chemistry *distillations*

The Newsletter of the Department of Chemistry, The College of William and Mary

Fall 2006

www.wm.edu/chemistry

Gary DeFotis, editor

Louise Menges, layout

Remarks by the Chair

In last year's column I gave the impression that it would be the last time I would write as chair of the department. Amazing how things can change in a few months. As it turns out, a vast majority of the chemistry faculty felt that the continuity necessary to ensure that the new building would be completed as desired was best left in the hands of the chair responsible for getting the plans to this point. So here I am again, but I promise that you will only have to endure another two years of my rantings.

Our faculty and staff continue to work as hard as ever in providing the resources and skills necessary to educate our students and provide outstanding research environments for our majors. In keeping with our high standards for providing such opportunities to our students, 48 majors stayed for this summer's research program. Two students received highly competitive summer fellowships from Pfizer and GlaxoSmithKline, and over $100,000 was invested in summer stipends from external grants awarded to our faculty. We had 49 majors graduate this past year, with 41 receiving ACS certified degrees. In fact, we ranked fifth in ACS degrees from the 2004–2005 graduating class for all ACS accredited programs nationwide. 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, in contrast to the ACS degree.

Over the past year we had several changes and notable losses within the department. There were no tenure promotions to consider over the past year, but Debbie Bebout received a well deserved promotion to professor. We were all saddened by the loss of Dr. Alfred Armstrong, an Emeritus Professor of Chemistry since 1976 (see article on Page 14) and member of the department since 1933. Although I only knew Dr. Armstrong for the last twenty-two years of his remarkable 94-year life span, my respect for his steadfast abilities, mastery of detail, and work ethic (even in retirement) was far greater than for many of the professionals I have been associated with over the years. The department has truly been touched by the number of individuals wishing to recognize him through donations to the Alfred Armstrong Chemistry Fund. I can assure you that these funds are being used in a way befitting of Dr. Armstrong's endless love of teaching and the indelible impressions he made on students over the years.

This past spring also marked the retirement of Bill Starnes, who joined our faculty in 1989 as the first Floyd Dewey Gottwald, Sr. Professor of Chemistry (see article on Page 4). Professor Starnes' illustrious career has been highlighted with numerous honors, prizes, and awards in recognition of his international reputation as a world-leading authority in polymer science. His research interests over his years at William and Mary focused on the degradation, stabilization, microstructure, mechanisms, fire retardance, and smoke suppression of technologically important synthetic polymers, in particular poly(vinyl chloride) and other polymers containing halogens. His expertise in polymer chemistry and the diverse research areas that he provided to students will be difficult to replace. For the time being, David Naistat, a new visiting assistant professor from the University of Miami, will join us until we are close enough to the completion of the new building to recruit a new Gottwald Chair.

The administration has done an admirable job in recent years by responding to our essential needs through additional resources for our operational budget and instrumentation needs. Unfortunately, if there is any one discipline that is highly impacted by rising energy costs, that would be chemistry. The cost of doing business (education) has dramatically increased as the prices for basic chemicals have far exceeded the national inflation rate over the past several years. Fortunately, a healthy state budget and the charter plan in effect for the College is helping to slow the impact of these rising costs. Hopefully this pattern of support will continue for some time to come. As for new instrumentation, we are in the beginning phases of developing a laser laboratory that will initially be incorporated in the physical chemistry laboratory curriculum.

The final design stages of the new building are now complete and include the vital services that we were desperately seeking this time last year (see article on Page 4). The official groundbreaking for the new building was held in conjunction with a Board of Visitors meeting in February, and construction has now commenced in full force. Hopefully

we will have more to share by this time next year on the construction process and timetable other than the massive hole currently adjacent to Rogers Hall.

As most of you may be aware, the College is close to concluding a successful campaign that should ultimately generate over $500 million in donations and endowments to help the College maintain its high level of success and visibility for years to come. Nevertheless, continued giving by alumni is vital to our department's ability to consider long term planning and goals (as opposed to reactive short term planning). Our status as one of the premier undergraduate programs in chemistry is clearly one we wish to retain. The only way we can achieve such a lofty goal 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 $50K or more are available to fund scholarships, student stipends, and instrument development. I mentioned our concerns at some length in last year's newsletter, and through conversations with the development office, have generated a list of department needs that will hopefully keep us competitive in educating the next generation of chemists (see page 8). I hope you will consider giving to the department, and assure you that we will always make sound use of such monies.

I recently met with a prospective student and his father who were interested in our chemistry program. One of the questions I usually ask such visitors is what other schools they are considering. In this case the student mentioned the University of Virginia, after which the father immediately blurted out, "And they said William and Mary has the best undergraduate chemistry program!" I simply smiled and stated, "Thank you for the flattering compliment, but what really generates our reputation is the alumni that we have educated and trained over the years and sent to graduate and professional programs such as UVA." I know that highly talented and dedicated faculty and staff are vital for our success, but you as alumni have truly touched the world in establishing that reputation. When I look back on the destinations of our graduating classes, and the successes that many of you have made in the work force as well as in society, it is very clear why such a comment was made.

As always, we hope that as many of you as possible (all 1900+ surviving alumni) will keep in touch, let us know of your good fortunes, and join us for our annual alumni reception held on the Friday evening of homecoming weekend. I also encourage you to visit our newly revamped department web site at www.wm.edu/chemistry,which is far more navigable than the old site and features stories on the home page about faculty, alumni, and other items of current interest. Most of all, I hope your memories of Rogers Hall, whether it be the original or current home of chemistry, are as fond as our memories of the many alumni who have graced our classrooms and research labs.

Cheers, ***Gary Rice***

Current Faculty

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

Emeriti

Ed Katz, 1980

Cirila Djordjevic, 1992

Trevor Hill, 1992

Dick Kiefer, 2003	*rlkief*@wm.edu
Bill Starnes, 2006	*whstar*@wm.edu

On leave for 2006–2007

Gary DeFotis (Spring '07)

Lisa Landino (Fall '06, Spring '07)

Part-time faculty, '06–'07

Sirisoma Wanigatunga (Fall '06)

Promotions

Congratulations to **Debbie Bebout**, who was promoted to full professor last fall.

We welcome David Naistat as a Visiting Assistant Professor of Chemistry.

David received a B.S. in Chemistry from the University of Buenos Aires in 2000 and a Ph.D. in bioorganic chemistry from the University of Miami in 2006 working with Roger LeBlanc. A native of Argentina, David is delighted to bring his *entusiasmo* for Organic Chemistry to the courses and laboratories at William and Mary.

Chemistry 2006

Here is our 2006 departmental picture for the Colonial Echo. Seated, from left: Bob Orwoll, Louise Menges, Dave Thompson, Rob Hinkle, and Dave Kranbuehl. Standing: Carey Bagdassarian, Gary Rice, Elizabeth Harbron, Lisa Landino, Bill Starnes, Debbie Bebout, Der-Hong Shieh, Gary DeFotis, Steve Knudson, Lynda Stitzel, Pat Hilger, Bob Pike, Linda Savedge, and Randy Coleman. Missing from this year's picture are Chris Abelt (again), J.C. Poutsma, and Ted Putnam.

