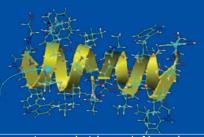
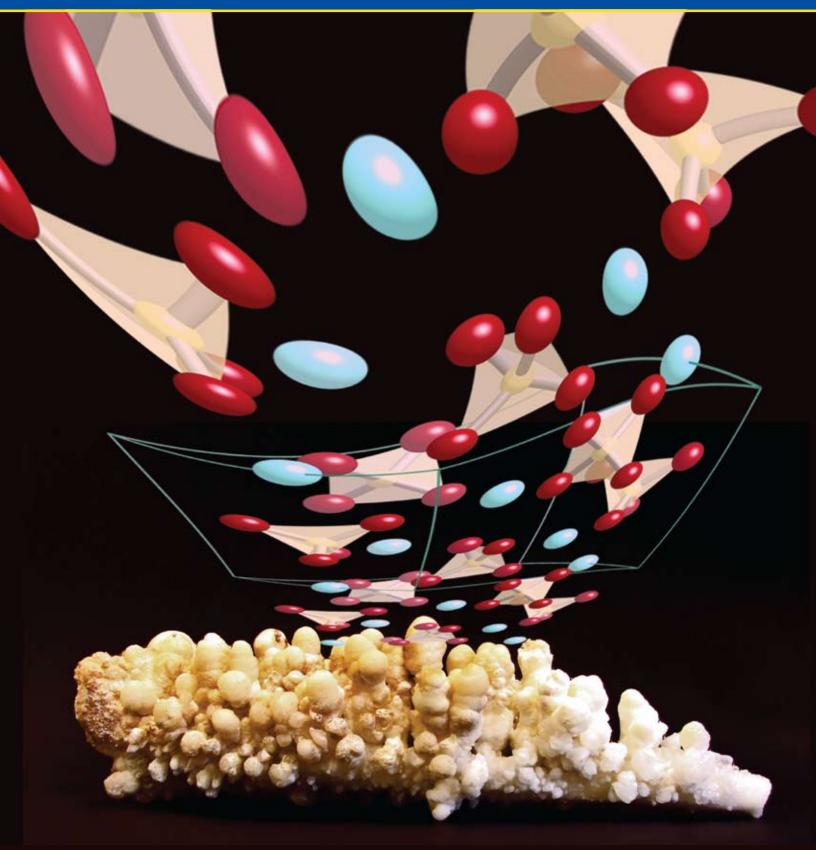
# BLUE HEN CHEMIST



University of Delaware, Department of Chemistry and Biochemistry Annual Alumni Newsletter

NUMBER 37 AUGUST 2010 JOHN L. BURMEISTER, EDITOR



# Chemistry& Biochemistry

COVER: This is the 37th issue of the BLUE HEN CHEMIST and, accordingly, the cover picture shows a sample of natural alabaster (gypsum,  ${\rm CaSO_4} \bullet 2{\rm H_2O}$ ). Why? Because, as discovered by Jen Durkin, the 37th wedding anniversary is the alabaster anniversary! The distorted crystal structure of  ${\rm CaSO_4}$  brings to mind the climactic battle scene in Avatar.

- —Sample courtesy of the University of Delaware Mineralogical Museum
- —Photo by Jen Durkin
- —Crystal structure provided by Prof. Svilen Bobev



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## FROM THE CHAIR

Professor and Chair Klaus Theopold (b. 1954) Vordiplom, 1977, Universität Hamburg; Ph.D., 1982, University of California, Berkeley; Postdoctoral, 1982–1983, Massachusetts Institute of Technology

Every four years during summertime I have 'Fussball' on my mind. By the time you read this, the 2010 Soccer World Cup in South Africa will be receding into memory. However, I am writing under the immediate influence of two very different matches, which highlight both how the world is changing, and how it stays the same. Yesterday, two relative newcomers to the 'beautiful game' met for the second time in World Cup competition, and once again as in 2006 - the United States team was sent home by Ghana, the sole African team to make it into the round of 16. Today, in the continuation of a rivalry of much longer standing, Germany beat England 4:1, including a reprise of the infamous 'Ghost Goal' of 1966 (yes, I was around for that one too). Let's just call it even! In other, and possibly more important news, I am happy to report that our Department is weathering the current economic crisis. Indeed, there is much that we are proud of. Herewith, then, my annual report.

The affairs of the University of Delaware remain in good hands. Following last year's elevation of **Prof. Tom Apple**, Ph.D. '81 to the position of Provost, this

year saw the appointment of Prof. George Watson, a member of UD's Department of Physics and Astronomy, as Dean of the College of Arts and Sciences. Our colleague Prof. Doug Doren continues as Associate Dean for Research and for the Natural Sciences. After a three-year hiatus from administrative duties, Prof. Charlie Riordan has been tapped as the new Vice Provost for Graduate and Professional Education; his role will be to support the University's strategic initiative emphasizing research and graduate study. As the first fiscal year under a new budget model comes to a close, we are still here and the anxiety about the impending change and the impact of the recession shows signs of receding. Budgets are still tight, but we are hopeful that things will improve in the years ahead.

As the saying goes, change is the only constant, and the past year has been no exception. I am particularly pleased to announce the arrival of two new faculty members for the next academic year. **Profs. Joel Rosenthal** and **Meredith Wesolowski** begin their respective appointments as assistant professors on July 1. Joel completed his graduate



work with Prof. Dan Nocera at MIT in 2007, and since then he has been a Ruth L. Kirschstein NIH Postdoctoral Fellow in the laboratory of Steve Lippard, also at MIT. Joel will initiate a research program in inorganic chemistry related to energy and human health. His work will focus on the development of electrocatalytic systems for the reduction of CO<sub>2</sub> as well as neurochemistry and molecular imaging. Meredith did graduate work at the University of Georgia, where she combined research in bioinorganic chemistry with earning a master's degree in science education in 2000,



Joel Rosenthal, Assistant Professor, Inorganic Chemistry, Ph.D. Massachusetts Institute of Technology (2007)

followed by a doctorate in educational technology from the University of Delaware in 2008. She has a wealth of teaching experiences in chemistry, biology, and physics, and is skilled in a variety of pedagogical approaches, including student-centered active learning methods and innovative technology. Her main focus will be teaching CHEM-103/104 Honors General Chemistry. Meredith is a denizen of the web; check out her regular contributions to the departmental Facebook page. In another indication of the progress of time, we congratulate **Prof.** Svilen Bobev, who has been promoted to Associate Professor with tenure effective September 1, 2010.



Meredith Wesolowski, Assistant Professor, Chemical Education, Ed.D. University of Delaware (2008)

This last year has also brought some departures. Roberta Colman, the Willis Harrington Professor of Biochemistry formally retired at the end of 2009, after 36 years of service as a faculty member. Roberta's last graduate students are defending their dissertations this summer and she is thus concluding a

long and productive research career. **Prof. Joel Schneider** has accepted a position as Laboratory Chief of the newly established Chemical Biology Laboratory at the National Cancer Institute in Frederick, Maryland. After 10 years at the University of Delaware, Joel moved his laboratory during the fall of 2009. While we were sorry to see him go, we wish him much success in his new position and look forward to keeping in touch and exploring potential collaborations.

As with the faculty, so it goes with the Department's valued staff. During this past year administrative coordinator Gus **Mandrachia** left the Department to pursue other opportunities. On the other hand, we were glad to welcome senior secretary **Debbie Fox**, to fill the position vacated last summer by **Tracy McQueen**. Recent additions to our staff include Meg Frost, who is serving as assistant to the Director of the COBRE grant, and Wanda Cibroski, whose position as sponsored program coordinator will augment our grants management team. There have also been some welcome promotions of members of our staff. Thus Federico Cruz is now a laboratory coordinator in charge of our instrumental teaching labs and Patrick McMahon has been promoted to CITA IV, the highest rank on the career ladder for campus IT associates.

A new initiative this past year has been the constitution of an Advisory Board for the Department of Chemistry and Biochemistry (affectionately abbreviated CBAB). The five inaugural members of this board are alumni **Dr. John J.** 

Baldwin, B.S. '56, Dr. Randy **A. Bull**, Ph.D. '81, **Dr. Arthur** J. Coury, B.S. '62, Dr. Martin DeBerardinis, B.A. '78 and Dr. William A. Welsh, Ph.D. '74. The Board will meet twice a year to provide perspective and advice regarding the operation of the Department as well as assisting with development initiatives. Coincidentally, board member **Art** Coury was inducted into UD's Alumni Wall of Fame in 2010, recognizing his 'outstanding professional and public service achievements'. Congratulations, Art!

Members of this Department have had some heartening successes in improving our research infrastructure. Most auspicious in this category was an award from the NSF to Profs. Polenova (PI), Rozovsky, and **Dybowski**, totaling \$2.2 M for the acquisition of a high-field NMR spectrometer. We are looking forward to the arrival of an 850(!) MHz spectrometer, which will be a significant step up for our excellent NMR facility. Another success in this regard was an NIH award to **Prof. Joe Fox**, of \$ 500,000 for the purchase of a 500 MHz NMR spectrometer. Another notable achievement was the award of the fifth(!) consecutive Howard Hughes Medical Institute (HHMI) grant under the direction of **Prof. Hal White**. This \$1.2M grant will provide funding in support of innovative programs to strengthen undergraduate and precollege science education. Several of our colleagues have attracted honors and prizes during the past year. Thus Prof. Svilen Bobev was selected as 2009 recipient of the Young

#### From the Chair

CONTINUED FROM PAGE 3

Scholar Award of UD's Francis Alison Society. The purpose of the award is to recognize promising young scholars at the University and encourage their future development of research at the University. Prof. Cecil Dybowski was the recipient of the 2010 Eastern Analytical Symposium (EAS) Award for Outstanding Achievements in Magnetic Resonance and he will be the recipient of the 2010 EAS Gold Medal Award, which was established in 1952 to recognize outstanding contributions to the field of Applied Spectroscopy. Prof. Kate Scantlebury was selected as a Fellow of the American Association for the Advancement of Science (AAAS) and she has been selected to receive the Outstanding Mentor Award by The Association for Science Teacher Education (ASTE). Prof. Zhihao Zhuang was the most recent recipient of a Faculty Early Career Development (CAREER) Award from the NSF.

Finally, **Prof. Sue Groh** was honored by the University with an Excellence in Teaching Award.

It is always a particular pleasure on this occasion to acknowledge the support that the Department has received during the past year from its alumni and friends. As is the custom, Associate Chair Prof. John **Burmeister** has provided more extensive coverage elsewhere in this newsletter; however, I wish to express our appreciation for some outstanding contributions. Following a precedent of several years, Mr. David Plastino, B.S. '78, has made a substantial gift to the University, underwriting both the 'David A. Plastino Scholars Program' at the University level and the 'Alumni Undergraduate Research Fellows Program' in the Department of Chemistry and Biochemistry. The latter funds the summer research of six undergraduate students as of this writing. In another tradition, the **David Lipp Family Foundation** 

has continued its unrestricted support of the Department. We have once again used these precious funds to appoint six 'Lipp Family Foundation Teaching Fellows', thereby aiding our increasing needs for teaching assistant positions.

Last, but not least, I want to thank all of you who sent us donations throughout the year. Your tangible support is critical to our continued function and our current students are the beneficiaries of your magnanimous support. Your spirit of giving back to your alma mater and to the generation of students coming after you is inspiring and much appreciated. We shall be most grateful for your continued support in the coming year.

With best regards,

blow 4. Theopold

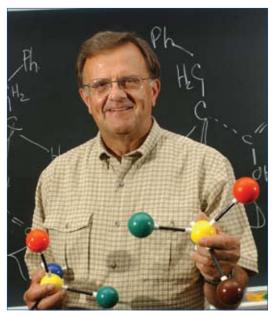
## Professor John Hartwig to be Awarded 6th Annual Richard F. Heck Lectureship Award



The Department established the Heck Lectureship in 2004 to recognize visionary leadership in the field of organometallic chemistry, and to honor the contributions of **Richard F. Heck**. The Department is pleased to recognize **Professor John Hartwig** of the University of Illinois for his contributions in the development of transition metal catalyzed bond formation. Dr. Hartwig's research has advanced fundamentally new methods of carbon-heteroatom

and carbon-carbon bond formation. The 'Buchwald-Hartwig reaction'— a Pd-catalyzed method for constructing carbon-nitrogen bonds— is utilized extensively in pharmaceutical research and for applications in materials science. Other research interests include the development of methods for olefin hydroamination, enantioselective allylic amination and etherification, and catalytic methods for alkane functionalization.

## FROM THE ASSOCIATE CHAIR:



Alumni Distinguished Professor and Associate Chair John L. Burmeister (b. 1938) B.S., 1959, Franklin and Marshall College; Ph.D., 1963, Northwestern University Instructor, University of Illinois, Urbana/Champaign, 1963 - 1964

## AN ISCC RETROSPECTIVE

The first Intercollegiate Student Chemists Convention was organized in 1936 under the guidance of Professor B. Meldrum of Haverford College, with eleven charter member institutions participating: Bryn Mawr College, Dickinson College, Drexel Institute of Technology, Gettysburg College, Haverford College, Johns Hopkins University, Lafayette College, Swarthmore College, Temple University, the University of Pennsylvania, and Ursinus College. Every year, for the last 73 years, except for one year during World War II, undergraduate chemistry students from institutions in Pennsylvania, New Jersey, Delaware, Maryland, and New York have been meeting to present scientific papers based on their original research. The ISC Convention is believed to be the oldest continuously meeting annual convention of its type in North America.

