

Remarks by the Chair



“YOU’RE STILL THE CHAIR?” is becoming a more common question from alumni and friends, as this is the seventh letter you have received from me as chair. Time flies when you’re having “fun”, but overseeing the well being of the department has certainly been my highest priority over that time. Fortunately, the alumni news section of the newsletter continues to grow each year, to the extent that pretty soon there won’t be any room for the chair’s annual “executive summary”.

This past year has been relatively calm compared to my other years as chair. Certainly the biggest news for the department in the upcoming year is the anticipated completion of the new home of the department next spring (see article on page 4 for details). We are scheduled to move over the next spring break, an intimidating task in itself. By my estimation, over 60% of our current alumni spent a considerable amount of time in the present Rogers Hall, which was opened in 1975. The new structure looks tremendous sitting adjacent to Rogers. There is no doubt in my mind that chemistry buildings, especially teaching labs, take more abuse than virtually any other type of educational facility. At least that’s what I tell prospective students and parents when I take them on tours of the current teaching labs with the multi-styled sections of floor tiling, stained ceiling tiles from numerous leaks, and a multitude of cabinets with the finish stripped off (can’t imagine how that could happen!). I’m still hoping that someone will buy us a 500 MHz NMR as a house warming gift.

Our faculty and staff continue to work to provide outstanding research and teaching environments for our majors. At least 51 majors stayed for the Summer 2007 research program, a number I would challenge any other chemistry program in the country to match. The entire program is funded through a combination of external faculty grants and endowments from alumni, with significant College support in the form of free summer housing. This past year we had 45 majors graduate, with 37 receiving ACS certified degrees

(we have averaged over 44 degrees awarded per year over the past 20 years alone!). For the 2005–06 academic year, we ranked eleventh in the entire country for ACS certified degrees (the top 10 are at large universities).

As I seem to state every year, these are phenomenal statistics, given the size of W&M and the fact that research is not required for the chemistry degree. Yet anywhere from 80–85% of our majors are participating in senior research, and more and more students are beginning their research experience anywhere from the freshman through junior years. This growth in early research experiences has led to far greater continuity for many faculty within their research programs, and continues to provide us with the opportunity

to recognize our students in peer reviewed publications and presentations at world class conferences. For example, for the 2006 year, over 40 listings of student co-authors were made in 26 faculty publications, with over 60 citations on 26 presentations. Faculty continue to achieve notable success in securing significant funding from external sources. This past year alone, both Rob Hinkle and Lisa Landino received new awards from the NIH, and Elizabeth Harbron received a very prestigious NSF CAREER award. In addition, Emeritus Gottwald Professor William Starnes was recognized by the Society of Plastics Engineers (SPE), the world’s largest organization of plastics professionals, with national awards in recognition of his contributions to the profession.

This has been one of those years with essentially no changes personnel-wise within or

outside of the department with respect to promotions, retirements, or other noteworthy news. Although in some ways it is hard to fathom that we could potentially have no untenured faculty within the next year, I consider it a sign of our commitment to the well being of the younger faculty and their long term success.

One major task I have asked the current faculty and staff to complete is a long term plan for the directions we should take over the next 10–20 years. The department needs to consider long term impacts on the program with the near completion of the new facility, growing College emphasis on productive research and external funding, a significant number of retirements over the next 5–10 years, and perceived

3 Editors’ Addenda

4 Five More Months!

5 Undergraduate Chemistry Scholarship

6 Faculty News, Res. Profiles

8 2006 Reception Pics

10 Giving

12 Class of 2007

13 News from Alums

disciplinary shifts in important research and curricular areas. The faculty and staff have taken this task very seriously, and we hope to have the plan completed this fall. I plan to post this on the department website for alumni to view and give their perspectives relative to what they are seeing beyond the insulated academic world we live in.

The College recently concluded a successful campaign which ultimately generated over \$500 million in donations and endowments to help it maintain a high level of success and visibility for years to come. A significant contribution to that was an endowment from Patti and Marshall Barry (Classes of '63 and '61 respectively) for the Patricia Pound Barry Scholarship in Chemistry (see story on page 5). I took great pleasure in working with the Barrys in developing the scholarship for entering freshmen majoring in chemistry. Rebecca Plummer, from Illinois, was an outstanding selection for the first recipient of the scholarship, and we look forward to providing these scholarships to an entering freshman every year for the lifetime of the department.

Continued giving by alumni is crucial to the department's long term planning and to our status as one of the premiere undergraduate chemistry programs in the country, an achievement we wish to retain. As stated last year, the only way we can maintain such recognition is to sustain a predictable level of giving from alumni on an annual basis, to the extent that allocations of private monies on the order of \$50–100K or more is available to fund scholarships, student stipends, and instrument development. I have chosen to retain from last year's newsletter a comprehensive list of department needs that will hopefully keep us competitive in educating the next generation of chemists (see page 10). I hope you will consider giving to the department, and assure you that we will always make sound use of such monies.

Last year I told the story about a prospective student mentioning the University of Virginia as a potential school, at which the father immediately blurted out, "And they said William and Mary has the best undergraduate chemistry program!" Odd, but I had exactly the same thing happen this year, in addition to two entering freshmen opting to turn down partial scholarships at another state school to major in chemistry at William and Mary. It would be very easy to say that the faculty and staff here are an integral part of our success, but other institutions truly recognize our program from the success of our alumni in their graduate schools, professional programs, as well as the chemical work force. Alumni have also been very important in letting others know about the reputation of our program. All I can say is thank you for making our job so easy in being so well recognized.

I hope that as many alumni as possible will join us for our **LAST** annual alumni reception in the current Rogers Hall held on the Friday evening of Homecoming weekend. I

also encourage you to visit our department web site at www.wm.edu/chemistry which contains stories on the home page about faculty, alumni, and other items of current interest. I continue to tell students that, although they may feel continually stressed by our rigorous academic standards, there will come a point in time when they realize these were actually four of the most independent and carefree years they will ever enjoy in life. We all know that the rigors and standards of the real world are far greater, thus I hope your memories of Rogers Hall, the faculty, and the lifelong friends you made here, will always help you keep a proper perspective in life.

CHEERS, GARY RICE

Current Faculty

Chris Abelt , organic	<i>cjabel@wm.edu</i>
Carey Bagdassarian , biophysical	<i>ckbagd@wm.edu</i>
Debbie Bebout , biochemistry	<i>dcbebo@wm.edu</i>
Randy Coleman , organic, biochem	<i>racole@wm.edu</i>
Gary DeFotis , physical	<i>gxdefo@wm.edu</i>
Elizabeth Harbron , organic	<i>ejharb@wm.edu</i>
Rob Hinkle , organic	<i>rjhink@wm.edu</i>
Steve Knudson , physical	<i>skknud@wm.edu</i>
Dave Kranbuehl , physical, polymer	<i>dekran@wm.edu</i>
Lisa Landino , biochemistry	<i>lmland@wm.edu</i>
Bob Orwoll , physical, polymer	<i>raorwo@wm.edu</i>
Bob Pike , inorganic <i>Garrett-Robb-Guy Professor</i>	<i>rdpike@wm.edu</i>
J. C. Poutsma , analytical	<i>jcpout@wm.edu</i>
Ted Putnam , dept. administrator	<i>tdputn@wm.edu</i>
Gary Rice , analytical, chair	<i>gwrice@wm.edu</i>
Dave Thompson , inorganic <i>Chancellor Professor</i>	<i>dwthom@wm.edu</i>

Emeriti

Ed Katz , 1980	
Cirila Djordjevic , 1992	
Dick Kiefer , 2003	<i>rlkief@wm.edu</i>
Bill Starnes , 2006	<i>whstar@wm.edu</i>

On leave for 2007–2008

Bob Orwoll Spring 2008

Visiting faculty, '07–'08

David Naistat

Adjunct faculty, '07–'08

Sirisoma Wanigatunga (Fall '07), **Homer Smith** (Spring '08)



Chemistry 2007

Here is our 2007 departmental picture for the Colonial Echo. Seated, from left: Elizabeth Harbron, Der-Hong Shieh, Rob Hinkle, Louise Menges, Dave Kranbuehl and Debbie Bebout. Standing, from left: Gary Rice, Pat Hilger, Ted Putnam, Linda Savedge, Bill Starnes, Chris Abelt, David Naistat, JC Poutsma, Homer Smith, Bob Orwoll, Steve Knudson, Lynda Stitzel, Bob Pike, Randy Coleman and Cary Bagdassarian.

Missing from our photo this year are Gary DeFotis, Lisa Landino and Dave Thompson.

Editors' Addenda

Earlier this year US News & World Report carried an article about how undergraduate institutions are experiencing growing proportions of female applicants. W&M was one of several schools highlighted. We have also noticed a change in the gender distribution of our chemistry majors. Here's what we found when we reviewed three 3-year periods, 20 years apart.