From the Editor

After so many years of publishing Chemistry Distillations, it becomes harder and harder to think up new things to include. But our staff technical expert, Louise Menges (who has in fact done by far the most to plan and lay out the newsletter) has compensated somewhat by finding more and more items concerning former students, and you will find several pages worth of such news later in this issue. And in this particular edition of Fall 2006 I feel obliged to devote space here to a sad but notable event, the passing of Professor Emeritus Alfred Armstrong (see "A Profound Loss" later in these pages). Alfred was very kind to me from the moment I arrived here twenty-six years ago. Perhaps he sensed that I was, like him if not to the same degree and regarding precisely the same things, a perfectionist. It is notable that Alfred was so welcoming to me when it was surely clear that I had a very pronounced commitment to research—something Alfred had not done here, in common with virtually all William and Mary faculty of his generation. I think Alfred noticed that I was putting a great deal of effort into preparing my lectures and teaching materials, and since he placed the highest priority on this he was not alarmed by the time I spent on research. Perhaps the fact that we were sometimes the only people in Rogers Hall on the weekend impressed him. I in turn was more than impressed at seeing a "retired" faculty member putting in comparable time with regular faculty, some nearly forty years his junior. I do not expect ever to see another faculty member who continues to work as though he were a full-time employee of the College nearly twenty years after retirement! While all human beings are unique, Alfred Armstrong was more unique than most.

A melancholy event for me as well is the retirement of Bill Starnes, our Floyd Dewey Gottwald, Sr. Professor of Chemistry. Bill and I hit it off well from the inception. We shared one or two side interests and each of us had a passion for research. We were each able to help the other in modest ways. Bill brought great experience, especially in matters at the academic/industrial interface, to William and Mary, as well as an exceptional reputation. Few if any other faculty here have been Distinguished Staff Members at the renowned Bell Labs. Yet is is notable how this formidable scholar would carefully patrol the undergraduate laboratories when he was assigned this duty, patiently coaching his charges. Little did the students realize the eminence of their instructor. He also brought a valuable precision of thought to a number of departmental considerations, as well as notable general courtesy and a decided panache in his interactions with others. He has been a true friend to me and I hope to continue to see him come in as he presently does on a less intensive basis.

Gary DeFotis

Faculty News

Bill Starnes Retires

The Chemistry Department reports with regret but also pride the retirement of William H. Starnes, Jr. as Floyd Dewey Gottwald, Sr. Professor of Chemistry. Bill Starnes joined the faculty in 1989 as Gottwald Professor and as Professor of Applied Science in 1990. He received his Ph.D. in 1960 from the Georgia Institute of Technology, held positions for Esso Research and Engineering Co. from 1960–1971, was an instructor and Research Associate at the University of Texas from 1971–1973, a distinguished supervisory member of the technical staff for Bell Labs from 1973–1985, and a Professor of Chemistry at Polytechnic University in Brooklyn, NY from 1985–1989.

Professor Starnes' illustrious career has been highlighted with numerous honors, prizes and awards in recognition of his international reputation as a leading authority in polymer science. He has been a member of several editorial boards for various scientific journals, and he has been Editor-in-Chief of the *Journal of Vinyl and Additive Technology* since 1998. He has also served as a consultant in polymers and chemicals to 33 organizations since 1985. He is a Fellow in the American Association for the Advancement of Science, the New York Academy of Sciences, and the Society of Plastics Engineers. In 2001, Bill was named by the Plastics Pioneers Association as one of less than a thousand individuals worldwide who have had the greatest impact on the history of plastics. In 2004, he was also honored with the annual Excellence in Innovation award by the Hampton Roads Technology Council for his recently released patented ester thiols for PVC stabilization. Bill's research interests at William and Mary have focused on the degradation, stabilization, microstructure, mechanisms, fire retardance and smoke suppression of technologically important synthetic polymers. He has published prolifically in his career, brought over $2 million in external funding to William and Mary, and his continuing interests in the development of ester thiol stabilization technology have led to patents and licensing for commercialization through the W&M Technology Transfer Program.

Bill taught intensively in the polymer division of the chemistry curriculum and in the undergraduate organic labs, involved many undergraduate and graduate students of the department in research, and directed the very successful Ph.D. and M.S. theses of several Applied Science students. Two of these won international thesis awards from the Society of Plastics Engineers.

Departmental News

Off and Digging!

Anyone visiting the campus these days would probably be somewhat alarmed by the transformations occurring around the current Rogers Hall. The new dormitories on Barksdale Field are nearing completion on the east side of Rogers Hall, and the west end has taken on an entirely new look. The picture you see here is the footprint of where the first phase of the new Integrated Science Center will be located (or what we are currently calling the Rogers strip mining operation). Note that the entrance to Rogers as well as the stairwell are gone! Steel work should begin this fall, and we anxiously anticipate moving the entire department into the new facility by the late spring of 2008. Chemistry will occupy the first and second floors, while the vivarium and molecular biology research labs will occupy the ground and third floors respectively. The noise and commotion associated with these large projects has become a daily exercise in patience, but they also represent progress, a tangible process we have been looking forward to for years.

The Hole, as seen in July from an edge of the precipice on the Millington side just off Landrum Drive (the view from our side is obscured by fencing, construction trailers, and vehicles).

We were somewhat pessimistic at this time last year due to escalating construction costs, but the efforts of faculty in the planning and design of the building, along with the help of alumni in convincing the administration to meet our basic needs, have led to a facility that will have amenities necessary for the research and teaching needs of the department for years to come. We hope to post construction updates on the department web site in the near future so that alumni can follow the building progress. Also, because of the internal funds required beyond those allocated by the state, there is still substantial private financial support needed to ultimately fulfill our dreams.

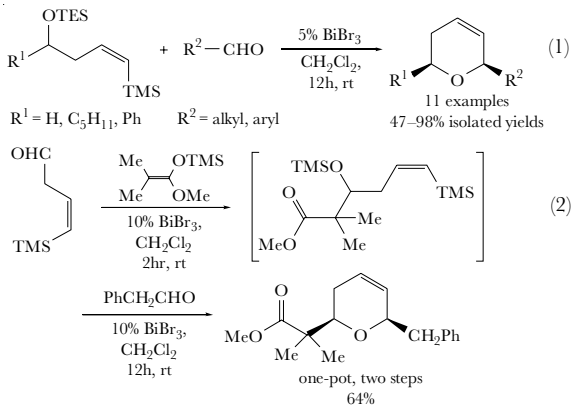
Faculty Research Profiles

Carey Bagdassarian

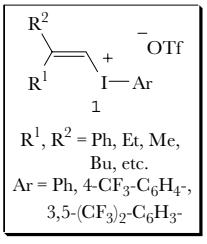
My many and heartfelt thanks to Chris Sudol (Class of '99). His wonderful generosity in setting up a fund in honor and memory of John Parkinson (Class of '98, who died in October of his senior year) will support my summer research students. Deutsche Bank in New York City, Chris's employer, is matching his contributions. My thanks to them as well.