Eight ISCC's have been hosted by the University of Delaware. The most recent (the 74th) was held in Brown Laboratory on April 24, 2010. Since the history of the ISCC is intertwined with the history of our Department, I have decided to, once again, utilize my annual letter to lead you on a trip down Memory Lane. I will concentrate, for the most part, on the ISCC's held in Beautiful Downtown Newark.

While the U of D was not involved in the creation of the ISCC, it did not take us long to become active. Indeed, the 3rd ISCC was held in the Blue Hens' Coop on April 30, 1938 (the year I was born). Unfortunately, no other written record remains of that meeting.

Our second ISCC, held on May 6, 1950, was of cosmic significance, insofar as the future development of inorganic chemistry was concerned. Two students received Honorable Mention for their presentations: **Henry R. Krysiak** (UD BS50), who went on to earn his doctorate, and is still living in Wilmington, and a Temple University student named Frank

A. Cotton (better known today as (the late) F. Albert Cotton). His Advanced Inorganic Chemistry text, written with (the late) Nobel Laureate Geoffrey Wilkinson, now in its 6th edition, has become the bible of inorganic chemistry. Prof. Cotton, prior to his death in 2007, became the most published chemist in history. The premier position has subsequently been taken over by our own Arnie Rheingold (FAC 84-03), with the number of published papers standing at 1712 (AR) to 1599 (FAC), as of the date of the last ISCC. The keynote lecture for the 1950 ISCC was given by **Dr. V.R. Hardy**, of the DuPont Experimental Station. His topic was indicative of the tenor of the times: "The Type of Man Industry Needs."

Our third ISCC, April 27, 1957, produced another Honorable Mention for one of our majors – (the late) **Roger Thornton**. His widow, **Martha (Morgan)** (BS57), is still living in Willow Street, PA. The keynote lecture, "From the

#### From the Associate Chair

CONTINUED FROM PAGE 5

3R's to the 3C's," was presented by **Dr. Robert W. Voris**, of the Hercules Powder Company.

The 1967 meeting at the U of D was actually spawned at the 1966 meeting in Gettysburg – my first ISCC. My first undergraduate research student, **C. Frank Shaw III** (BS66), now a Professor of Chemistry at Illinois State University, who has endowed two inorganic awards in our Department, earned a first place award for his presentation. Flushed with victory, we immediately offered to host the next meeting!

That ISCC took place on April 29, 1967, in Brown Laboratory and what is now called the Perkins Student Center. It was chaired by Wayne Fenton (BS67). **Ben Dunn** received a 3rd place award in the organic division. Dwight Swigart (F&M), now a Professor of Chemistry at Brown University, was also an awardee. The keynote speaker, Prof. Charles Overberger, of the University of Michigan, lectured on "Problems in Macromolecular Chemistry." Prof Wallace McCurdy (FAC 59-92) served as one of the judges.

The 1978 meeting, held on April 22nd in Clayton Hall, will best be remembered for producing the funniest keynote address in the history of the ISCC: "How to Run a Small Chemical Company for Fun and Profit," presented by **Max Gergel**, Chairman of the Board of the Columbia Organic Chemical Company. **Joseph Plevyak** (BS78) served as the Chair of the meeting. The first place award earned by **Bruce** Hrnjez (BS78), now an Associate Professor of Chemistry at Yeshiva University, was prophetic, in its own right. His research mentor,

Prof Richard Heck (FAC 71-89), the discoverer of what is now called the Heck Reaction, was the subject of a recent feature article in <u>C&E News</u> (5/17/10, pp. 31-33), in which one commentator verbalizes what a number of his peers and erstwhile colleagues have felt for a long time: "he is long overdue for a Nobel Prize!" U of D – related judges included Prof Henry Blount (FAC 70-84), **AZ Conner** (MS52, then at Hercules), and (the late) Leonard **Edwards** (PhD71, then a faculty member at a Penn State branch campus).

The ISCC returned to Clayton Hall on April 25, 1987. The research group of **Prof Lila Gierasch** (FAC 79-87) produced two awardees: Jennifer Johnston (BS87, 1st place in biochemistry) and Sarah Stradley (BS87, 1st place in organic II). Even more impressive was the accomplishment of **Christopher Hadad** (BS87), who carried out his undergraduate research in the laboratory of **Prof Jim** Damewood (FAC 68-74). For the second year in a row, Chris received an award – this time, a 1st place recognition in the physical division. Chris, who is now a Professor of Chemistry and Vice Chair for Undergraduate Affairs at the Ohio State University, will return to campus on May 28, 2011 to present our 16th CHEM/BIOC Graduation Convocation address. The keynote speaker, Prof. Derek Davenport, of Purdue University, was, in my opinion, the best chemist lecturer I've ever heard. He converted a seemingly dry subject, "Going Against the Flow: Moissan's Isolation of Elemental Fluorine" into a presentation that held the audience spellbound.

The Department's yield of awards at the April 26, 1997 meeting in Brown Laboratory and the Perkins Student Center was even larger: Laura Jane (Swanson) Henning (BS97, **Prof Hal White**, 2nd place, biochemistry I – her second award in a row); Amy Mach (BS97, **Prof Hal White**, 1st place, biochemistry II, Ph.D., Georgetown); Frank Cochran (BS97, Prof Arnie Rheingold, 2nd place, inorganic, Ph.D. MIT); JM Geremia (BS97, Dr. Martha **Bruch** (NMR Spectroscopist), 2nd place, physical, Ph.D.Princeton). JM also gave a second paper on a project of his own devising which also garnered a 2nd place aware in organic! Laura Jane and Keith Hornberger (BS97, Ph.D.Columbia) served as co-chairs of the meeting. We brought back Prof Davenport for an encore keynote presentation that proved to be even more compelling: "A Reflected Portrait of Linus Pauling." UD – connected judges included Barbara Jezl (BS69, Ph.D.74, DuPont), Jennie Nerenberg (BS87, Ph.D.Yale, Merck), Charles Polley (Ph.D.80, ARCO), and **Steven Stuart** (BS90, Ph.D.Columbia, US Naval Academy [now a professor at Clemson]).

We would have continued our string of Lucky Seven meetings in 2007, but the renovation of the north and west wings of Brown Laboratory intervened. Consequently, we did not regather in Brown Laboratory and the Perkins Student Center until 4/24/10. The meeting attracted 28 papers from presenters at 11 different schools, including 3 from the U of D. **Prof Conrad Stanitski** (Franklin and Marshall College) filled Prof Davenport's keynote shoes admirably with

his fascinating lecture on "Joseph Priestley – Polymath and Chemist." The judging contingent again included several representatives with UD connections: **Julie** (**Lloyd**) **Palkendo** (Ph.D.09, Kutztown University), **Dr. Chad Tolman** (PT FAC, DuPont CR&D – retired), **Michael Bower** (BS92, Ph.D.California – San Francisco, Incyte Genomics), and **Dr. Allen Denio** (FAC 78-79, 98-99, Wisconsin-Eau Claire – retired).

Those of you who know me well know that I have a penchant for list-making. Thus, it was only natural for me to initiate a running total of ISCC award winners, by school, when I acquired the ISCC archives during my stint as ISCC Executive Secretary from 1968-1971. While the complete list of 63 schools is too long to reproduce in the **BHC**, a perusal of the list of those schools who have produced double-digit awardees is revealing.

School	No of ISCC Awards
Delaware	94
Ursinus	70
Franklin & Marshall	69
Lebanon Valley	41
Muhlenberg	40
Gettysburg	24
Juniata	19
Bucknell	17
Indiana U of PA	17
Villanova	16
Temple	14
Elizabethtown	10
Georgetown	10

Note: Records for 1936-1948 have been lost.

While Delaware's premier position is, indeed, quite satisfying, the more important point to be derived from the list is more subtle. We are the only Ph.D-granting school which has consistently participated in the ISCC. Temple and Georgetown are our closest, albeit far distant, competitors. In point of fact, undergraduate research has always been a very important component of our undergraduate program. The University formally recognized undergraduate research as one of its highest priorities when it established the Undergraduate Research Program in 1980, with **Dr. Joan Bennett** (since retired and replaced by **Dr. Lynnette Overby**) as its first Director.

As part of the URP's 30th anniversary celebration on May 7-8, 2010, the URP staff compiled lists of participants, by Department, starting in 1980. Our list included 300 entries, although even those are incomplete. A non-systematic eye-balling of said list by yours truly produced the following, rather impressive list of current faculty members (with apologies to those whose academic appointments are not in my memory banks): see table on page 8.

It was fitting that the final keynote address for the 30th anniversary celebration was presented by **Charles Bergquist** (BS96), Director of National Public Radio's. Talk of the Nation: Science Friday. Charles, you may recall, was the speaker for our 15th CHEM/BIOC Graduation Convocation in 2009. Mention of his lectures closes an interesting circle in this annual missive, for Charles received a 2nd place award (organic I) for his

presentation of his undergraduate research results, working with **Prof Doug Taber**, at the 1996 ISCC, held at Ursinus College. In a still more interesting twist of fate, his future wife, **Catherine Jones** (BS96, Ph.D.Columbia) also received a 2nd place award (inorganic) at the same meeting, for her presentation of her work with **Prof Klaus Theopold**.

What goes around comes around!

P.S.: **Enrollment Tsunami**The enrollment explosion that I fussed about in <u>BHC#36</u> came to pass last fall, exactly as described therein. We taught 1200 CHEM-103 students in four lecture sections in Smith Hall, plus 50 weekly laboratory sections, utilizing even Friday nights and

Saturday mornings.

What I didn't foresee, at the time, was a comparable enrollment tsunami of new CHEM/BIOC majors. After experiencing a steady state of 72-78 new majors from 2005-2008, our freshman crop of CHEM/BIOC majors jumped to 120 (!) last fall. We managed to survive this double whammy – barely.

Happily, the enrollment pressure appears to be easing this fall, at least at the freshman level. Better yet, the University is committed to renovating our three organic teaching labs (QDH-112, 318, and 320), beginning possibly as early as this summer. In addition, a complete overhaul of Drake's ventilation system is in the offing.

## **CURRENT FACULTY URP PARTICIPANTS**

CHEM/BIOC ALUMNUS	GRADUATION YEAR	FACULTY MEMBER AT:
Larry Principé	1983	Johns Hopkins
Vincent Conticello	1985	Emory
Christopher Hadad	1987	Ohio State
Kristi Kiick	1989	Delaware
Andrew Hollenbach	1989	Louisiana State
Rebecca Alexander	1990	Wake Forest
Iris Gibbs	1990	Stanford
Steven Stuart	1990	Clemson
Holly Gaede	1991	Texas A&M
Joseph Shane	1991	Shippensburg University
Christopher Krause	1993	Rutgers
Jennifer (Ogrodnick) Cochrane	1995	Stanford
Jeffrey Reinking	1995	SUNY-New Paltz
Raymond Trievel	1995	Michigan
William Donovan	1996	Akron
JM Geremia	1997	New Mexico
Jill (Trafton) Venton	1998	Virginia
Justin Donato	1999	University of St. Thomas (MN)
John Dueber	1999	California-Berkeley
Amanda Simons	1999	Framingham (MA) State
Joshua Figueroa	2000	California-San Diego
Suzanne (Bart) Doucette	2001	Purdue
Adam Hock	2001	Illinois Institute of Technology
Kristine Nolin	2002	Richmond
Bryan Davis	2003	Shenandoah



### From the Director of Graduate Studies:

Associate Professor and Director of Graduate Studies Brian Bahnson (b. 1964) B.S., 1986, University of Massachusetts, Amherst; Ph.D., 1991, Brown University; National Institutes of Health Postdoctoral Fellow, 1991– 1994, University of California Berkeley; Visiting Assistant Professor, 1994, Williams College; Postdoctoral Fellow, 1994–1998, Brandeis University



Our graduate program in the Department of Chemistry & Biochemistry has continued to grow and thrive. We currently have 158 PhD and 4 Masters students in our graduate programs. We awarded 4 Masters and 22 Ph.D. degrees in the past academic year. The students in our program provide the backbone of our faculty's research. The vitality of these programs was recently demonstrated at our Convocation ceremony this spring. We had a record turnout of graduate students participating, with 18 PhD and one Masters student marching in full regalia.

Just as last year, we recruited a larger than average class of students for our PhD program. The recruiting year started with a larger than average number of applications with well over 300 applicants. Our teaching assistantship and fellowship (TAF) committee worked hard to select a terrific crop of students coming this year that include 28 new Ph.D. graduate students that will officially begin this fall semester. Following the trend of recent years, we again had a successful graduate student recruiting weekend. A large part of our success in recruiting great students has been the consistent and dependable involvement of current students, as well as faculty, in the recruiting process.

The 44th **Glenn S. Skinner Award** was presented to A**ndrew DeAngelis** at the Colloquium on
May 17th. Andrew is working with **Prof. Joe Fox** This prestigious

award (\$2500) is presented each year to the student in our Ph.D. program who is deemed to have contributed the most to the Department in each important area: scholarship, research, teaching and service to the Department. In the competitive selection of this award, Andrew was noted for his creativity, scholarship, and willingness to mentor fellow students, and thereby allow them to tackle challenging problems. The award is named in honor of **Glenn S**. Skinner, who was an active member of the University's chemistry faculty from 1928 to 1958.

