

The Chemical Bond

Newsletter of the Chemistry Department

Spring 2006

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Centennial Anniversary of the Chemistry Department

In 1905 the Roanoke College Catalog first recognized Chemistry as a separate department from the other sciences and math. We celebrated this anniversary during the spring term 2005 with a series of seminars having an historical theme. The celebration culminated in a 100th birthday party held on Saturday, April 23 as part of Alumni Weekend. Besides featuring a birthday cake shaped like the Periodic Table, alumni representatives from every decade from the 1920's through the 2000's attended a talk by Ron Oetgen on the history of chemistry at Roanoke.

One hundred years ago, chemistry was taught by Professor William A. Smith, a graduate of RC who did post-graduate studies in Germany and France. Classes and labs were held on the newly constructed third floor of the Administration Building. All students were required to take a year of chemistry. A senior year course was available which included significant analytical work.

In 1920, Dr. Harry Johnson joined the faculty. He also was an RC graduate and earned his Ph.D. from Johns Hopkins. Dr. Johnson taught here from 1920 until 1946. During his tenure, the chemistry major developed, along with additional specialized courses, such as Organic Chemistry and Physical Chemistry. In 1940, the department moved to new quarters in Lucas Hall, which provided a major expansion.

In 1941, Dr. Ashley Robey joined the faculty and became chairman of the department in 1947. Dr. Robey was well known for his rigorous Organic Chemistry course. The post-war years brought expansion of the faculty, including Professor Andrew Murphy, famous for his humorous general chemistry lectures, Dr. Charles W. Bondurant, Jr., famous for his ever-present cigar, and Professor Frances Russell, the first female chemistry instructor.

The 1960's brought further expansion of the chemistry faculty. Dr. Paul Henson started teaching Organic Chemistry in 1964., Dr. Ronald Oetgen started the biochemistry program in 1967, and Dr. Ben Huddle began teaching Physical Chemistry in 1968.

In 1969, construction was begun on the current science center, and the chemistry department moved into our present quarters in 1970. The spacious classrooms, teaching labs, research labs, and special purpose rooms were a definite factor in the department's accreditation by the American Chemical Society in 1975.

The 1970's and 80's were marked by changes in the faculty and the addition of modern instruments in the curriculum and for research. Dr. Vern Miller arrived in 1976, Dr. Gail Steehler joined the faculty in 1984, Dr. Pam Turpin took over management of general chemistry labs in 1987, and Dr. Jack Steehler arrived in 1988.

In the last two decades, plans for renovating the teaching labs in Trexler were carried out under the capable supervision of Dr. Jack Steehler. Dr. Gary Hollis became the Organic Professor in 1995. In 2002, a new major in Biochemistry was approved and our first biochemistry majors graduated. Dr. Gail Steehler took over the departmental chair in 2003, the first female to hold that position. Dr. Adele Addington joined the faculty in 2003 to teach Biochemistry.

The Chemistry Department is proud of its rich heritage, its many successful alumni, and the program we have striven to provide over the past century. We look forward to the next century with its further advances in the science and to the students who will come here to study.

By Ronald R. Oetgen
Fall, 2005

Ronald Roane Oetgen

On the Occasion of his Retirement

Ronald R. Oetgen received his bachelors, masters, and doctorate in chemistry from Case Western Reserve University in Cleveland, Ohio. After a postdoctoral experience at California – Berkeley, and a teaching post doc at Denison University, Ron came to Roanoke College in the fall of 1967, and has been here ever since.

Ron is rightfully considered the “father” of biochemistry at Roanoke College. He developed and taught the first two courses in biochem/molecular biology at Roanoke, and helped to develop the biochemistry major here. He also introduced a course in Nutritional Chemistry. He taught Chem 101 to some 4000 students over three generations. In total, he has taught more than 12,000 students in 300 courses over 39 years. He has always considered himself a teacher first and foremost.

Ron worked tirelessly during his whole career at Roanoke to bring a chapter of Phi Beta Kappa to campus. He has been instrumental in guiding numerous students into medical school, dental school, optometry, pharmacy and graduate school, both in individual conversations and as a member of our Health Professions Advisory Group.

Ron has been married for 43 years to Barbara, who taught kindergarten for the Salem schools for many years. They are the parents of Lauren and Brian, and grandparents of Molly, Brian, Jane, Michael and Tommy. Their license plates, H2OABC and ABCH2O, are now recognized by most of the 25,000 residents of Salem.

Ron and Barbara are also known as supporters of Roanoke College sports. They have attended over 600 basketball games, in our Alumni Gym, at the Salem Civic Center, in the Bast Center, and on the road.

Now on the occasion of his retirement, we all wish Ron happiness and good health for the next period of his life. We grant him time for working in his yard, for traveling, for painting furniture, for reading, for movies, for his family, and for all the other activities in which he finds joy.