Rob Hinkle

Our research examines the chemistry of metal-catalyzed synthetic organic transformations as well as studies of highly-reactive vinylic systems. Since a sabbatical at Indiana University in 2002, we have become involved in the synthesis of cyclic ethers using catalytic quantities of non-toxic Bismuth(III) compounds. Our most recent work showed that relatively complex ring systems can be made diastereo-selectively by two- and three-component processes using 5–10% of Bi(III) species as shown in 1 and 2 below.



Our first studies at William & Mary involved the synthesis and reactivity of extremely labile Iodine(III) compounds (e.g., **1**) in which the Ar-I group is an outstanding leaving group. Iodine can adopt several oxidation states and this class of compounds contains iodine in the +3 oxidation state. The positive charge on iodine renders the vinylic C-I bond labile enough to make these compounds prone to fragmentation, rearrangement and substitution. Yajing Lian (M.A., 2006) used kinetic isotope effects to verify that most fragmentations occur *via* migration of the neighboring group, R^2, but that the most reactive compound might fragment through a very high-energy primary vinyl cation.



Each summer, four or five students work in the lab developing new chemistry. During the summer of 2006, two students, Heather Stevenson and Tim Brown, garnered independent support for the bismuth work from Pfizer and GlaxoSmithKline pharmaceutical companies, respectively. We are very excited about improving these processes and developing new reactions using these environmentally-friendly Bi(III) catalysts.

Most Recent Publication

Lian, Y.; Hinkle, R. J. *J. Org. Chem.* **2006**, *71*, ASAP article, The American Chemical Society.

J. C. Poutsma

Our group uses tandem mass spectrometry and high-level theoretical calculations to investigate the intrinsic properties of gas-phase ions. We currently have 3 main areas of research: 1) determining thermochemical properties for protein and non-protein amino acids, 2) investigating entropy effects in the extended kinetic method, and 3) investigating the effects of non-protein amino acid substitution on the fragmentation pathways of small peptides. Recent results include the determination of proton affinities for canavanine and canaline, oxy-analogs of arginine and ornithine and a determination of the gas-phase acidities of all twenty protein amino acids.

I just got back from a sabbatical in Professor Vicki Wysocki's lab at the Univeristy of Arizona, and we are beginning to study peptide fragmentations using techniques that I learned while I was away. In other exciting news, we recently received a new (to us) flowing afterglow-triple quadrupole mass spectrometer and spent the summer of '06 modifying the instrument and developing a computer interface. We hope to begin collecting data in the fall.

Selected Recent Publications

"Proton Affinity of Canavanine and Canaline, Oxyanalogs of Arginine and Ornithine." Andriole, E. J.; Colyer, K. E.; Cornell, E.; Poutsma, J. C. *J. Phys. Chem. A,* in press.

"Theoretical and Experimental Investigation of the Energetics of *Cis-Trans* Proline Isomerization in Peptide Models" Carper, E. M.; Schroeder, O. E.; Wind, J. J.; Poutsma, J. L. Etzkorn, F.A.; Poutsma, J. C., *J. Phys. Chem. A* **2006** *110*, 6522.

"Proton Affinity of β-Oxalylaminoalanine (BOAA): Incorporation of Direct Entropy Correction into the Single Reference Kinetic Method" Wind, J. J.; Papp, L. D.; Happel, M.; Hahn, K.; Andriole, E. J.; Poutsma, J. C., *J. Am. Chem. Soc. Mass Spectrom.* **2005**, *16*, 1151.

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. The College of William & Mary strives 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, a distinction we want to maintain. Nevertheless, the ability of the department to sustain that level of excellence seems to become more difficult with each passing year due to 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 periodically made donations over the years to help the department, with some establishing endowments that can guarantee long term stability in some areas. Indeed, expendable private monies from annual contributions or proceeds from endowments currently amount to roughly $25–30,000 annually. Nevertheless, over the next 5–10 years we would like to see yearly private support to the department exceed $100,000 from annual giving and expendable 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 foot 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 between the three departments. Much of the cost for this new building as well as the renovation of Rogers Hall comes from state appropriations and bond 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. For specifics of how you can help, contact Barb Salins, Director of Development for Arts and Sciences, 757-221-7641 or e-mail at bjsali@wm.edu

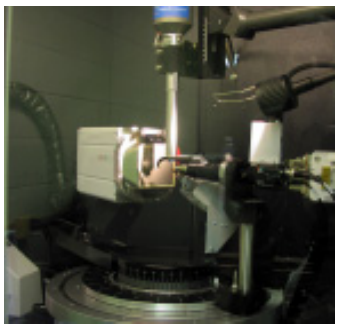
Scholarships

The rising cost of higher education is making it far more difficult for highly talented individuals to attend the college of their choice. Last year was the final class of Dow Scholar graduates, a very successful corporate program that was beneficial in attracting some of the most talented freshmen in the region to our program. 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 prove very beneficial as well. For specifics of how you can help, contact Barb Salins, Director of Development for Arts and Sciences, 757-221-7641 or e-mail at bjsali@wm.edu.

Undergraduate Summer Research Fellowships

The summer research program continues to flourish, with an average of 45–50 W&M chemistry majors staying every summer to conduct research with our faculty. Several of these fellowships are annually supported through endowments provided by alumni or through annual contributions of 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, thus 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. For specifics of how you can help, contact Barb Salins, Director of Development for Arts and Sciences, 757-221-7641 or e-mail at bjsali@wm.edu.

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. Our next large purchase will hopefully be a new 600 MHz NMR for the new facility. 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 specifics on exact needs and how you can help contact the department chair, Gary Rice, 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/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:

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 that can benefit the department.

For More Information

To further explore giving options that will be meaningful and beneficial to you, please contact bjsali@wm.edu, Barb Salins, Director of Development, Arts & Sciences, at 757-221-7641.

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.

Chemists helped raise money for Katrina victims

Debbie Bebout, Elizabeth Harbron and Rob Hinkle participated in the "Tribe Waves to Save," a Hurricane Katrina American Red Cross fundraiser hosted by the varsity swim team last spring. The event involved races between students and each of eight high profile "Celebrity Faculty/Staff" (including the Provost). After racing the students, the faculty and staff got to race against each other for a prize of two free meals at the Caf (although no one stepped forward to claim the prize). The William and Mary Swim Team raised more than $1200 at the event.

