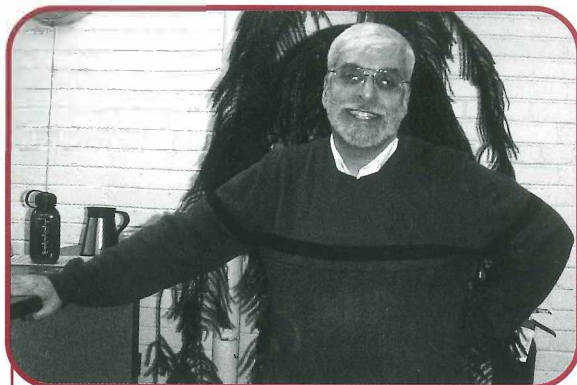


ELEMENTS

The Alumni Magazine of the Department of Chemistry at Virginia Tech - Fall 2005



From the Department Chair

In his presidential installation address, President Steger set a goal for Virginia Tech to reach the Top 30 of

expenditures over 2001. Then another \$2M in research expenditure occurs in fiscal year 2003 with a jump in rankings to 29. This is a huge increase and a big jump in the ranking.

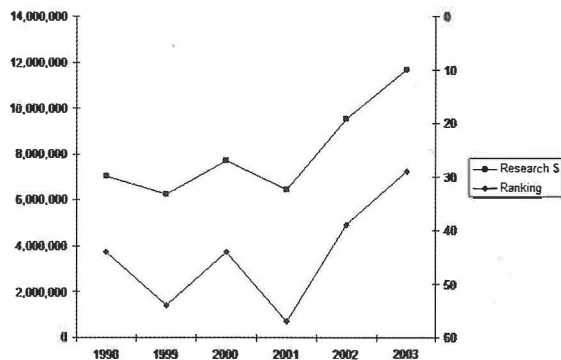
National Science Foundation (NSF) rankings based on research expenditures. I thought it would be a good idea to explain how these rankings are done and what the latest rankings of chemistry departments means for us.

NSF Rankings - what do they mean?

Each year, NSF collects a lot of data from research universities in the United States. The sheer volume of data leads to the rankings requiring a year to digest that data and the latest rankings are from fiscal year 2003. (If you are interested in the gory details, you can view the entire report on the NSF website at: <http://www.nsf.gov/statistics/nsf05320/>)

As part of the report, the NSF also ranks individual departments and I would like to focus on the Chemistry department data. The chart shows the annual research expenditures for the chemistry department from 1999-2003 on the left axis and the NSF ranking on the right. Department research expenditures and ranking remained relatively flat from 1998-2001. However, 2002 showed an increase of \$3M in research

Why do we care? Research expenditures is one measure of the excellence of a department. By this measure, we are clearly an excellent department. The department's increase in research expenditures comes as a result of hiring excellent faculty who have great ideas that are winning research awards in a highly competitive atmosphere. This ranking places the VT chemistry department ahead of such well known institutions as Princeton and Johns Hopkins universities. Our "company" in the 20-30 grouping includes a number of state "systems" and not just individual departments.



What's Inside:

Faculty In The News	3
Faculty Spotlight	5
Alumni Highlights	7
Chemistry Awards	9
Alumni Spotlight	11
Staff Spotlight	13
Donors	15



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Continued on Page 12

Patents And Grants



Some Patent Activity by Chemistry Faculty

Patents Received

Inventor: Frans, Van Damme
Patent No.: D490,532
Patent Title: Nuclear Magnetic Resonance Tube Cleaner

Inventor: Paul Carlier
Patent No.: 6,700,018
Patent Title: Amine Compounds and Inhibiting Neurotransmitter Reuptake

Inventor: Mehdi Ashraf-Khorassani, Larry Taylor, Michael Martin-Armadillo
Patent No.: 6,746,695
Patent Title: Pharmaceutical Preparations of Bioactive Substances Extracted from Natural Sources

Disclosures

Isolation of Sucrose Esters from Turkish Tobacco - L. Taylor

Inventor: Paige Phillips, Judy Riffle, James P. Dailey-Erie Retinal
Patent No.: 6,749,844
Patent Title: Magnetic Fluids

