



Remarks by the Chair

This edition of *Chemical Distillations* was again edited by Debbie Bebout and, as always, Louise Menges capably put everything together in final form for publication. We are indebted to Debbie and Louise and to all others who contributed to this edition.

The 1999-2000 academic year was busy and productive for the Chemistry Department. The faculty continues to be very successful in securing competitive research grants. During this year, members of the chemistry faculty were awarded over 1.2 million dollars in new externally funded grants to support their undergraduate and graduate research programs. Rob Hinkle received the department's first NSF CAREER grant for young investigators. His award is for \$295,000 over 4 years. Bill Starnes and Bob Pike received an NSF grant for \$250,000 over 3 years. Kathleen Morgan received an NIH AREA (Academic Research Enhancement Award) grant for \$139,000 over 3 years. Bob Pike also received one of six Dreyfus Teacher-Scholar awards given during the last year. The award is for \$60,000 over 5 years. The department's first Dreyfus Faculty Start-up grant was awarded to J. C. Poutsma. The award was for \$20,000. These awards are in addition to the very competitive grants which a number of faculty members have received from the Petroleum Research Foundation, the Research Corporation, and the Jeffress Memorial Trust. Further details of these awards are provided in this newsletter. Research in the department resulted in 20 papers published with over 30 student coauthors.

Last year we graduated 51 undergraduate students with Chemistry degrees. Thirteen of these students earned departmental Honors, 9 were Monroe scholars, and 7 were elected to Phi Beta Kappa. In addition, 2 students earned Master of Arts degrees and one student, Andrew Meyer, was the first to receive a Master of Science degree. This degree is part of a new joint program with the Applied Science Department in which a student enters into the Chemistry graduate program and earns the Master of Science degree when he or she passes

the qualifying exams for the Applied Science Ph.D. degree. Andy is working with David Kranbuehl.

As part of Homecoming Weekend, the Chemistry Department is once again hosting a reception for our graduates. It will be held at 5:30 p.m. on Friday, October 27 in the Rogers Hall Conference Room. We have extended a special invitation to chemistry graduates who will be celebrating a class reunion divisible by five. We look forward to seeing many of you there.

Once again Trevor Hill has written "Old Rogers Recollections" focusing this time on some of the more memorable features of the building. We appreciate the time and effort that Trevor spends in writing these recollections.

This past summer, 50 William and Mary undergraduates participated in our summer research program. Nineteen of these students were rising sophomores or juniors, the rest were rising seniors. Of these, 23 were supported by competitive grants from the College, 25 were funded by external research grants to individual faculty members, and 2 were funded by departmental funds. This year students received \$2500 for the 10 week program along with free housing in a College dormitory. We continue to look for creative ways to enhance the funding of the program so we can involve more students.

As we have done in previous editions of *Chemical Distillations*, we remind our graduates that all or a portion of their gift to the College can be designated to the Chemistry Department. We are experiencing flat budgets in a time of rising costs, particularly for equipment repair and maintenance. We are grateful to all who responded and look forward to your continued support. We have an active and dedicated department which continues to attract top-notch students. Please communicate with us either by e-mail, letter, or, better yet, in person! I hope to see many of you on October 27.

2 Our Faculty; Randy Coleman's ARIA

3 Research Profiles

4 Research Funding

6 Undergrad Research

7 Old Rogers Recollections

8 Travelling Chemists

9 Staff News; New Rogers Roof

10 Class of 2000

11 News from Alums

Current Faculty

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Dave Thompson, inorganic
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Emeriti

Alfred Armstrong, 1976

Ed Katz, 1979

Trevor Hill, 1992
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Cirila Djordjevic, 1992

Faculty Changes

On leave for 2000–2001

Debbie Bebout Spring 2001

Randy Coleman (see below)

Steve Knudson Spring 2001

Bill Starnes Spring 2001

Part-time faculty, 2000–2001

Kathy Sturgeon

Trevor Hill

Randy Coleman to help College Hear New ARIA



Last spring the College launched Project ARIA (Accurate, Reliable Information Access), a multiyear project that will replace the College's aging main-frame computer system with a modern Enterprise Resource Planning system (ERP). The operating term ARIA refers to "a song for a single voice, with accompaniment". The goal of this project is to provide a "single voice" for all the information resources needed by student, faculty and staff to make William and Mary a better place to learn, teach and work. The key to the success of such a comprehensive project is clearly visionary leadership, so it comes as no surprise that Randy Coleman has been chosen as the William and Mary leader of the Campus Management Team. This team is responsible for matters related to student information such as registration and academic advising. Implementation of the new ERP system will harmonize the processes developed by this team with the two other teams (Financial Process and Human Resources).

During his 30 years at the college, Coleman created the pre-med advising program and subsequently rebuilt the undergraduate advising program. Over the last five years he promoted development of an electronic registration system and spearheaded institution of a Web interface to the Student Information System. Coleman's lucid view of the set of services required by students will undoubtedly be a great asset as Project ARIA is implemented. The increasing difficulty encountered by the academic advising office for getting accurate and timely information from the many pieces of William and Mary's student information system, including several instances where critical data has been lost during transfer between systems, make him especially committed to this long-term project.

