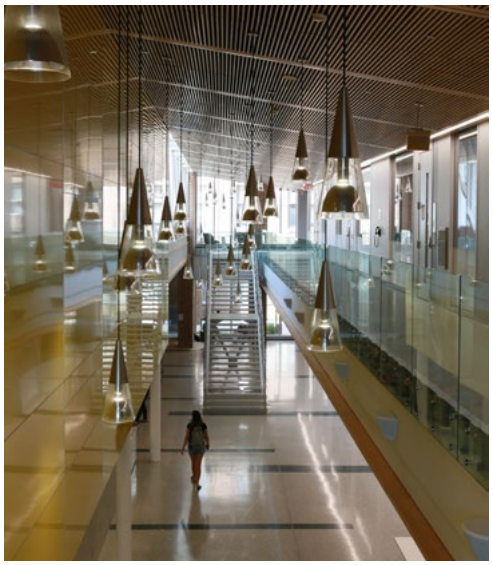
# chemistry distillations

Newsletter of the Department of Chemistry at the College of William & Mary • www.wm.edu/chemistry • Fall 2016

## From the Chair

As I write this column we are mostly moved into the Integrated Science Center 3 (ISC3). It is a beautiful and functional building. I can already feel the Machine for Science, the name given to the research labs on the interior of the building, starting to come to life. If you have a chance to visit the area, I recommend stopping by just to see it. While I was not scheduled to move, it turns out that my office window looks out into the atrium area and the coffee shop behind it. Because of fire code, my window had to be moved into an adjoining wall in ISC3. Because the two walls have different foundations, there has to be a gap of several inches between them. The end result was that I had to move out of my office for several weeks this summer. The new building houses chemistry labs belonging to Randy Coleman, Dick Kiefer and Bob Orwoll, Lisa Landino, and Nathan Kidwell. Nathan is our most recent hire. He is a physical chemist, and his area of specialization is laser spectroscopy.



ISC 3 Atrium
Photo by Stephen Salpukas/William & Mary

The completion of the ISC3 brings together four departments—Chemistry, Biology, Applied Science, and Psychology—and several interdisciplinary programs including Neuroscience and Environmental Sciences. The For The Bold campaign includes a goal of raising $4,000,000 to buy new equipment for the ISC (https://forthebold.wm.edu/schools/arts-sciences.html). An important part of this goal is the Cabell Foundation's challenge grant that I mentioned last year. The Cabell Foundation will contribute $500,000 if the College can raise $1,000,000 by December 31, 2016. So far, Chemistry has received over $154,000 in new gifts from individuals contributing toward the Cabell Challenge. We would love to raise a total of $200,000 toward the big ticket items that we have identified: a circular dichroism (CD) spectrometer to study proteins and an upgrade to our x-ray diffractometer that makes the x-ray source ten times brighter (not to worry, the lead-infused glass will properly shield researchers just as it would completely block Superman's x-ray vision). Applied Science's new hire, Myriam Cotten, is a chemist, and she will make use of the CD spectrometer, along with several chemistry faculty.

Faculty continue to enjoy recognition of their efforts at the College. Jon Scheerer was awarded a Plumeri Award for Faculty Excellence. Kristin Wustholz won an Alumni Award after she breezed through the tenure and promotion process. This award is typically given to an outstanding, recently-tenured faculty. It is the second one in a row for the department. Elizabeth Harbron also breezed through the promotion process and is now a full professor.

The last year brought changes for two members of the department. Gary Rice retired in May, and we are fortunate that his retirement is only formal. He will in fact return to teaching in a multi-year, part-time capacity beginning next spring. As I mentioned last year Gary was kind enough to fill in as chair during the fall of 2014. I am hoping that this experience wasn't the motivation to give phased retirement a go. Since I will see five retired faculty almost daily, the line between full-time, phased, teaching part-time and retired but still research active gets very difficult for me to keep straight at times. And just to keep the streak of hiring every year during my term as chair going, we are conducting a search for Gary Rice's replacement in analytical chemistry. Finally, Carey Bagdassarian is moving to Interdisciplinary Studies. While this is a change in reporting hierarchy and teaching assignments, it is not yet a change in physical location. In Carey's new role, he will teach several COLL courses, administer part of the College Curriculum and work on his writing and storytelling.

Chris Abelt

# Chemistry Faculty and Staff

## Current Faculty

| | |
|---|---|
| **Chris Abelt,** organic<br>*Chancellor Professor and Chair* | *cjabel@wm.edu* |
| **Debbie Bebout,** biochemistry | *dcbebo@wm.edu* |
| **Randy Coleman,** biochemistry | *racole@wm.edu* |
| **Elizabeth Harbron,** organic | *ejharb@wm.edu* |
| **Rob Hinkle,** organic | *rjhink@wm.edu* |
| **Nathan Kidwell,** physical | *nmkidwell@wm.edu* |
| **Lisa Landino,** biochemistry<br>*Garrett-Robb-Guy Professor* | *lmland@wm.edu* |
| **Dana Lashley,** organic<br>*Visiting Assistant Professor* | *dlashley@wm.edu* |
| **Bill McNamara,** inorganic | *wrmcnamara@wm.edu* |
| **Tyler Meldrum,** physical | *tkmeldrum@wm.edu* |
| **Bob Pike,** inorganic<br>*Floyd Dewey Gottwald, Sr. Professor* | *rdpike@wm.edu* |
| **J.C. Poutsma,** analytical | *jcpout@wm.edu* |
| **Jonathan Scheerer,** organic | *jrscheerer@wm.edu* |
| **Jordan Walk,** organic<br>*Lecturer* | *jtwal2@wm.edu* |
| **Kristin Wustholz,** physical | *kwustholz@wm.edu* |
| **Douglas Young,** bioorganic | *dyoung01@wm.edu* |

## Professional Faculty

| | |
|---|---|
| **Jeff Molloy,** analytical<br>*Instructor and Director of Labs and Instr.* | *jcmolloy@wm.edu* |

## Emeritus Faculty

| | |
|---|---|
| **Gary DeFotis**<br>*Garrett-Robb-Guy Professor Emeritus* | *gxdefo@wm.edu* |
| **Dick Kiefer** | *rlkief@wm.edu* |
| **Steve Knudson** | *skknud@wm.edu* |
| **Dave Kranbuehl** | *dekran@wm.edu* |
| **Bob Orwoll** | *raorwo@wm.edu* |
| **Bill Starnes**<br>*Floyd Dewey Gottwald, Sr. Prof. Emeritus* | *whstar@wm.edu* |
| **Gary Rice** | *gwrice@wm.edu* |
| **Dave Thompson**<br>*Chancellor Professor Emeritus* | *dwthom@wm.edu* |