Purification of trimetallic nitride endohedral metalofullerenes - Harry Dorn

Production of hydrogen from water - Karen Brewer

Some of the Grants Recently Received by Chemistry Faculty

Investigator: Riffle, Judy S.
Project: Toward high magnetic moment, controlled-size, blood dispersible nanoparticles: an enabling technology for biomagnetics interfacing concepts
Sponsor: Air Force Office of Scientific Research

Investigator: Kingston, David G.
Project: Biodiversity conservation and drug discovery in Madagascar
Sponsor: John E. Fogarty International Center

Investigator: McGrath, James E.
Project: Synthesis and characterization of sulfonated poly(arylene ether sulfone) copolymers: potential candidates for chlorine resistant surface active water purification membranes
Sponsor: Office of Naval Research

Investigator: Duncan, Susan; Long Timothy; Thatcher, Craig
Project: Macromolecular Interfaces with Life Sciences (MILES) graduate education and research training
Sponsor: National Science Foundation

Investigator: Yee, Gordon T.
Project: A Different Strategy for the Production of Molecule-Based Nanomagnets
Sponsor: National Science Foundation

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Faculty In The News

Long Initiates Collaborative Research and Education Programs with IPF Dresden

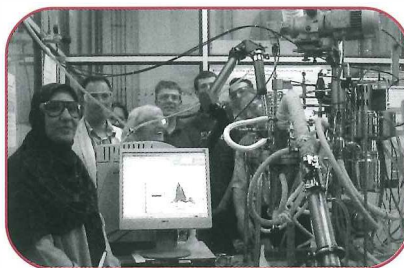


Prof. Dr. Brigitte Voit, Director IPF Institute of Macromolecular Chemistry and Prof. Timothy E. Long in Dresden this past summer.

Professor Timothy E. Long visited the Institute of Macromolecular Chemistry, Leibniz-Institut für Polymerforschung (IPF, www.ipfdd.de) Dresden in June 2005 for an intensive two-week collaborative research session with Director Prof. Dr. Brigitte Voit and colleagues. Prof. Long was accompanied by Mr. Matthew T. Hunley, a graduate student in the Virginia Tech Macromolecular Science and Engineering program. Prof. Long gave two invited lectures on Virginia Tech research efforts in the area of tailored macromolecular architecture and chemical functionality while at IPF Dresden, and Mr. Hunley presented his graduate research. In-depth discussions with IPF Dresden faculty members highlighted the common themes of research at Virginia Tech and IPF Dresden and uncovered several areas for multidisciplinary collaboration and international student exchange.

Collaborations are already underway in polymer research and professional outreach, and funding opportunities were identified for a formal international student exchange program between Virginia Tech and IPF Dresden. Electrospinning techniques at Virginia Tech are being used to examine the nanoprocessing behavior of several novel polymers and polymer/carbon nanotube composites created at IPF Dresden with the German manufacturer Elastogran GmbH, and Prof. Long and Prof. Dr. Voit are co-organizing the American Chemical Society Division of Polymer Chemistry 2006 Biennial on "Polymer Innovation at Emerging Boundaries of Science and Engineering" (www.polyacs.org). Proposals to the National Science Foundation (NSF) and North Atlantic

Treaty Organization (NATO) are planned to fund international student exchange, and Mr. Hunley will apply for a Fulbright Scholarship and other fellowships to enable him to conduct research with IPF Dresden faculty and students in Germany as part of his Virginia Tech graduate education.

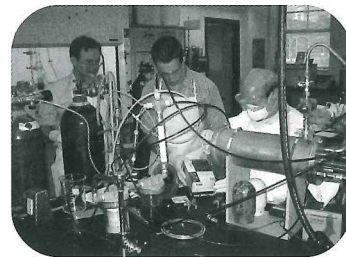


Prof. Timothy E. Long and collaborators at the Institute of Macromolecular Chemistry IPF Dresden.