Unfortunately, there is a downside to Coleman's involvement in Project ARIA, at least from the student perspective. After more than a year of study

and planning, President Sullivan and Provost Cell decided his more complete involvement in project ARIA was critical just before students conducted Spring registration for Chem 414. The increased administrative burdens required him to take a break from instructing classes. Chem 414: Biochemistry and Chem 309: Organic II have been very popular classes with Coleman as the instructor both during the academic year and during summer school. The reduced potential interactions with Coleman are particularly keen for pre-medical students who each need a letter of recommendation from him for their applications. Professor Bebout was asked to assume Chem 414 on short notice, resulting in cancellation of the course she was originally scheduled to teach, Chem 102: Introduction to Organic and Biological Chemistry, a course for non-science majors. Enrollment in the latter course had been steadily declining since Area/Sequence requirements were replaced by General Education Requirements and this course was to be replaced by a freshman seminar in 2001 anyway. Professor Emeritus Trevor Hill assumed the role of instructor for Chem 307 during summer school and will teach it again this fall. Unfortunately, a summer school instructor for Chem 414 could not be identified.

Coleman expects the new ERP will provide faculty advisors, students, and the advising staff with the reliable and timely information that they deserve at all times. His rapport with students and stellar reputation among his colleagues suggest he has the devotion to make sure the College's new ARIA is as harmonious as imaginable.

Selected Research Profiles

Richard L. Kiefer

In my research group, we add materials to polymers to enhance some of their properties. Currently, we are adding aluminum to several polymers in the form of nanoaluminum particles or aluminum acetylacetonate. The resulting materials show enhanced resistance to erosion by atomic oxygen, the major component of the atmosphere in the region where the Space Shuttle flies. We are also adding polymeric material to simulate lunar dust to develop a means of making habitats on the lunar or Martian surface. X-ray photoelectron spectroscopy is used to analyze the surface of the materials. Bulk properties are monitored with thermomechanical and thermogravimetric analysis. Our research is funded by NASA and some of the projects are collaborative endeavors with Professor Orwoll.



Recent Publications

R. L. Kiefer, R. A. Orwoll, J. E. Harrison ('98), V. M. Ronesi ('99), and S. A. Thibeault, "The Effects of the Space Environment on Polyetherimide Films" *Polymer Preprints*, 1999, 40, 183.

S. C. Ko ('96, M.A. '97), C. S. Pugh ('98, M.A. '99), R. L. Kiefer, R. A. Orwoll, S. A. Thibeault, and G. C. King, "Boron Containing Polyimides for Aerospace Shielding" *Materials in Space – Science, Technology, and Exploration*, MRS Symposium Proceedings, December 1999, 551.

R. L. Kiefer, K. Herring ('97), B. J. Wylie ('98), R. A. Orwoll, and S. A. Thibeault, "The Effects of UV Radiation on Several High-Performance Composites" *Polymer International*, 1999, 48, 1042.

Gary W. Rice

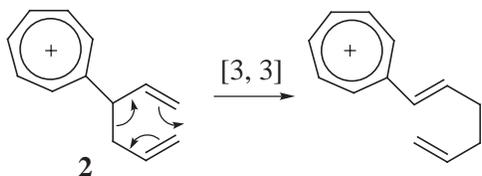
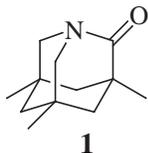
My research interests have diversified somewhat over the years, especially in environmentally related areas. We are currently contracted by the Virginia Department of Environmental Quality to determine trace metal levels using flame and graphite furnace techniques for fish and sediment samples collected throughout the state's river, lake, and estuary system. We continue to utilize a helium discharge detector for element selective detection for GC. Our current focus is evaluating a miniature PC-based spectrometer system with array detection for simultaneous detection of halogenated compounds. We have also demonstrated that volatile halogenated hydrocarbons can be separated directly from water on a capillary GC column to the extent that trihaloforms in drinking water can be determined within minutes with no pre-concentration or isolation. Finally, we are working with local archaeologists to characterize the origins of copper artifacts recovered from excavations by examining variations in trace metal concentrations using GFAAS. Preliminary results have indicated that Pb is an excellent diagnostic element to distinguish European from American copper.



Kathleen M. Morgan



I am a physical organic chemist, which means I study how the physical properties of a molecule, such as structure and energy, affect its behavior. For example, amides are normally unreactive. We are studying an unusual amide, **1**, which has extreme structural deformations yet is remarkably stable. These deformations greatly increase the reactivity of the amide, which undergoes rapid hydrolysis to an amino acid. We are going to measure the energy released in this reaction by calorimetry, and try to correlate the reactivity to the structural deformations. We are also looking at the Cope rearrangement, which like the Diels-Alder is a pericyclic reaction. This means that old bonds are being broken and new bonds are being made simultaneously, and the cost of breaking bonds is greatly offset by the benefit in making new bonds. We are investigating whether a cationic group in the right place (**2**) will cause the reaction to occur faster, based on the prediction that the cation will weaken one of the bonds that needs to break. Our preliminary results show this is true.



Recent Publications

K. M. Morgan and D. A. Kopp ('97), "Solvent Effects on the Stability of Simple Secondary Amides" *J. Chem. Soc., Perkin Trans. 2* **1998**, 2759-2764.