Years	Total no. of chem majors	Fraction that are female
1965–67	44	30%
1985–87	104	37%
2005–07	161	61%

A brief accounting of four retired faculty: Ed Katz, 91, lives in a retirement community near his daughter in Blacksburg; Cirila Djordjevic resides with her husband Branko in Williamsburg. Dick Kiefer and Bill Starnes and their spouses have also remained in town. Both Dick and Bill maintain offices in the department and both mentor graduate and undergraduate research students.

A final note (and added over the subject's protest): The great majority of this newsletter is the work of Louise Menges. We are very grateful for the great effort and care that she has put into the writing and picture taking, the layout, and (with Pat Hilger) the mailing.

Laser Lab a Reality

We have made a considerable investment in developing a laser laboratory for the upper division teaching labs which is close to fruition. A new Continuum Nd:YAG laser with fundamental and two harmonic frequencies was purchased with funding from the College, and a refurbished Spectra Physics dye laser was obtained via a road trip by Professor Poutsma to Furman. The dye laser, all necessary optics, detectors, and laser table were purchased through alumni donations to the department. State-of-the-art safety interlocks and the laser enclosure were designed and provided by the College's Environmental, Safety, and Health Department.

Special thanks to J.C. Poutsma for setting up the lab and tracking down the dye laser, and to Sandra Prior, Director of ES&H, for developing all the safety features. We hope to have one or more experiments ready for the next spring semester of the physical chemistry lab, with other experiments being developed in the future through Elizabeth Harbron's NSF CAREER grant (see page 6) once the lab is relocated to our new facility.



The entrance to our new laser lab. (Since it's unlikely that any of you is wearing appropriate laser goggles, safety concerns prevent us from giving you a look inside for now.)

Integrated Science Center Nearing Completion

A Work in Progress...



September 2006



January 2007



May 2007



mid-August 2007

Last year we commented on the strip mining operation occurring between Rogers and Millington Halls in preparation for the construction of the new Integrated Science Center (or, being the scientists we are and finding an acronym for everything, the ISC). The transformation of that excavation into the accompanying pictures here has been a phenomenal transition, with virtually every day bringing some visible change to the exterior structure. What is even more amazing is that the coordinating contractor (Gilbane) expects the building to be ready for occupancy by the beginning of March, 2008. Given the urgency in beginning the renovation (or should we say gutting) of the current Rogers Hall for cost efficiency, we are currently planning to move over spring break.

A mid-semester move will be a daunting task, but we are in the midst of carefully planning for such a transition. Excess chemical inventories have been significantly reduced. The physical chemistry teaching lab was virtually packed to the brim with obsolete equipment and other dysfunctional items over the summer to the extent



Unused equipment we were encouraged to surplus before our move next spring accumulated in P-Chem lab over the summer. Mercifully, it was all removed in August!



that they practically needed a semi just to haul everything away. The contractors have been exceptional in planning the movement of instrumentation with respect to making sure all utilities are functioning when we arrive.



Harvey Fielding, head of Gilbane's transition team, double-checked dimensions and utilities requirements for equipment to be relocated during our move.

As we stated last year, Chemistry will occupy the first and second floors of the ISC, while the vivarium and molecular biology research labs will occupy the ground and third floors respectively. The new building actually looks intimidating in size, sitting next to Rogers Hall, but hopefully will provide the department with exceptional teaching and research space for many years to come. There are currently fourteen 900 sq.ft. faculty research labs in the ISC, ranging from what we refer to as high service labs (four 8 ft. hoods), to medium service (four 6 ft. hoods), to low service (two 6 ft. hoods). The building's air handling service has been designed so that additional hoods can be added to most of the research labs as our faculty, and needs, change. There are separate instrument rooms to accommodate spectroscopy, chromatography, polymer instrumentation, GC-MS, x-ray crystallography, the laser lab, and NMR. The building will have far greater services in each lab, including compressed air, house vacuum, and local exhausts. Each floor will even have a liquid nitrogen tap dispensed from a central tank on the loading dock. The four general/organic labs are each equipped with 12 hoods (one for each pair of students—no more organic fumes wafting out into the hallways). Best of all, no more cold-looking cinderblock walls—the whole interior

is lined with conventional, and more aesthetically pleasing, wallboard. All offices and labs will be provided with new furnishings. Other architectural features will also make the interior of the building look far more inviting than the institutional seventies look of Rogers. The vestibule area on the first floor is large enough that we are in the beginning phases of collecting departmental “relics” and developing ideas on how to display the history of the department to students and visitors.



Veolia's David Griffith and David Taylor labelled and packed another roomful of chemicals culled from our shelves this summer and took them away.

We have some pictures of the various construction phases on the department web site. Also, because of the internal funds required beyond those allocated by the state, there is still substantial private financial support needed to fulfill our dreams of a first class research/teaching facility. By the time this newsletter reaches you, we will be at less than five months and counting from the move. If you have a nostalgic desire to visit Rogers Hall prior to its demise, or wish to contribute to department needs within the ISC, feel free to drop by or contact us at any time.

Barrys Establish Undergraduate Chemistry Scholarship Endowment

The Department of Chemistry was honored to receive an endowment last fall to provide support for an entering freshman planning to major in chemistry. The Patricia Pound Barry Chemistry Scholarship, in honor of Patricia Pound Barry (Class of 1963) was provided by Patti and Marshall Barry (Class of 1961) to recognize an outstanding entering freshman with a scholarship to support his or her tuition and fees. One freshman will be awarded a scholarship every fall semester with continued support over four years.

Patti graduated with an American Chemical Society certified degree in 1963. She was also a member of Mortar Board, Chair of the Women's Honor Council, a President's Aide, and the recipient of the Algernon Sidney Sullivan award. After graduation she worked for three years as an Organic Research Chemist at Abbott Laboratories. Nearly ten years later, she entered medical school as one of only three women in her class, and upon graduation, she was awarded the Dean's Prize as her class' outstanding student and chosen for the medical honor society, Alpha Omega Alpha.

In her medical career, Patti became board certified in Internal Medicine and in Geriatrics, and was elected by her peers to the presidency of the American Geriatrics Society. She became a full professor and Chief of Geriatric Medicine at Boston University School of Medicine where she also earned her MPH degree specializing in Epidemiology and Biostatistics. In 2006 The American Geriatrics Society awarded her the prestigious AGS Nascher-Manning Award for her "... distinguished, life-long achievement in clinical geriatrics." After retirement from Boston University, she created and administered the Merck Institute of Aging and Health, an international research and geriatric education foundation from 2000-2005. She has numerous publications and presentations to professional associations.

Patti has always credited her education at William and Mary as the foundation for her achievements. Her continued contact with the College includes membership in the President's Council, the Fourth Century Club, as a board member of the Fund for William and Mary, and current President of the Advisory Board for Graduate Studies in the Arts and Sciences.

The department looks forward to utilizing the Patricia Pound Barry Endowment to attract and train future scientists for many years to come. Patti and Marshall were so excited about starting the scholarship that they provided funds for the past year before endowment funds were even available. The first Patricia Pound Barry Chemistry Scholarship was awarded to Rebecca Plummer, from Illinois. Becca is currently planning a double major in biology and chemistry, and from all observations was an outstanding selection for the first scholarship. The scholarship was ceremoniously

awarded at our homecoming reception this past fall (much to Patti and Marshall's surprise!).

Support from our alumni is paramount to the continued success of the department and our students. The involvement of alumni in the future of the College, as demonstrated by the commitments of Patti and Marshall Barry, reassures us that William and Mary will be in good hands for generations to come.



At last October's reception, Patti and Marshall Barry met Becca Plummer ('10), the first recipient of The Patricia Pound Barry Chemistry Scholarship.

Faculty News



Elizabeth Harbron Third to Receive Prestigious NSF CAREER Award

Elizabeth Harbron joins colleagues Rob Hinkle and J.C. Poutsma as recipients of National Science Foundation CAREER awards. Established in 1995 and restricted to tenure-track Assistant Professors, nineteen William and Mary faculty have successfully paired innovative research ideas with the institution's distinctive balance between

teaching and research to earn these exceptionally competitive awards. Elizabeth has received funding totaling \$404,000 over the next five years in the form of a CAREER award from the National Science Foundation's Organic and Macromolecular Chemistry Program.

Elizabeth, a photochemist, is investigating highly fluorescent conjugated polymers based on poly(p-phenylene vinylene) (PPV). Her lab synthesizes PPV derivatives with photochromic side chains, which have two forms, interconverted by light, with different absorption properties. The two photochromic forms of the side chain have different electronic and steric interactions with the PPV backbone that can influence PPV fluorescence properties. Switching between the two forms of the side chain with light reversibly activates/deactivates backbone-to-side-chain energy transfer, which enables modulation of the fluorescence intensity. Photoswitching can also alter polymer conformation and/or solvation, which can yield changes in fluorescence color.