## Staff

| | |
|---|---|
| **Janet Hopkins** | *jlhopkins@wm.edu* |
| **Beverly Laws** | *bllaws@wm.edu* |
| **Susan Mulholland** | *smulholland@wm.edu* |
| **DerHong Shieh** | *dxshie@wm.edu* |
| **Claudia Smith** | *csmith01@wm.edu* |



Top row: Bob Pike, Gary Rice, J.C. Poutsma, Jonathan Scheerer, Bill Starnes, Gary DeFotis; 2nd row: Elizabeth Harbron, Doug Young, Tyler Meldrum, Randy Coleman, Rob Hinkle, Jeff Molloy, Bob Orwoll, Dick Kiefer; 3rd row: Kristin Wustholz, Claudia Smith, Janet Hopkins, 4th row: Lisa Landino, DerHong Shieh, Susan Mulholland, Bev Laws, Dana Lashley; 5th row: Chris Abelt, Debbie Bebout, Nathan Kidman

Photo by Stephen Salpukas/William & Mary

More faculty: Jordan Walk, Dave Kranbuehl, Bill McNamara



# Faculty News

**Kristin Wustholz** is one of a select group of outstanding young faculty members who will be honored with the W&M Alumni Fellowship Award this fall. This Award was endowed by the Class of 1968 and recognizes professors who possess outstanding qualities that have contributed to the College's reputation. Kristin has also received tenure and was promoted to Associate Professor this year.

**Jonathan Scheerer** received the Plumeri Award this year for his outstanding record of accomplishment in teaching, scholarship and service. His research is inspired by natural products, and the journals in which his publications appear are high-quality and high-impact journals. In addition, Jonathan has been able to integrate his enthusiasm for teaching organic chemistry with his talents as a research mentor. He has mentored over 30 students — sponsoring four to five during the summer and over 10 during the academic year. Jonathan has also been a pre-major advisor and has recently become an executive officer for the Alpha Chapter of Phi Beta Kappa.

**Elizabeth Harbron** has been promoted to full Professor this year. Prof. Harbron is a photochemist who teaches in the organic curriculum. Her research lab investigates the photophysical properties of fluorescent dyes and nanoparticles that have applications in fields of sensing and imaging.

# Faculty Transitions

**Gary Rice** joined the department in 1984 after receiving a B.S. in chemistry from James Madison University and a Ph.D. in analytical chemistry from Iowa State University followed by a postdoctoral fellowship at the Ames National Laboratory. He served as the department chair from 2001-09, where he was heavily involved in the development of the first phase of the Integrated Science Center, which became the home of the department in 2008, and as interim chair in fall, 2014.

As an analytical chemist, Gary quickly began efforts to modernize the undergraduate quantitative labs. He continually and tirelessly kept our analytical equipment functional and current. In fact, over the past two years, he convinced the administration to purchase modern digital technology to completely replace outdated tools for both collecting and plotting data in over half of the lower division general chemistry labs.

Gary has received several College-wide recognitions for his teaching, including the Alumni Fellowship Award in 1990 and the University Professorship for Teaching Excellence in 1996 –one of the first three faculty so honored in the inaugural year of the award. His lectures are uniformly praised by students for their combination of clarity, insight and sheer fun. He is renowned for his larger-than-life persona in lectures, playing the "mad scientist" for chemical demonstrations, dressing as Santa Claus at the end of the semester and delighting audiences in departmental magic shows over the earlier years of his tenure.

Gary's research was primarily in the area of environmental analytical chemistry. External support for his research exceeded over $1.1 million, and he mentored over 150 undergraduates and 10 master's students during his tenure here. He has had a long-standing relationship with faculty members at the Virginia Institute of Marine Science, and he most recently collaborated with Virginia Tech engineers on "lab-on-a-chip" projects for micro-GC analysis, which led to several publications and presentations.

He will continue teaching over the next several years in the College's phased retirement program. This will hopefully provide him more time to spend with his wife, Tonya, and enjoy his grandson. The latter will definitely involve more travelling since Gary's son lives in Portland. His other son lives in Denver—that makes two states where you can legally regress back to the '70s! He has also become an avid cyclist, and he hopes to find the time to start home brewing again (and we're not talking tea here). He is also looking forward to volunteering more time to organizations that he is already involved with such as being a P&R soccer referee and helping at a local low income medical

## Gary Rice Retirement cont'd

care clinic. He hopes to expand into other worthwhile causes and interests as well, although there's a lot of catching up to do on the old homestead first. We just hope he can continue to provide us with fresh vegetables from his garden.

**Carey Bagdassarian** is leaving the Chemistry Department but not the College. As Senior Lecturer of Interdisciplinary Studies, his focus will turn to his writing, story telling, art, and the confluences of art and science—and to the transdisciplinary thinking that motivates his teaching in the College Curriculum. He is grateful to the Chemistry Department for the years it was his home.

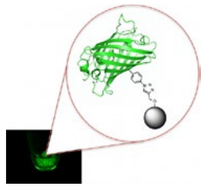
## Welcoming New Faculty

**Nathan Kidwell** joined the Chemistry faculty this summer as an Assistant Professor. Nathan earned his Ph.D. in physical chemistry from Purdue University in 2014, where he investigated combustion-relevant molecules and reactive intermediates using molecular spectroscopy. He then held an appointment as a Postdoctoral Research Fellow at the University of Pennsylvania developing novel techniques to research the chemical reaction dynamics of transient species in the atmosphere. Professor Kidwell will be teaching physical chemistry and integrated physical/analytical chemistry lab as well as general chemistry classes. His research will apply laser-based techniques to explore reactive processes at a fundamental level in order to address atmospheric and physical chemistry problems. Specifically, his research group will study the photochemistry and bimolecular reactivity of neutral molecules, reactive intermediates, and molecular clusters using laser spectroscopy and imaging methods accompanied by high-level theory and reaction modeling. The experimental measurements provide important benchmarks for theoretical studies in order to determine detailed mechanisms for the first few nucleation events towards aerosol formation, which are necessary for predictive atmospheric chemistry modeling.

Nathan moved here from Philadelphia with his wife, Martina, and daughter, Claire. Originally from the Midwest, they feel more at home in peaceful Williamsburg over the hustle and bustle of the big city. They welcomed the newest addition to their family in July: their now two-month old second daughter Reagan. Exciting summer indeed!