K. M. Morgan and S. Gronert, "Structural and Solvent Effects on the Mechanism of Base-Induced Rearrangement of Epoxides to Allylic Alcohols" *J. Org. Chem.* **2000**, *65*, 1461-1466.

K. M. Morgan, M. J. O'Connor ('00), J. L. Humphrey ('98), K. E. Buschman ('97) "An Experimental and Computational Study of 1,2-Hydrogen Migrations in 2-Hydroxycyclopentylidene and its Conjugate Base" submitted for publication, *J. Org. Chem.*, July, 2000.

David E. Kranbuehl



My research interests are broad. My group includes about 15 undergraduates, several chemistry masters students and two Applied Science Ph.D. students. Research projects include controlling the rate of diffusion of dye molecules by modifying their polarity, examining the effect of confinement in small pores on the mobility of proteins, and Monte Carlo computer models to simulate the effect of confinement on mobility and T_g . One major emphasis is to use electric field sensor measurements to monitor changes in molecular mobility and thereby to monitor in situ the changes occurring during the synthesis of polymers and the cure of polymers as resins, coatings, adhesives and composites, both in the laboratory and in the industrial production environment. Recent work is directed at using these sensor techniques to monitor changes in performance properties – durability – health and % life remaining of polymer materials during use in the field.

NSF, ICI and a consortium of international oil companies support this research.

Recent Publications

D. Kranbuehl, D. Hood ('90, M.A. '92), J. Rogozinski ('95, M.A. '96), A. Meyer ('98, M.S. '00), E. Powell ('99), C. Higgins ('99), C. Davis ('99), L. Hoipkemeier ('00), C. Ambler ('99), C. Elko (high school honors student), and N. Olukcu, "Monitoring and Modeling the Durability of Polymers Used for Composite Offshore Oil Transport" *Recent Development in Durability Analysis of Composite Systems*, Reifsnider & Verchery (eds), **2000**, Balkema, Rotterdam, 413-420.

A. Bonnet, J. P. Rascault, H. Sautereau, J. Rogozinski ('95, M.A. '96), and D. Kranbuehl, "Epoxy-diamine Thermoset/Thermoplastic Blends: Dielectric Properties Before, During, and After Phase Separation" *Macromolecules*, **2000**, 3833-3845.

N. Haralampus ('97), P. Argiriadi ('98), A. Gilchriest ('00), E. Ashmore ('96), C. Scordalakes ('96), W. Martin ('95), D. Kranbuehl, and P. Verdier, "Dielectric Measurements and Computer Simulation of the Effect of Confinement on the Glass Transition Temperature" *J. Non-Crystalline Sol.* **1998**, 235-237, 428-434.

Faculty Attract Nationally Competitive Research Funding



Rob Hinkle



Bill Starnes and Bob Pike



J. C. Poutsma



Kathleen Morgan



Debbie Bebout

One of the most critical challenges facing the chemistry faculty is securing funding for our very large undergraduate research program and more modest, but no less critical, master's degree research program. Fortunately, the department's track record for preparing students for the rigor of advanced degree programs and producing papers with student co-authors carries a lot of weight with most funding agencies. All faculty regularly receive funding from sources such as the Petroleum Research Fund, Research Corporation, the Jeffress Memorial Trust and the College to help fund their research, but these are typically small grants with short durations. Faculty associated with Applied Science receive significant funding from NASA. Abelt, DeFotis and Starnes have regularly received funding from nationally competitive sources such as the National Science Foundation (NSF). Recently, a number of other faculty have received significant grant awards.

Rob Hinkle is the first member of the Chemistry faculty to receive a National Science Foundation CAREER Award, presented to promising young faculty in their first five years of appointment. This highly competitive program requires proposals demonstrating commitment to development as a teacher and scholar, which is certainly a strength of William and Mary faculty. Patricia Kane (Assistant Professor of Chemistry, 1990-1992), is the only other member of the chemistry faculty to be specially recognized by the NSF at this early career stage; however, she received an NSF Faculty Young Investigator Award, the predecessor to the CAREER program. The long-term objective of Hinkle's \$294,810 CAREER grant is to exploit the high reactivity of labile carbon-iodine bonds in "hypervalent iodine" compounds to form new carbon-carbon bonds of defined geometry. This work could be key to meeting increasingly strict Food and Drug Administration guidelines dictating "geometrical purity" of pharmaceuticals.

In addition, the largest traditional NSF research grant ever awarded directly to William and Mary's chemistry Department was received by **Bill Starnes** and **Bob Pike**. This \$250,000, three-year grant will allow them to continue a five-year-old collaborative effort to use copper-based additives to prevent the dangerous smoke and flame produced when vinyl polymers burn. The potential impact of this work is considerable since poly(vinyl chloride), also known as PVC, is the most commercially important synthetic polymer and the world's second-largest selling plastic material. In addition to providing undergraduate and graduate student stipends, grant funds have been used to purchase a cone calorimeter. The only one of its kind at a Virginia college or university, this apparatus will be used to conduct small-scale fire test experiments.