Initial work in the Harbron lab focused on azobenzene-functionalized PPVs, and both intensity and color modulation phenomena were observed in solution. Intensity modulation is also observed in neat polymer films of the azobenzene-PPVs, a particularly important result given that nearly all applications of PPVs involve films. PPV derivatives produced by other labs have been incorporated into commercial polymer light-emitting diodes (PLEDs) for display applications. The NSF grant will allow her and her company of undergraduate chemists to advance to the next level, including the pursuit of groups beyond azobenzenes. "We want to take the effects we have and try to make them stronger, by swapping out the azobenzenes with other kinds of photoactive molecules," she says. They are now looking at spiropyran, a more complex molecule than azobenzene which offers more properties that could be made to change in response to light or electrical stimuli.

Once the spiropyran polymers have been synthesized, the lab will begin solution characterization of their samples, then move into films. Elizabeth also has a list of other photoactive molecules that might prove to be promising.

New Monies Awarded to Department Members

In addition to Elizabeth's CAREER award, Chemistry faculty have received grants totalling more than \$797,000 in support of their research over the past year from the following national, state, private and industrial sources:

Petroleum Research Fund
Jeffress Memorial Trust
National Science Foundation
U.S. Fish and Wildlife Service
Coatings, Inc.

National Aeronautics and Space Administration
Virginia Department of Environmental Quality
National Institute of Standards and Technology
International Scientific Technologies, Inc.
Sherwin-Williams Company

Faculty Research Profiles



Debbie Bebout

Student research in my laboratory currently explores the coordination chemistry of physiologically

essential Zn(II) and its toxic congeners Cd(II) and Hg(II). Previous work has focused on correlations between solid-state structures and solution-state NMR properties. Using synthetic multidentate models of biological ligands, students have made numerous discoveries including characterization of complexes with rare and new coordination motifs and previously unprecedented slow geometric isomerization on the chemical shift time scale for zinc triad metal complexes. The opportunity to help solve X-ray structures in the department has made preparation of new complexes even more exciting for students.

Future research in my laboratory will focus on the processes of ligand-ligand and metal-metal exchange for divalent zinc triad metal ions. We anticipate these studies will provide valuable insight regarding the toxicology of Hg(II) and Cd(II).

Selected Recent Publications

D. C. Bebout, J. F. Bush II (BS '98), E. M. Shumann (BS '00), J. A. Viehweg (BS '02), M. E. Kastner, D. A. Parrish & S. M. Baldwin "Caging the Mercurous Ion: A Tetradentate Tripodal Nitrogen Ligand Enhances Stability and J(1H199Hg)," *J. Chem. Cryst.* 2003, 33, 455-462.

D. C. Bebout, G. S. Murphy (BS '98, M.A. '99), M. M. Garland (BS '00), E. V. Bowers (BS '03) & R. J. Butcher, "Investigation of the Mercury(II) Coordination Chemistry of Tris[(1-methylimidazol-2-yl)methyl]amine by X-ray Crystallography and NMR," *Dalton Trans.* 2003, 2578-2584.

M. M. Makowska-Grzyska, K. Doyle, R. A. Allred, E. Szajna, A. M. Arif, D. C. Bebout & L. M. Berreau "Structural, Spectroscopic and Reactivity Properties of N2S2(thioether)O(amide)-Ligated Hg(II) Complexes: The First Examples of Hg(II)-mediated Amide Cleavage," *Eur. J. Inorg. Chem.* 2005, 822-827.

W. Lai, S. M. Berry, D. C. Bebout & R. J. Butcher "Investigation of Group 12 Metal Complexes with a Tridentate SNS Ligand by X-ray Crystallography and 1H NMR" *Inorg. Chem.* 2006, 45, 571-581.



Gary DeFotis

My research deals with topical issues in magnetism. The major effort is in mixed magnetic systems, where the effects of

randomness on the magnetic behavior generally and on magnetic phase transitions in particular, is a primary issue. Many such systems have been prepared and studied recently, as illustrated in the list of publications below. These include a material, $\text{Co}_{1-x}\text{Mn}_x\text{Cl}_2 \cdot \text{H}_2\text{O}$, with strongly competing interactions showing an apparent paramagnetic "gap" in its phase diagram, that is a composition range without ordering; a system, $\text{Mn}_{1-x}\text{Ni}_x\text{Cl}_2 \cdot 4\text{H}_2\text{O}$, exhibiting a magnetic phase boundary with multiple curvature changes; a mixture, $\text{Mn}_{1-x}\text{Ni}_x\text{Cl}_2 \cdot 2\text{H}_2\text{O}$, showing a broad region of virtually constant transition temperature irrespective of composition; the first ternary insulating mixed magnet to be prepared and studied, $\text{Co}_{1-x}\text{Mn}_y\text{Fe}_{x-y}\text{Cl}_2 \cdot 2\text{H}_2\text{O}$; and a metamagnetic mixture, $\text{Fe}_{1-x}\text{Ni}_x\text{Cl}_2 \cdot 2\text{H}_2\text{O}$, in which the associated transition field is substantially less than in either pure component (a phenomenon for which there is no theoretical explanation as yet). New materials are being prepared for future study, of both mixed and pure type.

Selected Recent Publications

G.C. DeFotis, D.K. Havey (BS '01), G.S. Coker (BS '96) and H. Aruga Katori, "Absence of Magnetic Ordering in Mixed Magnetic $\text{Co}_{1-x}\text{Mn}_x\text{Cl}_2 \cdot \text{H}_2\text{O}$ ", *Physica B* 336, 252-260 (2003).

G. C. DeFotis, J. S. Bergman (BS '97), H. A. King (BS '97), C. S. Branch (BS '98), S. Lee (BS '98), J. A. Duling (BS '99), M. E. Cox (BS '99), T.E. Borsari (BS '02), D.B. Bodkin (BS '02) and R. A. Huddleston, "Uncompensated Antiferromagnetism and Phase Boundary with Variable Curvature in the Mixed Magnet $\text{Mn}_{1-x}\text{Ni}_x\text{Cl}_2 \cdot 4\text{H}_2\text{O}$ ", *Phys. Rev. B* 70, 184413, 9 pgs (2004).

G. C. DeFotis, J. J. Christophel (BS '00), D. K. Havey (BS '01), M. L. Laccheo (BS '01), S. D. Kosovych (BS '02), D. B. Bodkin (BS '02) and T. E. Borsari (BS '02), "Static Magnetic Properties and Magnetic Phase Diagram of $\text{Mn}_{1-x}\text{Ni}_x\text{Cl}_2 \cdot 2\text{H}_2\text{O}$ ", *Physica B* 362, 18-28 (2005).

G.C. DeFotis, C. D. Wallo (BS '00), R. L. Smith (BS '01), D. B. Bodkin (BS '02), G. L. Mirabilio (BS '03), T. R. Leftwich (BS '03), M. G. Kim (BS '04) and Z. D. Reed (BS '05), "Static Magnetic Properties and Relaxation of the Ternary Mixed Magnetic Insulating System $\text{Co}_{1-x}\text{Mn}_y\text{Fe}_{x-y}\text{Cl}_2 \cdot 2\text{H}_2\text{O}$ ", *Phys. Rev. B* 71, 224415, 13 pgs. (2005).

G.C. DeFotis, M.G. Kim (BS '04), Z.D. Reed (BS '05), D.G. Chan (BS '05), A.T. Hopkinson (BS '06) and Y. Matsuyama (BS '06), "Composition-induced Metamagnetism and Static Magnetic Properties of $\text{Fe}_{1-x}\text{Ni}_x\text{Cl}_2 \cdot 2\text{H}_2\text{O}$ ", *Phys. Rev.*, B73, 214434, 10 pgs. (2006).



Lisa Landino

My research students and I use the tools of chemistry and biochemistry to understand how oxidative damage to

proteins alters structure and function.

Our focus has been and continues to be on the cytoskeletal proteins, tubulin, microtubule-associated protein-2 (MAP2) and tau. Tau is of particular interest because tau abnormalities are evident in Alzheimer's disease.

Early work in the lab focused almost exclusively on peroxynitrite anion, a strong oxidant derived from nitric oxide and superoxide anion. When tubulin, MAP2 and tau were treated with peroxynitrite anion, we detected damage to both cysteines and tyrosines. Cysteine oxidation correlated with a loss of protein function whereas tyrosine oxidation did not. Cysteine oxidation to form disulfides was particularly intriguing because the damage is reversible and easily repaired by enzymes like thioredoxin reductase, the glutaredoxin system and by small molecule reductants.

Current questions in the lab are: 1) Is tubulin uniquely sensitive to oxidants because it contains 20 reduced cysteines per protein molecule; and 2) How do other oxidants affect tubulin? Molecules of interest that can damage/modify protein cysteines are hypochlorous acid (bleach!), nitric oxide donors and glutathione. Over 30 undergraduate students including 25 young women have worked with me on these projects.