## Faculty Features

**Doug Young** is a bioorganic chemist, working on the interface of biology and chemistry to develop novel chemical tools to address biological issues. Utilizing a variety of techniques including unnatural amino acid mutagenesis, microwave irradiation, solid-supported synthesis, and fluorescence spectroscopy, the Young lab is focusing on developing new reactions, biological probes and novel proteins that can be used in the diagnosis and treatment of a variety of cancers and other diseases.

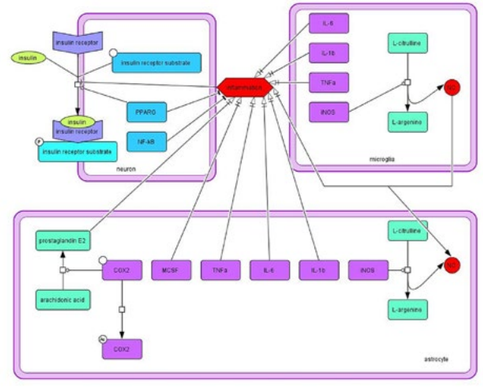


Recently, the Young lab has developed a novel Glaser-Hay bioconjugation reaction, transferring the typically "organic" coupling of terminal alkynes to a biological setting. This work has been recently featured in *Angewandte Chemie and Chemical Communications.* The lab is currently continuing the work to develop therapeutic immunoconjugates that can be used to detect cancerous cells and specifically deliver a toxic molecule to only the malignant cells, minimizing the harsh side-effects of many current chemotherapeutics.

Since arriving in 2011, Doug has been teaching general chemistry (CHEM 103) most fall semesters and biochemistry (CHEM 414) in the spring semesters. Recently, he developed a new COLL 200 course: Biochemistry at the Bar, putting the practices and ethics of biochemical techniques on trial. Doug is also the Chemistry Club advisor and an active participant in the annual Chemistry Magic Show.




**Randy Coleman's** research involves modeling the extremely complex biochemical metabolism that exists in a neuron undergoing a degenerative disease process that may lead to impaired neuron-neuron signaling or to cell death. That model defines the relationships among the various components and the rates of reactions between and among the components. Randy and his research students then convert the model into a mathematical formalism using the program MatLab that allows them to look at the dynamic properties of the system from a mathematical perspective using Bichemical Systems Theory (BST). BST methodologies allow them to pose questions about disease triggers within the model, to trigger those processes mathematically and to look at treatments for the disease state. The research group can mathematically define the treatment biochemistry and see from the computational outcome if the disease breakdown is being reversed. They can quickly determine what parts of the model have changed the most or least, as a result of the perturbations. The group's publications are presented as testable mathematical models of the disease state in question. Below is an image from a recent publication on the effects of insulin resistance on Parkinson's Disease (Braatz & Coleman, J. Computational Biology & Chemistry, 2015). The image is from part of the model showing the effects of insulin resistance on inflammation.




Randy's current research involves a collaboration with Prof. Frank Castora at Eastern Virginia Medical School in Norfolk. Frank brings to the research program an ability to do microarray processing on brain tissue from AD patient brains. Together they are interested in the differential gene expression of a set of mitochondrial energy expression genes that are indicated to play a role in both beta-amyloid and tau protein processing. With this data in hand, Randy's group then uses BST to build testable mathematical models of neurons undergoing an Alzheimer's-like degradation process. This effort has resulted in the presentation and publication of an abstract at the Alzheimer's Association International Conference 2016, held in July 2016 in Toronto, Canada.

The research group at present has seventeen undergraduate students, with five of them working on various pieces of the Alzheimer's model growing out of the EVMS collaboration. Two other groups of three each are working on Parkinson's Disease and Multiple Sclerosis models. Smaller one- or two-person groups are working on ALS and Prion diseases. Randy says,"It has been a pleasure to work with our bright undergraduates on these important problems. Most of my research students go on for either MD or PhD degrees, and a few have pursued dual MD/PhD programs. I think that record of successful placement is really what our chemistry department is all about, and I hope the reader agrees!"

## Sad News

We are sad to share the news that Professor Cirila Antolovic Djordjevic passed away on April 30th in Hanover, MD. She was 90 years old.

Cirila was born in Zapresic, Yugoslavia. She earned a B.S. in chemical engineering from the University of Zagreb and a Ph.D. in chemistry from University College, London. In 1968 she immigrated to the U.S. to join the Chemistry faculty at William & Mary, where she remained until retiring in 1992 as the Garrett-Robb-Guy Professor of Chemistry.

An inorganic chemist, Cirila is known internationally for her research on the synthesis, structure and properties of metal complexes, particularly in vanadium and molybdenum systems. Her courses in inorganic, general and analytical chemistry consistently received very favorable evaluations from both undergraduate and graduate students. She was the 1991 recipient of William & Mary's Jefferson Award.

# Destinations of 2016 Graduates

## Chemistry Majors

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|---|---|
| ***Isaac Alty*** | Pathways MD Program at Harvard Medical School |
| ***Andres Arana*** | Searching for Job in Website Development |
| ***Kimberly Borden*** | Graduate Studies at William & Mary School of Education |
| ***Mark Broderick*** | Chemical Engineering Masters at Purdue University |
| ***Nicole Connolly*** | Work as ER Technician, then Applying to Medical School |
| ***Heidi Crockett*** | Graduate Studies in Secondary Education at William & Mary |
| ***George Deng*** | Work as Pharmacy Technician, then Pharmacy School |
| ***Melissa Dullum*** | Applying for a Job |
| ***Austin Dunn*** | Graduate Studies in Chemistry at University of Virginia |
| ***Corinn Durham*** | Ph.D. Studies in Chemistry at University of Pittsburgh |
| ***Stephanie Early*** | Work as Pharmacy Technician, then Pharmacy School |
| ***Evan Finnell*** | Planning on Teacher Residency Program, then Masters in Education |
| ***Christian Fontan*** | Medical School at Virginia Commonwealth University |
| ***Benjamin Fortman*** | Graduate Studies in Physical Chemistry at U. of Southern California |
| ***Meagan Gay*** | Staff Scientist at Nova Research Inc., then Graduate School |
| ***Mairin Haley*** | Medical Scribe, Applying to Medical School |
| ***Carolyn Hartley*** | Graduate Studies in Inorganic Chemistry at UNC Chapel Hill |
| ***Zachariah Hasan*** | Medical School at Eastern Virginia Medical School |
| ***Katherine Henke*** | Graduate Studies in Global Mental Health at King's Coll/U of London |
| ***Scott Huang*** | Working as a Scribe, then Applying to Medical School |
| ***Taylor Jacobs*** | Working, then Medical School |
| ***Elizabeth Johnson*** | Graduate Studies in Chemistry at Northwestern University |
| ***Dean Katsaros*** | Graduate Studies in Applied Mathematics at UMass-Amherst |
| ***John Kean*** | Graduate Studies in Analytical Chemistry at Colorado State U. |
| ***Allison Kelley*** | Art Conservation Work, then Grad Studies in Art Conservation |
| ***Kyu Kim*** | Working at Patheon Pharmaceutical |
| ***Claire Kimberly*** | Graduate Studies in Biomedical Sciences at EVMS |
| ***Anton Lachowicz*** | Gap Year |
| ***Denise Lee*** | Medical Technician at Quest Diagnostics, then Dentistry School |
| ***Samuel Lee*** | Medical School |
| ***Harlan Mantelli*** | Ph.D. Studies in Chemistry at Case Western Reserve University |
| ***Mary Matecki*** | Emergency Department Scribe at Inova Fair Oaks Hospital |
| ***Frances Morin*** | Graduate Studies at University of Pittsburgh |
| ***Douglas Natal*** | Pursuing Dentistry |
| ***Matthew Nelli*** | Ph.D. Studies at the Unversity of Utah |
| ***Margaret Olesen*** | Catastrophe Risk Analyst |