The other major source of government funding is the NIH. Both **Debbie Bebout** and **Kathleen Morgan** recently received National Institutes of Health Academic Research Enhancement Awards (AREA). These awards are intended to stimulate research in educational institutions that provide baccalaureate training for a significant number of the Nation's research scientists but have not been major recipients of NIH support. In May 1999, Bebout received \$109,000 to be used over three years to develop a novel method of monitoring the folding of metalloproteins. This fall Morgan received \$139,500 to study the interaction of solvent with unusual amides to investigate the energetics of amide rotation, a process which is critical to protein folding.

Two faculty were also the beneficiaries of funding from the Dreyfus Foundation this year. **Bob Pike** received a well deserved Henry Dreyfus Teacher-Scholar Award, one of only six such awards given this year by the Camille and Henry Dreyfus Foundation to support chemistry instruction and research at undergraduate institutions. Pike was nominated by the department in recognition of past accomplishments and future promise. He will use the \$60,000 unrestricted gift, awarded over five years, to develop a separate laboratory course for second semester sophomore chemistry majors and to provide

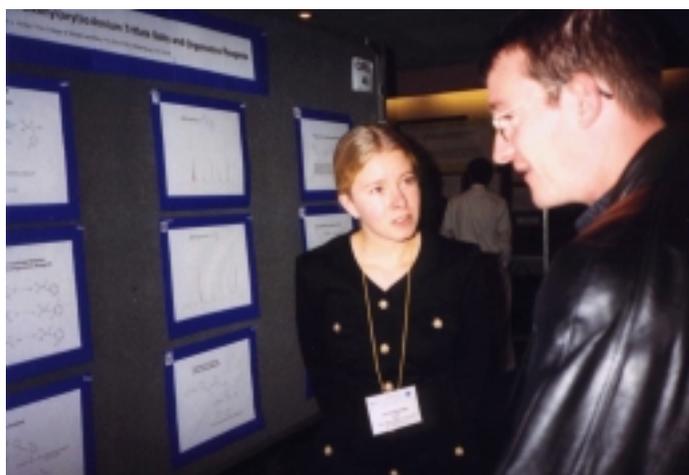
summer research opportunities for students in the areas of polymer additives and inorganic polymers. In addition, the Dreyfus Award will provide funds for Pike's students to present their findings at scientific meetings. **J.C. Poutsma** became the first William and Mary recipient of a Dreyfus Faculty Start-up grant, one of only 11 awarded to faculty starting their first tenure-track appointments last year. He will use the \$20,000 grant to initiate his research into the structure and thermochemical properties of unusual amino acids in the gas phase.

While awards like these are critical to maintaining the reputation of the William and Mary Chemistry Department as an excellent professional training ground for chemistry students, equally critical are funds for the upgrade and maintenance of departmental facilities. Unfortunately, aging infrastructure threatens the ability of the faculty to get renewals on established grants and the faculty are being forced to address this urgent need. Regular financial contributions from alumni and friends of the department are also very instrumental in helping us fulfill our educational mission. We hope you will consider allocating a regular portion of your charitable contributions to the department to help us maintain our high training standards.

Undergraduate Research Opportunities Continue to Expand

Since undergraduate research is a key component of the mission of the Chemistry Department, it is no surprise that Rogers and McGlothlin-Street Halls are two of the busiest buildings on Campus during the summer. In spite of declining enrollments and chemistry concentration declarations in the last few years, the 10 week summer research program in chemistry has continued to attract 45-50 participants. Key to maintaining this level of activity has been increased recruitment of underclassmen. Efforts of this type began informally several years ago when **Dave Kranbuehl** initiated a program to place freshmen with extensive laboratory experience enrolled in Chem 151: General Laboratory into faculty research labs. This led to the formal introduction of Chem 191: Freshman Honors Research in 1997-98 and inclusion of semester and summer support for freshman research as initiatives in the most recent Howard Hughes Medical Institute (HHMI) Biological Sciences Education Program Award. Fourteen freshman were able to earn one credit by working one afternoon a week in a faculty research lab this fall and over one fourth of those students took advantage of the associated summer research program. Fifteen other rising sophomores and juniors joined 28 rising seniors and 3 graduating seniors to make for a busy summer.

One important aspect of conducting research is sharing the results with others. The William and Mary Undergraduate Research Symposium continues to provide an opportunity to present research results in the natural sciences, mathematics, and kinesiology. The Sixth Annual Symposium was held on September 17, 1999 in the University Center. The Symposium was again supported by GTE. For the first time the Symposium had over 100 presenters! Although increased participation from the Biology Department primarily accounts for the surge in numbers, the Chemistry Department continues to have the largest contingent of presenters since nearly all the participants in the summer research program in chemistry contribute. **Debbie Bebout** once again organized and ran the Symposium.



Alessandra Leri ('00) discusses her research project with another attendee at the Southeast Regional ACS Meeting in Knoxville, TN, in October 1999.

In addition to presenting on campus, the faculty have been actively seeking funding to send students to disciplinary conferences. As part of the most recent HHMI award to the College, students can apply for small travel grants three times a year to defray meeting expenses. In October, undergraduates Chris Clements ('01), Geoff David ('01), Melissa Garland ('00), Alessandra Leri ('00), and Justin Rice ('00) used HHMI funding to expand their Symposium posters for presentation at the 51st Southeast Regional Meeting of the American Chemical Society in Knoxville, Tennessee. In addition to sharing their results with a wider audience, they got to hear about the science going on at other institutions and learn more about regional graduate programs in chemistry. Notably, Alessandra won a cash prize, sponsored by DuPont, for the quality of her poster presentation. In August, Edith Bowers ('03), Melissa Garland, and Peter Godenschwager ('01) used HHMI funds to present their research at the 220th National Meeting of the American Chemical Society in Washington, D. C.