The 28th annual Elizabeth

Dyer Excellence in Teaching

Awards were presented to three outstanding graduate student teaching assistants: Kaitlin

Papson, Carol Roach and Pavan



**Left to right:** Professor Joe Fox, Andrew DeAngelis and Professor and Director of Graduate Studies Brian Bahnson

#### From the Director of Graduate Studies

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From left to right: Pavan Mantravadi, Alumni Distinguished Professor and Associate Chair John Burmeister, Director of Graduate Studies and Associate Professor Brian Bahnson, Kaitlin Papson and Professor and Chair Klaus Theopold

Mantravadi. Kaitlin Papson received her bachelor's degree from the College of New Jersey and is currently pursuing a PhD with Prof. Doug Ridge. Kaitlin served as a TA in CHEM-111 and 112, General Chemistry, during the fall of 2008 and spring of 2009. Carol Roach received her bachelor's degree from Temple University and is currently pursuing a PhD with Prof. Sharon Neal. Carol served as a TA in CHEM-438, Instrumental Analysis, during the fall of 2008 and CHEM-120, Quantitative Chemistry, during the spring of 2009. Pavan Mantravadi received his master's degree from the Indian Institute of Technology in Madras India and is currently pursuing a PhD with Prof. John Koh. Pavan served as a TA in CHEM-102, General Chemistry during the fall of 2008 and CHEM-322, Organic Chemistry in the spring of 2009. The Dyer Award honors the memory of Professor Elizabeth Dyer, a member of the Chemistry and Biochemistry faculty from 1933-1971.

The 37th annual Joel L. Silver **Award Symposium** was held May 19, 2010. This annual competition encourages the development of our graduate students' ability to communicate their scientific research. Twelve participants presented a 15 min research talk followed by a 5 min question and answer period. All of the talks at this year's symposium were fantastic, making the jury's task very difficult to choose a winner. We extend our sincere appreciation to this year's Silver symposium jury: Prof. Karyn Usher, Dept. of Chemistry, West Chester University (Analytical), Prof. Carl Schmidt, Dept. of Animal and Food Sciences, UD (Biochemisty), Prof. Meredith Wesolowski, Dept. of Chemistry & Biochemistry, UD (Inorganic), Dr. Geoffrey Sametz, Dept. of Chemistry & Biochemistry, UD (Organic) and Prof. Matthew DeCamp, Physics, UD (Physical). Carol Roach (Prof. Neal) won 1st place for her presentation titled "Numerical Correction of Detector Channel

Cross-Talk for Fluorescence Correlation Spectroscopy". The 2nd place winner went to Vidyadhar Daithankar (Prof. Thorpe) for his presentation titled "Characterizing the Molecular Basis of a New Mitochondrial Disease". The 3rd place award went to Obaidur Rahaman (Prof. Doren) for his presentation titled "Development of ReaxFF Reactive Force Field for Glycine and Other Chemical Reactions". The other presenters, all impressive, were: Bayrammurad Saparov (Prof. Bobev), Yuqian Gao (Prof. Johnston), Melissa Blackman (Prof. Fox), Sandip Kumar (Prof. Chen), Kathryn Perrine (Prof. Teplyakov), Mayura Dange (Prof. Colman), Yuzhen Wang (Prof. Chen), Yang Zhong (Prof. Patel), and Feng Gao (Prof. Zondlo).

The 3rd annual **Trofimenko** Memorial Prize was awarded to Bayrammurad Saparov. Bayram is a senior graduate student in the laboratory of Prof. Svilen Bobev. The prize recognized Bayram's work on the synthesis and structural characterization of intermetallic phases of rareearth metals and transition metals containing the heavier pnicogens, which are of interest in the search for more efficient thermoelectric materials. This \$500 award, in memory of Dr. Swiatoslaw 'Jerry' Trofimenko, creator of the polypyrazolylborate ligand system and visiting scholar in the Department from 1996 until his death in 2007, is given annually to a graduate student in the Department who has distinguished him/herself in the area of 'creative inorganic synthesis'.

**Bayrammurad Saparov** was furthermore the recipient of the 2nd **Brennie E. Hackley**,

Jr. Award for Excellence in Research (Story on page 16). This \$2000 award is given annually to a graduate student who has demonstrated excellence in research. It honors the memory of Dr. Brennie E. Hackley, Jr. (UD Ph.D. '57), who devoted his remarkable 57-year career at the Edgewood Chemical and Biological Center, Aberdeen, MD Proving Grounds to the development of medical antidotes to chemical warfare agents.

The University of Delaware awards a limited number of graduate student fellowships that include stipend support for one year. This year **Brad Bauer,** who is working in the lab of **Prof. Sandeep Patel,** was granted a University Graduate Fellows award. Brad has everything you would like to see in a future scientific leader. He has demonstrated outstanding accomplishments in both research and teaching during his time in our department.

In addition to Departmental and University awards, special recognition goes out to Melissa Blackman (Prof. Fox) who was recently recognized as a student award winner at the 3rd National IDeA Symposium of Biomedical Research Excellence held in Bethesda, MD. Melissa's presentation was titled "A Bioorthogonal Reaction Based on an Inverse Electron Demand Diels-Alder Reaction".

In closing, I would like to thank our current Chair, **Prof. Klaus Theopold**, and the entire faculty and staff of the Department for their tireless efforts to advance our graduate program.

I need to specifically reciping acknowledge the tireless efforts of the previously mentioned TAF Committee, as well as the Graduate Curriculum Committee (GCC).

Furthermore, our current and past



Chair Klaus Theopold, Trofimenko Award recipient Bayram Saparov and guest speaker Dr. Roy Periana, Scripps Research Institute (Florida)

students deserve considerable praise for their efforts to make our Department a successful and interesting place to learn and do cutting edge research. Finally, I enthusiastically applaud the efforts of Jen Durkin and Susan Cheadle for their work with prospective and current graduate students in our program. Their continuous and superb work makes all of our lives a lot easier in the Department. I look forward to my final year as Director of Graduate Studies to continue to grow and improve our graduate



1st Place: Carol Roach [center] (Dr. Sharon Neal's research group) 2nd Place: Vidyadhar Daithankar [left] (Dr. Colin Thorpe's research group) 3rd Place: Obaidur Rahaman [right](Dr. Douglas Doren's research group)

### FAREWELL TO JOEL SCHNEIDER



This year was also marked with the disappointing news of the departure of **Prof. Joel Schneider** from the Department. Joel has moved to Frederick, Maryland, where he is Laboratory Chief and Head of the Peptide Design and Materials Section of the National Cancer Institute. Joel will be missed as a friend, colleague, scientist and teacher. He was one of Jeff Kelly's very first Ph.D. students (then) at Texas A&M and joined the Department in 1999 after a post doc with William DeGrado at the DuPont Experimental Station and UPenn. He quickly rose through the ranks, being promoted to Associate Professor in 2005 and Full Professor in 2009. The Schneider group has worked in many areas while at UD, including

work on unnatural amino acid design, fluorometric redox sensors and arsenic peptide interactions. However, he is perhaps best known for his collaboration with **Professor Darrin Pochan** (Dept. of Material Science and Engineering), wherein Joel applied his knowledge of peptide design to create environmentally sensitive biocompatible hydrogel materials. His work on peptide materials has burgeoned into a flurry of creativity, resulting in over two dozen publications and expanding his work to include antimicrobial materials, stem cell growth, and artificial tissue design.

Needless to say, Joel is internationally recognized for his work while at UD. He has received many recognitions and honors, including a DuPont Young Faculty Award and the first of a recent trend of NSF CAREER Awards to Department faculty (followed by **Fox, Zondlo, Polenova, Bobev & Zhuang**). He serves on the Editorial Board of Peptide Science and Current Opinion in Chemical Biology and is Associate Editor of Peptide Science.

For many alumni, Joel was best known for being an outstanding teacher. He was an animated lecturer who kept even the most sleep-deprived undergraduate pre-med student awake with his vociferous CHEM-321/322 Organic Chemistry lectures that were often heard echo through Brown Foyer. He was the recipient of the Francis Alison Award, always highly recommended at "ratemyprofessor.com" (where he finally received a chili pepper). As his new NIH position does not involve teaching, his contributions to the education of the next generation of scientists will be sorely missed.

Speaking for myself, his knowledge and mastery of the grill (clearly another trade he learned in Texas) will be missed at this year's Departmental Barbeque. We wish him and his family (Jen, Jack, Jimmy) much happiness and success in Frederick.

John Koh

## CHANGES IN THE WIND FOR INTRODUCTORY CHEMISTRY

The University of Delaware has been awarded its fifth Undergraduate Science Education Grant from the Howard Hughes Medical Institute (HHMI). **Hal White** is the Project Director for this \$1.2 million grant. The Assistant Director is David Usher, Associate Chair of Biological Sciences.

Various national meetings and reports sponsored by the National Academy of Science, AAAS, and HHMI have called for changes in science education with respect to what is taught and how it is taught, based on current understanding of how people learn and poor student performance in science. Chemistry educators around the country have been leaders in the efforts to rethink science education. Two major themes emerge in these effortsintegration of science disciplines and inclusion of active learning activities that change or modify traditional practice.

Our previous HHMI grant focused on the integration of math and biology with particular emphasis on introducing more quantitative elements into biology laboratory courses and developing a Quantitative Biology major in the Department of Mathematical Sciences. The new grant will focus on the integration of introductory biology and chemistry for life science majors.

Approximately 50% of the students taking our CHEM-103 General Chemistry course have majors in the life sciences and a majority of them take BISC-207 Introductory Biology I concurrently. A theme in Introductory Biology I is the Chemistry of Life, where many chemistry concepts are introduced superficially and sometimes more than a year before they are introduced in chemistry courses. By coordinating and integrating material from CHEM-103 and BISC-207, life science students should gain a better understanding of chemistry concepts and a greater appreciation of the importance of chemistry to understanding modern biology. These are among the goals of the HHMI initiative.

Simultaneously with the new HHMI initiative will be the construction, recently begun, of a new interdisciplinary science and engineering building at the corner of Lovett and Academy Streets. The 194,000 sq. ft. facility will house the core research facilities for teams of researchers and space for the University of Delaware Energy Institute and the Delaware Environmental Institute, as well as an Integrated Science teaching section. The building is scheduled to be completed in 2013.

The Integrated Science
Teaching area will have teaching
laboratories flanking cooperative
learning classrooms on all four
floors. The classrooms will be
equipped with modern teaching
technology and be set up for
group work. How introductory
chemistry and biology courses will
be integrated in problem-solving
activities and laboratory exercises
in this building of the future is
being considered.

A group of about 15 faculty from biology and chemistry have been meeting monthly for over a year to consider changes in the curriculum that address integration of introductory biology and chemistry. The final form remains to be decided. The possibilities range from a single integrated course taught in a problem-based learning (PBL) or process-oriented guided-inquiry learning (POGIL) format with investigative laboratories, to separate courses in which content is coordinated and linked to an integrated laboratory serving both courses. In any event, faculty in chemistry and biology are talking to each other about how and where their courses overlap and how they might better facilitate student learning. Many challenges remain. Suggestions and participation are welcome. Stay tuned.

- Hal White

## Additional Faculty/Staff Activities and Awards:

**Dr. Henry Blount** (FAC 70-84) is the Director of NSF's EPSCoR Program.

Dana Chatellier (MA83, EDUCATION SPECIALIST) continues to do his part in dispelling chemistry's bad image, having performed chemical demonstration shows at Maclary Elementary School and Salesianum High School. danac@udel.edu

**Dr. Allen Denio** (FAC 78-79, 98-99), co-founder of the Delaware Academy of Chemical Sciences, organized a 75th Anniversary Celebration of the Invention of Nylon at the Hagley Museum on 2/28/10. Joseph X. Labovsky, 97, the last survivor of Wallace Carothers' research group, was the ceremony's guest of honor. Stephanie L. Kwolek, who invented Kevlar as a research chemist in

the Textile Fibers Department at DuPont, was also honored at the event. To top off the afternoon's festivities, **Dr. Michael Stemniski** (PT FAC) performed the nylon rope trick (<u>C&E News</u>, 4/12/10, p.46).

We note, with sadness, the passing of **Dr. Roger Crecely**, on 1/15/10. In the words of **Prof. Cecil Dybowski**:

Roger was manager of the NMR facility for 15 years, starting in 1976, and oversaw the installation of a number of spectrometers as the facility grew from a single instrument to a moderate-size facility for a research department.

Roger was a good friend to me. He was the best man at our wedding, and we did many things with him and Karin over the years. He was an avid squash and tennis player, along with **Bob Wood** (FAC 57-02), **Hal White**, and me, every Thursday night in the early days of my career. I am sure that most of you remember the Fourth of July parties at his "Southern Plantation."

He had an encyclopedic knowledge of NMR spectroscopy, as well as infrared spectroscopy. He helped several generations of graduate and undergraduate research students from across the Department and the university to their degrees. He was practical, and was able to make spectrometers do many experiments that they

were not necessarily originally designed to do. But he was also skeptical of people who simply wanted to invent new NMR techniques that did not provide new information compared to older ones. No matter how elegant, if some technique did not give important new information easily, he eschewed it. He also had an innate sense of what needed to be done, so he would often advise students to use other techniques if he thought they would more straightforwardly answer a question than NMR.