Best wishes, Ron.

We Hear That (news from alumni)

Charles H. (Hap) Fisher ('28) was featured in an article in the Chronicle of Higher Education (13 May 2005) along with two other nonagenarians who continue to be professionally active.

*See more on this story
on page 10 of this
Newsletter.*

Bettie Sue Siler Masters ('59) was awarded an honorary doctorate by Charles University in Prague, the oldest and most distinguished university in Czech Republic. Bettie Sue is the Robert A. Welch Distinguished Professor in Chemistry at the University of Texas Health Science Center.

Paul Henson ('60), continuing to recover from surgery, is playing golf again. Paul and Sandy live in Salem.

Rick Scordas ('69) is Regional Manager for Holt, Rinehart and Winston in Colleyville, Texas. They publish textbooks, including "Modern Chemistry" and "Holt Chemistry" for high schools.

Ron Niswander ('71) stopped by the Chemistry Department this summer. Ron and Maria have moved to Smith Mountain Lake after his retirement from Dow Chemical Company in Texas.

Hal Schmidt ('72) is working for Mars Candy, Inc. in New Jersey.

Steve Ockrymiek ('73) was by with his wife and middle daughter, who is considering Roanoke College.

Chip Cody ('75) is in Boston, where he works for JEOL. Chip's mother Betty Pence still lives in the Valley, and attended an Elderscholar workshop at Roanoke College on fingerprints, taught by Ben Huddle. See article on page 9 in this Newsletter.

Tom Rutherford ('76) is a physician at Yale University School of Medicine, doing research in apoptosis. Tom has a Ph.D. from the Medical College of Ohio, and an M.D. from the Ohio Valley Medical Center.

*See more on this story on
page 9 of this Newsletter.*

Mike Patrick ('78) is back in the Valley. He is a physician with Roanoke Valley Medical Associates, where one of his patients is Ben Huddle's dad. Mike taught chemistry for us part-time a few years ago.

Hyuk Kim (Kim McKenzie) ('81) continues to teach Chemistry and Physics at Lakeview Academy in Gainesville, Georgia, where he has been since 1985. He has a Ph.D. in Chemistry from the University of Virginia.

Michael Peyton ('85) is working for the Virginia Cancer Society in Richmond.

Merrie Noel Powell Jackson ('90) visited with Jack Steehler last summer while Jack was in Cincinnati on sabbatical. The Jacksons have twin boys. (Twins run in the Chemistry alumni family!)

Ann -Alyssa King ('92) and Brian Hill were married May 7, 2005 in Crockett, VA and honeymooned in Hawaii. Ann-Alyssa is a chemist for Earth Tech in Richmond, VA.

Paige Phillips ('93) has moved to the University of Southern Mississippi in Hattiesburg, where she is teaching Physical Chemistry. Paige has a Ph.D. from Virginia Tech.

Craig Bayse ('94) finally married Hilary last summer. He is still teaching Physical Chemistry at Old Dominion University in Norfolk.

Chris Rhodes ('94) is a patent attorney for Lowrie, Lando & Anastasi, LLP, in Cambridge, Massachusetts. Chris has a Ph.D. in Chemistry from the University of Virginia, and a J.D. from Suffolk University Law School.

Tseon Tewolde ('98) has completed her Masters in Physicians Assistants at Shenandoah University in Winchester.

Burt Hollandsworth ('99) has finished his Ph.D. at Ohio State and moved to a post-doctoral appointment at the University of South Carolina. Burt is married to **Heather Turner Hollandsworth** (also '99).

Kelly Newton Toler ('99) and husband Mike live in Andover, Massachusetts, where Kelly works for Wyeth.

Jenny Winters ('99) moved to Texas on completion of her Masters at Virginia Tech, where she is working in an analytical chemistry lab.

Jennifer Runyon ('00) is in our thoughts and prayers on the sudden death of her father, Donald Runyon, July 17, 2004.

Stephanie Kenny Scheidt ('01) and Gus Scheidt are parents to Alexander Karl Scheidt, born December 31, 2004.

Troy Bonsall ('02) and his wife have moved back to the Valley. Troy hopes to move into forensic science.

Emily Keener ('02) has finished her third year at the new Edward Via College of Osteopathic Medicine in Blacksburg. Emily received one of five Wolfe Scholarships awarded by the Medical College.

Meredith Paul ('02) is working for Lancaster Labs in Richmond, helping to formulate a safer cigarette.

Josh Pollak ('02) is stationed in Seattle as a naval aviator in the VAQ-129 Vikings squadron. Josh earned his wings in Pensacola, and had further training in San Diego and Lemoore, California. He may currently be in the Middle East.

Chris Berndsen ('03) continues his graduate work in John Denu's lab at the University of Wisconsin. He recently had a research paper published, and gave a talk at the West Coast Chromatin Conference.