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| ***Gavin Oplinger*** | Job Hunting, then Applying to Medical School |
| ***Marshall Padilla*** | Graduate Studies in Chemical Biology at U of Wisconsin-Madison |
| ***Jacob Robins*** | Ph.D. Studies in Organic Chemistry at UNC Chapel Hill |
| ***Joo Yeon Roh*** | Travelling and Working for a Year, then Ph.D. Studies at U of Wash. |
| ***John Rose*** | Emergency Room Scribe, Applying to Medical School |
| ***Kalpish Shah*** | Medical School |
| ***Hannah Shenouda*** | Graduate Studies in Organic Chemistry at UNC Chapel Hill |
| ***Hannah Smith*** | Applying to Medical Schools |
| ***Patrick Smith*** | Ph.D. Studies in Chemistry at University of Washington |
| ***Christina Stephens*** | NIH Postbac Intramural Research Fellow |
| ***Jenna Tan*** | Graduate Studies in Chemistry at William & Mary |
| ***Amanda VanInwegen*** | School of Pharmacy at Virginia Commonwealth University |
| ***Lucas Walker*** | Ph.D. Studies in Pharmacology at University of Rochester |
| ***Rachel Waymack*** | Ph.D. Studies at University of California-Irving |
| ***Jill Williamson*** | Graduate Studies in Organic Chemistry at UNC or Boston College |
| ***Hanyang Xu*** | Graduate Studies at University of Washington |

## Other Members of the Class of 2016

| | |
|---|---|
| ***Hadear Hamama*** | ***Jacob Lisi*** |
| ***Josiah Hammack*** | ***Christopher Ohlhaver*** |
| ***Korkor Koppoe*** | ***Robi Rahman*** |
| ***Matthew Lentini*** | ***Kan Tagami*** |
| ***Timothy Lindner*** | ***Nicholas Vierira*** |

## Masters In Chemistry

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|---|---|
| ***Gerardo Ayala*** | Searching for Job in Industry |
| ***Kathy Huynh*** | GC/MS Lab Technician at the MITRE Corporation |
| ***Jonathan Maza*** | Ph.D. Studies in Chemistry at University of California-Berkeley |
| ***Wanji Zhang*** | Ph.D. Studies in Chemistry at Caltech |

# Endowments and Donations to the Chemistry Department 2015-2016

## Endowments

Students and faculty in the Chemistry Department benefit from the generosity of donors who have established permanent endowments that further our academic mission. This year, we are honored to acknowledge a new scholarship endowment established by Walter R. Wenk, Jr. '66 in memory of Professor Alfred Armstrong. Annual income from endowments is essential to supporting scholarships and student research, rewarding academic achievements, sustaining the Chemistry Seminar Program and helping us buy new equipment. The department's faculty and students are fortunate to be the recipients of such generosity from the following donors:

*Debra L. Allison Summer Fellowship in Chemistry*
*Dr. Alfred R. Armstrong Chemistry Scholarship Endowment*
*Scott H. Andrews Chemistry Undergraduate Teaching Fellowship*
*Marga Larson Bales Scholarship Endowment*
*Patricia Pound Barry Chemistry Scholarship*
*James T. & Evelyn A. Cranmer Memorial Scholarship*
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*Charles E. Flynn '34 Memorial Chemistry Endowment*
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*William G. Guy Endowment*
*Hillger - Roberts - Kranbuehl Chemistry Endowment*
*Kranbuehl - Thompson Graduate Fellowship*
*Gene J. & Frances E. Schiavelli Memorial Endowment*

## Donors

We are very grateful to the many donors to the Chemistry Department and the Chemistry Honors Research Projects through the Charles Center. Your generosity makes a significant impact on our educational enterprise.