Roger was the third manager of the NMR facility, having followed **David Dalrymple** (FAC 68-74), who followed **Walter Freeman** (PhD 72), in the job. After Roger, **Martha Bruch** (BS78, PhD84) was manager for a while, and **Steve Bai** is our current manager. Roger was the longest-serving manager and Steve is the next longest-serving manager. We have been exceptionally fortunate, in that all of these are highly qualified NMR spectroscopists.

To quote our Chair, "Cecil (Dybowski) has recently been on a tear!" He is the recipient of two national awards this year, both to be presented at the Eastern Analytical Symposium in November. First to be announced was the EAS Award for Outstanding Achievements in Magnetic Resonance. This was

followed by the Gold Medal of the Society for Applied Spectroscopy. The EAS session honoring Cecil is being organized by one of his former students, **Anita Brandolini** (MA 82, PhD 83), Assistant Professor in the School of Theoretical and Applied Sciences at Ramapo College (NJ). University of Delaware **Provost Tom Apple** 

(PhD82) was Cecil's first doctoral student. Providing the icing on his award cake is a \$2.2 million grant from the NSF to Cecil, **Prof Tatyana Polonova**, **Prof Sharon Rozovsky**, and **Dr. Steve Bai** for the acquisition of an 850 MHz NMR spectrometer that will serve as a valuable resource for scientists throughout our region.

Another pithy Chair's quote: "It's raining NMR's!" An NIH proposal for a 500 MHz NMR spectrometer, promoted by Prof. Joe Fox, has also just been funded and great news for everyone in the Department who use solution NMR.George Luther (JOINT FAC), Maxwell P. and Mildred H. Harrington Professor of Oceanography, had the highest percent increase in total citations in the field of geosciences between 1998 and 2008, according to an analysis of citation data completed by Essential Science Indicators. luther@udel.edu

**Prof Burnaby Munson** was honored at the aforementioned 30th Anniversary Celebration of the Undergraduate Research Program for his seminal contributions to the URP during his stint as Director of the University Honors Program.

**Prof Ulhas Naik** (JOINT FAC, BISC) has been elected a Fellow of the American Heart Association. unaik@udel.edu

Arnie Rheingold, Ph.D. (FAC 84-03), Professor of Chemistry at UC-San Diego, reports that he is now servicing nearly 300 active NIH grants and "retirement is not even remotely on the horizon." arheingold@ucsd.edu

**Prof Charlie Riordan** has been named a Fellow of the Royal Society of Chemistry (FRSC).

Prof Kate Scantlebury has also been on a tear. She has been named a Fellow of the American Association for the Advancement of Science, joining fellow Fellows Cecil Dybowski, Al Matlack (ADJ FAC), Burnaby Munson, Don Sparks (JOINT FAC), Doug Taber, and Klaus Theopold. She also received the Outstanding

Mentor Award, presented by the Association for Science Teacher Education, and was a Visiting Scholar at Uppsala University's Center for Gender Research in Sweden. Lastly, she had two books published: "Re-visioning Science Education from Feminist Perspectives: Challenges, Choices, and Careers" (co-author), and "Coteaching in International Contexts: Research and Practice" (co-editor).

Prof Donald L. Sparks (JOINT FAC), S. Hallock duPont Chair in Plant and Soil Sciences and Director of the Delaware Environmental Institute, has been honored with the Liebig Medal by the International Union of Soil Sciences for his outstanding contributions in soil science research. Earlier this year, he won the Geoffrey Marshall Mentoring Award from the Northeastern Association of Graduate Schools for outstanding mentoring support of graduate students. dlsparks@udel.edu

**Dr. Michael Stemniski** (PT FAC) received the Rolf Dessauer Award for Excellence in Public Outreach from the Delaware Academy of Chemical Science. mastem@udel.edu

Prof Douglass Taber spent two weeks in China this past May, giving lectures at the West China School of Pharmacy in Chengdu, USTC in Hefei, the University of Science and Technology in Qingdao, and the Institute of Materia Medica and Peking University in Beijing. He was an invited speaker at the 1st Annual World Congress of Catalytic Asymmetric Synthesis in Beijing.

**University Service Awards** were recognized at a special

dinner held at Clayton Hall on 6/2/10: Prof John Burmeister (45 years), Prof Donald Sparks (JOINT FAC, Plant and Soil Sciences, 30 years), Mr. Michael DiMauro (STAFF, 25 years), Prof Susan Groh (25 years), and Prof George Hadjipanayis (JOINT FAC, Physics, 20 years). The following retirees were also officially recognized: Prof Roberta Colman (see BHC#36, 36 years), Prof Mahendra Jain (see BHC#35, 35 years), Ms Cathy Skelly (Asst. to the Chair, 98-03, see BHC#30).

**Prof Harold White's** HHMI-funded CHEM-601 Introduction to Laboratory Instruction class for first-time TA's in CHEM/BIOC and BISC was reviewed in the November, 2009 issue of the HHMI Bulletin, pp. 30-33, 48. With co-PI Prof David Usher (BISC), Hal succeeded in securing the University's **fifth** HHMI grant – this one for \$1.2 million.

**Mary J. Wirth, Ph.D.**(FAC 86-04) is now the W. Brooks Fortune Professor of Chemistry at Purdue University.

**Prof Zhihao Zhuang's** research group has developed a new method for producing proteins critical to research on cancer, Alzheimer's, and other diseases, as reported in the April, 2010 issue of <u>Nature</u> Chemical Biology.

Bayram Saparov Named Recipient of Second Brennie E. Hackley, Jr. Award for Excellence in Research

Bayrammurad (Bayram) Sparov, a doctoral candidate in Prof Svilen Bobev's research group since 2006, was presented the second Brennie E. Hackley, Jr. Award at a Departmental Colloquium on March 12, 2010.

#### Additional Faculty/Staff Activities and Awards

CONTINUED FROM PAGE 13

Bayram received his Diploma in Chemistry (equivalent to our M.S.) from Moscow State University, the foremost University in Russia. He is a native of Turkmenistan, and was a bronze medal winner in the International Chemistry Olympiad.

> Bayram Saparov Named Recipient of Second Brennie E. Hackley, Jr. Award for Excellence in Research

His research project focuses on synthetically very challenging intermetallic compounds of the rare-earth metals with the d<sup>5</sup> and d<sup>10</sup> metals and the heaviest pnicogens (antimony and bismuth). He has already published eight peer-reviewed

papers for which he was the first author, and has presented papers at two national ACS meetings, as well as the Mid-Atlantic Inorganic Symposium.

In addition to the Hackley Award, Bayram has already received an **Elizabeth Dyer** (FAC 83-71) Excellence-in-Teaching Award and a Ludo Frevel Crystallographic Scholarship, one of only 8 given, worldwide, by the International Center for Diffraction Data.

The Brennie E. Hackley, Jr. Award for Excellence in Research is being given in perpetuity, thanks to a most generous endowment established by his family. Dr. Hackley received his M.S. (1954) and Ph.D. (1957) degrees from the University of Delaware, working with (the late) Professor Betty Dyer. He was the first African-American to receive a doctorate in chemistry from the U of D.



**From left to right:** Alumni Distinguished Professor and Associate Chair John L. Burmeister, Bayram Saparov, Director of Graduate Studies and Associate Professor Brian Bahnson, Associate Professor Svilen Bobev and Professor and Chair Klaus Theopold

## VISIT US ON FACEBOOK!

It was a dark and stormy night - on August 21, 2009, when the Department of Chemistry and Biochemistry made its debut on the social networking site Facebook. Having gone live at 10:40 PM that Friday night, I was amazed to see that the page attracted its first fan one(!) minute later and by midnight our group of followers had grown to six. The rate of growth has slowed down a bit since, but at last count the departmental page (at http://www. facebook.com/UDChem) is 'liked' by 422 people and that number is increasing slowly but steadily.

We think of the page as yet another way to connect to the community of our students, alumni and friends. It's a bit more immediate and more interactive than the annual copy of the Blue Hen Chemist you are reading right now. So, if you want to stay abreast of what's going on in good old Brown Laboratory, or if you have something you want everybody to know (be it an announcement, question, comment, or simply a 'Hello, remember me?'), there's now a place (and of course an app) for that.

In our business, we meet many people for short periods of time (typically 4 or 5 years) and then we go our separate ways. And yet, we remember you and hope you are doing well, and we absolutely love to hear from you. So, here's a new and simple way to be part of this diverse community, all of whom have (Bio)Chemistry and Newark, DE in common. Stop by and say hello. We are 'likeable' enough!

-Klaus Theopold

## POSTDOCTORAL RESEARCHERS AND FELLOWS, 2009-10:

Yongxing Ai (Jilin University, China) [Zhuang]

Elsa Bárány-Wallje

(STOCKHOLM UNIVERSITY, SWEDEN) [ROZOVSKY]

SANTOSH BHOR (UNIVERSITY OF ROSTOCK, GERMANY) [ZONDLO]

Yongkwan Dong (Ajou

University, South Korea)
[Bobev]

**AHMET GUNAY** (UNIVERSITY OF ROCHESTER) [THEOPOLD]

**GUANGJIN HOU** (WUHAN INSTITUTE OF PHYSICS & MATHEMATICS, CHINA) [POLENOVA]

PHANEESWARA-RAO KOMMOJU

(University of Konstanz, Germany) [Rozovsky]

**PRANTIK MAITY** (UNIVERSITY OF REGENSBURG, GERMANY) [M. WATSON]

NICOLA MENEGAZZO (GEORGIA INSTITUTE OF TECHNOLOGY)

[Воокѕн]

TAMMY MILILIO (STATE UNIVERSITY OF NEW YORK AT

Buffalo) [Brown]

NIRMAL PAHADI (TOHOKU

University, Japan) [D. Watson]

Tae-Soo You (Iowa State

University) [Bobev]

## VISITING SCHOLARS, 2009-10:

JULIET HAHN [TABER]
HAIHONG HUANG (INSTITUTE OF
MATERIA MEDICA, CAMS, CHINA)
[TABER]

Ana Salomé Veiga (Instituto de Medicina-Molecular, Portugal) [Schneider]

## LET'S COMMUNICATE!

All of the current chemistry faculty use e-mail. Here for your of Apple, Tom tapple@udel.edu	convenience, is a complete listing: Polenova, Tatyanatpolenov@udel.edu
Bahnson, Brian bahnson@udel.edu	Ridge, Douglasdougr@udel.edu
Beebe, Thomasbeebe@udel.edu	Riordan, Charlesriordan@udel.edu
Bobev, Svilenbobev@udel.edu	Rosenthal, Joel rosenthal@mail.chem.udel.edu
Booksh, Karlkbooksh@udel.edu	Rozovsky, Sharon rozovsky@udel.edu
Brown, Stevensdb@udel.edu	Scantlebury, Katekscantle@udel.edu
Burmeister, Johnjlburm@udel.edu	Taber, Douglastaberdf@udel.edu
Chen, Junghueijunghuei@udel.edu	Teplyakov, Andrewandrewt@udel.edu
Doren, Douglasdoren@udel.edu	Theopold, Klaus theopold@udel.edu
Dybowski, Cecil dybowski@udel.edu	Thorpe, Colincthorpe@udel.edu
Fox, Josephjmfox@udel.edu	Watson, Donalddawatson@udel.edu
Groh, Sue sgroh@udel.edu	Watson, Marympwatson@udel.edu
Johnston, Murraymvj@udel.edu	Wesolowski, Meredithmcw@udel.edu
Koh, Johnjohnkoh@udel.edu	White, Halhalwhite@udel.edu
Kramer, Mary Bethkramermb@udel.edu	Wingrave, James wingrave@udel.edu
Munson, Burnabybmunson@udel.edu	Zhuang, Zhihao87772@udel.edu
Neal, Sharonsneal@udel.edu	Zondlo, Nealzondlo@udel.edu
Patel, Sandeepsapatel@udel.edu	

## VISITING FACULTY, 2009 - 2010:

**Dr. Richard C. Gearhart** (UD PhD 72), CHEM-100 Chemistry and the Human Environment (on-line course); **Dr. Karen L. Hoober** (UD PhD99), CHEM-106 Elementary Bioorganic Chemistry, CHEM-214/216 Elementary Biochemistry; **Dr. Albert Matlack** 

(Hercules Research Center-retired), CHEM-680 Introductory Polymer Science, CHEM-681 Green Chemistry; **Dr. Paul A. Silver** (UD PhD73), CHEM-103/104 Honors General Chemistry; **Dr. Geoffrey Sametz**, CHEM-101 General Chemistry, CHEM-321/322 Organic Chemistry; **Dr. Michael Stemniski** (McKean High Schoolretired), CHEM-102 General Chemistry, CHEM-103/104, CHEM-213/215 Elementary Organic Chemistry.

## 2009-2010 Colloquia and Symposia:

Prof Barry Trost, Stanford University, presented the annual Richard F. Heck (FAC 71-89) **Lecture**, "On the Design of Chiral Space for Asymmetric Induction in a Catalytic Synthetic Reaction" on 9/9/09. The **Charles Darwin** Commemorative Lecture, on 10/2/09, was given by **Dr.** Stephen O'Brien, of the National Cancer Institute. His topic was "Retracing Genomic Natural History across the Mammalian Radiations." This year's **John C. Wriston, Jr.** (FAC 55-85) Memorial Lecture on "Chemical

Approaches to Sorting Out Protein Acetylation" was presented by **Prof Phil Cole**, Johns Hopkins University, on 4/16/10. The remaining external colloquium speakers were Profs. Louis Brus, Columbia University and Steven Rokita, University of Maryland. Internal colloquium lectures were presented by Profs Douglas Buttrey (CHEG), **Douglas Ridge**, **Brian Bahnson**, and **Karl Booksh**.