Selected Recent Publications

Lisa M. Landino, Tabor E. Skreslet (BS '03), Jane A. Alston (BS '04) "Cysteine Oxidation of Tau and Microtubule-associated Protein-2 by Peroxynitrite: Modulation of Microtubule Assembly Kinetics by the Thioredoxin Reductase System". *J. Biol. Chem.* 279, 35101-35105 (2004).

Lisa M. Landino, Maria T. Koumas (BS '06), Courtney E. Mason (BS '06), Jane A. Alston (BS '04) "Ascorbic Acid Reduction of Microtubule Protein Disulfides and its Relevance to Protein S-nitrosylation Assays". *Biochem. Biophys. Res. Comm.* 340, 347-352 (2006).

2006 Chemistry Reception

We had a big crowd last fall. We were delighted that Martha and Fred Armstrong were able to join us, and hope they enjoyed their visit as much as we did.

Here are some photos taken during the reception:



Marshall ('61) and Patti ('63) Barry



Bob Orwoll and John Barlow ('61)



J.C. Poutsma and Jonathan Boyle ('06)



Stokes ('76, MA '78) and Janice Hutchison Kirkland talk to Dave Kranbuehl.

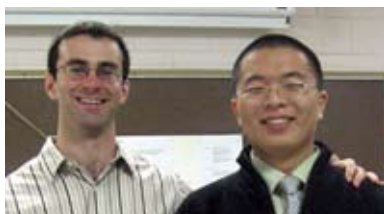


'76 classmates **Charlie Wilkes** and **Steve Christesen**

Emily Buehler ('96) stands next to her painting hanging in the conference room.



Sara Orski ('06) and Bob Pike



Rob Green ('07) and Woo Lee ('08) helped at the reception.



Eugene Aquino ('88, MA '91) and his sister Eileen talk to Trevor Hill and Bob Orwoll.

Martha Armstrong and Debbie Bebout—
is Martha telling a tall tale?



Fred Armstrong and Gary Rice talk turkey.



Scott Pugh ('98)



Dave Kranbuehl, Bob Orwoll, **Fred Armstrong**, Trevor Hill and **Charlie Wilkes** enjoy a laugh.

2006 Chemistry Reception



Bob Orwoll has a conversation with Kiera Buchanan, under the watchful eyes of her parents, **Nathan** ('96) and **Stacey Nevins** ('97) **Buchanan**.



Bob Richards ('81)



Gary Rice has a word with **Martha Armstrong**.



Hillary Huttenhower ('05)



Emily Buehler and Steve Knudson, her undergraduate research advisor



Dave Kranbuehl and **Ginny Youngblood** ('77)



Gary DeFotis and **Chris Marks** ('86)



Spencer ('81) and **Beverly Pugh**, talking to Bob Orwoll



Eric Schluederberg ('05)



Kay Pharr ('06)



Lisa and **Allen Howe** ('74)



Martha Armstrong, Trevor Hill and Bob Orwoll have a chat.



Maria Argiriadi ('98) and Randy Coleman are in discussion at the buffet table; behind them, Maria's husband and their son.



Fred Armstrong reminisces with Dick Kiefer.



Cary Bagdassarian, J.C. Poutsma, Elizabeth Harbron and Rob Hinkle—a big part of our department's future!

Giving to the Chemistry Department

Our society has made substantial efforts to ensure that you have had the opportunity to achieve goals fostered by a higher education. But even more important as you continue through your career paths is to contribute back to society, whether it be in the form of volunteering your time or through monetary contributions. Over recent years, the College of William & Mary has strived to maintain the highest quality education and research that can be afforded to our students, not only through state of Virginia appropriations and other funds provided by the College, but through highly competitive monies garnered by our faculty from external proposals and contracts. Our commitment to undergraduate education and research has led to the Chemistry department being recognized as one of the premiere undergraduate programs in the country, an honor that we strive to maintain. Nevertheless, the ability of the department to sustain that level of excellence seems to become more difficult with each passing year with the escalating costs in our general operations, thus impacting the ability to achieve higher goals and effective long term planning.

A number of alumni have made donations over the years to assist the department, with some establishing endowments that can guarantee long term stability in some areas. Nevertheless, expendable private monies from annual contributions or proceeds from endowments currently only amounts to roughly \$25–30,000 annually. Over the next 5–10 years we would like to see expendable yearly private support to the department exceed \$100,000 from annual giving and endowment funds. If you are interested in donating to the department, the first question that may come to mind is what are the most critical needs of the department and what levels of support would be of benefit. Some of the most important needs are given below.

Integrated Science Center

This new 100,000 square feet building will give not only the Chemistry department but the Biology and Psychology departments state-of-the-art laboratories and better opportunities for cross-collaboration of the three departments. Much of the cost for this new building as well as for the renovation of Rogers Hall comes from state appropriations and bond



The Landrum Drive side of the ISC in mid-August; the loading dock juts out on its right.

monies. There is still a critical gap between the construction costs of the new building and the private monies necessary to ensure that all of our needs are met for the next generation of chemists. Substantial contributions are still required to make the building of our dreams.

Scholarships

The rising cost of higher education is making it far more difficult for highly talented individuals to attend the college of their choice. Annual giving or endowments to support undergraduate scholarships will allow us to remain more competitive in attracting such talent. The creation of endowments for maintaining stipends for Master's level students would be very beneficial as well.



151 Lab is fun!

Undergraduate Summer Research Fellowships



Meghan Moynihan ('08), doing summer research in Chris Abelt's lab, checks the progress of her vacuum distillation.

The summer research program continues to flourish, with an average of 50 W&M chemistry majors staying every summer to conduct research with our faculty. Several of these paid fellowships are annually supported through endowments provided by alumni or through

annual contributions in the amount of a stipend. Currently there are faculty who can only support a limited number of students due to the size constraints of their labs, but that will change upon completion of the new facility, and our capabilities of providing summer opportunities to even more deserving undergraduates will increase significantly. Endowments or annual giving at a level that would support such fellowships would greatly enhance the productivity and continuity of our research programs.



Josh Abelard ('09) and Masters student Luke Davis ('07) search for the cause of problems with a programmable oven in Dave Thompson's lab this summer.

Instrumentation

Maintaining state-of-the-art instrumentation is critical for the department to remain competitive for research grants as well as productivity, to the extent that many instruments should be replaced every 6–7 years due to age (and costly repairs for upkeep) or simply to maintain innovations that students should be exposed to before leaving W&M. The Equipment Trust Fund provided by the state provides some support for these needs as well as College and external support for expensive items such as the new x-ray diffractometer.



Maria Happel ('07) and Erica Tullo (MS '06) work on a mass spectrometer in JC Poutsma's lab.



Mirth Hoyt ('04), a member of Elizabeth Harbron's group, sets up an experiment on an optical bench.

Our next large purchase will hopefully be a new 500 or 600 MHz NMR for the new facility (with naming rights to the NMR facility for substantial contributions). The increasing versatility of our current faculty, coupled with their research interests, has resulted in a department requiring a far more diversified inventory of instrumentation relative to as little as 20 years ago, and this need will undoubtedly expand in the future.

For more information about how you can help with departmental

instrumentation needs, contact *Gary Rice, Department Chair*, at 757-221-2540 or e-mail at gwrice@wm.edu.

Annual Contributions

While large donations to establish endowments would be very beneficial for any or all of these needs, a commitment to annual giving also provides a high level of predictable financial security and allows the department to consider long term plans and goals. If you are interested in contributing to the needs of the department on a regular or annual basis, there are several funds already established for this purpose, including the unrestricted Chemistry Fund and the Alfred Armstrong Memorial Fund. Endowments to support scholarships, summer research fellowships, and/or instrumentation can be established in honor of the alumni making such donations or any designate preferred. There are several mechanisms through which you can make contributions:

Mail

To contribute by mail, make your check payable to *The College of William and Mary Foundation*. Please be sure in your check's memo area to note how you are designating your gift.

Mailing address: **The College of William and Mary**
P.O. Box 1693
Williamsburg, VA 23187-1693

Securities

Gifts of securities, such as stocks and mutual funds, can be a strategically effective way to support the programs of the College of William and Mary. Please contact the Gift Accounting Office at 757-221-1080 to make your gift using securities.

Deferred gifts

We encourage you to consult the Gift Planning Office when making a bequest provision in your will, retirement plan, or other estate plan. This office can provide the appropriate legal name and language to ensure that your bequest can be used the way you intend. They can also provide information about a number of deferred options such as annuities and trusts which can benefit the department.

For More Information

To further explore giving options that will be meaningful and beneficial to you, please contact Andrew Barry, Executive Director of Development, Arts and Sciences, 757-221-3712 or e-mail at acbarr@wm.edu.