Short Course on Buckyballs, Nanotubes, and Other Nanomaterials

An NSF sponsored short course that focused on hands-on preparation and characterization of the newly discovered carbonaceous nanomaterials (buckyballs, nanotubes, and endofullerenes) was held in August, 2005. The course also focused on health and environmental issues related to the manufacture of these new nanomaterials.

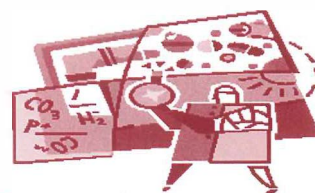
Students met at Emory & Henry College for three days and then at Virginia Tech for an additional three days.



The course was for undergraduate science students and faculty. The course instructors were Professor Harry Dorn of Virginia Tech and Professor James Duchamp of Emory & Henry College.

The course was sponsored by the NSF Nanoscience Under-graduate Education (NUE) program. Stipends were available for a limited number of participants to help defray travel, lodging, meals, and other costs associated with course.

Other News



McGrath & Hickner's Invention

Dr. James McGrath and former student Michael Hickner invented an economical fuel cell material that could reduce our dependence on oil. Battelle has optioned rights on the patents. R&D Magazine has selected this energy-related development from Virginia Tech as one of the 100 most technologically significant new products of 2004. This material is a high temperature proton exchange membrane (PEM) for fuel cells. PEM fuel cells can be integrated into stacks to provide more than 200 kW of power. Large units could be used in autos and homes, but first use will likely be small units such as cell phones and computers; where they will provide a much longer service life and weigh less than batteries.

Most PEM fuel cells now operate in the 60° to 80°C range and currently sell for \$500 per square meter. The Virginia Tech-Battelle material, Battellion™, might eventually sell at \$50 and operates at 100°C or higher.

Crawford Gives Lecture Series

Professor Daniel Crawford gave a series of lectures in Tennessee and Mississippi on his group's recent research in chiroptical properties: University of Mississippi, Oxford, MS; University of Memphis, Memphis, TN; 5th Southern School on Computational Chemistry; Mississippi College, Clinton, MS; Jackson State University, Jackson, MS.

Department Donates DVDs

Virginia Tech Chemistry Department has donated to the American Chemical Society (ACS) Project Bookshare program over 150 new copies of the DVD "General Chemistry: An Interactive Multimedia Course" (ISBN 0-9755024-0-9) co-authored by Ketan Trivedi and Herve Marand.

MII Poster Session A Success

With 98 posters from 4 colleges and 12 departments across campus, the first annual Macromolecules and Interfaces Institute (MII) campus wide poster session was deemed to be a very successful endeavor. This session was held on August 11 in Torgersen Hall and the participants were rewarded with a catered barbeque dinner. The objective of this session was to enhance communications among the entire macromolecular sciences community at Virginia Tech and to help establish the identity of the Macromolecules and Interfaces Institute. Attendance was outstanding and significant scientific exchanges were made among the graduate students and faculty. The traditional strong macromolecular chemistry core that resides in the Department of Chemistry was well represented at this session with 57 posters from 7 different research groups. Other departments participating were Animal and Poultry, Biological Systems, Chemical Engineering, Civil Engineering, Electrical Engineering, Food Science, Engineering Science and Mechanics, HNF, Mechanical Engineering, Physics, and Wood Science.

Long Hosts Workshop

Professor Tim Long hosted on campus this past summer a workshop on "Macromolecular Architecture Performance" sponsored by Army Research Office under grant number DAAD 19-02-1-0275. Speakers were from Virginia Tech, University of Massachusetts at Amherst, Air Force Research Laboratory, Cornell University, and Penn State University.

Faculty Spotlight

Professor Timothy Long *"Change is the Only Constant"*

We all appreciate the common phrase "change is the only constant" in both our professional and personal lives. "Change" has certainly defined both my professional and personal lives since my days (and nights) as a graduate student in the Department of Chemistry at Virginia Tech.