The 31st East Coast Ion Chemistry Conference was held on Saturday, October 17, 2009. Talks were presented by speakers from the University of Delaware, University of the Sciences in Philadelphia, Drexel University, Rutgers University, Johns Hopkins University, Princeton University, University of Maryland, DuPont, and Science and Engineering Services, Inc. Topics included aerosol mass spectrometry, MALDI, proteomics, peptide sequencing, and FT/ICR studies of ion/molecular reactions. The 32nd ECICC will be held on Saturday, October 2, 2011.

## ASBMB UAN CHAPTER OFFICERS FOR 2010-2011ARE:

President: Sarah King (BS/BIOC/11)

Vice President: **Michael Brister** (BS/BIOC/12)

Secretary: **Matthew White** (BS/BIOC/13)

Treasurer: **Sarah Stamm** (BA/BISC/12)

Webmaster/Public Relations: **Alex Bott** (BA/BISC/12)

Adviser: **Prof. Hal White** 

## ACS SA CHAPTER OFFICERS FOR 2010-2011 ARE:

President: **James White** (BS/CHEM/11)

Vice President: **Sarah King** (BS/BIOC/11)

Treasurer: Robert Sido (BS/CHEG/12)

Secretary: Laura Wertman (BS/BIOC/12)

Webmaster: **Christopher Black** (BS/BIOC/12)

Adviser: Prof. Burnaby Munson

The UD ASBMB/UAN Chapter was named the Outstanding UAN Chapter in the Northeast Region for the second year in a row.

## GRADUATE SCHOOL PLACEMENTS, 1994-2010

ADELPHI 1	HAWAII2	PRINCETON4
Arcadia1	Illinois-Chicago1	Purdue2
Boston College3	Illinois-Urbana7	Rhode Island 1
Boston University2	Imperial College, London 1	Rochester2
Brigham Young1	Indiana4	Rutgers6
Brandeis1	Johns Hopkins3	Scripps2
Cabrini 1	Kansas 1	SELZNICK SCHOOL FOR FILM 1
California-Berkeley 1	Lehigh2	Preservation
California-Irvine5	Maryland-Baltimore 1	Shenandoah1
California-Los Angeles 1	Maryland-Baltimore Co 4	Southern Mississippi 1
California-San Diego 3	Maryland-College Park 5	Stevenson1
California-San Francisco 3	Massachusetts 1	SUNY-Buffalo2
California-Santa Barbara 1	Michigan3	SUNY-Stony Brook 1
Cal Tech 5	Michigan State1	Syracuse 1
Case Western 4	Minnesota-Twin Cities 2	Temple3
CLEMSON	MIT6	Tennessee 1
Colorado State1	Montana State 1	Texas4
COLUMBIA 5	Montclair State 1	Texas A&M3
Connecticut 3	New Castle (England) 1	Thomas Jefferson5
Cornell	New Hampshire2	Toledo 1
Delaware	NYU 1	Tufts 1
Drexel 1	North Carolina-Chapel Hill 10	Vanderbilt 1
Duke 2	North Carolina-Greensboro . 1	Virginia3
Emory 1	Northeastern 1	VPI & SU 1
FLORIDA INTERNATIONAL	Northwestern 1	Wake Forest2
FLORIDA STATE2	Notre Dame 1	Washington (St Louis) 1
Georgetown1	Оню State4	West Chester 1
George Washington 2	Oregon1	Wisconsin 1
Georgia1	Pace4	Yale 2
GORDON CONWELL 1	Penn	Yeshiva1
THEOLOGICAL SEMINARY	Penn State9	
HARVARD 3	Pittsburgh 2	

## 15<sup>th</sup> CHEM/BIOC GRADUATION



Alumni Distinguished Professor and Associate Chair John L. Burmeister



Dr. Michele Hackley Johnson

PHOTOS COURTESY OF MIKE DAO.

Mike Dao is a current graduate student in the Riordan lab.

Our 15th CHEM/BIOC Graduation Convocation was consummated on Saturday, May 24, 2010, to the pleasure and satisfaction of all concerned. Indeed, the feeling of unbridled joy oozing from the pores of the extended family members present has to be experienced personally, to be truly appreciated.

Special commendation goes to our speaker, **Dr. Michele** Hackley Johnson (UD BA/ CHEM '75), Chief of Interventional Neuroradiology at the Yale University School of Medicine, whose remarks were meaningful, moving, and right on target. I will always treasure the moment we recognized the presence of her mother, **Ethel**, widow of Dr. Brennie Hackley, Jr. (UD Ph.D. '57). The remarkable 57year career of Dr. Hackley, our first African American chemistry Ph.D. graduate, at the Edgewood Chemical Biological Center of the U.S. Army's Aberdeen Proving Grounds will be forever memorialized in the form of the Brennie E. Hackley, Jr. Award for Excellence in Research, generously endowed by the Hackley family. It was fitting that the first recipient of this Award, Juan Carlos Rodriguez-Reyes, received his doctorate during the ceremony. Completing the noteworthy use of the numbers 5 and 7 is the fact that Ethel (who is also a chemist) and Brennie were married 57

The turnout by the graduating graduate student contingent, 19 strong, set an all-time record for the occasion. Forty-one of the 50 baccalaureate degree recipients (18 BS/BIOC, 21 BS/CHEM, 11 BA/CHEM) participated.

This year's placement pattern of the BS and BA contingent exhibited a dramatic downturn in advanced study commitments, especially in the area of graduate school (2009 data in parentheses):

Graduate School: 7 (20) Medical School: 3 (4) Dental School: 2 (2) Pharmacy School: 1 (4) Law School: 2 (2) Nursing School: 0 (2) Industry: 8 (2) Government: 1 (2) Teaching: 1 (4) Other: 3 (3) Undetermined: 13 (10)

Finally, the Unsung Heroine Award goes to **Debbie Fox**, who provided the on-site reception presence usually provided by **Susan Cheadle**, who was celebrating the graduation of her daughter, Kerry, from the U of D. Debbie and John were faced with the formidable task of post-reception clean-up, which

Chair Klaus Theopold and Juan Carlos Rodriguez-Reyes

they handled admirably.



#### May 29, 2010 CONVOCATION,

Professor and Chair Klaus Theopold with doctoral Double Del: Prabhavathi Srinivasan and husband, Vamsi Kodali.





Associate Chair John Burmeister, Mark Madachik and mentor, Professor Andrew **Teplyakov** 

Associate Chair John Burmeister and Dyer Awardee, Heather Hartman

LET'S DO IT AGAIN ON May 28, 2011!



Professors Charlie Riordan and Roberta Colman with the second doctoral Double Dell Due: Piyal Ariyanada and wife, Lushanti De Zoysa Ariyananda



Director of Graduate Studies and Associate Professor Brian Bahnson with three of his doctoral progeny: Subhendu Chakraborti, Prabhavathi Srinivasan and Anastasia Fuzaylova Thévenin.



Professor Joel Schneider



THE AFTERPARTY BEFORE THE AFTERPARTY!

## 2009 - 2010 Undergraduate Awards

National Awards	RECIPIENTS
ACS/Hach Scientific Foundation Scholarship Award	Kammas R. Murphy (BA/XCE/12)
Beckman Scholar	Soma Jobbagy (BS/BIOC/12)
ESPN The Magazine/College Sports Information Directors of America Academic All-America Soccer Team	Kyle F. Davis (BS/BIOC/10)
Goldwater Scholarship	Michael G. Napolitano (BS/CHEM/11)

REGIONAL AWARDS	RECIPIENTS
ESPN The Magazine/CoSIDA Academic All-District 2 Soccer Team	Kyle F. Davis (BS/BIOC/10)
University of Maryland-Baltimore County 12th Annual Undergraduate Research Symposium in the Chemical and Biological Sciences	& Molecular Biology  James L. White (BS/CHEM/11) 2nd place, Biochemistry by Molecular Biology  James L. White (BS/CHEM/11) 2nd place, Chemical Sciences

University Awards	RECIPIENTS	
Blue Hen Team Sportsmanship Award	Amanda B. Halstrom (BS/BIOC/13) Women's Tennis	
	Laura L. Wertman (BS/BIOC/12) Women's Crew	
Edgar N. Johnson Award	Kyle F. Davis (BS/BIOC/10)	
Sigma Xi Summer Undergraduate	Michael G. Napolitano (BS/CHEM/11)	
Research Symposium Award	1st place	

DEPARTMENT AWARDS	RECIPIENTS
American Chemical Society Award in Chemistry	James L. White (BS/CHEM/11)
American Chemical Society	James L. White (BS/CHEM/11)
Undergraduate Award in Analytical Chemistry	
American Chemical Society Undergraduate Award in Inorganic Chemistry	Devan L. Turner (BS/CHEM/11)
American Institute of Chemists Award in Chemistry	Emily J. Spang (BS/CHEM/10)
Kevin Scott Beall Memorial Awards	James T. McParland (BS/BIOC/13)
	Matthew C. White (BS/BIOC/13)
Wallace H. Carothers Scholarships	Timothy E. Gilpatrick (BS/BIOC/12)
	Soma Jobbagy (BS/BIOC/12)
Frank W. Collins Undergraduate Award in Biochemistry	Amy L. Styer (BS/BIOC/10)
Quaesita Drake Scholarships	Valerie W. Shurtleff (BS/CHEM/11)
	Devan L. Turner (BS/CHEM/11)
	Tara L. Rhoades (BS/BIOC/10)
	Amy L. Styer (BS/BIOC/10)

DEPARTMENT AWARDS	RECIPIENTS
Elizabeth Dyer Awards for Excellence in Chemistry and	Heather A. Hartman (BS/CHEM/10)
Biochemistry	Kyle F. Davis (BS/BIOC/10)
Hypercube Scholar Award	Sean T. Hunt (BS/CHEM/11)
Wallace H. McCurdy, Jr. Undergraduate Award in Analytical Chemistry	James L. White (BS/CHEM/11)
Merck Index Awards	Andrew J. Meyer (BS/CHEM/10)
	Patrick J. Straney (BS/CHEM/10)
James A. Moore Undergraduate Award in Organic Chemistry	Patrick J. Straney (BS/CHEM/10)
James E. Newton Black American Studies Student Award	Shakir JM. McLean (BA/CHEM/11)
Joseph H. Noggle Undergraduate Award in Physical Chemistry	Sean T. Hunt (BS/CHEM/11)
Gene J. and Frances F. Schiavelli Undergraduate Research Fellowship	Michael G. Napolitano (BS/CHEM/11)
C. Frank Shaw III Undergraduate Award in Inorganic chemistry	Charles F. Polotti (BS/CHEM/11)
C. Frank Shaw III Undergraduate Inorganic Research Fellowship	Devan L. Turner (BS/CHEM/11)
Carl A. vonFrankenberg Undergraduate Award in Chemistry Education	Samantha A. Martin (BA/XCE/11)
EPSCoR	Lauren McFadden (BS/CHEM/12)
	Shannon M. Owings (BS/CHEM/13)
Howard Hughes Medical Institute Undergraduate	Donald A. Allen (BS/BIOC/12)
Research Fellows	Nicholas J. Audette (BS/BIOC/12)
	Michael A. Brister (BS/BIOC/12)
	Timothy E. Gilpatrick (BS/BIOC/12)
	Matthew C. White (BS/BIOC/13)
INBRE	Jennifer L. Kim (BA/CHEM/11)
David A. Plastino (BS/CHEM/78) Alumni	Derek T. Ahneman (BS/CHEM/12)
Undergraduate Research Fellows	Cory M. Anson (BS/CHEM/12)
	Alyssa B. Hellreich (BS/CHEM/11)
	Dorottya Miketa (BS/CHEM/12)
	David M. Raciti (BS/BIOC/12)
	Renee P. Rubenstein (BS/CHEM/11)
Science & Engineering Scholar	Christopher D. Wright (BS/BIOC/12)

2010 B.A. Chemistry Graduates:		
Otto C. Burger III	Christopher J. Mandala <sup>a</sup>	Samil J. Patel
Matthew H. Carella	Gregory F. Marra	Brent M. Shick, Jr.
Kayli D. Cheyne	Sarah W. Meadows	Kimberly C. Webb
Caitlin E. Fox	Brannon M. Moore	

#### <sup>a</sup> Honors Degree

#### 2010 B.S. BIOCHEMISTRY GRADUATES:

Andrew J. Besherwor	Julian D. Gonzalez	Kevin WC. Siu
Aditya P. Bose <sup>a</sup>	Jason A. Lennon	Amy L. Styer <sup>a</sup>
Christine M. Brandt	Samuel S. Linton	Shazim T.Uppal
Kyle F. Davis <sup>b</sup>	Jaheda Nisar	Amanda B. Vent
Stacie E. Dutton	Tara L. Rhoades <sup>a</sup>	Jason S. White
Angela A. Genoese	Kevin A. Sforza <sup>b</sup>	Christine M. Whitfield

<sup>&</sup>lt;sup>a</sup>Honors Degree-with-Distinction | <sup>b</sup>Honors Degree