*Christopher J. Abelt*
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*Jordan Adelson*
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*Deborah G. Allen*
*Michael S. Allen '14*
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*Matthew C. Ames '80*
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*Elizabeth Austin-Minor '92*
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*Patricia Pound Barry '63*
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*Eric J. Dawnkaski*
*Jacquelyn M. Blake-Hedges '13*
*Patrick N. Blank '14, M.S. '15*
*Charles J. Blevins '13*
*David F. Boerner '72*
*Jean S. Boerner*
*Susan B. Boon*
*Wyndham H. Boon '70*
*Brian D. Borne '02*
*Louise S. Brewer*
*Robert H. Brewer '72*
*Cheri Browder*
*J. Wayne Browder '67*
*Steven W. Budd '82*
*Olenna Truskett '82*
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*Sue E. Delos M.A. '80*
*Kevin P. Dockery '88, M.A. '89*
*Kelly Reynolds*
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*Robert C. Grant*
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*Elizabeth J. Harbron*
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*Carolyn L. Hartley '16*
*Zachariah I. Hasan '16*
*Douglas S. Hawkins '86*
*David A. Hecht '89*
*Barry H. Hill*
*Carol Bova Hill '80*
*Robert J. Hinkle*
*Daniel J. Horgan '06*
*Allen K. Howe '74*
*Elizabeth Gunn Howe '74*
*Elizabeth Wenrich Ingram '68*
*David G. Evans*
*Patricia K. Jue '83*
*Craig Hedberg*
*Dorothy M. Jung '79*
*Jayda B. Justus*
*J. Brent Justus '97*
*Lauren A. Katkish '08*
*Susan M. Kauzlarich '80*
*Peter Klavins*
*Gwynneth D. Kelley '80*
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*Christopher H. Komatsu '14*
*Karl A. Komatsu*
*Nancy B. Komatsu*
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*Marjolane Kranbuehl*
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*Jessica Kuperstock*
*Charles R. Kyle '73*
*Deborah Lipsey Kyle '74*
*Janine S. Ladislaw '03*
*Robert F. Lambert '11*
*Lisa M. Landino*
*Tyler S. Larson '18*
*Carol Humphries Lindsay '80*
*Walton C. Lindsay '80*
*Ross J. Lloyd J.D. '74*
*George A. Lock Jr. '72, M.A. '75*
*James Logan*
*Marguerite McLaughlin Logan '55*
*David B. Lombard*
*Walter Lorenzo*
*Robert P. MacCubbin*
*Margaret Hildebrant MacDonald '35*
*Katherine Holman MacKallor '28*
*Dominic J. Maglieri*
*Ruth Mallard*
*Robyn Roarke Manke '94*
*Judith Marcuson*
*Samuel W. Marcuson '72*
*G. Douglas Markham IV '72*
*Carolyn A. Martin '73, L.H.D. '12*
*Margaret Holt Mate '55*
*Yuichi Matsuyama '06*
*Ruth Callaway Matthews '45*
*William M. May '07*
*Johnathan C. Maza '15*
*John B. McCaffrey '33*
*John J. McCarthy IV '10*
*Lewis A. McGehee Jr. '74*
*John McKechnie*
*G. William McLaughlin*
*Wendy A. McLaughlin '82*
*William R. McNamara*
*Gail Holder McPeters '73*
*Hamlin L. McPeters '73*
*Margaret Wayne McReynolds '51*
*Tyler K. Meldrum*
*William G. Millar M.A. '58*
*Deana Hadley Miller '07*
*Ronald Miller*
*Gregory S. Miller '95*
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*Grace B. Moncure*
*James K. Moran '90*
*Shawn P. Mulvaney '97*
*Christopher W. Beck '93*
*Tanya R. Myers '92*
*Karen C. Newman*
*Kirk E. Newman '82*
*Gerri A. Nichols*
*Stephen A. Nichols '90*
*Aileen Nicoletti '92*
*Suzanne Argentine Olds '90*
*Amy Heth Olitsky '86*
*David S. Orgel '70*
*Anderson J. Orr Jr. '74*
*Joseph E. Orth '61*
*Betty Orwoll*
*Robert A. Orwoll*
*David W. Oslin '85*
*Sharon Archer Oslin '85*
*Caryn Prairie Outten '95*
*Franklin W. Outten '95*
*Amy L. Padden '91*
*Carol Short Peabody '72*
*Jonathan C. Perkins*
*Karen Caufield Porzio '64*
*Sarah Kelley Potash '89*
*Christopher S. Pugh '98, M.A. '99*
*Gianna D'Angelo Pugh '00*
*Bruce C. Puryear '81, M.A. '87*
*Adin T. Putnam*
*Michelle M. Putnam*
*Lidia M. Quagliano*
*John F. Quensen III M.A. '76*
*Katherine B. Ragan '14*
*Lisa Reese*
*Raymond Reese*
*Tonya K. Higgins*
*Gary W. Rice*
*Cheryl Richter*
*Lee J. Richter '81*
*Sarah S. Rogers '31*
*Joo Yeon Roh '16*
*Carolina C. Rojas Ramirez '14*
*Benjamin C. Rothermel '04*
*Mary V. Thur*
*Mark E. Ruddel '70*
*Wendy S. Rudolph '85*
*Dwayne L. Therriault '85*
*Ruth A. Russell*
*Carlton L. Salnoske M.Ed. '72*
*William H. Saunders Jr. '48*
*Mary Sawyer '78*
*Jonathan R. Scheerer*
*Karl A. Schellenberg '53*
*Greta L. Schneider '15*
*Carlota Blackburn Schone '70, M.Ed. '72*
*Harlan E. Schone*
*Beth A. Schraeder '74*
*Danielle Vissers Schug '99*
*Kevin A. Schug '98*
*Sue P. Schwarz*
*William W. Schwarz '49*
*Randy Shangraw '85*
*David W. Shea*
*James B. Shea*
*Betty Dillon Shepherd '60*
*Kenneth E. Shepherd '74*
*James A. Shield Sr. '24 +*
*Charles Shishkevish*
*Almeyda Whitehead Shurling '35*
*Kathleen Finley Shy '72*
*Leonard I. Silver '55*
*Robert A. Singhass '50*
*Christine Scheid Sloane '67*
*Thompson M. Sloane*
*Sharon Cutler Smallwood '88*
*Anne Lassiter Smith '43 +*
*Emily R. Smith '14, M.A.Ed. '15*
*Ellen H. Speers '11*
*Lorna Bowen St. George '61*
*Sofi Starnes*
*William H. Starnes*
*Nancy Howard Stearns '73*
*Richard H. Stearns*
*Janice Bray Stubin '60*
*Doris Scheffel Symonds '78*
*John H. Symonds*
*Timmothy J. Taps '12*
*Isabelle J. Thibau '11*
*David W. Thompson*
*Karen Thompson*
*Amy B. Thompson*
*N. Ross Thompson III '74*
*Jock B. Thompson*
*Sandra Poteat Thompson '90, M.A. '91*
*Jonathan V. Todd '03*
*Elizabeth McAdams Tomlin '02*
*Gregory M. Tomlin '01*
*Clayton F. Traver '08*
*Maria Happel Traver '07*
*Connor S. Tribble '14*
*Deborah E. Tronic*
*UBS*
*Gale Updike*
*Kenneth R. Updike '76*
*Garnett W. Vaughan*
*Diego A. Vicente '05*
*Sarah Robinson Vicente '05*
*Jordan K. Villa '15*
*Jordan T. Walk '08, M.S. '09*
*John R. Walk '77*
*Sarah Moore Walk '77*
*Adam R. Warack '12*
*Loretta P. Welts M.S. '86*
*Mary Kay R. Wenk*
*Walter R. Wenk Jr. '66*
*Bradley D. Mohr*
*Kathleen A. Whalen '89*
*Deborah Smelley Wickham '76*
*Joel M. Williams Jr. '62*
*Mary Carol Gregory Williams '64*
*Christopher M. Woleben '93*
*Janice Wright*
*Kristin L. Wustholz*
*Douglas D. Young*

**THANK YOU!**



## Support Chemistry!

Endowed funds and gifts to the department or for programs like our undergraduate summer research make a significant impact on our educational enterprise. The Chemistry Department benefits directly from donations to the following funds:

### Chemistry Fund #2967

This is an unrestricted fund that allows us the flexibility to use funds where they are needed most.

