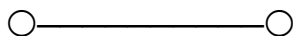


The Roanoke Chemical Bond
The Newsletter of the
Roanoke College Chemistry Department
Summer, 2004



What's New? The News in Brief

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Dr. Hap Fisher Honored

The American Chemical Society has designated the Southern Regional Research Center in New Orleans a "National Historic Chemical Landmark". A ceremony, symposium, reception and open house marking this achievement were held at the Center on May 14, 2004. Dr. Charles H. (Hap) Fisher was the guest of honor at this event.

Hap is a Roanoke chemistry alumnus from 1928. He earned his M.S. and Ph.D. at the University of Illinois, taught at Harvard for three years, then began a long and successful industrial career. During World War II he did research on coal liquefaction, synthetic rubbers, carbohydrates and polyacrylate elastomers. He went to New Orleans in 1950 as Director of the Southern Regional Research Center, a position he filled for 22 years until his "retirement". Under Hap's leadership SRRC developed an international reputation for their work on cotton, peanuts, sugar cane, pine gum, citrus juices, vegetable oils, and many other materials with southern "roots". Many commercial products were invented and developed, including the wrinkle-resistant and flame-resistant cotton fabrics that rule the market. It was for these accomplishments that the SRRC was named a Chemical Landmark, and why Hap was invited to return as the guest of honor.

In 1972 Hap returned to Roanoke College as Adjunct Research Professor of Chemistry, a title he retains today. He continues to do research and write, and is a valued consultant. He and his wife Betty Florence Snyder Fisher (°46) live at Brandon Oaks. Betty is the grandmother of Garrett Cosenza, a junior Biochem major at Roanoke College.

We hear that

Burt Hollandsworth ('99) has completed his Ph.D. at Ohio State, and is teaching chemistry this fall at OSU – Mansfield. He expects to do a post-doc next year at Los Alamos National Labs.

Heather Turner Hollandsworth ('99) is working as a technical recruiter.

Alissa Ashley ('03) is in the Microbiology and Immunology program at the Medical College of Virginia.

Chris Berndsen ('03) has his first publication in press resulting from his research at the University of Wisconsin.

Hap Fisher ('28) was recognized on May 14, 2004 for his 22 years as Director of the USDA Southern Regional Research Center in New Orleans. Hap and Betty moved to Brandon Oaks Retirement Center in June, 2004.

Ron Niswander ('71) is currently working for Union Carbide in Charleston, WV. He works both in technical services and in process development for ethylene glycol products.

Anne Castelvechi ('03) had to leave her Peace Corps work in Haiti due to the political instability there.

Michael Peyton ('85) visited us with his wife Alice and sons Mark and Steven.

Tim Jessee ('79) continues to practice optometry in Salem.

Christina Abraham Aziz ('97) has completed her residency in internal medicine at Roanoke Memorial Hospital. She and her husband Sam Aziz and daughter Katherine have recently moved to Atlanta.

Stephanie Kenny Scheidt ('01) is currently doing a residency at Roanoke Memorial. Husband Gus Scheidt has completed his studies in computer science at the University of Virginia.

Adam Cassis ('02) continues his medical studies at West Virginia University.

Gina Ebbett ('01) has completed her studies at Virginia Tech. Gina married Ryan Kelly on May 29, 2004.

Don Cregger ('70) was featured in a Roanoke Times and World News article on June 2, 2004 on his developing a rail lubricant from soy beans. Don was Ben Huddle's first research student.

Troy Bonsall ('02) was married in May, 2004. **Jennifer Divers** and **Meredith Paul** attended.

Bob Fenner ('72) completed his 30th year at Philip Morris, and has been named Scientific Research Fellow there.

Crystal Hileman Kilgore ('02) and husband Jason Kilgore are the parents of Kennedy Grace Kilgore, born 5 December 2003. They have moved to St. Paul, VA.

Tom Miller ('67) is currently Vice President for Engineering at Fairway Medical Technologies in Houston Texas.

Steve King ('84) presented the annual Chemistry Alumni Lecture on April 16, 2004. The title of his talk was "Synthesis of New Drugs".

Jim Southers ('97) has recently moved to Connecticut, where he accepted a position as Senior Associate Scientist with Pfizer in their CVMD-Discovery division.