Gifts supporting the departments and programs of Arts & Sciences at the College of William and Mary are tax-deductible according to regulations governing section 501(c)(3) of the IRS code.

2007 Chemistry Concentrators and Their Destinations

φ H Timothy Justin Brown	(Dec. '06) graduate studies in chemistry, Duke
Christina Pittella Carpenter	medical school, University of Dentistry and Medicine of New Jersey
Elizabeth Jane Cline	Research Associate, NIH
M Luke Michael Davis	masters program in chemistry, W&M
M Kathryn Elizabeth deKrafft	graduate studies in chemistry, UNC-Chapel Hill
Amy Nicole Dembowski	pharmacy school, VCU
H Emily Catherine Dugan	graduate studies in chemistry, UC-San Diego
Andrew Charles Durfor	graduate studies in chemistry, UVA
Andrea Lynn Emanuele	law school, UVA
Chelsea Kerrigan Finch	undecided
φ H Megan Ann Fikse	graduate studies in chemistry, U Penn
Christine Forgues	graduate studies, Georgetown School of Pharmacology
Caitlin Sarae Garwood	medical school, Temple School of Podiatric Medicine
Robert Lorenza Green	medical school, UVA
φ Deana Helen Hadley	medical school, UVA
Emily Ruth Hall	graduate studies in pharmacy, VCU
φ M H Maria Kathleen Happel	graduate studies in cellular and molecular biology, Duke
Katherine Anne Bugge Heller	(chem/psyc) Peace Corps Volunteer
Natalie Paige Herring	graduate studies in chemistry, UNC Charlotte
Maury Lynn Howell	summer research in chemistry, W&M
Matthew Ryan Imm	medical school, Ohio State University College of Medicine
Harrison Danielle Johnson	English teacher, Korean Language Institute; optometry school in 2008
Matthew Hobson Jones	(Dec. '06) masters program in chemistry, W&M
Megan Elisa Kardine	undecided
Jamie Leigh King	scribe, Sentara Community Hospital, then medical school, EVMS (2008)
M Molly Margaret Larson	medical school, U Colorado School of Medicine
Robert S. Lewis	Materials Chemist I, Virginia Department of Transportation
William Michael Marcus May	intern at a vinyard/winery before gradute studies in enology, VPI&SU (2008)
Katie Sheahan McCarthy	master's program in public health, Tulane
M H Cory Arthur Messerschmidt	medical school, United States Uniformed Health Services
H Tyler Mackenzie Owens	(chem/math) mathematician, NAVSEA, Dahlgren Division
Elizabeth Ann Pacheco	graduate studies in chemistry, U Texas at San Antonio
Stephanie Naomi Pearson	undecided
Anna Truluck Perry	(chem/music) win the Miss South Carolina pageant and go on to Miss America
Marion Eileen Preda	graduate studies in biodefense, George Mason U
Colleen Patricia Riesbeck	teach high school chemistry
Marnie Rognlien	Head USA swim coach for the summer before job-hunting
Heather Elaine Stevenson	Associate Chemist, Merck
φ M Natalie Marie Stinton	dental school, U Penn
Michael Alexander Stredney	work for a year before graduate school
Daniel Boitnott Tice	Chemical Technician, CIBA Speciality Chemicals
Monica Lynn Tremont	(bio/chem) graduate studies in biophysics, UC-San Francisco
H Tristan Andrew Tronic	graduate studies in chemistry, U Washington
H Stacy Saithy Tse	(chem/intr) paralegal for Kirkland & Ellis before applying to graduate school
M Melissa Ashley Winkler	(Dec. '06) not reported
M H Alexander George Zestos	masters program in chemistry, W&M, then medical school (2008)

φ PBK M Monroe Scholar H Honors in Chemistry

Departmental Awards

William George Guy Prize in Chemistry	Maria Happel
Virginia ACS Award	Megan Fikse
American Institute of Chemists Award	Tristan Tronic
Alfred Armstrong Teaching Assistant Award	Emily Dugan, Robert Lewis
Hypercube Award	Emily Hall
Merck Index Award	Tim Brown, Natalie Stinton, Stacy Tse
Alumni Undergraduate Research Award	Melissa Sprachman
Blanton Mercer Brunner Scholarship	Maria Happel

News of Our Alums

It is wonderful to hear from you—please continue to keep us up to date with what is going on in your lives! In this issue we decided to list your news by graduation year. Information about how to contact the Department is on the back page of this newsletter (or you can contact your favorite professor, who will forward the message).

Class of '59

From **John Yurko**: “I have fond memories of Dr. Guy, Dr. Armstrong and others. I majored in pre-med chemistry, went on to MCV (thanks to Dr. John Baldwin), internship at Ohio State University and did surgery here in Morehead City, NC for 33 years. Now retired for 3½ years. I visit Williamsburg from time to time and am amazed at the change in the College. My real chem mentor was Dr. Harrell, who not only taught me organic but also integrity and kindness. I had a great experience in the chemistry department as did many of my fellow students. I hope students still feel that way.”

Class of '61

John Barlow, who retired this year as a physician working for JCAHO, was at last year's reception, and told us that he first went to Old Rogers looking for Chemistry's gathering. (And next year, the venue will change again!)

Class of '63

Teaching responsibilities kept **Cordell Bowman** from attending last October's reception, he wrote last fall. He began teaching chemistry in 1964 in Cotacachi, Ecuador, and reports that he is once more teaching high school chemistry (and physics), this time at Verdugo Hills High School in Tujunga, CA, where his wife graduated from high school in 1963.

Class of '64

Richard Gardner was passing through Williamsburg in May and stopped in for a visit, his first since graduation. After a Ph.D. from Brown, Richard joined IBM, where he managed groups in materials reliability, toxicology, magnetic heads and media, tribology, and at one point a materials analysis laboratory with fifty chemists addressing all aspects of analytical science. He retired in 2006, and lives in California.

Class of '73

Christopher Bracken received a MS in Biochemistry at Texas A&M in 1975 and his PhD in Organic Chemistry at TAMU in 1978. He is currently at UT Health Science Center at San Antonio.

Class of '74

From **Elizabeth Couch Graichen** (MA Duke 77): “I worked in the Biochemical Toxicology department at the Chemical Industry Institute of Toxicology in RTP, NC, for 5 years. Then moved to the Drug Metabolism department at SmithKline & French Labs in Philadelphia, PA for 7 years. In 1990 I moved to Jackson, MS, where my husband was on

the faculty at the University Medical Center. I've been working in the Biochemistry department at UMC for 15 years now. We have a wonderful 13-year old son.”

Allen Howe made it back to last October's reception. Allen is a primary care physician in northern Virginia. His wife Lisa is also a W&M grad, and their daughter Sarah graduated from W&M in May 2006 with a degree in music.

Class of '76

In an article about Sonoma County winemaking, Dave Kranbuehl spied **Grady Wann**'s name; Grady, winemaker at Quivira Winery, was identified as one of the “best in the business” sought after by apprenticing vinters.

Charles Wilkes is an Ob-gyn in Virginia Beach, and worked for four years in the in-vitro clinic during its early years. His daughter Catherine is a junior at W&M.

Class of '77

Ginny Youngblood got her PhD at Yale and went to work for DuPont—first as a chemist, then up the management ladder. She is now plant manager at the DuPont facility in Richmond which manufactures Kevlar and Nomex.

Class of '78



John Gilmer paid a visit to the Department in May. He retired from his position at Eastman Chemical in Kingsport, TN, and began a new career in July '06 as an Associate Professor of Chemistry at King College in Bristol.

During his visit, John and Bob Orwoll spent several hours talking physical chemistry and comparing notes.

Class of '80

Bill Atkins writes, “I am a professor of Medicinal Chemistry at the University of Washington in Seattle. Our department is small, collegial, and committed to graduate education. Our graduates are extremely marketable in the pharmaceutical industry, biotechnology, academics and other fields. (And they have a blast living in one of the most beautiful cities in the world.) We are always looking for the kind of student that comes from W&M Chemistry. Check out grad school here at: <http://depts.washington.edu/medchem/>.”

Class of '81

From **Bruce McCord**: “I have recently moved to Florida International University where I am a Professor of Analytical Chemistry and chair of the graduate program in forensic science. Our research group develops methods for DNA typing and toxicology. Prior to moving to Florida, I worked at Ohio University and the FBI. Margie (Class of '83) and I have 3 kids who are 5, 12 and 14, and are enjoying the warm weather in Miami.”

Spencer Pugh has left Eastman Kodak and is currently head of research for Battelle in Columbus, Ohio.

Bob Richards is a gastroenterologist in Lynchburg, VA.