### Cabell Challenge – ISC Equipment Fund for Chemistry #3981

W&M is raising $1 million by December 31, 2016 to qualify for The Cabell Foundation's challenge grant of $500,000 toward equipment purchases for the departments of Chemistry, Biology, Psychology and Applied Science in our newly expanded Integrated Science Center. So far 450 donors have committed $860,000 to the Challenge--including $154,000 in gifts designated for the Chemistry department. Chemistry's goal is to raise an additional $46,000 to provide a total of $200,000 for the department's high-priority equipment needs. To make an on-line gift towards the Cabell Challenge, please go to www.impact.wm.edu/cabell. Thank you!

### How to Give

There are two mechanisms through which you can make one-time, regular or annual contributions. To contribute by mail, make your check payable to The College of William & Mary. Please be sure in your check's memo area to note the fund and number to which you are designating your gift and send it to:

The College of William & Mary
P.O. Box 1693
Williamsburg, VA 23187-1693

In addition, online donations can be made by going to the chemistry web site at www.wm.edu/chemistry and clicking on Support Chemistry.

# News of Our Alumni

It is wonderful to hear from so many of you. Please continue to keep us up to date by sending us an email to chemistry@wm.edu, contacting your favorite professor or filling out the form on our website at www.wm.edu/chemistry/sendnews. You can also send us a note to the address on the back of the newsletter or join the "William and Mary Chemistry Alumni" Facebook interest group.

## Class of 1959

**Captain Emil Cekada (RET)** reminded us that he had submitted some news to this section of the Chemistry Newsletter in the early 1990s but it never got published. He goes back to the Drs. Guy and Armstrong's days and has had a long career in the U.S. Public Health Service before he retired in 1993. He enjoys reading about the destinations of the W&M Chemisty students and thought that his own career might be of interest to some of them and possibly give them ideas.

After graduating from W&M Chemistry in 1959, he went on to get a B.S. in Pharmacy from the University of North Carolina and then did a hospital pharmacy residency at Duke Medical Center. In 1963 he entered the U.S. Public Health Service as a pharmacy officer-LT and was assigned to the Public Health Service Hospital in Mt. Edgecumbe, Alaska that provided health care for Alaska Natives and the U.S. Coast Guard. In 1965 he was assigned to the Indian Health Service Hospital in Winslow and in 1966 to Fort Defiance, Arizona, as Chief Pharmacist. In 1971 he was assigned to the University of Minnesota and obtained a Masters in Public Health in 1972. Afterwards he began the administrative portion of his career, directing pharmacy programs in 12-14 hospitals, a medical center and clinics. He was assigned to the Alaska Area Native Health Service in Anchorage as the Area Pharmacy Officer. In 1992 he returned to clinical pharmacy and he was detailed to the Federal Prison at Seymour Johnson Air Force Base, N.C. before he retired in 1993.

He writes, "the U.S. Public Health Service is a uniform service—not military. The uniforms are the same as the Navy, with the only difference being the emblem on the coat or collar. The flexibility of the CORPS gave me the opportunity to work with all armed services, the American Indians and the Alaskan Natives. My time period in the U.S. Public Health Service and where I was assigned gave me this opportunity. I don't know if I could have the same opportunities today."

## Class of 1970

**Bill Boon** wrote us the following note: "...I received my PhD in Chemistry later and have 1/2 an MBA. I spent my career in Chemistry, and while I also worked on the business side, I always had one foot in R&D. My career included working at Goodyear Tire, Shell Chemical/Oil, and Reliance Industries (Mumbai)."

## Class of 1980

**Bill Atkins** wrote us a note last fall. He hopes that the current students realize what a fantastic combination a chemistry major and W&M is. He writes, "The students there are very lucky. I am currently on the faculty of Medicinal Chemistry at the University of Washington, and when it comes to recruiting students to our graduate program there is no substitute for good training in chemistry mixed with a broad liberal arts education and exposure to critical thinking. Chemistry is an empowering major because ... chemistry is everywhere. It's in high tech materials, medicine and pharmaceutical sciences, and environmental science and in forensic science . . . it's even in cooking and wine making. The best Chefs know at least a little bit of chemistry! "

**David Mozley** sent us this update: "The education in physical chemistry that I received at W & M made it possible for me to base my career on the development of novel radiopharmaceuticals and methods for quantifying their dynamics in vivo. This year, I transitioned from Professor & Chief of Nuclear Medicine at Weill Cornell Medical College & New York Presbyterian Hospital in Manhattan to become a VP at a small biotech in Indiana called 'Endocyte'. What I appreciate the most about the education you gave me is the confidence it instilled to pursue goals that are more likely than not to fail, but just might make a contribution to our society."



## Class of 1983

**Brian Failon** attended the Homecoming Reception last fall with his son and his daughter Caroline '19. Caroline was a freshman at W&M and was thinking about a Neuroscience major.

## Class of 1985

**Jeff Kushan**, Mary (Biology '85) and three of their four daughters visited with Bob Orwoll last fall. Jeff practices patent law in Washington D.C. The oldest daughter, apparently an outlier in this science-oriented family, just graduated with a major in English. Their second daughter has a strong interest in biochemistry and hopes to enter William & Mary in 2016. The two younger daughters are also interested in the sciences.

## Class of 1985/1986

**Jennie Gundersen** took part in an Alumni Panel to discuss career paths with W&M chemistry students during last year's Homecoming ceremonies. She has been an analytical chemist at the EPA since she got her Ph.D. from VIMS in 1995. She has been working in the Office of Research and Development at the EPA as well as the Region 3 lab doing more applied analyses. Her specialty is HPLC and HPLC/MS.

## Class of 1990

**Scott Forrest** attended last year's Homecoming Reception. He is an ob/gyn physician with a private practice in Northern Virginia.

**David Hood** took part in the Homecoming 2015 Alumni Panel. He is an R&D Manager at ASI (Ashland).

## Class of 1990/1991

**Sandra Poteat Thompson** attended the Homecoming Reception last fall where she told Chris Abelt that she started at a new firm in January 2015.