Some faculty have found other creative ways to enhance the research experiences of their students. **J.C. Poutsma** took the four students doing summer research with him to West Lafayette, Indiana to work in the laboratories of several mass spectroscopists at Perdue University for a week. The students gained an appreciation of some highly specialized equipment. In addition, **Dave Kranbeuhl** has an exchange program with the University of Lyon in which students working in his lab go to Lyon, France for an extended period of time to learn specialized techniques in polymer characterization while his collaborators periodically send students here to gain more experience with dielectric measurements.

The chemistry faculty anticipate that expanding the research opportunities for undergraduates will have a positive influence on the preparedness of students for advanced studies. Students starting research projects earlier in their undergraduate studies will be more likely to contribute to all phases of a particular project. Experience gained presenting research in formal settings is a valuable supplement to other aspects of a liberal arts education since graduate schools and many technical positions require periodic oral overviews of progress. Most importantly, the faculty look forward to being able to have more student co-authored publications, and possibly enlisting students in the process of preparing and revising manuscripts before they graduate, which has been rare in the past.

Old Rogers Recollections

The move from “old” Rogers Hall to “new” Rogers Hall was performed in the mid '70s (*i.e.* 1970s) and these names (old *vs.* new) were retained for a while. Then “old” Rogers was renovated and renamed Chancellor’s Hall, and a few years later again renamed as Tyler Hall.

Some may view these renovations and move to “new” Rogers as a mixed blessing because there were indeed certain idiosyncratic features of “old” Rogers not normally found in the more modern and common-sense designs.

The Pidgeon Roost in the Phys. Chem Lab

Getting stray pigeons and other flying objects removed from inside old Rogers was oftentimes a community (student/faculty) effort, usually accompanied by much shouting, arm-waving and running about in an effort to guide the frustrated beasts out an open window. While the problem was sometimes solved by the obvious act of keeping the windows closed to start with, there was no airconditioning in those times so windows simply remained open during the summer months for perhaps days at a time. (Prof. Armstrong had his own personal air conditioner installed in his office on the main floor.) In addition the windows often stuck hard in the open position anyway because the humidity would swell the wooden shashes, and even the most stalwart of Neanderthals, after Herculean effort to close them, would quietly walk away: defeated.

The Physical Chemistry laboratory was located at the southeast corner of the second floor, and the pigeons would gain access by an altogether different and intriguing route indeed. It turns out that the hood ventilator



tubes were nested by pigeons at their outlets on old Rogers’ roof. Every so often a nest would give way and come crashing down into the hood, pigeons and all. On opening the laboratory to start an afternoon laboratory session, one would find a couple of pigeons sitting on the vacuum train, billing and cooing at the newcomers, having already done the sorts of things pigeons do all over the equipment. So the lab had to start with a cleanup before the afternoon’s exercise, accompanied by the usual frenzy to rid the pigeons from the building. (Singing a chorus of “When the Swallows Come Back to Capistrano” was not considered funny by the instructor.)