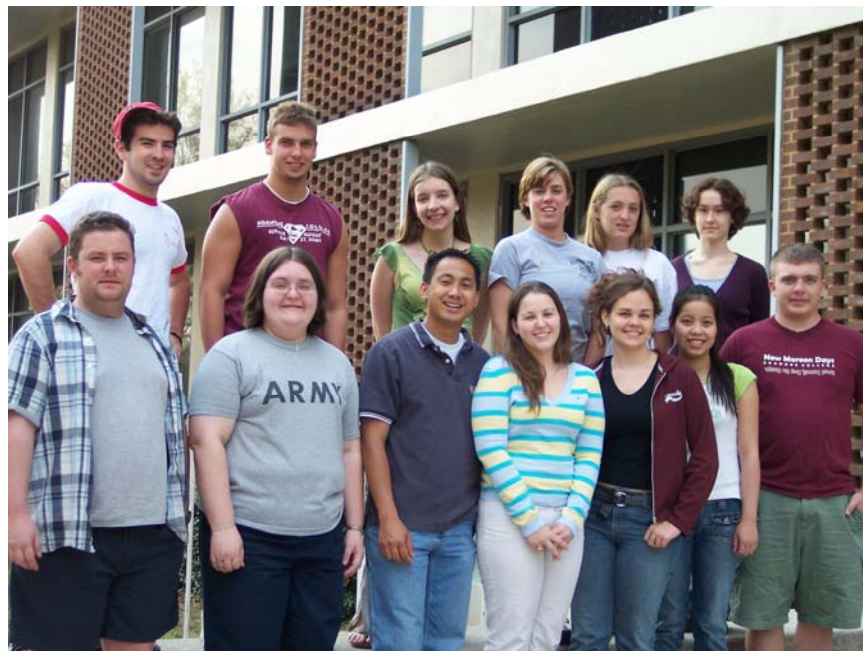
Anne Castelvechi ('03) has moved to East Timor with the U.S. Peace Corps, after having to leave Haiti because of the political turmoil in that country.

Stacy Wood ('03) has moved to Burlington, NC, where she works for LabCorp in the DNA Identification division. Boyfriend Nate is still in the Marines, in Jacksonville, NC.

Claire Meyer ('04) began medical school last fall at St. Louis University School of Medicine.

Michael Wolter ('04) started dental school at MCV this fall.

2005 Chemistry Seniors



Melissa Carr (Roanoke), B.A. Melissa is doing her practice teaching in the fall of 2005.

Amandaa Bostick (Gainesville, FL), B.S. – Amandaa started graduate school in Chemistry at Florida State this fall.

Hanan Dahche (Saida, Lebanon), B.S. – Hanan started graduate school in Biochemistry at Virginia Tech this fall.

Michele Dellis (Vinton), B.S. – Michele is looking for a job in chemistry.

Curtis Kleier (Elkton, MD), B.A. – Curt has started a job in Maryland.

Uyen Le (Roanoke), B.S., Chemistry – Uyen is considering a variety of health options.

Adria Mannon (Floyd), B.S., Chemistry – Adria will start a graduate program in Food Technology at Virginia Tech.

Amy Neuhs (Glasgow), B.S., Biochemistry – Amy is a researcher for the U.S. Army.

Matt Piper (Whitman, MA), B.A., Chemistry – Matt is looking for a job.

Megan Via (Moneta), B.S., Chemistry – Megan is preparing for graduate programs in Physicians Assistant.

Jessica Worsham (Powhatan), B.S., Chemistry – Jessica is considering a career as a softball coach.

2005 Chemistry Summer Research

Kimberly Berndsen (Summer Scholar)– “Analysis of a Helicase-Dependent Isothermal DNA Replication Process Using the TH01 Short Tandem Repeat”, with B. Huddle.

Dustin Carroll – “Kinetic Study of Cathepsin S with Caspase and Granzyme B Inhibitors”, with A. Addington.

Mike Cashin – “*In Vivo* Apoptosis”, with A. Addington.

Michele Dellis – “Experiments in Kitchen Chemistry”, with A. Addington.

Alissa Gadpaille – “Surface Plasmon Resonance Raman Spectroscopy Monitoring of Thiol Deposition”, with J. Steehler.

Anna Kostric – “Borane Exchange Reactions of 1,4-Dimethylpiperazine”, with V. Miller.

Will Lancaster – “Diurnal Variations in Mason Creek”, with V. Miller.

Ben Lawler – “The Oxidation and Diels-Alder Reactions of Perfluorinated Cyclopentadienes”, with G. Hollis.

Stephen Quinn – “Molecular Microbial Source Tracking for the Detection of *Salmonella* in Surface Water”, with B. Crozer.