Class of '82

From **Erica Holzbaur-Howland**: "I am now a Professor in the Physiology Department at the University of Pennsylvania School of Medicine. I have two sons, one of whom is a junior in high school and is starting to look at colleges. Unfortunately, right now he is more interested in UVA than W&M. The good news is that he is really enjoying his chemistry class this year, especially the labs which involve fire and explosions. My younger son is also great at science—it definitely runs in the family since my husband is a scientist as well. But for any student interested in a career in academic science, the liberal arts classes you take at William and Mary are just as important, since all I do these days is write and give talks, with hardly any time left for actual experiments."

Here is some news from **Shao-Li Liu**: "After MS Stanford and MBS UCLA, I went on to Wall Street working with CS First Boston, UBS, and Lehman Brothers for 18 years, of which 16 years was in Hong Kong. I am now an Executive Director of Potomac Capital, an Asia Pacific regional financial service provider headquartered in Hong Kong delivering global fixed income financial services to institutions and individuals of high net worth. My wife Elinor, daughter Sharel, two sons Sherman and Shannan are all well settled in Hong Kong. Kindly send my best regards to Dr. Hill, Dr. Thompson, Dr. Coleman, Dr. Defotis, and Dr. Djordjevic. Warm regards, Shao-Li Liu, Class of '82

Class of '83

Patricia Kay Jue stopped by in late August and had a wonderful time talking with her former research mentor, David Kranbuehl, and visiting with Louise Menges. Patricia received her MS in polymer science and Ph.D. in physical chemistry from Carnegie-Mellon University and is a member of Colgate University's department of chemistry in "upstate New York." She hadn't been back to William and Mary since graduation but now has a reason to visit often—her son, Guy Evans, is a member of the class of 2010.

Class of '84

Linda Ross Raber writes: "I have been on the staff of Chemical & Engineering News magazine for about 15 years as a reporter and as an editor. I am now assistant managing editor of ACS News and special features sections of the magazine. Our magazine just underwent a major redesign as did our website. Please check it out at www.cen-online.org. I would be happy to correspond with any W&M chemistry majors who have questions about careers in science journalism or working for a scientific nonprofit organization."

Class of '85

We heard from **Jennie Gunderson**, '85, MA '86: "Enjoyed the fall Chemistry Distillations greatly. I still remember many of us from back then lying in the hall of Rogers, trying to bend into various molecules. I'm sure I don't know why we did it, but I recall trigonal bipyramids were tough. Square planar was an easy one. Twister for geeks, maybe? I'm still a Chemist with EPA. 10 year pins rec'd last May! Mostly HPLC and HPLC/MS stuff. Doing primarily Superfund related work...providing data for cleanups and sometimes emergency responses. Not really doing too much research anymore but I like the immediacy of knowing my work helps get things cleaned up. Otherwise I've got a band again after years of listening to people who told me I was too old for that sort of thing anymore. The CD is due out in early 2007 (if day jobs permit). www.myspace.com/airportblvd. I'm also rowing with the Annapolis Rowing club. I run into the WM crew team at regattas now and then.

Got myself a mortgage, 2 cats and a ¼ acre of suburban splendor in Annapolis MD.

Cheers to all who were there '81-'85 and '86 for my Masters. Especially Dr Djordjevic!"

Class of '86

Chris Marks is a high school teacher in Richmond.

Class of '88

Michael Crowder earned his Ph.D. at Virginia in 1993, postdoc'd at Penn State with Steve Benkovic, and was hired by Miami University in 1995 as an Assistant Professor, where he is currently the Volwiler Professor of Chemistry and Biochemistry.

Class of '91

Jay Salmon wrote to Gary Rice, "It amazes me that it has been 16 years since I worked with you during my summer research fellowship (I am sure you remember it like yesterday... determination of cadmium and zinc in environmental samples downstream from BASF—I was one of the first to use the just-delivered graphite furnace. It's probably a relic now...) You will be happy to know that I have not wasted my analytic background despite going to medical school. I am now a pathologist in Lynchburg and am in charge of the chemistry laboratory for the regional hospital system (Centra Health). I even impressed the techs by applying Beer's law to tweak an instrument and get a linear calibration. It only happened once, but I have been getting a lot of mileage out of the story. Unfortunately, most of the instrumentation is fully automated, so not much actual wet chemistry is done. But the background has helped, regardless.

I decided to say hello due to a bit of irony this week. First, I received the usual "chemistry distillations," not unusual. But yesterday, my partner told me of his visit this past weekend to William and Mary with his 17 year old son. I hate to admit

it, but Karl is a brilliant guy, and his son seems to be following in his father's footsteps. So they were interested in the quality of the science departments at the school. Karl said he was very disappointed when all of the tour guides and other admissions folk seemed very focused on a balanced "liberal arts" education, with a lot of emphasis on non-science fields. He asked how my experience had been, and I assured him that William and Mary would not let him down. I remembered the newsletter that I had just received. So I have brought it to work to let him look over and in doing so noted your email address!

But the real irony is in the photos. I am used to seeing familiar faces, but a new one caught my eye: **Moira Rafferty**, Class of '85. She's a physician here, and happens to be the primary care doc for my parents. I didn't even know she went to W&M! How funny is that? OK, not that funny, but just a little ironic.

My wife and I were both saddened at the news about Dr. Armstrong. Julie was not a chemistry major, though I was her TA when she had chem lab (I did NOT however show her any favoritism despite the fact that we were dating; and I am still paying for that lack of judgment). The fact that he is remembered some 18 years later by a girl who took two semesters of chemistry says a lot about his work.

So here it is 2006. My oldest daughter is 7. In 15 years, will she and I be able to discuss the teachings of Gary Rice? Now THAT would be ironic! Cheers!"

Class of '92

In a message to Gary Rice, **Tanya Meyers** wrote, "I hope you are all doing well in the Chemistry Department. This year brings my 15th homecoming; I'm not certain if we'll make the trip from Atlanta, but if we do, we'll certainly stop in to visit with the good folks in the department. I also thought you'd like to hear that, although it has taken me 9 years (while also working), I've finally finished my Ph.D. in Analytical Chemistry at Georgia State University. Whew! Note to self: remember to e-mail committee before defense reminding them of the time, date and location—my major professor thought that it was a week later and didn't initially show up! I'll attach a .pdf of the thesis just in case you're lacking for sleep sometime. I'm really grateful for the wonderfully warm instruction I received while at William and Mary. While I certainly worked hard, I also remember that time as being a lot of fun, and I think that you and other faculty members make a distinct effort to cultivate that atmosphere. One of my committee members for my dissertation commented that as he was reading the dissertation, he thought it looked like I had really enjoyed my project—that's true, and I think that attitude about research carries over from my days at William and Mary. I'm really tremendously grateful to all of you for not only the excellent

instruction that you gave us, but also the spirit in which you taught and mentored us in research."

From **Janice Moseley Langer**: "I have been meaning to write to you about my doings for a couple of years, but my job keeps getting in the way!

I am a physician in the US Air Force, just returned from a 5 month deployment for OPERATION IRAQI FREEDOM/OPERATION ENDURING FREEDOM, and am back to my regular job as Chair of Dept of Family Medicine at Dover Air Force Base. I keep myself busy with that, as well as teaching medical students at my other alma mater (the Uniformed Services University of the Health Sciences) and family medicine residents from Andrews AFB, Georgetown University and Ft Belvoir, and Ft Hood. My military career has been great, with assignments in Florida, South Korea, Washington, DC, Dover, DE and the United Arab Emirates. I am happily married to my college sweetheart, Andrew '93, and we have two daughters (5 and nearly 3).

Please let me know if the dept will be having a gathering this year at Homecoming. I will be attending since it is my 15-year reunion!"

Class of '93

Maria Agiraidi came to the reception with her husband and their 14-month-old son Andrew. Maria works for Abbott Pharmaceuticals in Worcester, MA, and says she uses a Brucker X-ray with more bells and whistles than our new instrument!

Bavesh Gupta sent us news that "I have finally settled down in Tucson, Arizona. I am working at the VA Hospital as an internist. My wife and I just had a baby girl, Avni Mira Gupta. I look forward to bringing them to see W&M some day."

Class of '94

From **Donald Petrille**: "I am pleased to announce that on December 20, 2006, my wife, Andrea, gave birth to a beautiful baby girl named Lucy Noelle! Lucy was 8 lbs 1 oz at birth and 20.5 in long. Right now, I am practicing law in Bucks County, Pennsylvania, and Andrea is running a bridal headpiece and jewelry business out of our home. Although I am not currently in science, my undergraduate education has served me well in a number of my cases!"

Class of '95

From **Pam Arnold**: "How are you doing? I hope your semester has wrapped up well. We've had a beautiful spring here in Gettysburg, and I keep remembering how nice the W&M campus was in springtime. My parents just passed through Williamsburg on Sunday (returning to Blacksburg from a square dancing convention in Hampton) and took a few moments to walk down DOG street and view the new graduates assembling in front of the Wren Building. Brings back happy memories.