## Class of 1991

**Kathy (Norton) Weesner**, Chris ('90 Geology) and their two kids came to last year's Homecoming Reception. Kathy works as a pediatric anesthesiologist in Kansas City.

## Class of 1995

**Ryan Pasternak** wrote us the following news: "Enjoying life in the City of New Orleans with my wife Merisa and 7 year old son Hayden. We enjoy New Orleans Saints and Pelicans games together and the charms of the City. I've worked the last 10 years at LSU Health Sciences Center as Director of the Adolescent Medicine Program in the Department of Pediatrics and recently as the Division Head for General Ambulatory Pediatrics and Adolescent Medicine. Being able to combine teaching students with clinical care and reproductive health research is my passion. William and Mary Chemistry prepared me to put in the extra hours needed for success in my career (it was tougher than med-school—shhh) and gave me role models of excellent teachers to emulate. Thanks Drs. Abelt, Bebout, Rice and Coleman among others."

## Class of 2000

**Brian Farrell** and his wife Amy attended the 2015 Homecoming Reception. They had just moved back to Williamsburg with their three children and were glad "to be home!"

## Class of 2004

**Crystal (Irwin) Taylor** left BASF in Chesapeake, VA to become an Environmental health and safety specialist at VIMS beginning in November.

## Class of 2005

**Ethan Greenblatt** and Bob Orwoll compared notes during last year's Homecoming Reception. Both earned PhDs at Stanford University. Ethan says that he was three years into his graduate work when his chemistry advisor left Stanford. He wound up transferring into Stanford's biology department,

where he then completed a Ph.D. He next began a long-term postdoctoral appointment studying genetics at the Carnegie Institution for Science in Baltimore, where he is today.

**Hillary Huttenhower** attended the Homecoming Reception last fall and told Bob Orwoll that she is employed in the Materials and Processes Engineering Department of Pratt and Whitney in East Hartford, CT.

### Class of 2008

**Tim Brewster** finished up his first year as an Assistant Professor at the University of Memphis last spring. He thanks the W&M Chemistry department for preparing him for a life as a research faculty.

### Class of 2009

**Jake Kuperstock** accompanied his recent donation with a note that said, "To a department that set the foundation for my career! Thanks!"

### Class of 2014

**Yuzhou Chen** currently works as a Product Development Assistant Manager at MTC Industries, Inc. in Hauppauge, NY.

**Ryan Goodman** visited the department last spring and sent us this note afterwards: "...I took a year off, lived abroad, and decided to go with my gut, continuing to work in Spanish and Portuguese. I received several offers and even interviewed at Washington University in St. Louis. In fact, I met up with **Claire Fortenberry** for lunch! She seems content and adjusting well. We both fondly remember working in the lab. After the dust settled, I ended up in the Ph.D. program at Princeton University. It has been a rough but overall positive experience. I finished (survived) my first year and will be doing some research abroad this summer."

**Chris Komatsu** traveled from Texas A&M in College Station to last year's Homecoming Reception. He was about to give a department seminar and take the prelim.

### Class of 2015

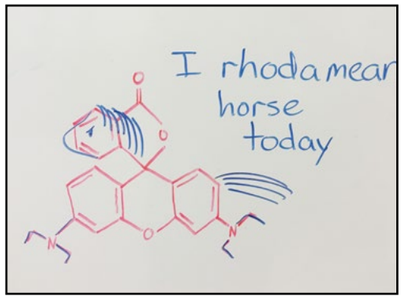
**Alex Hoffman** contacted Gary Rice last spring and let him know that he accepted an offer to attend the University of Florida this fall. He remembers Advanced Analytical with Prof. Rice as probably having been his favorite class in his senior year.

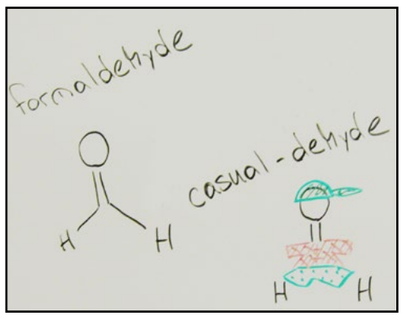
**Stephanie Kolb** contacted Gary Rice and let him know that she has been accepted to the University of Maryland School of Medicine. She is thrilled that her dream of attending Maryland has come true.

**Aaron Miller** attended the Homecoming Reception in 2015 and told Bob Orwoll that he has a position at the US Department of Agriculture investigating the spread of avian flu.

**Alec Weech** told us at last year's Homecoming Reception that he is training at the NIH and loving it!

## Student Doodles






## The Integrated Science Center

Photo by Stephen Salpukas/William & Mary

## Alumni Reunion Dinner

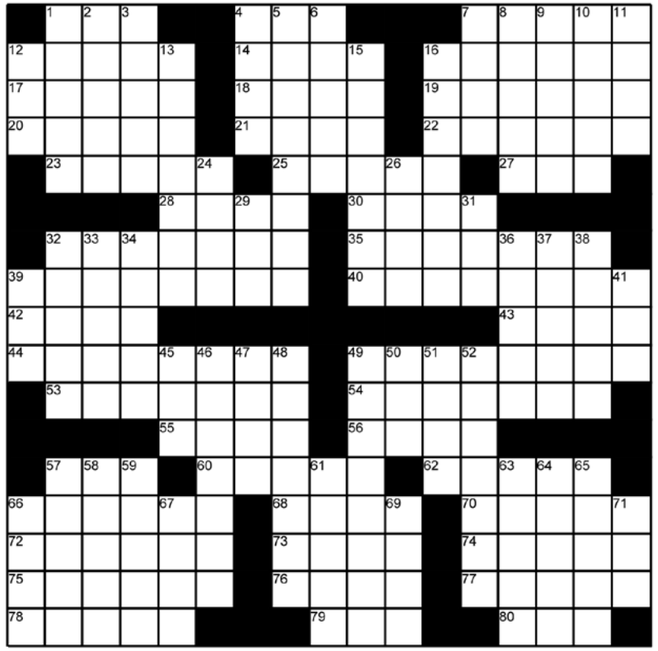
The 40-year chemistry reunion dinner on Homecoming weekend of 2015 was attended by Rick Stimpfle and Rick Baker, both Class of '75. It was hosted by Chemistry Chair Chris Abelt with Professors Coleman, Kiefer, Thompson and Orwoll, who taught the two Ricks 40-plus years ago. They reminisced over dinner about the ending of two eras: theirs was the last class to do its chemistry in the original Rogers Hall, the special building on the Sunken Garden that is now named Tyler Hall. And their class was among the several classes in the 1970s that made the transition from slide rules to pocket calculators.