#### 2010 B.S. CHEMISTRY GRADIATES

Gregory M. Blasdel <sup>b</sup>	Benjamin I. Hmiel <sup>b</sup>	Kathleen M. Pasqualini
Zachary S. Boyles	David M. Lewis	Alexandra R. Perry
Dora Chang	David J. Meninger <sup>b</sup>	Meghan E. Scott
Hiu Y. Choi <sup>c</sup>	Andrew J. Meyer <sup>b</sup>	Emily J. Spang
Justin P. Dilorio	Gloria A. Miner	Patrick J. Straney
Tatsiana Haidzinskaya	Nicholas D. Mulder	Steven R. Ursaki
Heather A. Hartman <sup>a</sup>	Dung T.P. Nguyen	Gregory T. Winter

 $<sup>{\</sup>it ^a} Honors\ Degree-with-Distinction\ |\ {\it ^b} Honors\ Degree\ |\ {\it ^c} Environmental\ Chemistry\ Concentration$ 

#### 2010 M.S. GRADUATES:

Name	MENTOR	BACCALAUREATE DEGREE, SCHOOL
Eric Allgaier (MA)	-	B.S. James Madison University
Stephanie Bolte (MS)	Polenova	B.S., Mary Washington College
Joliene Trujillo (MS)	Riordan	B.S. Univ of Northern Colorado
Dereck K. Wilson (MS)	Bobev	B.S., U.S. Military Academy

2010 Ph.D. GRADUATES	:	
STUDENT/PREVIOUS DEGREE(S)	TITLE OF DISSERTATION	Mentor
Adou, Kouame B.S., National Advanced School of AG M.S., Michigan State University	Charge Reduced Electrospray Interface for Flowing Systems: Development and Applications to Quantitative Nanoparticle Analysis	Johnston
Piyal W. Ariyananda Grad. Ichem.C, Institute of Chemistry Ceylon M.S., University of Louisiana at Monroe	Synthetic Chemistry for Understanding the Elementary Steps in Acetyl Coenzyme a Synthase Mechanism	Riordan
Berry, James B.S., Ursinus College	Development of New Synthetic Methodology and Enantioselective Synthesis of the A-B-C Ring System of the Veratrum Alkaloids	Taber
Dange, Mayura N. B.Sc., University of Pune M.Sc., University of Pune	Study of the Functions of the 3 Different Subunits of Human NAD-Isocitrate Dehydrogenase	Colman
De Zoysa Ariyananda, Lushanti M. Grad. Ichem.C, Institute of Chemistry Ceylon M.S., University of Louisiana at Monroe	Adenylosuccinate Lyases (ASL) from Bacillus Subtilis and Homo Sapiens: (I) Evaluation of Types of Interactions in the Subunit Interface (II) Studies of Five Point Mutations and Mutant ASL Hybrids Associated with ASL Deficiency	Colman
Guo, Na B.S., Jilin University M.S., Jilin University	Quantum Chemistry Studies in Applications: Molecular Electronics and Biofuels	Doren
Kodali, Vamsi K. B.Sc., Nagarjuna University M.Sc., University of Delhi	Studies on the Quiescin Sulfhydryl Oxidase from Trypanosoma Brucei and a Novel Structural Protein from Chicken Egg Shell Membranes	Thorpe
<b>Kumar, Sandip</b> M.Sc., Indian Institute Tech- Kharagpur	Establishment of a Universal DNA Fingerprinting Technique using Microarray Technology	Chen
Leftwich, Timothy R. B.S., College of William and Mary	Modification of Silicon-Based Substrates with Cyclocondensation and Cycloaddition Reactions	Teplyakov
Madachik, Mark R. B.S., Salisbury University	Organic Modification of Si(100) ~2x1 Surface Through Reversible Coadsorption	Teplyakov
Monillas, Wesley H. M. Tech., Seton Hall University	Synthesis, Catalysis, and Reactivity of Low-Valent Chromium Complexes Supported by a ß-Diketiminate Ligand	Theopold
Rahaman,Obaidur BTEC, Indian Institute of Technology, Bombay	Development of Reactive Force Fields and an Empirical Scoring Function for Drug Screening	Doren
Rodriguez-Reyes, Juan Carlos B.S., Pontificia Universidad Catolica del Peru	Chemical Control Over the Formation and Reactivity of Ultra-Thin Films and Amino-Terminated Layers on Silicon	Teplyakov
Sauers, Daniel J. B.S., University of Delaware	Light Directed Gene Patterning Using Photocaged Doxycycline	Koh
Saul, Thomas B.A., Western Maryland College	Reactive Uptake of Nitric Acid Onto Sub-Micron Sea Salt Across a Wide Range of Relative Humidities	Johnston

2010 Ph.D. GRADUATES:	Continued from page 25	
Student/Previous Degree(s)	Title of Dissertation	Mentor
Sheth, Ritesh B. B.S., George Washington University	Development of New Synthetic Methodologies and the Synthesis of Natural Products	Taber
Spraggins, Jeffrey M. B.A., College of Wooster	Environmental Applications of ESI FT-ICR Mass Spectrometry: Oxidized Peptides and Metal Sulfide Clusters	Ridge
Srinivasan, Prabhavathi B.Sc., Bangalore University M.Sc., Bangalore University	Characterization of the Association of Human Plasma Platelet-Activating Factor Acetyl Hydrolase with Lipoproteins	Bahnson
Tarwade, Vinod C. B.S. University of Pune, India M.S., University of Pune, India M.S., Lamar University	Directed Carbozincation Reactions of Cyclopropene Derivatives	Fox
Theilacker, William B.A., Chemistry and B.A., Biology, West Virginia Univ.	Extracellular Matrix Protein Patterns and Gradients to Modulate Axonal Growth	Beebe
<b>Thévenin, Anastasia Fuzaylova</b> B.S., Lynchburg College	Investigation of the Interaction of Human Glutathione S-Transferase PI with C-Jun N-Terminal Kinase	Colman/ Bahnson
<b>Urena, Damian E. R.</b> B.S. Felician College	Mechanistic Studies of the Human Recombination Proteins RAD51 and RAD54 at the Molecular Level Via Fluorescence Resonance Energy Transfer (FRET)	Chen
Xie, Xiaocong B.S., University of Science and Technology, China	Applications of Cyclopropenes: Methylenecyclopropanes, Alkylidenecyclopropanes and Butenolides	Fox
<b>Yang, Liu</b> B.S., Peking University	Quantum Chemistry Studies of Molecular Electronic Devices: from Electronic Structure to Current Flow	Doren

## FALL 2010 UPCOMING SEMINARS AND

Colloquia

Please note, this is just a listing of the seminars that are scheduled as of the date of the distribution of BHC37. Visit us on the web for updates. <a href="www.udel.edu/chem">www.udel.edu/chem</a>

9/1/2010, Colloquium, **Prof Joseph Fox**, University of Delaware
9/10/2010, Colloquium, **Prof Tatyana Polenova**, University of
Delaware
9/15/2010, Seminar, **Prof Yisodong Michael Shi**, West

Xiaodong Michael Shi, West Virginia University

9/17/2010, Seminar, **Prof Christopher Jaroniec** Ohio Sta

**Christopher Jaroniec**, Ohio State University

9/22/2010, Seminar, **Prof Gordon Miller**, Iowa State University

9/29/2010, Heck Lecturer, **Prof John F. Hartwig**, University of Illinois \*see short biography on p.26.

10/1/2010, Seminar, **Prof Devarajan (Dave) Thirumalai**,
University of Maryland - College
Park

10/6/2010, Seminar, **Prof James P. Donahue**, Tulane University 10/8/2010, Seminar, **Prof Mark Kobrak**, Brooklyn College: CUNY

10/13/2010, Seminar, **Prof Anna Mapp**, University of Michigan

10/18/2010, Seminar, **Prof Cheryl P Bailey**, University

Nebraska-Lincoln

10/20/2010, Seminar, **Prof William B. Tolman**, University of Minnesota

10/22/2010, Seminar, **Prof Phil Baran**, Scripps San Diego

11/3/2010, Seminar, **Prof Bill Geiger**, University of Vermont
11/5/2010, Seminar, **Prof Qiang Cui** University of Wisconsin-

**Cui**, University of Wisconsin-Madison

11/8/2010, Seminar, **Prof Robert Crabtree**, Yale University
11/10/2010, Seminar, **Prof Nora Radu**, DuPont
11/11/2010, Seminar, **Prof Shib**.

11/11/2010, Seminar, **Prof Shih-Yuan Liu**, University of Oregon 11/12/2010, Seminar, **Prof** 

**Tatyana Igumenova**, Texas A&M University

11/17/2010, Seminar, **Prof Ulrich Haussermann**, Arizona State University

12/1/2010, Seminar, **Prof David MacMillan**, Princeton University

### GRADUATE OR PROFESSIONAL SCHOOL BOUND:

Matthew Carella, University of Maryland (Dental School), matthew.carella@gmail.com; Laura Feitelson, Rutgers University-Camden (Law School), laura. feitelson@gmail.com; Angela Genoese, Philadelphia College of Osteopathic Medicine (M.S. in Biomedical Sciences), aagenoese@gmail.com; Heather Hartman, Thomas Jefferson University (Medical School), heather.ann.hartman@gmail.com; Benjamin Hmiel, University of

Rochester (Ph.D. in Chemistry), bhmiel@gmail.com; David Lewis, Virginia Commonwealth University (Post-baccalaureate program in Health Sciences); Christopher Mandala, Rutgers University (Pharmacy School), Christopher.mandala@gmail.com; Gregory Marra, Temple University (Dental School); Sarah Meadows, St John's University (M.S. in Pharmaceutical Sciences), sarahwmeadows@gmail.com; Andrew Meyer, Penn State

University (Dickinson Law School), ajmeyeriv@gmail.com;

Dung Nguyen, University of North Carolina-Chapel Hill (Medical School); Patrick Straney,
University of Pittsburgh (Ph.D. in Organic Chemistry),
pjstraney@gmail.com; Amy

Styer, University of Georgia
(Ph.D. in Biochemistry); Shazim

Uppal, Villanova University (M.S. in Chemistry); Amanda Vent,
Thomas Jefferson University
(Medical School).

## HEADED FOR INDUSTRY, TEACHING, ETC.:

Jason Buchta, Physics Teacher, Mount Saint Joseph High School, Baltimore, MD, Jason.buchta@gmail.com;
Dora Chang, Research Chemist, U.S. Army's Edgewood Chemical Biological Center, Aberdeen Proving Grounds, MD;
Kyle Davis, Environmental Research, University of Ibadan, Nigeria; Jason Lennon, Chemical Analyst, Innospec Fuel Specialties, LLC, Newark, DE, lennonj1987@gmail.com;

Samuel Linton, Research Chemist, Mitosciences, Eugene, OR, sam.linton87@gmail.
com; David Meninger, Youth Pastor; Christ Community Church; Nicholas Mulder, Research Technician, Sepax Technologies; Nathaly Murillo, Product Coordinator, Innospec, Inc., Newark, DE, nathaly.
murillo@innospecinc.com;
Brittany Ogden, Research Chemist, Agilent Technologies, Wilmington, DE; Meghan Scott,

Research Technician, Center for Translational Medicine, Thomas Jefferson University;

Kevin Sforza, AmeriCorps
Volunteer,
Sforza.kevin@gmail.com;
Emily Spang, Research Chemist,
ANP Technologies,
emilyspang@gmail.com; Jason
White, Intern, Bank of America.
Gregory Winter, Research
Chemist, Physical Pharmacy
Group, Siemens Healthcare
Diagnostics, Inc., Newark.

## **2010 GRADUATE STUDENT PLACEMENTS:**

of California-Riverside (Post-

Eric Allgaier, Siemens Healthcare (Research Chemist), ericallgaier988@hotmail.com; Piyal Ariyananda, University of Delaware (Post-doctoral Fellow in **Prof Joel Rosenthal's** Laboratory), ariyananda@gmail.com; Tara **Baney**, Merck & Co., Inc., White House Station, NJ (Clinical Scientist), Tara\_baney@merck.com; Subhendu Chakraborti, University of California-San Francisco (Postdoctoral Fellow in Prof. James Marks' Laboratory), chakrabortis@anesthesia.ucsf.edu: Timothy Leftwich, University

doctoral Fellow), leftwich@ucr.edu;
Mark Madachik, Elizabethtown
(PA) College (Visiting Assistant
Professor),
bullfrogsong@hotmail.com;
Radhika Nagarkar,
GlaxoSmithKline, (Research
Scientist); Obaidur Rahaman,
University of Delaware (Postdoctoral Fellow in Prof Douglas
Doren's Laboratory),
ramie@udel.edu; Juan Carlos
Rodriguez-Reyes, Harvard
University (Post-doctoral Fellow);
Vinod Tarwade, Martek Biosciences

Corporation (Research Scientist);

Anastasia Fuzaylova Thévenin,
Yale University (Post-doctoral
Fellow in Prof. Benjamin Turk's
Laboratory),
anateflon@yahoo.com;

Damian Urena, Genewiz, Inc.
(Project Manager); Xiaocong Xie,
Lonza, Inc., Guangzhou, P.R.C.
(Research Scientist),
xiexiaocong@gmail.com; Derek
Wilson, U.S. Military Academy
(Chemistry Instructor).

## **ALUMNI NEWS**

## University of Delaware Wall of Fame

Dr. Arthur J. Coury (BS62) became the 9th CHEM/BIOC alumnus to have his name added to the University of Delaware's Wall of Fame on 6/7/10. Art, who served as our 10th CHEM/BIOC Graduation Convocation speaker in 2005, received both Ph.D. and M.B.A. degrees from the University of Minnesota. He has held leadership positions at General Mills, Medtronic, Focal, and most recently, Genzyme Corp. where, prior to this retirement, he was Vice-President for Biomaterials Research. The holder of more than 50 patents, he has published widely in the field of polymeric biomaterials for medical products. He was inducted into the National Academy of Engineering in 2009.