2006 Chemistry Concentrators and Their Destinations

Jacob Parker Albright	not reported (Aug. '06)
Melissa Maria Bachorski	undecided
[M] Barbara Helen Besal	high school chemistry teacher, Virginia Beach Public Schools
Jonathan Henry Boyle	(chem/physics) graduate studies in materials science & engineering, U. Delaware
[ϕ] [M] [H] Christopher George Brown	medical school, MCV/VCU
[ϕ] [D] [M] [H] Eleanor Carol Browne	graduate studies in chemistry, UC Berkeley
[ϕ] William Eric Bylund	medical school, Uniformed Services University
[H] Steven Alexander Calder	graduate studies in chemical physics, U. Minnesota
[ϕ] [M] [H] Bradley John Carra	medical school, University of Washington in St. Louis
Ryan David Clayton	work for a year before applying to medical school
Kevin Wayne Duke	(math/chem) graduate studies in math, U. Maryland
Kathleen Rose Dunn	dental school, U. Conn
Sarah Kathryn Dutcher	work in the public health field before earning a Master's in Public Health
Ryann Marie Fame	(bio/chem) graduate studies in molecular and cellular biology, Harvard
Thomas William Fuller	work at EVMS
Arthur Jaeton Glover	master's program in chemistry, W&M
Megan Elisabeth Hilton	working as a chemist (Dec. '05)
Nicholas Edward Holubowitch	graduate studies in chemistry, U. Denver
Alan Thomas Hopkinson	undecided
Daniel John Horgan	field director for Virginia 21
Elizabeth Arielle Ilardi	graduate studies in chemistry and biochemistry, Florida State
Gu Sul Kim	work for a year before applying to medical school
Maria Theophania Koumas	pharmacy school, MCV/VCU
Priscilla Marilyn Krai	undecided
Christopher John Kub	graduate studies in chemistry and biochemistry, Georgia Tech
[M] Derek Austin LaMontagne	(chem/math) graduate studies in chemistry, U. Florida
[ϕ] [D] [M] [H] Steven Morgan Lewis	graduate studies in biochemistry and biophysics, UNC
Brian Lee Low	undecided
Courtney Elizabeth Mason	veterinary school, MD-VA Regional College of Veterinary Medicine
Yuichi Matsuyama	graduate studies in materials science and engineering, Penn State
Rachel Aviva Metz	undecided
William Marc Mihlmester	not reported (Dec. '05)
[ϕ] [M] [H] Christopher Andrew O'Neill	medical school, Columbia
[H] Sarah Victoria Orski	graduate studies in chemistry, U. Georgia
[M] Amy Justine Palesko	Fulbright Scholarship to study chemistry/computer science in Japan
Anna Katherine Pawlow	high school chemistry teacher, Georgetown Day School
Katherine Elizabeth Pharr	graduate studies in chemistry, Wake Forest
[M] Julianne Pupa	not reported
[M] Devon Allison Shick	undecided
[ϕ] [M] [H] Melissa Margaret Sprachman	graduate studies in chemistry, U. Pittsburgh
Meghan Patricia Sullivan	not reported
Sumner Wynn Svensson	ranch hand, C-Lazy-U Ranch
Christina Helen Wales	graduate studies in chemistry, UT-Austin
[M] [H] Austin Blackburn Wiles	medical school, EVMS
[M] Christopher Michael Williams	not reported
[H] Justin Wayne Williams	graduate studies in forensic science, Marshall U.
[M] Melissa Ashley Winkler	(Dec. '06)

[ϕ] PBK [D] Dow Scholar [M] Monroe Scholar [H] Honors in Chemistry

Departmental Awards

William George Guy Prize in Chemistry	**Steven Lewis**
Virginia ACS Award	**Ellie Browne**
American Institute of Chemists Award	**Amy Palesko**
Alfred Armstrong Teaching Assistant Award	**Melissa Sprachman**
Hypercube Award	**Chris Brown**
Merck Index Award	**Brad Carra, Chris O'Neill, Austin Wiles**
Alumni Undergraduate Research Award	**Melissa Sprachman**
Blanton Mercer Brunner Scholarship	**Steven Lewis**

Old Rogers Recollections

Those were the days!

						18
April 16	52	From Dr Guy	20 —			20 18
April 17	52	Key Sander			25	19.93
April 18	52	② Two gas gockets			90	19.53
April 21	52	4 lb Lard			67	18.86
April 22	52	4 lb Lard			67	18.19
April 22	52	per Armstrong				
"		nuts for analysis			30	17.89
"		Graph paper			30	17.59
"		Kerosene & Varsol			65	16.94
"		Poster Boards			2 50	14.44
"		Spot-light ①			1 16	13.28
"		Tacks			20	13.08
April 25	52	Incense			.35	12.73
"		Paint Brush			18	12.63
"		Spray Gun			25	12.38
"		Blue Paper			22	12.16
"		Firecrackers			30	11.86
"		Potatoes			05	11.81
"		Bubble Equip.			10	11.71
"		Wire for Analysis			70	11.01
April 30	52	Citrus fruit			53	10.48
April 30	52	Matches			28	10.20
May 2	52	6 lines for analysis			60	9.60
May 12	52	5 " " "			50	9.10
May 22	52	4 cans paint @ .30			1 20	7.90
"		1 paint stripper			.98	6.92
"		2 paint rollers			50	6.42
"		24 screw eyes			25	6.17
May 24	52	Paint Brush			50	5.67
July 1	52	Eagle Tech Co. 5.54 7.10			5 64	.03
Sept. 22	52	1 Qt - Water Glass			.40	
Sept. 22	52	From Dr. Guy	20 —			19.63

Above we've reproduced a page from Mr. Katz's petty cash ledger, which he kept meticulously from 1949 until his retirement in 1980. These entries from 1952, among which the largest sum spent was less than six dollars, offer a glimpse of how much more modest than today's were the Department's expenditures fifty-four years ago. As necessary, the Department Head (and later, Chairs) would provide infusions of cash (noted as "From Dr. Guy" twice on this page) from the departmental checking account. You may have noticed that Mr. Katz managed to make do with 3 cents in petty cash from July 1 to September 22 of that year.

The Ice Ages

This newspaper photo (perhaps from the Virginia Gazette) of Gladys Guy, Dr. Guy, and Marguerite Wynne-Roberts skating on a solidly frozen Lake Matoaka was taken in the late 1930s. No one in the Department now can remember Williamsburg winters that cold!

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! 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).

Mike Acquavella ('92) and his wife Anzia Anuar, who were married in September 2004, now make their home in Hong Kong, where he works for the bank ABN-AMRO.

Patti Pound Barry ('63) was awarded the 2006 American Geriatrics Society Nascher/Manning Award during the AGS Annual Meeting in New York in May. The award honors Dr. Ignatz Leo Nascher's pioneering work in the field of geriatrics, and was established in 1987 by Mrs. Manning, his cousin. Patti was recognized for her contributions as a leader in the field of geriatrics, educator, and author.