My main reason for writing is to update you about my new job. Next week I'll be moving out to Lincoln, NB, for a tenure-track position at Nebraska Wesleyan University. NWU is a private, liberal arts college with around 1500 students. While Lincoln is a long way off, the personality and priorities of the department seemed to be an excellent fit for me. I'm also excited about getting back into a larger city (250,000). I've already picked out a church, which is always my first step toward making a place feel like home. They have a special ministry for single people age 35+. I'm not quite to 35 yet, but I can fake it."

Jen Johnson wrote Gary Rice last fall: "So you are now called the Big Kahuna, huh? I think it fits. This is the FIRST Jennifer Johnson that worked with you ca.1994–5. I cannot believe it was that long ago!! Anyway, Caitlin and I drove you crazy for a summer and we are much better for it. She is on her second kid and has temporarily retired from chemistry teaching and I am on my second marriage and am still burning Faraday's candle at both ends with chemistry teaching. I am at a different school out here in Albuquerque named the Albuquerque Academy. It is a lovely school; one of my former students went to William and Mary and I was excited for him. The reason I'm writing is to say thanks for all of the chemistry distillation updates (I am glad they held you on as department head) and also that my new man Chuck and I will be in Williamsburg for a visit on Dec. 27th–28th to get away from mom and dad and was wondering if you were available for a visit or a beer or a bite to eat (my treat). I'd love to see you and talk education, science, science education, wacky administrators, current events, or any or all of the above. I realize you may want to LEAVE Williamsburg during the holidays, and I totally understand, but since we'll be down there I had to ask. I think it my first time back since 2000 or 2001 or something. Let me know if you may be available, if not, it's okay. I will just have to come out and visit again!

You are a great teacher and still are an inspiration! I have a Kramer poster in my office and think of you when I read it!!

Class of '96

After medical school at the Baylor College of Medicine in Houston, TX, **Chris Dyer** headed north for post graduate training and completed residency and chief residency in Internal Medicine at the University of Iowa in Iowa City, IA, and stayed on there for a nephrology fellowship until June of 2006, when he moved to Davenport, IA. He now practices Internal Medicine and Nephrology in a group practice and teaches Family Practice residents the same. In 2000, Chris married Elizabeth Stephens Dyer ('95) who was awarded a Fullbright Fellowship in Music in 2005 and is now a doctoral student in Musicology at the University of York in the UK.

Jim Gutheil graduated from The Ohio State University College of Medicine in 2000 and completed orthopaedic surgery residency at Texas Tech University in 2005. He spent the past year in Orlando in a pediatric orthopaedic surgery fellowship. Now Jim is on staff at Texas Tech as the Chief of the Division of Pediatric Orthopaedic Surgery and assistant professor in the School of Medicine.

Steve Ko (BS '96, MS '97) is currently finishing preventive medicine training with a Masters in Public Health at Columbia University. He will complete pediatrics training starting next July at Cornell Medical Center in NYC. Steve is concurrently working on his masters in divinity at Gordon Conwell theological seminary.

Class of '97

Rebecca Causabon got her Ph.D. in 2004 from Boston College, and now is working as a medicinal chemist at a biotech company in Waltham, MA, doing R&D for new cancer drugs.

Robin Gittelson McKiernan received her Ph.D. in Polymer Science and Engineering from the University of Massachusetts at Amherst. Since then Robin has been working at Procter and Gamble in Cincinnati, Ohio, in Upstream Material Development for Baby Care (Pampers, Luvs, Kandoo).

Class of '98

Bob Orwoll heard from **Sandeep Saggarr** (BS '98, MA '00) this summer, who writes: "Dr. Orwoll, Hello! I hope this letter finds you well and enjoying the summer. I was in town two weeks ago with my wife Jyoti (BA '99) and our friends **Scott** (BS '98, MA '99) and Gianna (BS '00) **Pugh**, playing golf, walking through campus, and re-visiting our favorite places in Williamsburg (including Sno to Go). I believe the last time we spoke, I was in the process of leaving my job in the Department of Medicinal Chemistry at Merck & Co. to go back to school. I graduated from the Darden School of Business at UVA in May with an MBA, and have accepted a job in Finance with Pfizer Inc. In this role I will be combining my background in science with business skills from Darden by being involved in structuring mergers, acquisitions, licensing deals, and research analysis. For my first assignment, Jyoti and I will be moving to Dublin, Ireland for six months. I will be working on valuing Pfizer's corporate portfolio, as well as its research projects. My wife, a CPA, will continue to work for her Charlottesville based accounting firm by telecommuting. We are excited about the opportunity to work and live abroad. Once this assignment is over, we will move to NYC, where Pfizer's corporate headquarters are located. I hope teaching and research is going well. I am intrigued by the new multi-science facility that is being constructed between Rogers and Millington. How will this impact the structure of the Chemistry Department (labs and classrooms), and what new research do you envision will result from this intersection?"

Kimberly O'Neil Schneider is working as a research scientist for a start-up biotech company in Portland, Oregon, which specializes in the development of clinical diagnostics for pregnancy related conditions. She received her Ph.D. in Analytical Chemistry from the University of Michigan, Ann Arbor, in 2003 specializing in the field of proteomic separations coupled with mass spectrometry. Currently, her research entails searching for novel protein biomarkers of both maternal and fetal conditions in maternal blood serum and other fluids in an effort to utilize these biomarkers for the development of a mass spectrometric assay for clinical diagnosis and screening.

Class of '99

Gary Fletcher is currently a Validation Specialist III at Wyeth Pharmaceuticals in Richmond, VA.

After spending several years as a librarian in the public school system, **Sarah Stokes** returned to graduate school to complete a master's degree in Library Science. This was followed by an extended period of job-hunting while making ends meet as a coffee roaster and other similarly amusing occupations. Finally, though, in January of this year, she began a position with none other than Chemical Abstracts Service, whose products she had come to know well during her years working in the Chemistry Department Library. Although CAS is based in Columbus, Ohio, Sarah works out of her Durham, North Carolina home. She travels over much of the mid-Atlantic region, training scientists, patent attorneys, and librarians in the art and science of searching the STN system for scientific literature and patents. In between flights, she enjoys a quieter life at home with a collection of finned and four-legged children and her favorite biped.



After his seminar, Andrew pauses for a picture with Lauren Katkish ('08).

Andrew Trask was a Chemistry Seminar speaker last spring, with a talk entitled "*Pharmaceutical Crystal Forms: Scientific and Legal Significance*". On graduation Andrew went to work at Pfizer in Groton, CT, analyzing crystallinity of candidates for pharmaceutical applications. After a couple of years at Pfizer, he resigned and started graduate work at Cambridge University.

He studied cocrystallization of caffeine and oxalic acid to yield a crystalline form of caffeine whose crystallinity remains stable at high humidities, and also reported on the discovery of a new crystalline polymorph of maleic acid.

For the past year Andrew has been employed as a patent agent for the law firm Jones Day.

Class of '00

Geoff Klein e-mailed Bob Orwoll last year: "It has been way too long since the last time I emailed/talked to you. My name is Geoff Klein and I graduated from William and Mary in 2000 (with a BS in chemistry) and worked with you on the molecular imprinting polymers during the summer/fall of 1999. I then went to Florida State University to get my Ph.D. in analytical chemistry under the direction of Dr. Alan Marshall (Mass Spectrometry). Well, I graduated this past October with my Ph.D. My dissertation was entitled "*Petroleomics: Applications in the Fingerprinting of the Acidic and Basic Components of Crude Oils by Electrospray Ionization Fourier Transform Ion Cyclotron Resonance Mass Spectrometry*". The faculty-student relationships along with the liberal arts learning environment at William and Mary inspired me to go into the academic field and pursue teaching at a small liberal arts college. I applied to quite a few schools this past fall and finally accepted a position back in my favorite neck of the woods, the Virginia peninsula. I accepted an Assistant Professor position at Christopher Newport University and have recently moved back to the area. Classes started last week and I'm having a blast. I have driven up to my alma mater a couple times to visit Williamsburg and thought that I would send you a quick email to see what you have been up to the last couple of years and to see how you have been. I also want to thank you for ALL your encouragement, direction and mentorship back when I was a student. Without it, I would not be enjoying my job today. The next time I'm in Williamsburg I'll definitely stop by old Rogers Hall (at least until the new building is finished!) to say hello. I look forward to seeing you soon. I hope all is well and once again THANK you."

Brent McQuaid sent this succinctly-worded news last fall:

"News = Married Beth Petersen 2002

Expecting first child (a boy) 01/07

Graduated from UVa Med 2005

Now a resident in Internal Medicine in Birmingham, AL"

Melissa Garland Yaroschak wrote, "I recently switched to working part time at Merck so that I can spend more time with our daughter, Aubrey. She was born in December, 2005 and is a wonderful baby (yes, she really does sleep 12 hours straight every night)."