## FIFTY-AND SIXTY YEAR ACS Members

Once again, the Honor Roll of 50- and 60-year ACS members (C&E News, 4/12/10, pp. 40-46) included good representation among our alumni: Eugene C. Capaldi (MS61, PhD64), Leon de Brabender (BS56), John L. Hess, Ph.D. (MS63), John E. Innes (PhD64), Robert J. Kobrin (PhD69), Manfred Katz (PhD61, 60-year member!), Roy F. Nichols, Jr. (BS50, MS58), Kenneth H. Schroeder (MS60), Charles G. Wade (MS68), and Roy L. Williams (PhD65). Heartiest congratulations to all!

## ACS DELAWARE SECTION OFFICERS FOR 2010

U of D alumni continue to serve the local ACS Section:

**Andrea Martin** (PhD81), Secretary; **Lois Weyer** (MS71, PhD96), Director

### INAUGURAL CLASS OF ACS FELLOWS

The 162 members of the inaugural class of ACS Fellows (<u>C&E News</u>, 7/27/09, pp. 62-64) included three Fellows with strong ties to the U of D: **Dr. Jean F. Futrell** (FAC 86-99, Chair 86-95, 96-97), Senior Batelle Fellow, Pacific Northwest National Laboratory; **Prof. Ned D. Heindel** (MS61, PhD63), H.S. Bunn Professor of Chemistry, Lehigh University, Past ACS President; **Prof. Jeannette E. Pemberton** (BS77), Professor of Chemistry, University of Arizona.

#### **50'**s

Gabriel Chuchani, Ph.D. (BS50, MS51), throughout his extraordinary 56-year career, has become known as the Father of Modern Venezuelan Chemistry. Still active, at age 86, at the Instituto Venezolano de Investigaciones Cientificas, in Caracas, he has published 205 scientific papers in the general area of the kinetics and mechanisms of organic reactions, including those in the gas phase, with 5 more currently in press. He is credited with establishing graduate education in chemistry in Venezuela, and has personally mentored 74 research students. He received his doctorate in chemistry from Tulane University in 1954 and, in 1999, received an honorary doctorate from Universidad Simón Bolivar (Venezuela). chuchani@quimica.ivic.ve

**Charles F. Raley** (PhD 50) has been a member of the ACS for 66 years (!), having retired as an Associate Scientist with the Dow Chemical Co., in Midland, MI in 1982.

John R. Kosak, Ph.D. (BS51, MS52) died on 7/5/10. John, who earned his doctorate in organic chemistry at Michigan State University, spent his entire professional career (1957-1993) in DuPont's R&D Department at the Experimental Station. His area of expertise, in which he held numerous patents, was in the catalytic hydrogenation of aromatic compounds.

Louis R. DePrisco (BS53) is a member of the Board of Regents of Ave Maria University and is a founding Board Member of the Shamrock Bank of Florida. Louis retired as a General Manager of ICI Americas, and lives in Naples, FL. LRdeP@aol.com

Martin B. Price (PhD56) is living in Pittsburgh, having retired as Director of Research for Akzo Nobel. mbp132@yahoo.com

#### **60'**s

**Thomas J. Kelly** (PhD63) passed away on 2/6/10. Tom retired from DuPont in 1998, after 35 years of service.

**Shirish K. Shah** (PhD68), while still continuing to teach at Towson (MD) University, has embarked on a new direction of service. He has been certified to work as a volunteer at the Gilchrist Hospice Center.

**Sylvan D. Hersh** (PhD69) and his wife, Anita, have relocated to Portland, OR. <a href="mailto:sylly71840@yahoo.com">sylly71840@yahoo.com</a>

**Isaac C. Sanchez** (PhD69), The William J. Murray, Jr. Endowed Chair of Engineering at the University of Texas-Austin, has received the American Institute of Chemical Engineers' Award for Service to Society.

#### **70'**s

John C. (Josh) van Houten, PhD (BS70), Leavy Family Professor of Chemistry at Saint Michael's College, Colchester, VT, organized a symposium on solar energy conversion and storage at the spring ACS National Meeting in Salt Lake City. jvanhouten@smcvt.edu

Eric Buel, PhD (BA75), Director of the Vermont Department of Public Safety's Forensic Laboratory, testified 9/9/09 before the U.S. Senate's Committee on the Judiciary on "Strengthening Forensic Science in the United States – a Path Forward." [see <a href="http://judiciary.senate.gov/hearings/hearing.cfm?">http://judiciary.senate.gov/hearings/hearing.cfm?</a>

**Charles C. LeFlar** (BA76) is a Group Manager of Business Operations in Immunodiagnostics for Beckman Coulter, Inc., in Chaska, MN. cleflar@beckman.com

I have said, several times in past BHC issues, that chemists do the darnedest things. This one is near the top of the list: Forensic Scientist Helps Solve a Murder Case - in the Land of Fiction! Some of you are familiar with Westmire College, in the quirky little college town of Westmire Shores on the New Jersey shore. Recently, a skull was dug up on the campus, and once again, Dean Doug Carter-Connors became involved in investigating the crime. One particular challenge was trying to determine how long the skull and accompanying bones were in the ground, so he went to a Chemistry Professor on his campus, Dr. Allen Faust. When Dean Doug arrived at the lab he was met by Professor Faust

and an old friend of Faust's, Professor John Allison (PhD77) from the nearby College of New Jersey! If you'd like to read about how Professors Allison and Faust use laser desorption mass spectrometry to develop a method for dating bones (interpreting mass spectra and everything!) you should read MURDER 101 (book II of The Mystery Series), which was published last year (April 2009) by Heath P. Boice (Orchard House Press, Port Orchard, Washington). It's rare to find a real person in a fictional mystery novel, but Dr. Allison will go where he is needed to provide expertise in Forensic Chemistry, even to a fictional college in a fictional town just north of Asbury Park! allison@tcnj.edu

Michael Hazuda, Jr., D.M.D. (BS77) has completed 27 years in his dental practice in Wilmington. drhazuda@aol.com

Debra Hess Norris, PhD (BA77), Henry Francis duPont Chair of Fine Arts, Chairperson of UD's Department of Art Conservation, and Vice Provost for Graduate and Professional Education. was one of 60 of the world's leading conservators and cultural heritage and policy professionals, representing 35 countries, who convened last fall in Salzburg, Austria to explore global challenges related to cultural preservation and to develop an action plan for protecting irreplaceable treasures around the world. dhnorris@udel.edu

Martin DeBerardinis, PhD (BA78), Director of Medicines Evaluation at AstraZeneca, is one of a group of local private pilots who give their time and talent to Angel Flight Mid-Atlantic, a group that helps transport needy medical

patients for treatment at faraway centers. Marty was the speaker at our 12th CHEM/BIOC Graduation Convocation in 2007. martin.deberardinis@astrazeneca.com

Karen D. Riding, PhD (BS79) is the Director of Lean and Continuous Improvement for Vertis Communications, in Castleton, NY. <a href="mailto:kriding@vertisinc.com">kriding@vertisinc.com</a>

#### **80'**s

**Barbara (Shaw) Harrison** (BS80) is now "working with many of my old DuPont buddies" at Incyte Corporation, in Wilmington.

Jane Margaret O'Brien (PhD81) has stepped down from the Presidency of St. Mary's College (MD) to assume the Presidency of the Center for Medieval and Renaissance Studies Consortium (with which St. Mary's has had a 35-year association) in Oxford, England. Her 13-year term as President of St. Mary's resulted in a dramatic reshaping of the College in appearance and in substance. A 10-year building effort added 86 acres, increased student housing by 50%, and added a new academic building, a new student services building, a new campus center, and two new recreational facilities. Its campus was extended overseas with the establishment of study centers in Gambia, West Africa and Alba, Italy. A formal affiliation with Historic St Mary's City was established in 1997. The Heritage Campaign, under her leadership, successfully raised \$40 million to support academic and studyabroad programs through a new Core Curriculum, to grow the residential campus, and to offer two new lecture series. Forty

#### ALUMNI NEWS

CONTINUED FROM PAGE 29

new student scholarships and nine endowed professorships are credited to her efforts. Small wonder, then, that St. Mary's has been consistently ranked as one of the top public liberal arts colleges by <u>U.S. News and World Report</u>, and that the <u>Washington Post</u> has described St. Mary's as "a place to get an Ivy League education at a public school price." Maggie served as our 4th CHEM/BIOC Graduation Convocation speaker in 1999. jamaobrien@gmail.com

A lawsuit brought by Anita Brandolini (MA82, PhD83) and a female colleague against their former employer, William Patterson University (NJ) was the subject of a feature article in C&E News (11/16/09, pp.33-36). The lawsuit alleges that WPU tolerated a hostile work environment against women in its chemistry department, specifically allowing gender discrimination and harassment. The case was to be tried in the Superior Court of New Jersey.

**James A. Daley** (BA82) is a Gas Chromatograph Specialist with Emerson Electric in Houston, TX. <u>jadaley1@comcast.net</u>, jim.daley2@emerson.com

**Jeffrey A. Gates** (PhD85) has been promoted to the newly created position of Director of Marketing at Syrgis Performance Products, in Covington, KY.

**Gerard M. Koether** (BS85) was a member of AstraZeneca's "Schizophrenia Squad" – the team of AZ scientists who created AZD2624, a drug candidate that reached Phase II clinical trials in patients with schizophrenia, before being discontinued in 2009. (C&E News, 4/12/10, pp. 30-32).

Research conducted in the

laboratory of Kristi Kiick, PhD (BS89), Associate Professor in the Department of Materials Science and Engineering at the U of D, has been highlighted in a special series in Macromolecular Rapid Communications, one of the leading journals in the field of polymer science. The manuscript describes her group's work on the design of polymer-based hydrogels that are capable of targeted protein delivery to cells. Kristi served as the Program Chairman for the Polymer Division at the 2010 San Francisco ACS National Meeting. kiick@udel.edu

#### 90's

I have always found giving a lecture at one's alma mater(s) to be a special treat. Three of our 90's alumni indulged in this pleasure during the past academic year:

**Steven J. Stuart, PhD** (BS90), Associate Professor of Chemistry, Clemson University, "Modeling Energetic Impacts with Reactive Potentials," 10/12/09.

Jennifer (Ogrodnick) Cochran, Ph.D. (BS95) Assistant Professor of Bioengineering, Stanford University, "Engineered Protein Therapeutics and Diagnostic Agents Inspired by Nature," 11/18/09.

#### John E. Dueber, Ph.D.

(BS99), Assistant Professor of Bioengineering, University of California-Berkeley, "Engineering Modular Control Over Signaling and Metabolic Pathways," 3/5/10.

**Thomas P. Russell** (PhD90) is a Director at the Air Force Office of Scientific Research.

**Lee J. Silverberg** (PhD91), having spent 18 years in industry, most recently with Merck, has transitioned to academia. During

the past academic year, he taught general and organic chemistry at Penn State's Schuylkill Campus (located in your Editor's home county). lisilverberg@verizon.net

Joseph J. Urban (PhD91), Associate Professor of Chemistry at the U.S. Naval Academy, was quoted in a feature article on "Naval Chemistry," in <u>C&E News</u>, 2/15/10, pp. 49-50. Joe recently returned to Newark for his son, Matthew's campus visit. <u>urban@usna.edu</u>

Mark W. Embrey (BS93) is a Senior Research Associate in the Medicinal Chemistry Department of Merck's Research Laboratories in West Point, PA. mark embrey@merck.com

**George S. Watts, Ph.D.**(BS93) is the Director of the Microarray Facility in the University of Arizona's Cancer Center.

Jonathan T. Goodman, PhD (BS94) has added a third degree (J.D.) to his name, and is now a practicing Patent Attorney in Chicago. j.goodman@gmail.com

Jeffrey L. Reinking, Ph.D. (BS95) is now an Assistant Professor of Biology at SUNY-New Paltz. His grandfather, Norman Reinking, who died this past year, was my group leader at Bakelite/Union Carbide Plastics during the four summers that I worked in Bloomfield/Bound Brook, NJ during my Franklin & Marshall days.

Raymond C. Trievel, Jr., Ph.D. (BS95) Assistant Professor at the University of Michigan's Medical School, is the recipient of an Early Career Award from the American Crystallographic Society.

**Michael D. Gentile (**BS96) is a Research Technician in the Stroud Water Research Center, Avondale, PA.

**Keith R. Hornberger, Ph.D.** (BS97) is now a Project Leader in cancer chemistry at OSI Pharmaceuticals, in Ardsley, NY. khornberger@osip.com

Anita (Robinson) Brown (PhD98) is the Chair of Salisbury (MD) University's Chemistry Department. arbrown@salisbury.edu

Thomas M. Razler, Ph.D. (BS98) is a Research Scientist in the Pharmaceutical Division of Bristol Myers Squibb, in New Brunswick, NJ. <a href="mailto:thomas.razler@bms.com">thomas.razler@bms.com</a>

#### 00's

**Walid ben Ayed** (AS00) is a Business Analyst for the CEO of the EMITAC Group in Dubai, Arab Emirates. walid\_ayed@emitac.ae

Daniel R. Dries, Ph.D. (BS00) is a Post-doctoral Fellow in the Department of Neuroscience at the University of Texas Southwestern Medical Center in Dallas, TX. daniel.dries@UTSouthwestern.edu

Joshua S. Figueroa, Ph.D. (BS00), Assistant Professor of Chemistry at UC-San Diego, has received an NSF CAREER Development Award.