Emily Buehler ('96) received her Ph.D. at UNC in 2001, and subsequently began baking at a cooperative natural food store in Carrboro, NC. About a year later she started teaching artisan bread-making to others in classes sponsored by a local market and the Carrboro Artscenter. Emily's search for the details of bread making science began when she wrote the manual for her class. Unable to find a good source, she pulled bits and pieces together from various places—biology textbooks, notes in recipe books, high-tech books on commercial baking, newsletters of the Bread Baker's Guild of America, and a few scientific journal articles. A more thorough search confirmed her belief that a comprehensive, understandable bread science book was needed, so Emily decided to write one herself, and *Bread Science: the Chemistry and Craft of Making Bread* is the result. It covers the entire process in detail, including not only the practical aspects but also the chemistry and biology occurring in the dough. (If you're intrigued, it is available from Two Blue Books, P.O. Box 621, Carrboro, NC 27510, and online at www.twobluebooks.com.)

Ted Germroth ('74) has been named the first senior technology fellow at Eastman Chemical in Kingsport, TN. In September 2005 Ted, who holds a Ph.D. from Berkeley, celebrated his 25th year with Eastman, where he has a long history of accomplishments in technology and innovation.

In July, Bob Orwoll received this news in an e-mail from **John Gilmer** ('78): "In a month I will be making a switch from Eastman Chemical Co. to a position as Associate Professor at King College in Bristol. Since I will be responsible for the physical and analytical portion of the chemistry curriculum, much of my preparation for classes this fall reminds me of your classes 30 years ago at W&M."

Laura Flattum Hamp ('91; M.S. in gerontology, MCV; J.D., UVA School of Law) is a fellow of the Borchard Foundation Center on Law and Aging at the University of Georgia School of Law. Previously, she worked as an assistant director of an area agency on aging and served on the board of the Virginia Association on Aging. She has conducted research on state statutes governing elder abuse and

studied factors contributing to the unmet legal needs of the elderly. Laura assisted in drafting the National Handbook on Laws and Programs Affecting Senior Citizens and was awarded the title of Virginia's Ambassador for the Aging by the Virginia Department for the Aging.

Elise Hattersley ('97) is in a postdoc program in oncology at Loyola University Chicago.

Chris Kontos ('84) is a cardiologist at Duke, and his wife Demetra Yeapanis Kontos (W&M '85) is a teacher at Durham Academy, where their children attend school. The Kontos family traveled to Richmond, VA last year for the dedication of a new medical sciences building at MCV with special significance for them; it was named after Chris' father, Dr. Hermes A. Kontos.

Her mentor Chris Abelt heard from **Bethany Lobo** ('03) this summer. Bethany has graduated from Harvard Law School, is studying for the California bar, and also begins a yearlong clerkship with a Federal Judge in San Jose, CA.

An article in the Spring/Summer 2005 Alumni Magazine about brewmaster **Brian Lottig** ('98) attracted the attention of Natasha Moulton-Levy (W&M '05), whose family had been talking about starting a brewery for more than 10 years, and now were looking for someone to help them turn their vision into reality. Natasha contacted Brian and persuaded him to join forces with her in creating a new brewing facility in downtown Cleveland, whose construction Brian is also managing. The brewery will be capable of supplying nearly 100,000 barrels (about 1,400,000 cases) of Lott Brand beer to Cleveland and the surrounding area. Brian and Natasha expect to complete the project and have their product to market by the first quarter of 2007.

David W. Mastbrook writes, "I am a 1965 ACS certified Chemistry Major Graduate of WM. I studied under Dr. Alfred Armstrong and did research under Dr. Trevor Hill. I spent two years teaching Chemistry at Stony Brook Prep. School in NY and two years as a research Chemist for the Food and Drug Administration, and I have several Research Publications in Nuclear Magnetic Resonance. I have had a varied and interesting career in other areas. I was involved in forming the Environmental Protection Agency in the early 1970s in Washington DC. Later I went back to school and got 45 sem hours in Computer Science and got a Master's Degree in Information Technology from Webster University. I am retiring for the final time in two weeks from the FBI as an IT specialist with 20 years of Federal Service. I have also had a career in Aerospace as a Systems engineer for Lockheed Martin. I am already retired from Lockheed Martin and Aerospace Corporation—making my upcoming retirement my third and final retirement. I looking forward to traveling and visiting the Department in Williamsburg. I still have Chemistry in my blood, so to speak. Please keep me on your mailing list."

From **Lucy Sibold McCrillis** ('77): "After graduating from W&M, I worked a total of 19 years between the US EPA and Department of Defense (DoD) regulating chemicals and cleaning up hazardous wastes sites. It would be nice to say I actually removed hazardous waste but when you work at headquarters, you just tell other people how to do it. In 1989, I married an aerospace engineer, John McCrillis, and we took up residence for two years on a 37 foot sailboat in Solomons Island, MD. Living-aboard was a delight for us but the two hour commute was not, so we became landlubbers (even though our secret hope is to live aboard again). During those last years at EPA someone thought I knew what I was doing so they made me an Associate Director, overseeing cleanup of hazardous waste sites at federal agency facilities. That was a challenge until 1997, when we quit our gov't jobs, sold the boat and moved to Florida when John was offered a job in the private sector. My usual career went on hold for a while doing volunteer work with Young Life, a non-denominational Christian teenage ministry that I was associated with back in my W&M days. After four years of sunshine we found ourselves in Arlington, Virginia where I reengaged with Booz Allen Hamilton, helping the DoD sustain military training ranges. DoD's military ranges are some of the last best open spaces in our country for many threatened and endangered species and the DoD faces a significant challenge protecting these lands for their use to train military forces while also protecting the environment. Among other things, the solution involves land conservation, which I discover, after 25 years, seems to be a hidden passion. But the best seems to be the last. In February 2005, at the age of 49, we adopted the most incredible baby boy, Brian. He was born in VA and is a blessing beyond words. I'm mostly full time Mom now and love it (and we're *still* planning to reside on a sailboat). All said and done, I remain forever grateful for W&M and Dr. Orwoll in particular and am glad, after all these years, that I majored in chemistry. The rigors and mental discipline of studying chemistry ended up being the thing that had the lifelong impact even if the specifics are now a bit hazy."

Anne McNeil ('99), a postdoctoral fellow at MIT, is one of five women selected to receive a 2006 L'Oreal Fellowship for Women in Science. The fellowships are given annually to encourage young women to continue their careers in science by supporting them financially and helping them strengthen their networks in the scientific community. Anne will investigate a new approach to improve the sensitivity, selectivity and versatility of fluorescent polymer-based chemo- and biosensors, and more specifically a novel sensing scheme based on the analyte-triggered release of a "masked" quencher proximate to the fluorescent polymer. She hopes to integrate this method into a biosensor platform for the early diagnosis of diseases like Alzheimer's.

