrics/Gynecology.

## Class of 2006

**Anna Williams**
Is in her third year as a graduate student at Northeastern University.

## Class of 2008

**Paul Titchenell**
Paul is currently a graduate student at Penn State College of Medicine enrolled in the Cellular and Molecular Physiology department, is a PhD program.

**Chris Tolmie**
Since graduation, he has started medical school at the Philadelphia College of Osteopathic Medicine. There are several other Dickinson Alumni attending PCOM with him, which has helped with the transition. He is almost finished with the first term and is enjoying every minute of it, especially the dissections in gross anatomy lab. Overall, the sciences at Dickinson more than adequately prepared him for the medical school curriculum.

**The last lab class in Althouse, May 2008.**