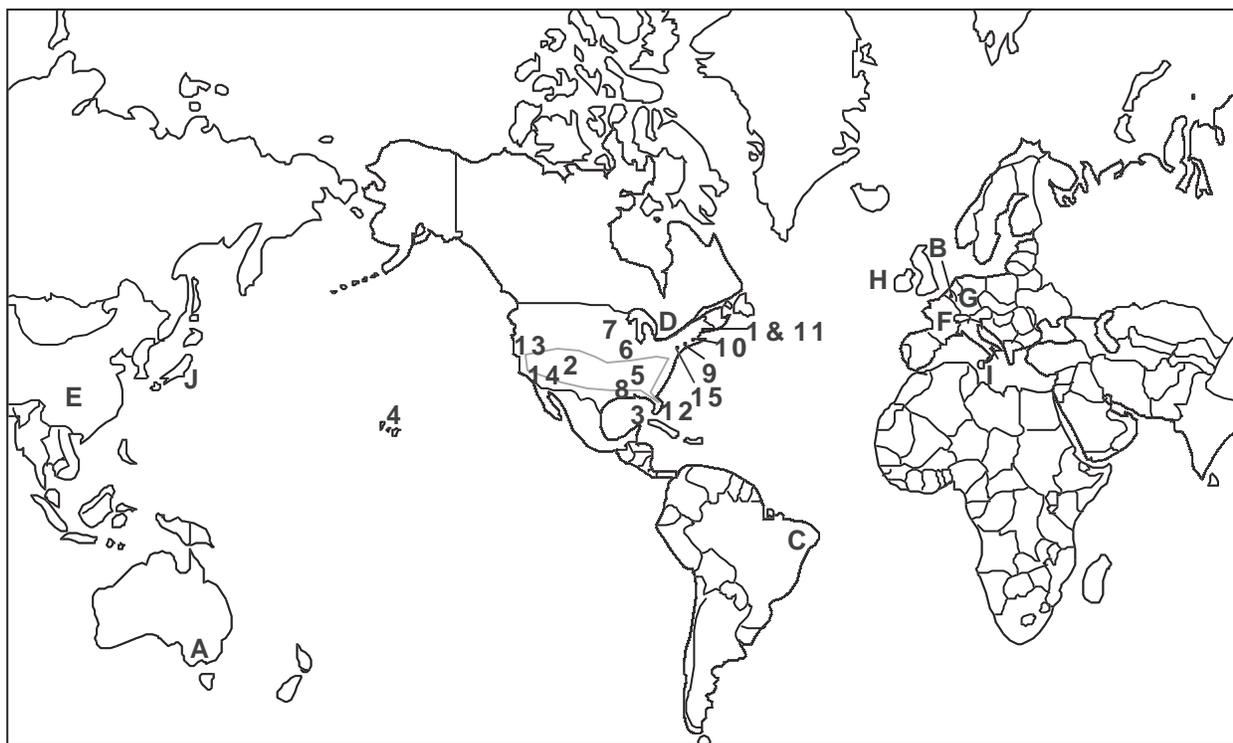
The Keys to the Kingdom

Most normal working science faculty must have access to several rooms in their daily activities; the office, the library, the laboratory, the lecture room, the stockroom, etc.. In old Rogers, each door had its own separate key, including one for a room labelled 306^{1/2}! This meant that everyone working in old Rogers had to have his/her personal bundle of many keys, one for each door, to function at all. I recall, at one Departmental meeting, suggesting that each door be fitted with a new lock so that each of us would have to carry just one or two keys instead of a dozen. My suggestion was greeted by senior faculty with stares into outer space, as though I was asking for something only found in the land of Oz! At least in new Rogers most rooms are accessed with only one key.

I visited Tyler Hall recently: the windows work, there is a pushbutton elevator, no pigeons inside: everything quiet and efficient. OK, I guess.

Around the World with 17 Chemists...

As highlighted below, chemistry faculty found many reasons to travel this year, visiting five continents and over half the states. It is always fun to run into friends of the Department on these rare escapes from Williamsburg. Hope we will see more of you next year!



Domestic Travel

- 1) **Boston, MA** – Thompson presented research results at the Materials Research Society Meeting.
- 2) **Boulder, CO**– Bagdassarian & Knudson presented research at the American Conference on Theoretical Chemistry.
- 3) **Clearwater Beach, FL** – Pike presented research results at the Additives 2000 Conference.
- 4) **Honolulu, HA** – Morgan escaped Williamsburg the week her tenure file went to outside reviewers as a bridesmaid
- 5) **Knoxville, TN** – Bebout, Hinkle and several research students presented research results at the Southeastern Regional ACS meeting (see story p. 6).
- 6) **Madison, WI** – Abelt & Poutsma chaired sessions at the Reaction Mechanisms Conference.
- 7) **Man Trap Lake, MN** – Orwell spent quality time with his extended family listening to loons and watching eagles.
- 8) **New Orleans, LA** – Abelt, Bebout, DeFotis, Kranbuehl and Morgan presented research results at the National ACS meeting and enjoyed some excellent cuisine.
- 9) **Newark, DE** – Bebout presented research at the Middle Atlantic Regional ACS meeting while Kiefer and Coleman went bird watching with former colleague Mel Schiavelli.
- 10) **Newark, NJ** – Thompson presented research results at the Metallized Plastics Conference.
- 11) **Newport, RI**– Pike presented research results at the Inorganic Gordon Conference.
- 12) **Orlando, FL** – Abelt and Rice spent some quality time with their families visiting the Magic Kingdom.
- 13) **San Francisco, CA** – Hinkle, Kiefer, Kranbuehl, Orwell, and Thompson presented research at the national ACS meeting and enjoyed some exceptional food and beverage. Poutsma attended a Symposium honoring his postdoctoral advisor Richard Zare (a.k.a. the BIG 60th birthday bash).
- 14) **Tuscon, AZ** – Starnes present an invited plenary lecture at

a Fire Retardant Chemicals Association Conference and toured nearby sites, including the O.K. Corral, with his wife.
15) **Washington, D.C.** – Rice served on an EPA peer review panel for grant proposals. Many faculty and students also took advantage of the late start of the semester to attend the National ACS meeting in August.

—) **Cross-Country Motorhome Tour** – Hill took his wife and dog through many state parks on the way to CA and back.

International Travel

- A) **Australia** – Kranbuehl spoke at a polymer workshop and attended the Australian Polymer Symposium in Melbourne.
- B) **Belgium** – Kranbuehl and Starnes toured with their wives
- C) **Brazil** – DeFotis presented research results at the International Conference on Magnetism in Recife.
- D) **Canada** – Coleman attended a Higher Education & Research Users meeting for the new software package whose campus-wide installation he is helping to manage in Toronto (see story, p.2).
- E) **China** – Krahbuehl and his wife toured this fascinating country from which many of our graduate students originate.
- F) **France** – Kranbuehl has an ongoing collaboration with the University of Leon in Lyon that provides his students with occasional opportunities to visit and learn new techniques.
- G) **Germany** – Starnes was the scientific advisor to the Steering Committee of the European Multinational Environmental Research Project on PVC in Soil and Landfills
- H) **Ireland** – Morgan spent her honeymoon enjoying unpastuerized Guinness with Trent Holliday (Visiting Assistant Professor of Anthropology '94-'95).
- I) **Italy** – Bagdassarian worked with collaborator Claudio Coriano on research ideas in Lecce then toured with Sturgeon
- J) **Japan** – DeFotis spent part of his sabbatical in the laboratory of K. Katsumata of the Institute of Physical & Chemical Research in Tokyo.