Mike Mellis ('81, MA '84)and his wife Debbie (W&M '80), an attorney, live in McLean, VA.

Ann Mikowski ('02) received her Ph.D. in organic chemistry from UVA in June and has begun a postdoc there, studying the mechanisms of small molecule-protein interactions.

Gabriella Mirabilio ('03) was married in May to Michael Dettmer (also W&M '03). They live in Harrisonburg, VA, where Mike attends Eastern Mennonite Seminary. Gabriella is a chemistry teacher in Shenandoah Co.

Caryn Prairie Outten ('95) her husband Wayne (Biology, '95) moved to Columbia, SC last summer with their one-year-old, Bryce, to start positions as assistant professors in the Department of Chemistry and Biochemistry at the University of South Carolina. They have spent the past year setting up their biochemistry research labs and welcome any W&M students who would like to attend graduate school "down south."

Len Owen('40) and his wife Alice live in Manasquan, NJ, and family members now number 26. At 87, Len still plays golf, is involved in Kiwanis projects, and is completing the history of his 200-year-old church, Manasquan Baptist.

Michelle Ricketts Reardon ('97; MS forensic science, GWU), a forensic chemist at the Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF) National Laboratory Center in Maryland, was honored on June 13 with the prestigious Arthur S. Flemming Award in the applied science and mathematics category. Michelle is the first ATF employee to receive a Flemming award, which recognizes outstanding men and women in the federal government annually and is named after Dr. Arthur Sherwood Flemming, whose career included service as president of three universities, secretary of the Department of Health, Education and Welfare, and chairman of the U.S. Commission on Aging and of the U.S. Commission on Civil Rights. Michelle's duties include the analysis of intact and post-blast evidence from bomb-related crimes, and she also provides technical assistance to the law enforcement community and teaches law enforcement personnel and other first responders about bombings. Since joining the government in August 2000, she has worked on about 250 cases involving explosives and is a member of ATF's National Response Team, which goes to major fire and bombing sites around the country. She received this recognition for developing a technique for identifying oils used in making the explosive C-4, which can be difficult to trace because all of its manufacturers use essentially the same materials.

Bryn Reinecke ('04), at U. South Carolina, passed her research plan defense for her doctoral candadicy last fall.

Ashley Burri Rogers ('97) and her husband Greg were married in October 2004 and live in Maryland. She has worked for Dupont for eight years and is now in sales, "tackling new customers in our polymers business."

Melissa Sampson ('97) sent her mentor, Gary Rice, an e-mail last October. She worked for the Governor of Maryland for a year before grad school, and recently completed her Master's and Doctorate in Aerospace Engineering at the University of Colorado, Boulder. Melissa is now working for Lockheed Martin in Colorado, and writes, "Attending a different school for my graduate work crystallized the uniqueness of W&M and reinforced the notion that not all schools teach critical thinking. I am better prepared for my career (and life) having attended W&M."

Susan Switzer Scanga ('95) reports that she is doing well, and that her W&M chemistry background has served her well. After graduation, she worked for BASF in the Research Triangle, NC for a year before going to dental school. She graduated from UNC Dental School in 2000 and relocated to Nashville, TN where her husband Dan completed a residency in radiology. They have just settled in Charlotte, NC. She is practicing part-time in a family dentistry practice, and was expecting her first child in the summer.

Judy Moy ('99) is finishing her fourth year at Tufts Dental School in Boston, and will be applying to graduate residency programs.

Peggy Schott ('77) is still teaching chemistry at Dominican University, near Chicago. For fun she plays viola in the local symphony orchestra and with several string quartets, and travels to Interlochen, Michigan for adult music "camp" each August.

Suchi Sharma ('92, MA '93) and her husband John Deni have lived in Germany for about five years, and their first child, Mira Isabella, was born in January. John is a political advisor for U.S. Army forces in Europe, and Suchi works for SAS, managing all of their consulting practices for Central and Eastern Europe and Belgium. She says that she finds her job very interesting, particularly because it affords her the chance to see how countries of the former Warsaw Pact continue their transition to capitalism and European Union membership, while meeting interesting people across the continent.

Leslie Sombers ('96) received her Ph.D. from Penn State and is a postdoctoral fellow in Mark Wightman's group at UNC, which is using electrochemical techniques to observe the chemistry of neurons in the human brain. The progress of that research was the subject of a Feb. 20, 2006 cover article in C&E News, and the image on the cover is a product of some of Leslie's work.

Steve Tang ('82) is vice-president of life science business development at Olympus America, a precision technology leader designing and delivering innovative solutions in health care and consumer electronics worldwide. He and his family still live in the Lehigh Valley region of Pennsylvania.

Todd Thornton ('96; MS '99, NC State) works as an environmental, health and safety specialist for ARCADIS, an engineering firm in Raleigh, NC. He and his wife Courtney have a daughter, Paige Elise, born in January last year.

Richard Vachet ('93; Ph.D. UNC-Chapel Hill; post-doc Naval Research Labs, Wash. D.C.), is a chemistry professor at U Mass-Amherst. He and his wife Laura Powell Vachet (W&M '94) are the parents of a 2½ year-old son, Charlie.

Cathy Norton Weesner ('91), after her service with the U.S. Air Force, is now a pediatric anesthesiologist in Kansas City, Kansas. Her husband Chris (W&M '90) does consulting work and is active in their children's schools.

Kirsten Quitno Whelan ('91) lives in Ukiah, CA, practicing pediatrics part time and enjoying time with her two sons and husband Rob.

Dennis Wixted ('96) and his wife Allison Puryear Wixted (W&M '96) live in Richmond, VA, where he is an internal medicine hospitalist physician at MCV. Allison plans to use her doctor of pharmacy degree once their twins, born in February last year, are a little older.

Cathy Wright ('96) sent an update in January. She received her master's in epidemiology from U. Pittsburgh in 2002, and is a research associate in Philadelphia, analyzing data on sexually transmitted diseases and reproductive health.

Christine Yeamans ('96) is a pediatric oncology fellow at Johns Hopkins.

In Memoriam

Jason Choy ('98), a graduate student at Berkeley, lost his life in an auto accident last year.

Jason was completing his seventh year of a Ph.D program in chemistry and molecular and cell biology when he and two other Berkeley graduate students were killed in a freeway accident there in July 2005.

He had worked in Carlos Bustamante's laboratory since entering Berkeley, and was using optical tweezers to measure forces generated when an enzyme—in this case, a bacterial protease —snips a protein. Jason pursued his research with intensity, performing more experiments than necessary for graduation, and had begun writing his thesis.

Jason received his Ph.D. posthumously in August 2005, and a lecture series on single molecule manipulation at Berkeley has been dedicated to him.

Robert Dickson ('74), a leading cancer researcher

Robert B. Dickson, a Georgetown University professor whose groundbreaking research led to a deeper understanding of breast cancer, died on June 24 at 54. At the time of his death, Bob was vice chairman of the department of oncology at Georgetown and, since 2001, co-director of the breast cancer program at the university's Lombardi Comprehensive Cancer Center.