Rose Clark received one of two 2004 national awards for excellence in teaching from Iota Sigma Pi. Rose is the wife of **Ed Zovinka** ('87). Both teach at Saint Francis University, where Ed is chair of the Chemistry Department.

Jennifer Mullin Moen ('96) is back at UNC after two years in New Zealand. She is doing a post doc in pathology.

Russ Schmehl ('76) has returned to Tulane after teaching and doing research in Japan.

Nate Alexander ('03) is beginning his second year in medical school at LSU-Shreveport. He is ranked #6 in a class of 100. He spent some time this summer in Mexico on a medical mission trip.

It was good to see **Paull Torrance** ('72) at the ACS national meeting in Philadelphia. Paull still works for Celanese in Texas. He and his wife have 4 children between the ages of 14 and 26.

2003 – 2004 Fisher Lectures

The Chemistry Department was able to support two Fisher Lectures this academic year. As you probably know, the Charles H. Fisher Lecture Series honors the many contributions of Hap Fisher, bringing to campus outstanding speakers in the general area of chemistry. We usually have a nice dinner with a few invited guests, often friends or relatives of the speaker, followed by a lecture open to members of the College and the general public. Past Fisher Lecturers include Bassam Shakashiri, Mary Virginia Orna, Joe DeSimone, Jerry Bell, Jim McGrath, Art Ellis, and others.

This year we were able to have two Fisher Lectures, one in the fall and one in the spring. On November 20 Dr. James Wolfe spoke on “The Emergence of Osteopathic Medicine in Rural Healthcare for Virginia”. Jim is the current President of the new Via College of Osteopathic Medicine, which just enrolled its first class of medical students in September. He is a former Chair of the Chemistry Department at Virginia Tech, and a long-time friend of our Chemistry Department.

On April 5 Dr. Lloyd Wolfenbarger came to Roanoke College to speak on “Tissue Engineering of Natural Tissue Grafts”. Wolf is a former chemistry professor at Old Dominion University, and is currently Vice President for Research at LifeNet, a tissue procurement and disbursement organization in Norfolk.

It has become a tradition to invite a chemistry alum back to campus during Alumni Weekend to talk about a topic of interest and chat with our current students. This year Steve King ('84) talked about his research at Abbott Laboratories.

2004 Summer Research

The Chemistry Department continues a tradition of active student research over the summer. This year we have eight student researchers. Most of these are receiving a \$2500 stipend from the Bondurant Fund, with free housing provided by the College. Many thanks to those of you who have contributed to the Bondurant Fund over the years. The eight summer researchers are listed below, along with their faculty mentor and a brief description of their project.

Amandaa Bostick (Vern Miller) – Amandaa is working on the synthesis of propylamine triol, and measuring the equilibrium constant of the complex of propylamine triol with boric acid using boron NMR, and using CAChe.

Mike Cashin (Adele Addington) – Mike is using CAChe to model the interaction of inhibitors with the enzyme Caspase-3.

Garrett Cosenza (Len Pysh) – Garrett is studying the effect of ethylene on root lengths in mutant *Arabidopsis thaliana* plants.

Michele Dellis (Vern Miller) – Michele is measuring the concentration of anions in local streams.

Will Lancaster (Vern Miller) – Will is measuring the concentration of metals in local streams.

Uyen Le (Adele Addington) – Uyen is studying the effect of peptide inhibitors on caspase enzymes.

Amy Neuhs (Adele Addington) – Amy is determining if non-caspase proteinases are involved in apoptosis.

Will Wolanski (Gary Hollis) – Will is determining the active ingredient in rosemary oil which prevents wild deer from feeding on plants.

In addition, **Adria Mannon** is doing an internship in forensic toxicology at the Western Regional Forensic Laboratory, and **Megan Via** is working with children at the Science Museum in downtown Roanoke.



2004 Chemistry Alumni

Erika Arbogast, Virginia Beach; Biochemistry and History double major *cum laude*; MCV Pharmacy.

Jared Herr, Amarillo, Texas; Biochemistry *magna cum laude*; University of Texas-Galveston Medical School.

Claire Meyer, Catawba; Biochemistry *summa cum laude*, Salutatorian, Phi Beta Kappa; Seeking employment, considering graduate school.