Staff News

After working part time in the department less than five weeks, **Katherine Hazelwood** was offered another part time position which included insurance coverage, and quit her job as Departmental Fiscal Assistant. **Ted Putnam** was unable to identify someone else interested in this position for nearly a year...

...In the mean time, only 18 months after having his right hip replaced with a prosthesis, Ted fell in March and broke his good hip, requiring a second hip replacement. The rest of the staff had to really scramble to get *some* of the many things Ted normally does during the end of the academic year done. He was back for less than four weeks and just getting used to the nickname titanium man, when an infection flared around his new prosthesis and required its removal. With limited mobility, Ted used e-mail, the internet and the phone to try to get his job done from home, but the staff once again rose to the challenge of balancing their own jobs with parts of his. Massive amounts of antibiotics and eight weeks later, the surgeons cut him open again to insert a new hip. By late September Ted had been sighted in Rogers, and he expects to be back at work in early October.

Just when we thought nothing else could go wrong, **Peggy Greene**, our Departmental Secretary for the last seven years, announced that she had accepted a new job which started the week after classes began. We are currently interviewing for her replacement.



Teresa Wilson

Finally, in August **Teresa Wilson** accepted the part-time Departmental Fiscal Assistant position and relieved some of the burden of Ted's absence from the rest of the staff. Teresa is looking forward to the challenge of learning the intricacies of her new job.

In unrelated staff news, **Louise Menges** and **Derhong Shieh** were recognized for continuous and loyal service on William and Mary Employee Appreciation Day this year. Louise was recognized for 25 years of service (note that the College makes awards the year after they are earned so she had actually worked here for more than 26 years), and the department will truly miss her after 2003 when she expects to retire. Derhong was recognized for 5 years of service.

New Roof!



View of the roof towards Millington as roofers apply tar to areas surrounding hood motors.



The odiferous "tar kettle" as viewed from our glass shop window.

The long awaited Roger's Hall roof improvements finally got underway in May. The new roof has a slight grade that is expected to dramatically improve drainage and minimize periodic leaking problems.

Construction of the new roof provided some entertainment as well annoyances. The week before the students arrived, the faculty offices were provided with a free "percussion concert" - the "Crash! Rumble, rumble, rumble" of rocks being tossed down a chute into a waiting dump truck every five minutes or so. J. C. Poutsma also watched in horror from his office one day as the dump truck nearly tipped over the (hopefully unoccupied) port-a-potty. An unusually wet summer seemed to legitimize all those waterfalls Disney's Pocahontas suggest exist in Virginia ... miraculously the torrents managed to avoid instrumentation and computers. We are still waiting for parts to repair some fume hoods that were discovered to be non-functional during the roofing job, and other hood motors were shut off from time to time as the work progressed. And, as you might expect, the days the air conditioning had to be shut off were the hottest, most humid days of summer making working conditions unbearable.

Rain delays prevented the contractors from completing the project before classes started, but the job was finally completed before the end of September.



We saw a lot of these two guys during the course of work on our roof. Between them, they saw to it that the work was done properly. Willie Miles (left) was inspector for the job, and Gilbert Stewart of W&M's Capital Outlay had overall responsibility for the project.

Chemistry Class of 2000 and Their Destinations

Jeffrey Stephen Alvis	medical school, UVA
Marie Noel Andrews	network engineer in NoVa
Martin Sean Baksa	unreported
Laura Katherine Chew	undecided
φ^H John Jared Christophel	medical school at UVA
^M Michael Charles Clark	seeking internship at EPA (chem/environ science)
φ Stephen Randolph Collins	medical school at UVA or Stanford
Janet Lynn Coppins	seeking employment
Christopher Jason Dean	seeking employment
^M ^D Jennifer Linn Dueber	seeking employment (chem/art)
φ^H Brian Thomas Farrell	MD/PhD Scholars program, U. of Nebraska
Sheila Lani Flack	undecided
^H ^M Amy Marie Gilchrist	graduate studies in chemistry, Purdue
William Alexander Gomaa	public opinion research firm in DC (chem/gov)
John Harry Graham	unreported
Peter Michael Graham	graduate studies in chemistry, UVA
Carrie Lynn Hamilton	undecided (chem/environ science)
^H Leslie Joann Hoipkemeier	graduate studies in chemistry, U. of Florida
Christine Michelle Howard	master's program in chemistry, W&M
Nicholas Mark Jones	master's program in chemistry, W&M
Victoire E. Kelley	medical school
Geoffrey Christofferson Klein	graduate studies in chemistry, Florida State
^H Matthew Basil Kraynyak	graduate studies in chemistry, U. of Oregon
φ^H Edgar Damian Kwee	law school, GWU
Susan Ruth Larsen	seeking employment in Colorado
^M Alessandra Catherine Leri	master's program in Italian, UVA
^H Elizabeth Robertson Levy	master's program in environmental studies, Yale
Susan Spaulding Marshall	midwifery school, Eugene, OR (chem/women's studies)
Melissa Jean M^cMahon	seeking employment
Douglas Brent M^cQuaid	medical school
Jeanette Denise Millner	medical school
^H ^M Theresa Giang Nguyen	graduate studies in chemistry, UNC
^H Michael Stewart Northrop	medical school, NY Medical College
φ^H Matthew James O'Connor	medical school, UVA
Brian Lee Pienkos	medical school
φ Alexandra Elizabeth Purdy	unreported (bio/chem)
Pradeep Rajan	graduate studies in environmental health, Harvard
^H Justin Lalor Rice	medical school, UVA
^M Sarah M. Satterlee	master's program in Entomology, VPI (bio/chem)
^H Elizabeth Mary Shumann	graduate studies in environmental engineering, Stanford
^M Christina Lynn Spencer	graduate studies in chemistry, Princeton
^M Jennifer Lee Stone	medical school, UCLA
φ^H ^M ^D Benjamin Andrew Suhr	graduate studies in chemistry, Yale
Kevin Takashi Takeguchi	United States Geological Survey
Andrew Trask (Dec 99)	unreported
Heidi Melissa Twitt (Dec 99)	unreported
Stephanie Diane Upshaw	graduate studies in forensic science, U. of Illinois, Chicago
Christina Denise Wallo	unreported (bio/chem)
Jonathan Adam Weakley	undecided
Clifford Adams Wilson, II	master's program in chemical engineering, U. of Florida
Charles Edgar Wilson, IV	pilot, USAF