Before coming to Georgetown in 1988, he was a researcher at the National Institutes of Health. Since 1993, he had been director of an interdisciplinary tumor biology program at Georgetown.While at the NIH in 1987, Bob was the first scientist to demonstrate a link between estrogen, a naturally occurring hormone, and the growth of tumors. That study led to the development of hormone treatments for breast cancer, which is diagnosed in 215,000 American women each year.

Some of his other research isolated proteins, cell receptors and "growth factors" that contribute to the metastatic spread of breast cancer. He studied how cancer cells can travel throughout the body and invade other organs.

Bob contributed to more than 340 scientific publications, wrote or edited 14 books and journals about breast cancer, and spoke at more than 200 conferences. His work opened many avenues of research for other scientists and has been cited in more than 900 professional papers.

Ryan McGlothlin ('01) was William & Mary's first casualty in Iraq.

Marine 2nd Lt. Donald Ryan McGlothlin was killed in action on Nov. 16, 2005, while engaged in combat in the Al-Anbar province in western Iraq.

As an undergraduate, Ryan worked with Dick Kiefer on a NASA project aimed at learning how habitats could be built on the moon and on Mars from surface material available *in situ*. Elected to Phi Beta Kappa with a 3.97 GPA , Ryan was also the recipient of the William George Guy Prize in Chemistry at his graduation. He had joined the Army ROTC as an undergraduate, and, although on graduation he entered the doctoral program in polymer chemistry at Stanford, Ryan ultimately chose to become a Marine Corps infantry officer after completing his master's degree in 2003. His platoon was deployed to Iraq in July 2005.

2005 Chemistry Reception

A BIG GROUP! We'll start with Frankie Ann Holmes ('72), Allen Howe ('74), Constance (O'Doherty) Barnes and Bill Barnes (both '75), and Pat (Cotts) Rabolt ('75) and her husband John. There from the Class of '80 were Cindy Darling, Kerwin and Kathy (Lloyd) Dobbs, Carol (Humphries) Lindsay, and Bill Weiser. 1985 was represented by Sharon (Archer) Oslin, with her husband David (also W&M '85), John Quagliano (who delighted us by bringing his mother, Lidia Vallerino), and Moira Rafferty. Chris Marks ('86) returned for a visit, as did Eugene Aquino ('88) and Sean Hart ('90). Pam Arnold and Melody (Kipp) Cushman (both '95) dropped by, and we saw Krista (Hessler) Carver ('03) and her husband Ross, as well as Mike Clark, Kelly Kennett, KT Moynihan, Callie Raulfs (all '04), Melissa Howard, Michael Hurt, and Mamio Mattern (all '05).

This shot includes, from left: Dave Kranbuehl and Bob Orwoll (backs to camera), David Oslin, John Quagliano ('85), Dick Kiefer, Trevor Hill [talking to a partially obscured Frankie Holmes ('72)], Pat Cotts Rabolt ('75) and Randy Coleman.

Sean Hart ('90)

Trevor Hill, Constance O'Doherty Barnes ('75), Bob Orwoll, Moira Rafferty ('85) and Bill Barnes ('75) pause for a picture.

Mamio Mattern ('05) and Melissa Howard ('05)

The Quaglianos visit with us…

Above left, John ('85), his mother, Lidia Vallerino, and Bob Orwoll

Above right, Gary Rice makes a point.

Left, Lidia in a discussion with Gary DeFotis

The Aquino family: Eugene ('88), his parents, his sister Eileen ('87), and her two boys.

Classmates from the Class of '85 Moira Rafferty and Sharon Archer Oslin catch up.

Michael Hurt ('05) and Mike Clark ('04)

In the foreground are Pat Cotts Rabolt ('75) and her husband John; behind the Rabolts, Bill Barnes ('75) and Dave Kranbuehl.

That Bob Orwoll gets around, doesn't he? Here he's ptotographed with Frankie Holmes ('72) and Pam Arnold ('95).

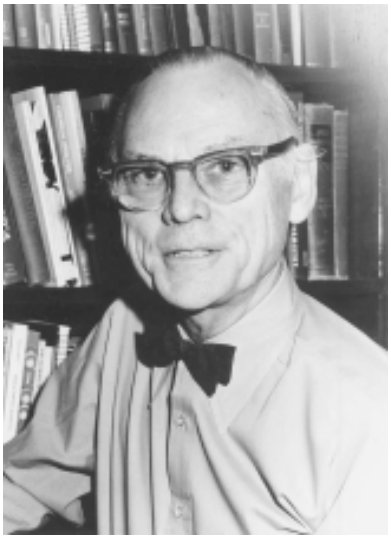
Lisa Landino, Callie Raulfs ('04) and Kelly Kennett ('04) are caught by the camera.

Bill Weiser ('80)

Kelly Kennett ('04) and Rob Hinkle

A profound loss

Chemistry lost a most remarkable member of its faculty when Alfred Armstrong passed away in February at 94, after suffering a massive stroke.



Alfred R. Armstrong
July 6, 1911–Februrary 8, 2006

Alfred's health had been declining in the last few years, and eventually wouldn't permit him to make his regular visits to the department for coffee, conversation, and, when the occasion arose, birthday cake. However, he and Martha continued to entertain any and all visitors to their home on Newport Avenue, where Martha plied them with cookies and beverages and gave tours of the Armstrong's large shady yard and gardens. The Armstrongs made a great many friends in their neighborhood, in the College community, and far beyond, and guests were frequent. Martha is still welcoming visitors with the same gracious hospitality.

Family, friends, neighbors, colleagues and former students attended a memorial service in the Wren Chapel on February 18, where they shared memories and acknowledged Alfred Armstrong's many contributions to his family and friends, to William and Mary, to his community and to chemistry.

In addition to his wife Martha, Alfred is survived by their two sons, R. Miller Armstrong and Alfred B. Armstrong, and five grandchildren.

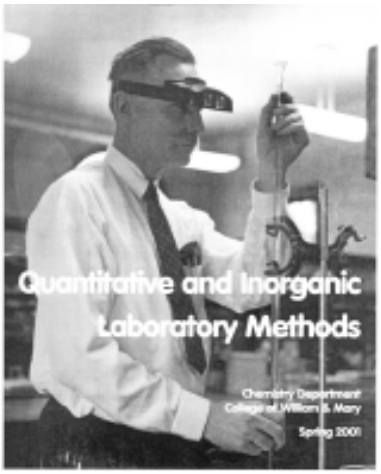
Alfred Ringgold Armstrong was born in Washington, D.C., but spent most of his childhood in Asherton, Texas, and graduated from Sperryville High School, in Virginia. He enrolled in William and Mary in 1928, graduated with a B.S. in chemistry in 1932, and continued at the College as a graduate student in chemistry, receiving his M.A. in 1934.