Rebecca Peshkin, Ann Arbor, MI; Spanish major, Chemistry minor *magna cum laude*, Phi Beta Kappa.

Matthew Poferl, Fishersville; Chemistry, Business and Computer Information Systems, triple major *magna cum laude*, Phi Beta Kappa; Duke University Chemistry.

Michael Wolter, Roanoke; *magna cum laude*, plans to attend dental school.

Help us Solve a Mystery

In the process of cleaning up, we ran across a bound copy of a research paper titled "The Chemistry of Metals of Brass". It was very well done, 135 pages long, typed on an old-fashioned typewriter, with hand-drawn figures. There is no name or date, but it looks like it may have been from the Bondurant Era. If you can identify this paper, let us know.

Jack Steehler Returns from Sabbatical

I spent August 2003 to August 2004 on sabbatical leave. The first nine months were at the University of Tennessee – Knoxville, and summer 2004 was spent at the Health Care Research Center of the Procter & Gamble Company in Mason, OH. My work was supported by Roanoke College, the National Science Foundation funded “Research Sites for Educators in Chemistry” program at UTK, and by the Procter & Gamble Company.

In Knoxville I worked with Prof. Mike Sepaniak on Surface Enhanced Raman Spectroscopy (SERS) and Raman imaging. Our focus was adding chemically selective polymeric phases on top of the silver island films that give the enhancement of the Raman signal. The overall plan is the development of an array of chemically selective polymeric overlayers. Raman imaging can be used to look at all those different individual sensor spots, mapping a response pattern that identifies the analyte, even when an individual sensor spot isn't perfectly selective by itself.

The work at P&G was also basic research, although the vast majority of the work at that center is product focused, supporting both product development and production sites. I worked with Dr. Phil Drake on the development of a new model system for characterizing ingredients used in oral care products. The optical spectroscopy technique I used there will be the basis for ongoing surface chemistry research projects in the near term future working with Roanoke College students.

Since I effectively built the P&G system from scratch this summer, I'm well prepared to design and build a similar system here at home. I'm particularly pleased to have this crossover from sabbatical work to an ongoing project.

Of course, at both locations I learned many things outside of the research work itself. At UTK I was reminded of the many differences in the small college and university settings. Clearly, undergraduate education is emphasized more at Roanoke College! And at P&G I noticed how the real cost of labor was appreciated compared to an academic setting. In academics, budgets for equipment and supplies are always tight. In the industrial setting, if it saves people time, it pays for itself easily. I also got a good sense of the modern work environment in an industrial research setting, which I'll be able to share with our students. I also did a lot of Labview programming at both locations, something I've wanted to do with Roanoke College students for some time, a project that has already begun now that I've returned to campus.

All in all, my sabbatical was highly productive in a number of ways. Nevertheless, it's good to be home with colleagues and family!

Jack Steehler



Dr. Ron Oetgen Begins Phased Retirement

This year Ron Oetgen began preparing for retirement by choosing an option provided by Roanoke College called “phased retirement”. Under this option a professor may have a reduced teaching load for up to three years, giving us the benefit of his experience as a new faculty member is getting started.

Ron has been at Roanoke College for 37 years. He has a B.S., M.S., and Ph.D. in Chemistry from Case-Western Reserve University, and two post-doctoral appointments before coming to Roanoke College in 1967. He is one of the charter members of the new Roanoke College chapter of Phi Beta Kappa. He and his wife Barbara have a daughter Lauren (now living in Lynchburg) and a son Brian (now living in Cincinnati), and four grandchildren.

Ron was the person responsible for initiating our program in Biochemistry. He initially taught a one-semester course, then added an advanced course, and we now have a full major (B.S.) in Biochemistry, which is proving to be a popular option for many students. Ron also developed the nutritional chemistry course, which he continues to teach. He also teaches Organic class and lab, and our course for non-science majors.

General Chemistry Sets Record Enrollment

We have 103 students enrolled in 4 sections of General Chemistry this fall. I believe that’s a record for General Chemistry since we dropped Chem 11/12, when all students were required to take a year of two different sciences, and began teaching Chem 101, our chemistry for non-science majors. Other enrollments are:

| | |
|----------------|-------------------------------|
| Chem 101 = 33 | P Chem = 8 |
| Gen Chem = 103 | Biochem = 17 |
| Organic = 28 | Environmental Analytical = 11 |

Dr. Adele Addington joins the Roanoke College Faculty

We are pleased to welcome this year Adele Addington, who joined us this year as our new biochemist. Adele has a B.S. and Ph.D. in biochemistry from Virginia Tech, and has taught at James Madison and at the Virginia Military Institute before coming to Roanoke. Adele's current teaching assignment includes both Biochemistry courses and our chemistry for non-science majors.