φ PBK

^H Honors in Chemistry

^M Monroe Scholar

^D Dow Scholar

News from our alums

Vineeta Ahluvalia ('94) is in her third year of OB/GYN residency at the U. of Alabama.

Chris Almond ('92) is a pediatric resident at Harvard Brigham and Women's Hospital in Boston.

Sharon Archer ('85) is a biophysical chemist working for DuPont Pharmaceuticals in Wilmington, Delaware.

Kathryn Beers ('94), after getting her Ph.D. at Carnegie Mellon, has moved to Gaithersburg, MD, where she is a postdoc at NIST, involved in combinatorial measurement method development.

Catherine Branch ('98) is in the Ph.D program in chemistry at Rice.

Caryn Carson Borg-Breen ('94), having finished her Ph.D at UNC Chapel Hill, has started a post doc at Northwestern working with Dr. Joe Hupp and Dr. Sonbinh Nguyen.

Allison Choy ('94) has finished her Ph.D at UNC -Chapel Hill and is working as a post doc with Dr. Pearson at Michigan.

Pete Coyne ('98) is working for First Union in Charlotte.

Anne Delaney ('98) spent a year teaching English in Hungary, and is currently a first-year medical student at MCV.

Last fall, **Debbie Gibbs Sauder** ('76) was named chair of the chemistry and physics departments at Hood College.

Kevin Gwaltney ('92, M.A. '93) is a professor of chemistry at Bucknell.

Robert Hicks ('71), is Director, Office of Environmental Health Services, Virginia Department of Health.

Geoff Hird ('96) is pursuing a doctorate in chemistry at Duke, as is **Kim Smeds** ('96).

Courtney Lucado ('96) starts an internal medicine residency at EVMS this fall.

Stephanie Monn Rogers ('92) completed her Ph.D in chemistry at CalTech and is a research staff member with the Institute for Defense Analyses in Alexandria.

Kathy Norton Martin ('91) has moved into the banking world as a loan officer.

Adam Rawlett ('95), a graduate student in chemistry at Professor James M. Tour's lab at Rice, has been recognized in C&E News for his synthesis of a compound which shows promise in the development of nanoscale electronics based on carbon nanotubes.

Tony Serafino ('95), after four years as an officer in the U.S. Army and a master's in international relations, is working in Washington, D.C. as a technology consultant for Booz, Allen & Hamilton.

After receiving his Ph.D in chemistry from UC Berkeley in 1996, **Alan Veek** ('91) went to work as a management consultant for McKinsey & Co. He and his family now live in Pittsburgh, where he has joined a small on-line business-to-business electronic company, FreeMarkets.

Julie Warner ('98) has returned to W&M as a doctoral student in Applied Science.

Dennis Wixted ('96) has finished med school at Jefferson and began his residency in internal medicine at MCV in June.

John Yang ('95) and **Ivana Verona** ('96), who were married in the fall of '99, expect to receive Ph.Ds in chemistry from UNC -Chapel Hill this December.



The Pike research group somehow found time to be creative outside of their research activities... Alex Doyal, Jason Johnson, Jeanine Cole, Jonathan Maeyer and Kathryn Guy (l-r) are showing off the "chem lab assistant" piñata they made for the end-of-summer picnic and Alex "Warhol" Doyal prepared "Visions of Pike", to the left.

Chemistry Invites you to our reception during Homecoming 2000!

The Department is having a wine and cheese reception for chemistry graduates in Rogers Hall on Friday, October 27, starting at 5:30 p.m. We would be delighted to see you there. If you can join us, please fill out this form and mail it to:

Trevor Hill
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, 2000, at 5:30 pm.

Name _____ Class of _____ No. of guests _____

Any Comments?

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