Beth Tucker – “Developing Surface Plasmon Resonance Spectroscopy to Monitor Substrate Deposition”, with J. Steehler.

Jason Wolfe – “Acid Dissociation Constants of Weak Acid Indicators”, with V. Miller.





Chip Cody Wins National Award

Dr. Robert B. ("Chip") Cody, '76, was presented with the Pittcon Gold Award for best new product at the 2005 Pittcon in Orlando this March. The award was for the invention of a new ion source for the rapid detection of organic substances called DART, Direct Analysis in Real Time. Chip works for JEOL USA, in Peabody, Massachusetts. JEOL makes time-of-flight mass spectrometers, for which DART is intended, as well as nuclear magnetic resonance spectrometers and other analytical instrumentation.

DART provides accurate identification of gas, liquid and solid samples by the assignment of mass fragments. A unique application is the ability to detect chemicals on surfaces without direct contact with the surface. Surfaces investigated include concrete, asphalt, human skin, airline boarding passes, fruits and vegetables, cocktail glasses, even the neck tie of a colleague who had been close to an explosion. In the photo above Chip looks for change on a \$1000 bill.



Bettie Sue Masters Receives International Recognition

Bettie Sue Siler Masters (class of 1959) was awarded the Doctorate Honoris Causae in medical sciences from Charles University in Prague on May 1, 2005. Founded in 1348, Charles University is the oldest and most prestigious university in the Czech Republic, and is one of the 12 oldest universities in the world.

Dr. Masters is the Robert A. Welch Foundation Distinguished Professor of Chemistry at the University of Texas Health Sciences Center. Her research group is interested in the structure and function of nitric oxide synthases. Nitric oxide is involved in many biochemical processes, including dilation of blood vessels and the killing of tumors, bacteria and fungal agents. She was one of the discoverers of the chemistry of how proteins and enzymes produce nitric oxide. For the past decade she has been a frequent visitor to Charles University, where she collaborates on research and has helped the Czech Republic establish a system of peer review.

Dr. Masters has been president of the American Society for Biochemistry and Molecular Biology. She has been Chair of the U.S. National Committee of the National Academy of Sciences to the International Union of Biochemistry, and was a member of the Advisory Committee to the Director of the National Institutes of Health. In 1996 she was inducted into the prestigious Institute of Medicine of the U. S. National Academies.

She is also the mother of Deborah Ann Masters Camitta, '87.

New Raman Spectrometer

The department is pleased to announce the addition of a Raman spectrometer to our program. Acquired in mid-2005, the Lambda Solutions Dimension P1 spectrometer is expected to see heavy use in both teaching and research. Raman spectra are vibrational spectra, with selection rules that complement those of infrared absorption vibrational spectra. Typically, symmetrical molecules give strong Raman signals, while that same symmetry causes the infrared spectrum to be weak.

Historically, Raman spectrometry required big expensive lasers and big triple monochromators to separate the weak Raman signal from the extremely bright Rayleigh scattered light. In the last few years, diode lasers and special filters which block Rayleigh scatter have made Raman systems much more compact and affordable. The diode lasers have also shifted the excitation wavelength into the infrared, minimizing fluorescence problems that frustrated early Raman spectroscopists.

Our new instrument uses a fiber optic probe, and can be used to study liquids or solids. The first uses, in summer 2005 research, involved identifying different crystal forms of calcium carbonate, grown as part of student research projects in Dr. Jack Steehler's laboratory.

By Jack Steehler

Fall, 2005



This Just In

We are pleased to report that Dr. Catherine Sarisky will be joining us as Assistant Professor of Chemistry in January, 2007. Cathy has a B.S. in Chemistry from the New College of Florida, and a Ph. D. in Biochemistry from the California Institute of Technology.

Chair's Corner

It's a busy time around the Chemistry Department. We have seen increasing enrollments in chemistry courses in recent years and reached record enrollments this year, with 50 students in organic and 16 in PChem. As a result, we'll be adding an eighth faculty line in the department. We are leaving the specialty open, but hope to add someone with research interests in bioorganic, biophysical, or related areas. If you know of anyone who would be a good fit for Roanoke, please refer them our way.

We are also very excited about our purchase of a new NMR, which will be in place by spring semester. Our current NMR is 15 years old. It has served us well, not quenched since installation, but those 5-1/4 inch floppy disks have to go! Alumni contributions continue to make a real difference to our department by supporting student research and new instrument acquisition.

In addition, we have scheduled a Fisher Lecture to coincide with Alumni Weekend 2006. Dr. William Jensen, who won the 2005 Edelstein Award for Outstanding Contributions to the History of Chemistry, will be speaking on Friday April 21. We hope that you'll come back for Alumni Weekend and join us. If you can't come in person, please drop us a line to let us know what you've been doing.

Gail Steehler