Alfred joined the William and Mary faculty as Instructor in 1933. His teaching at William and Mary was interrupted during the 1935-36 academic year while he was in the graduate program in chemistry at the University of Michigan and again from 1942 to 1944 when he undertook doctoral studies at the University of Virginia under the mentorship of Dr. John H. Yoe. He received a Ph.D. in chemistry from UVA in 1945.

In 1936 Alfred was promoted to Assistant Professor of Chemistry at William and Mary. In 1945 he advanced to Associate Professor and then to Professor in 1961, and was responsible for the Chemistry Department's courses in analytical chemistry. He served on most of the faculty committees at the College, as a faculty marshal at William and Mary's Charter Day and commencement ceremonies, and as Secretary to the Faculty of Arts and Sciences. In 1975 Alfred Armstrong was awarded the Thomas Jefferson Award for his "significant service to the College through personal activities, influence, and leadership." He was the author of several papers on analytical chemistry and the coauthor of the text *Qualitative Analysis and Chemical Equilibrium*. In 1976 Alfred retired from full-time teaching but continued on a part-time basis for the next *twenty years*, teaching laboratory courses in general chemistry as well as looking after various department matters informally. It is difficult to think of any other William and Mary faculty member who continued in such intensive service for so long after formal retirement!

Alfred was a member of the Alpha Chapter of Phi Beta Kappa at William and Mary for 74 years, and a 68-year member of the American Chemical Society. In 1996 the first Phi Beta Kappa departmental student award was named after him. In 1972 the Virginia Section of the ACS presented him with its Distinguished Service Award, citing his high standards of teaching, his dedication to students, and his distinguished service to the organization.

ARA stories from two members of the Class of 1956



In honor of his 90th birthday in 2001, we chose this undated photo of Alfred Armstrong for the cover of that year's Chem 356 Lab Manual. Probably many of us can remember seeing him read a buret in just this way.

...from Laurence Bobbin, sent in 1996 on news that the Department had established the Armstrong Fund:

Dear Dr. Orwoll,
This should not have taken me as long as it has, but I wanted to express the high regard and respect I have always had for Dr. Armstrong. Since 1953, when I took his course in analytical chemistry, he has remained one of the most impressive individuals I have known. Somehow the demand for perfection that was part of his method of teaching still remains with me.

One anecdote I remember was that on a short visit to Williamsburg a few years ago with my wife and daughter, Jill ('85), I told them about Dr. Armstrong and the positive impression

I still have. While walking across campus toward the chemistry building I glanced at a white-haired gentleman coming toward me. I said, "Dr. Armstrong," and identified myself. He said, "Oh, yes, you went on to engineering school after graduation," which was correct. Now, this is 40 years and many hundreds of students later, and he had not seen me since 1956. I can also assure you that my academic record was not memorable.

I'm pleased this fund has been created, for as I look back on all the professors I have had, he is tops.

Laurence Bobbin
Morristown, NJ

...from Martin Damsky, who had attended Dr. Armstrong's memorial service, and also addressed to Bob Orwoll, a speaker on that day:

It was with interest and emotion that I listened to your story of the pipettes. I should like to expand or fill in some of the story which further enhances the mystique of Dr. Armstrong's abilities. Although you did not identify the actual time or place of the incident, I feel the circumstances are too similar not to be the same incident to which I am referring. It was the summer of 1954 after I had just completed my sophomore year at W&M and my course in analytic chemistry commonly referred to qual and quant under Dr. Armstrong's tutelage. I had procured a job as a laboratory technician for the summer break. Although I was a chemistry major, the people at Riverside Hospital (the old one on 50th St.) in Newport News in their wisdom hired me as a tissue technician to work under their newly hired young and ardent pathologist, Dr. Devereux Lippitt.

One day Dr. Lippitt became incensed over the fact that a patient had been lost due to an erroneous blood potassium determination as you said. His feelings were further riled due the fact that we had a brand new flame photometer still in the box, uncrated, which no one at the hospital knew how to use much less calibrate and set up and it had been setting there for quite a while. This machine, properly run, could have made the correct determination thus probably saving the patient's life. Dr. Lippitt asked me if I knew a young PhD. chemist he could contact about getting this piece of equipment operational. My answer was no but that Dr. Armstrong might have this information especially since he himself had done graduate work in chemical spectrography. The next day that I returned to work, lo and behold, there was Dr. Armstrong. He had been hired over night ostensibly to get the flame photometer up and running and to teach the staff to operate this expensive and accurate state of the art (at that time) piece of equipment. But we all know how thorough and perfection finding Dr. Armstrong was, thus, he not only accomplished his original task but reorganized the laboratory so it was efficiently functional. This is where the story of the pipettes comes in. And it is true, we do not know how many lives he potentially saved through his diligence and foresight.

In this photo accompanying a July 4, 1976 **Daily Press** *article about his retirement, Dr. Armstrong displays his retirement gift from the Department, a replica of a 200g brass balance weight. It was fashioned of silver recovered from the efforts of Martin Damsky, Laurence Bobbin, and many, many other William and Mary students of chemistry, and cast by Colonial Williamsburg's master silversmith, William DeMatteo.*

I was quite surprised to hear that you knew about this incident as I never heard him discuss this with anyone including myself. As you know he was not prone to boast of his deeds and achievements.

The story of the silver balance weight also made me feel good. I had never heard this story before and it was pleasing to know I had a part (be it so infinitesimal—a microscopic piece of my dime must have been included) in the making of such a meaningful present to such a deserving individual. It is a bit sad, though, to think that probably in fifty more years no one will realize the significance of such an exceptional gift item save maybe an antiques dealer or historian.

Dr. Martin Damsky
Williamsburg, VA

For years and years he did collect
with resolution circumspect
those grams and grams of residues
which to the world seemed aught but ooze.

To him they were the end result
of efforts typical of his cult,
to teach the young agreeably
the rules of stoichiometry.

And so out of this muddy gunk,
which most would see as only junk,
we've made good use of chemists' might
to extract for him a weight so bright.

The weight will recall on glorious wings
the days of weighing by method of swings,
and, if we do not guess all wrong,
the happy days of A. Armstrong.

(a poem composed by S.Y. Tyree, Department Chair, for the presentation of Dr. Armstrong's silver weight in 1976)

Make our Chemistry reception part of your Homecoming 2006!

The Department is having its wine and cheese reception for chemistry graduates in Rogers Hall on Friday, October 27, starting at 5:30 p.m. We look forward to seeing you there. If you can join us, please try to let us know by October 20.

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
Williamsburg, VA 23187-8795

Yes, I plan to attend the Chemistry reception on Friday, Oct. 27, 2006, 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.

The College of WILLIAM & MARY
Department of Chemistry
P.O. Box 8795
Williamsburg, VA 23187-8795

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