Contact Us

Please feel free to contact us with news of you or other chemistry alums. You can write to any of us at 221 College Lane, Salem, VA 24153. You can phone us at (540)-375 + the extension given below. Or e-mail us at

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Also, check out our web site at
<http://www.roanoke.edu/chemistry/>

Chemists in Phi Beta Kappa

On Friday, March 12, 2004, the Virginia Nu Chapter of Phi Beta Kappa was officially installed at Roanoke College in a ceremony held in Olin Hall. Three members of the Chemistry Department faculty are charter members of the chapter. They are Jack Steehler, Gary Hollis and Ron Oetgen. Charles H. (Hap) Fisher ('28) was inducted as one of five Foundation Members of the Chapter. Foundation membership is meant to honor those who have made extraordinary contributions to the College or to the liberal arts and sciences.

On Friday, April 12, 2004, the first group of undergraduate students was initiated into the Society. This group of eighteen juniors and seniors included the following chemistry and biochemistry students: Claire Meyer ('04, biochemistry), Amy Neuhs ('05, biochemistry), Rebecca Peshkin ('04, chemistry minor), and Matt Poferl ('04, chemistry).

In addition, Betty Sue Siler Masters, chemistry alumna, class of 1959, was inducted as an alumna member. Dr. Masters is the Robert A. Welch Professor of Chemistry at the University of Texas Health Science Center. She spoke about her experiences as a chemistry student at Roanoke and how those experiences affected her successful career in biomedical research.

Who Killed the President?

On Friday afternoon, March 19, Roanoke College held its first in what is hoped to be a series of annual "Science Day" activities. High school juniors were invited to come to the college and spend a few hours in one of the science departments of their choice. The hope, of course, was that some of these students will like what they saw and decide to select Roanoke as their college.

The Chemistry Department prepared an activity which we advertised as "Who Killed the President"? About 30 or so students came to the fourth floor of Trexler, presumably to look at posters on archaeological chemistry prepared by our sophomore chemistry and biochemistry majors. President Gring, who was in on the plot, also attended. We had soft drinks, Kool-Aid, and cookies, and apparently someone put something poisonous to President Gring's Kool-Aid, because he fell over and "died" on the spot. We collected the cup with the leftover Kool-Aid with the poison and a sample of the killer's DNA. Some suspects were identified. Half the group analyzed the Kool-Aid for the identity of the poison; the other half did a DNA gel electrophoresis on the killer's DNA and that of the five suspects. The poison was found to be eugenol, oil of cloves, to which President Gring is acutely allergic (Right!). The killer was identified as one of our senior chemistry majors who is going to graduate school at Duke this fall (well, that explains a lot).

The event was fun to put on, and was well received by the high school students. Yet to be determined is how many of them decide to come to Roanoke as a result.

Chair's Corner

Someone recently asked me, "Doesn't it get boring teaching the same courses over and over again?" I was momentarily stunned. My job has been at times exhausting and frustrating. I keep doing it because it is also incredibly rewarding. Boring? No, it has never been boring. I never teach "the same course over." It is new every time because it is new to the students and what we do at Roanoke is about the students.

Obviously, classroom teaching is about the students, but so is everything else. Research is fun, but the best part is helping students discover new science and new talents within themselves. Professional meetings are a chance to find new ideas to use with students. We work with the Admissions Office to help bring in new students. We produce this newsletter to keep in touch with former students. Even taking a sabbatical away from students and the college is really about the students. When a sabbatical successfully re-energizes a faculty member, it shows in opportunities for students that develop when the sabbatical is over. Without students, this job would have no purpose, and that would be boring.

For a faculty member, the rewards lie in interactions with current and former students. Please keep in touch. Participate in the life of this college and of our department whenever you can. You made life interesting for the faculty when you were a student, and you keep it interesting as we hear about the paths you have taken after leaving Roanoke.

Gail Steehler