Class of '02

From Ricky Anderson: "I am currently in my 3rd and final year of law school at Georgetown Law;

Spent last summer working in the Intellectual Property group at the DC office of Hunton & Williams (planning on returning to H&W after graduation);

Got married 2+ years ago to Christen Beyer (W&M Class of '02);

Spent a year before law school teaching chemistry (and biology) in the Alexandria City Public Schools;

Currently living in Alexandria, VA.

I swung through campus a few weeks ago, and I was excited to see all the construction that's going on for the new science center. I can't wait to see it completed!

Hope all is well in Williamsburg!"

Tom Bosari has graduated from Georgetown University School of Medicine with a Doctor of Medicine and is currently in his Anesthesiology residency at the University of Pittsburgh Medical Center (UPMC).

Last October, **Dan Gray** wrote that he was a 4th year medical student at UVA, and interviewing for a residency position in Family Medicine.

Jenine Cole Maeyer ('02) and **Jonathan Maeyer** ('99, MA '01) joyfully welcomed their new daughter, Cassidy Quaintance Maeyer, born January 4, 2007.

Jennifer Stone received her Ph.D. from the Department of Human Genetics at the University of California, Los Angeles. Her dissertation focused on uncovering the genetics of autism spectrum disorder, and investigating genomic structure and patterns of human diversity.

Class of '03

The research of **Janine Ladislaw** and her coworkers was highlighted in the October 30, 2006, C&E News. (Janine is pictured in the article with her mentor Virgil Percec and two other collaborators.) Part of Janine's doctoral research contributed to the development of an improved catalytic system for vinyl polymerization. The new method, which they earlier reported in JACS, requires such a small amount of the copper catalyst that the copper does not need to be removed from the product polymer, unlike in procedures commonly used today.

Class of '04

Crystal Irwin (BS '04, MA '05) writes: "I hope all is well in Rogers world. I'm doing well and loving my job. I'm working at Ciba Specialty Chemicals in Suffolk—there's word of promoting me at the start of the new year to a Process Development chemist (I'm now working in a QC lab). My boss (ok, my boss's boss) put in for a request for more money to make a position for me. The Ciba Suffolk site is a polymer plant in the water and paper treatment industry."

Class of '05

Amanda Boone is teaching chemistry at Kings Fork High School in Suffolk, VA. She and Jefferson Griffin were married on June 23.

Class of '06

From **Billy Bylund**, who stopped by this August: "I just finished my first year of medical school at the Uniformed Services University of the Health Sciences (USUHS) in Bethesda, MD. I really enjoy what I've been learning, but I certainly miss my time at W&M. I'll never forget the walks down Dog Street, Catholic Campus Ministry activities, the runs through beautiful Williamsburg. Most of all I miss my classmates (and even professors). Those four years at WM were priceless.

Back at med school, the first year was all basic sciences— anatomy, psychology, neuroanatomy, biochemistry. Since it's a military school, I did some field training and spent two weeks aboard an aircraft carrier this summer. This fall should be more clinically relevant than first year, and I'm even more excited about the future third year rotations—a chance to leave some bookwork behind! The chemistry department certainly prepared me for the challenges of life beyond W&M. If anyone is in the area, drop me a line at Billy.bylund@gmail.com."

From **Amy Palesko**: "Currently doing research at the Institute of Scientific and Industrial Research at Osaka University in Japan. It may be a different culture, but the instruments are all the same, and even though I'm not using any of the instruments to test a material's tensile strength or run temperature scenarios, knowing they are one room from my desk gives the place a familiar, homey, Rogers feel."

Class of '07



On July 7, **Anna Perry** was chosen second runner-up in the Miss South Carolina pageant, where her skill at the piano also made her a preliminary talent winner.

An email from **Katie McCarthy**: "I hope you're having a wonderful summer! I've been having a great time, working at a camp for kids with special needs and spending time with my family and PA friends. As some of you may know (I can't remember who I've told and who I haven't), I'm heading down to Tulane for a master's in public health, with a focus on international health and development, at the end of August. Although I never thought I would end up going farther south after seeing the bugs of Spotswood :,), I loved New Orleans and Tulane's program when I visited, and I am looking forward to spending the next year and a half there (despite what I hear about flying cockroaches). Please let me know if you will be in the area... I look forward to lots of visitors!"



The dapper Trevor B. Hill, in a departmental photo taken in 1980.

Old Rogers Recollections

Those of you who have received our newsletter for a number of years probably remember an annual humorous column written by Professor Trevor Hill called *Old Rogers Recollections*. Just prior to sending this edition of the newsletter to press, the department was deeply saddened to learn of the passing of Dr. Hill on Saturday, August 18th. He is survived by his devoted wife Shirley.

Professor Hill was one of the most beloved professors ever to grace the old (and new) Rogers Halls. After working at DuPont for a

number of years, he became an integral part of the department with his arrival in 1963 and well beyond his official retirement in 1992. Dr. Hill was an individual of high integrity as well as humility, an avid sailor and golfer, and an enthusiastic teacher and scholar. His love of chemistry, coupled with his passion for teaching students the fundamentals of organic chemistry, will always be remembered by those of us who worked with him, as well as the thousands of alumni who had the privilege to be in his classrooms. Probably the most lasting impression he made on students and faculty was his ability to lecture on every subject without the use of any notes, a feat that few (if any) of us could ever rival.

We cannot begin to do justice to all the recollections we have of Professor Hill at this time due to publication deadlines, but promise that our Fall 2008 edition of the newsletter will provide a tribute befitting Professor Hill's broad impact on the department, our alumni, and the community. We encourage any alumni who would like to share thoughts or reflections of their time with Dr. Hill to please contact us over the next several months so that these can be included as well. We ask that you send your own "Rogers Recollections" by e-mail to Louise Menges at ltmeng@wm.edu or by mail to the Department of Chemistry, College of William and Mary, Williamsburg, VA 23187.

Dr. Melissa (Garland) Warfield ('51), who dedicated her life to healing youngsters, died September 29, 2006, at 76. "The reason you get into medicine is to help out," she said in an interview in 2005 after receiving a prestigious national humanitarian award. "The things she did that were first," said Dr. Jean Shelton, a former student and longtime friend and colleague of Warfield. "It just goes on and on." Dr.



Warfield, a graduate of Granby High School, was instrumental in founding the Children's Hospital of The King's Daughters and started the pediatric residency program at Eastern Virginia Medical School. She established programs for abused children and worked with health officials to start a lead poisoning prevention program. In 1983, Warfield was named Tidewater Woman of the Year. "How they discovered me over here in my corner grubbing quietly, I don't know," she said at the time. She was the 2005 winner of the Humanism in Medicine Award from the Association of American Medical Colleges. Dr. Warfield received the humanitarian award, in part, for her strong record of teaching other physicians. "She helped develop in people this mind-set of serving," said Shelton, who is chairwoman of the physical medicine and rehabilitation department at EVMS. "I may meet people who are as smart or energetic, but I will never, I don't think, meet anybody who did more of lasting value in such a selfless way."



Bob Shiffer, MA '75, of Carlisle, PA, passed away on Sept. 29, 2006. Bob, a Pennsylvania native, earned his bachelor of science degree in chemistry from Susquehanna University and his master's degree in synthetic organic chemistry from William and Mary, working with Randy Coleman. From 1975 to 2001 Bob was the chief chemist at Carlisle Tire and Wheel and from 2001 until recently was the director of research and development at Carlisle SynTec.



We were sorry to learn of the death in July of **Lisa Grace Payne Nestor** '79, in Farmington, CT. Lisa was born in Alexandria, VA and raised here in Williamsburg. She received her graduate degree in chemistry from Princeton and began her teaching career at The College of Holy Cross in Worcester, MA before moving to Connecticut and joining the faculty at Trinity College in Hartford.

Make our Chemistry reception part of your Homecoming 2007!

The Department is having its wine and cheese reception for chemistry graduates in Rogers Hall on Friday, October 26, starting at 5:30 p.m. We look forward to seeing you there to bid farewell to the Rogers Hall we have known for the past 32 years. If you can join us, please try to let us know by October 19.

You can e-mail us at pxhilg@wm.edu, give us a call at 757-221-2540, or return this form to:

Patricia Hilger
Chemistry Department, College of William and Mary
P.O. Box 8795

Yes, I plan to attend the Chemistry reception on Friday, Oct. 26, 2007, at 5:30 pm.

Name _____ Class of _____ No. of guests _____

Even if you're unable to come, consider using this space to let us know what you're doing and mailing this form to us at the above address. We'd love to hear from you.

Non-Profit
Organization
U.S. Postage
PAID
Williamsburg
Virginia
Permit No. 26



Department of Chemistry
P.O. Box 8795
Williamsburg, VA 23187-8795