The two Ricks discovered that they are near neighbors in Massachusetts. Baker, having earned a Ph.D. in biochem, is on the faculty of the Microbiology Dept at the University of Massachusetts (in Boylston) doing research in genomics. Stimpfle still lives in the Boston area after retiring in 2010 from Harvard University, where he researched atmospheric ozone. He told stories of flying experiments on U-2 airplanes and in the lab with unstable compounds in order to better understand ozone. Joe Stubbs '75 was not able to attend the dinner but came to the Homecoming Reception. He is a physician in internal medicine in Albany, Georgia.

Bob Orwoll, Richard Stimpfle '75, Richard Baker '75,
Dave Thompson, Chris Abelt, Dick Kiefer and Randy Coleman.

# Chemistry Puzzle by Robert Pike

**One Word: Plastics** Robert D. Pike



© Literate Software Systems

**ACROSS**

1. Pester
4. Sprite
7. Hexafluoropropylene-vinylidene fluoride copolymer
12. Polyethylene terephthalate, sometimes metallized
14. Health, beauty & style magazine
16. Controversial 1948 Rossellini/Fellini film
17. Agenda
18. A hazy recollection
19. Moon landing program
20. Latin name
21. Mil. alliance headquartered in Brussels
22. Poly(tetrafluoroethylene)
23. Kind of neighbor
25. ____ Carlo
27. Cable carrier for MLB, etc.
28. Dry river bed
30. Spelling of "Beverly Hills 90210"
32. Captured again
35. What's ____? (A rose is a rose)
39. Quantum description of the electron
40. Polydimethylsiloxane
42. See 24 down
43. Schlepp
44. Polyoxybenzylmethylene-glycolanhydride
49. Veterinarian, often
53. Vision aldehyde, a vitamin A derivative
54. Device that converts information formats
55. Annapolis sch.
56. Gawk at
57. ____-Lev, superconducting effect
60. Put a halt to, in legalese
62. Southern Hemisphere mountains
66. Poly(paraphenylene terephthalamide)
68. Concerning, abbrev.
70. U.S./Israel lobby grp.
72. Mesmerized
73. Golf or tennis tournament
74. Scrimshaw medium
75. Outwits during a chase
76. Technology prefix
77. Polycarbonate
78. Poly(metaphenylene isophthalamide)
79. Topic of heated debate often, abbrev.
80. Anti anti

**DOWN**

1. Poly(hexamethylene adipamide)
2. Texas battle site
3. Founder of Microsoft
4. Book i.d.
5. 2,4,6-Triamino-1,3,5-triazine + formaldehyde polymer
6. A dwarf planet
7. Drag on an e-cigarette
8. "Bye now"
9. Costs on the road
10. Polyacrylonitrile
11. Element with no stable compounds
12. Web portal associated with 3 down
13. Continuation of a subscription
15. ____-piece, illustration facing a title page
16. To the side
24. With 42 across, Japanese noodle dish
26. Singer Braxton
29. Long-time W&M prof. & polymer chemist (initials)
31. Common extension for configuration files
32. Sensing method that uses long wavelengths
33. Elicit
34. Key belief
36. Behaved
37. Michael or Mary Tyler
38. Pass through a portal
39. Techno/hip-hop sound
41. Mountain follower
45. Actress Lucy of "Charlie's Angels"
46. Puts one thing into another
47. Catches some rays
48. State of happiness
49. Poly(2-chlorobutadiene)
50. Courses offered by VA Tech, but not W&M, abbrev.
51. Home of the Pac-12 Bruins
52. Lamisil application location
57. Edison home, ____ Park, NJ
58. Yiddish form of Abraham
59. Air freshener brand
61. Equal
63. Sketchy joints
64. Thermosetting polymer glue
65. Poly(vinylidene chloride)
66. Highly sharpened
67. Pinnacle
69. Keto tautomer
71. Nickname for Ms. Nixon of "Sex and the City"



# Homecoming Reception 2015

Sarah Coffee ‘16 and maybe some other guests managed to evade the camera.

Scott Forrest ‘90, Kathy (Norton) Weesner ‘91 and Randy Coleman

Emily Parrish ‘15 and Michael Lichstrahl ‘15

Maren Leibowitz ‘15

Brian Failon ‘83, his son and his daughter Caroline ‘19

Jordan Walk ‘08/09 and spouse Kelli

Cynthia Darling ‘80, Randy Coleman and Carol Lindsay ‘80 with husband

Jonathan ‘99/01 and Jenine Maeyer ‘02 and family

Peter Christy ‘05 and family

Lisa Landino and Rebecca Coggin Brinkman ‘05 and Emily (Wischow) Texdahl ‘05 with husbands

Bob Orwoll and Ethan Greenblatt ‘05

Matt McCarron ‘14 and Alana Ogata ‘14

Bob Pike and David Hood ‘90

Ryan ‘95 and Merisa Pasternak

Chris Komatsu ‘14 and Gary DeFotis

Allison Kelley ‘16, Christian Fontan ‘16, Doug Young and Michael Lichstrahl ‘15

Jeff ‘85 amd Mary Kushan (Biology ‘85), three of their four daughters and Bob Orwoll

Richard Baker ‘75, Richard Stimpfle ‘75 and Joseph Stubbs ‘75

Chris Abelt and Sandra Poteat Thompson ‘90

Jen Dertinger ‘05 and Lisa Landino

Alec Weech ‘15, Jeff Molloy ‘90 and Debbie Bebout

Aaron Miller ‘15 and Dick Kiefer

David Haden ‘82 and Gary DeFotis

Hillary Huttenhower ‘05 and Sara (Costa) Campbell ‘05 with Ruth

Steven Silvonek ‘04 and spouse

Michael O’Connell (W&M ‘95) and Melissa Sampson ‘97

Kristin Wustholz and Brian Lobar ‘05 with spouse Bridget

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*Return Service Requested*



# Integrated Science Center Homecoming Open House

This year the Chemistry Department would like to invite you to an ISC Homecoming Open House with all the departments and programs housed in the Integrated Science Center: Chemistry, Biology, Psychology, Applied Science and Neuroscience. The Open House will take place on

Saturday, October 15, 2016, 10 am – 12 pm
in the first floor Atrium of the new ISC 3.

We look forward to seeing you there.

If you can join us, please try to let us know beforehand by emailing chemistry@wm.edu or by calling the Chemistry Office at 757-221-2540. Even if you're unable to come, we would still like to hear from you!