Irina (Rudik) Miksa (PhD00), having completed her M.B.A. at Lehigh University, is a US Regional Planning Leader for Global Pre-clinical Drug Development at Johnson & Johnson, in Raritan, NJ. imiksa@its.jnj.com

**Isaac A. Hubner, Ph.D.** (BS01) has decided to change fields, and is now a Law Clerk in the Patent

Law and Intellectual Property Group in Proskauer's Boston office.

Valerie J. (Dzubeck) Bradford, Ph.D. (BS02) is a Scientist in Global Grooming R&D for the Gillette Division of Procter & Gamble, in Needham, MA. bradford.v@pg.com

**Dwight L. Higgin, M.S.** (BA02) is a doctoral candidate in Neuroscience at Drexel University's College of Medicine. dlh49@drexel.edu

Matthew J. Swierzbinski, M.D. (BS02) is a Resident in Internal Medicine at the George Washington University in Washington, DC. mjswiz@hotmail.com

**Bryan J. Davis, Ph.D.** (BS03), Lecturer in Chemistry at Guilford College, Greensboro, NC, also returned to campus to give a teaching-oriented seminar on 1/26/10. Brian will begin his new appointment as an assistant professor at Shenandoah University this fall. <a href="mailto:bryan.davis.de@gmail.com">bryan.davis.de@gmail.com</a>

**Gerald W. Farmer, Jr., Esq.** (BS03) is the Coordinator of the Dawn Career Institute's Legal Assistant Program in Wilmington, DE.

Wenny (Shih-Wen) Lin, Ph.D., M.P.H. (BS04) is a Cancer Prevention Post-Doctoral Fellow in the Division of Cancer Epidemiology & Genetics, Nutritional Epidemiology Branch of the National Cancer Institute, in Bethesda, MD. lins4@mail.nih.gov, ms.wennylin@gmail.com

**Lakshmi S. Subbarao** (BS04) is an Applications Chemist with TharSFC (recently acquired by Waters). <a href="mailto:lsub@comcast.net">lsub@comcast.net</a>



Reunited: Having begun his research career in the laboratory of Prof. Arnold Rheingold, Josh Figueroa is now a colleague of Arnie's at the University of California - SanDiego

#### ALUMNI NEWS

CONTINUED FROM PAGE 31

Catherine I. Daigle (BS05) is a Biochemist with Siemens Healthcare Diagnostics, in Newark. Cathy completed her M.S. in Clinical Research Organization and Management at Drexel University in 2009. Catherine.i.daigle@siemens.com

Miya D. (Drury) Howell (PhD05) is a Scientist with the Monsanto Company, in Chesterfield, MO. miya.d.howell@monsanto.com, miyahowell@gmail.com

The One Road South bicycle expedition of Daniel W. Lins (BS05) and his three UD classmates turned into many roads north, as they cycled from the southern tip of South America, in Patagonia, to Lima, Peru - a distance of 6,500 km, over 9 months, ending 9/1/09. Dan traveled, alone, for an additional two months, via hitchhiking and buses, to Southwest Brazil, Paraguay and Uruguay. He will begin his missionary studies at the Moody Bible Institute, in Chicago this September. For a brief overview of their extraordinary journey, see the 3/18/10 issue of the News-Journal at www.delawareonline.com For the full 6,500 km, see www.oneroadsouth.com

**Christopher R. Hanson** (BS06) and **Nicole (Stephenson) Hansen** (BS07) have moved their Double Del abode to Cranbury, NJ.

Michael E. Meredith (BA06) is a Civilian Chemist in the Organic Pesticides Section, Directorate of Laboratory Service of the U.S. Army's Public Health Command, Aberdeen Proving Grounds, MD. michael.e.meredith@us.army.mil

**Michael T. Mock** (PhD07) is a Staff Scientist at the Pacific Northwest National Laboratory.

**Daniel L. Silverio** (BS07) is a doctoral candidate in the laboratory of Prof. Amir Hoveyda, at Boston College. silverid@bc.edu

Matthew T. Kieber-Emmons (PhD08) is an NIH Post-doctoral Fellow in Prof. Edward Solomon's group at Stanford University.

Patrick J.Knerr (BS08) is a doctoral candidate in the laboratory of Prof. Wilfred van der Donk at the University of Illinois, Urbana-Champaign. pjknerr@gmail.com

**Ann E. Benavidez** (BS09) is a doctoral candidate at the University of Pennsylvania. benavide@sas.upenn.edu

Joseph E. Davis (MS09) is a Chemist/Software Engineer Liaison for Siemens Healthcare Diagnostics, in Newark. jedavis5384@gmail.com

**David F. Grieco** (BS09) is a Chemist at the Edgewood Chemical Biological Center, Aberdeen Proving Grounds, MD. david.f.grieco@ud.army.mil **Simon E. Hamermesh** (BA09) is a Junior Product Manager with the Buchi Corporation, in New Castle, DE. hamermesh.s@buchi.com

Amanda J. Pickard (BS09) is a doctoral candidate in the laboratory of Prof. Ulrich Bierbach at Wake Forest University. pickaj9@wfu.edu

Steven J. Tereniak's (BS09) poster received a 2nd place award at the annual Delaware ACS Section Student-Industry Poster Session, held at the U of D on 4/22/09. Narmada R. Gunawardena (MS01), a Scientist with AstraZeneca, and Andrea E. Martin (PhD81), an Assistant Professor of Chemistry at Widener University, served as two of the judges.

#### 10's

Eric D. Bugglin-Borer (BS11) has had one of the more unusual summer jobs. In 2008, he served as a wildland firefighter, fighting wildfires in two locations in Northern California. Last year, his first assignment took him to Utah, after which he was assigned to Los Padres National Forest, in Southern California.

### HONOR ROLL OF GIFTS TO THE DEPARTMENT

The Department would like to acknowledge, with extreme gratitude, financial support from the following alumni, parents, faculty members, staff members, and friends during 2008-2009:

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We have made every effort to make the preceding lists complete. Please let me know of any omissions.

## **Kudos**

This edition of the Blue Hen Chemist blended the talents of two very capable administrative assistants: my right arm, **Linda Staib**, who did all of the word processing, and **Jen Durkin**, who created the layout and did the formatting. As usual, your Editor is responsible for all of the non-attributed content.

## GIVING TO THE DEPARTMENT

Sincere thanks to all the friends and alumni who have made generous contributions over the past year. Your gifts are used for many worthwhile purposes — to create professional development opportunities for our students, to support programs that enrich our curriculum, to fund special events that deepen our understanding of modern chemistry and to reward exemplary performances.

To make a gift to the Department of Chemistry and Biochemistry, please visit our online form at <a href="https://www.udel.edu/makeagift">www.udel.edu/makeagift</a>. When you visit the form, please earmark your gift to the Department of Chemistry and Biochemistry or any of the funds listed below in the "Other Designation" box. For additional information on how to make a gift, please call the Development Office's toll free number at 866.535.4504 during normal business hours.

**Kevin Scott Beall Memorial Awards [1994]:** These awards of \$500 are presented to the most outstanding fre shman chemist nd biochemistry majors. They are given in the memory of a graduate of the Department who was killed in an automobile accident in 1993.

**Wallace H. Carothers Scholarships [1980]:** These awards, presented by an anonymous donor to students in chemistry or biochemistry, are to commemorate the achievements of this pioneer in polymer chemistry. The \$500 awards, based on academic merit, have traditionally been given to the students deemed to be our most outstanding sophomore chemistry and biochemistry majors.

**Frank W. Collins Undergraduate Award in Biochemistry [2002]:** An endowed award given to the graduating senior who best exemplifies scholarship in biochemistry. The award consists of an honorarium of \$400, provided by the Frank W. Collins Endowment.

**Elizabeth Dyer Excellence in Chemistry and Biochemistry Undergraduate Award Fund** [1989]: supports awards (currently two \$2.5K awards/year - one to a CHEM major, one to a BIOC major) given to senior majors in recognition of excellent performance in one or more of the following areas: scholarship, research and service to the Department. The awards honor Prof. Elizabeth Dyer, faculty member 1933-1971.

**Elizabeth Dyer Excellence in Teaching Award Fund [1982]:** supports awards (currently \$300-\$600, depending upon the number of awardees) given to graduate teaching assistants in the Department for excellent achievement in the teaching of chemistry.

**Quaesita Drake Scholarship Fund [1969]:** supports scholarships (currently four \$1.5K scholarships/year) given to outstanding junior or senior women who are chemistry or biochemistry majors, on the basis of academic accomplishment and potential and excellence of character. The funds for these awards are obtained from gifts of alumni and alumnae to honor Prof. Quaesita Drake, chairperson of the Women's College Chemistry Department for over 25 years.

**Alberta E. Edge Fund:** This fund, created from the estate of Alberta E. Edge (BA35), underwrites the financial component of the awards given to outstanding senior (American Institute of Chemists Award, currently \$500) and junior (American Chemical Society Award, currently \$500) CHEM or BIOC majors, as well as the two senior Merck Index Awards (currently \$250 each).

**Brennie E. Hackley, Jr. Award for Excellence in Research [2009]:** Given annually [currently \$2,000] to a graduate student who has demonstrated excellence in research. It honors the memory of Dr. Brennie E. Hackley, Jr. (UD Ph.D. '57), who devoted his remarkable 57-year career at the Edgewood Chemical and Biological Center, Aberdeen, MD Proving Grounds to the development of medical antidotes to chemical warfare agents.

**Wallace H. McCurdy, Jr. Undergraduate Award in Analytical Chemistry [2000, reconstituted 2007]:** An award given to the graduating senior in the Department of Chemistry and Biochemistry who best exemplifies scholarship in analytical chemistry. The award consists of an honorarium of \$400. The award honors Wallace H. McCurdy, Jr., faculty member 1959-1992.

**William A. Mosher Fund:** supports fellowships for CHEM/BIOC graduate students. The fellowships honor Prof. William A. Mosher, who chaired the Department from 1945 to 1969.

- **James A. Moore Undergraduate Award in Organic Chemistry [2000]:** An award given to the graduating senior in the Department of Chemistry and Biochemistry who best exemplifies scholarship in organic chemistry. The award consists of an honorarium of \$400. The award honors Prof. James A. Moore, faculty member 1955-1988.
- **Joseph H. Noggle Undergraduate Award in Physical Chemistry [1999]:** supports an annual award (currently \$400) given to the graduating senior who best exemplifies scholarship in physical chemistry. The award honors Prof. Joseph Noggle, faculty member 1971-1998.
- **NUCLEUS Fund:** The NUCLEUS (Network of Undergraduate Collaborative Learning Experiences for Underrepresented Scholars) Program assists underrepresented ethnic students earn their bachelor's degree in biomedically related disciplines. Gifts to the NUCLEUS Program will support retention and post-baccalaureate placement programming that enhance the experiences of underrepresented ethnic students in the Department.
- **Gene J. and Frances E. Schiavelli Undergraduate Research Fellowship [2005]:** An award (currently \$500) given to an undergraduate chemistry or biochemistry major who shows special promise as a research scientist, as demonstrated by work accomplished during his or her academic career. The award is supported by an endowment provided by Dr. Mel Schiavelli, University Provost (1994-2001).
- C. Frank Shaw III Undergraduate Award in Inorganic Chemistry [1992]: The award, presented by Dr. C. Frank Shaw III '66, Professor of Chemistry at Illinois State University, is given for outstanding classroom and laboratory performance in inorganic chemistry by an undergraduate chemistry or biochemistry major. The stipend is \$400.
- **C. Frank Shaw III Undergraduate Inorganic Research Fellowship [2010]:** This \$500 award, endowed by Dr. C. Frank Shaw III '66, Professor of Chemistry at Illinois State University, is given to an undergraduate CHEM/BIOC major who demonstrates exceptional aptitude and promise for research in the area of inorganic chemistry. The primary intent of the Fellowship is directed at providing financial support for a junior CHEM/BIOC major engaged in full-time research in inorganic chemistry during the winter (usually) or summer session. Awards to senior, sophomore, or freshmen students are not precluded, should the situation warrant them. Selection of the recipients will be made by the members of the INOR Division.
- **Joel Silver Award Fund [1973]:** supports an award (currently \$300) given in memory of Joel L. Silver, a graduate student killed in a traffic accident in his last doctoral year (1971), that recognizes excellent achievement in research, as well as a highly professional presentation of results at an annual symposium.
- **Glenn S. Skinner Award Fund [1968]:** supports an annual award (currently \$3K) to a graduate student in recognition of distinction in scholarship, research and service to the Department. The award honors Prof. Glenn S. Skinner, who was a chemistry faculty member from 1928 to 1958.
- **Trofimenko Memorial Prize [2007]:** This \$500 award, in memory of Dr. Swiatoslaw 'Jerry' Trofimenko, creator of the polypyrazolylborate ligand system and visiting scholar in the Department from 1996 until his death in 2007, is given annually to a graduate student in the Department who has distinguished him/herself in the area of 'creative inorganic synthesis.'
- **Carl A. von Frankenberg Undergraduate Award in Chemistry Education [2005]:** supports an annual award (currently \$400) given to the graduating senior who best exemplifies scholarship in, and the practice of, chemistry education. The award honors Prof. Carl von Frankenberg, faculty member 1961-1997.

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