I was so fortunate to graduate with a Ph.D. in Chemistry in 1988 under the direction of Prof. Jim McGrath. It is often hard to believe that I now share an office space with Jim McGrath and I now lead my own research group with nearly 20 graduate students and research associates. The road that I have traveled to return to Virginia Tech was characterized with many moments of "change" and it should also be added that "change is never easy". As a faculty member, accepting "change" is critical as we advance into new fields of science and we challenge traditional academic boundaries. Certainly, change is good!

Upon graduation, I immediately joined the Corporate Research Laboratories of Eastman Kodak Company in Rochester, NY. Dr. Richard Turner, who has been a real inspiration and mentor for me, was the Kodak recruiter and he fortunately convinced me that Kodak was the right place. He was right; I was surrounded with some of the top scientists of our day until the Corporate Research Laboratories were dissolved in 1993. I was married to another Hokie in November of 1992, and it is often said that there is much chemistry between Vicki and I. Vicki received her graduate degree under the direction of Profs. Tom Ward and Jack Graybeal. Vicki now teaches four classes as an Instructor in the Department of Chemistry. There are no shortages of "Longs" in the Department (Gary Long is also considered my long lost southern brother!).

We left the "lake effect snows" of the north for the hills of Tennessee in 1993 in order to join the Eastman Chemical Division of Kodak. I was fortunate to have



Richard Turner at my side as we both struggled with this change. Since Rochester was my home town, I left three siblings and 9 nieces and nephews behind. Change is never easy, but the new scientific challenges at Eastman molded me into a new scientist. In addition, we were blessed with three little boys in the hills of Blountville, TN (it was said that the Blountville water was the cause of this phenomenon!). This change to

Tennessee was difficult, but as I look back, this change expanded my scientific breadth and positioned my return to academia. A faculty position was my dream, and fortunately I saved every chemistry notebook and textbook in a box in my basement. I think this box that we moved four times also served as a constant in my life!

Vicki and I arrived in Blacksburg with three incredible boys in early 1999. I immediately began teaching Organic Chemistry and Introduction to Polymer Chemistry. Teaching Organic Chemistry to non-majors is surely an exciting opportunity to impact students' lives and I enjoy every minute. My research group has grown to include a diverse mixture of students, and I often wonder if any of these students will return to the Department of Chemistry as a professor. My research efforts have broadened to include gene delivery, biomaterials, adhesives, branched topologies, supramolecular chemistry, sensors, and transducers.

I recently returned from a sabbatical leave at Cal Tech under the mentorship of Prof. David Tirrell. This experience will surely lower the activation energy for more change. I am honored to be on the faculty in the Department of Chemistry and contributing to our continued success.

P.S. Richard Turner is now in the Department of Chemistry at VT; fortunately, there some constants in life!

Joining the Department ...



Daniel Capelluto



I define myself as a protein biochemist. My research experience in the biochemical characterization of proteins was first achieved during my graduate student work at Dr. J. Cannata's laboratory in the Department of Biological Chemistry, University of Buenos Aires. Along with my research work, I taught an introductory level of microbiology, virology and

immunochemistry for biologists and chemists and biochemistry for medical students. My research training includes postdoctoral work at Dr. M. Overduin's laboratory in the Department of Pharmacology at the University of Colorado Health Sciences Center. Under his supervision, I

studied an array of new protein domains in order to construct a comprehensive functional-structural view of how signaling proteins act and are regulated using NMR spectroscopy. My current research program employs a multidisciplinary approach, working at the interface of structural and cell biology, to elucidate how protein domains recognize lipids and proteins, specifically interact with downstream effectors and participate in signal transduction and membrane trafficking. Novel signaling domains with no known ligands are tested through NMR-based screens to identify their physiological ligands. Thus, NMR spectroscopy helps us to elucidate the function of protein modules in sufficient structural and functional detail to build up the quantitative basis for predicting subcellular targeting. We are interested in therapeutically relevant protein modules including oncoproteins (Rho GTPases), tumor suppressors (DIX domain) and membrane trafficking domains involved in human genetic diseases.

Cathy Sarisky



Cathy Sarisky joins the Virginia Tech Chemistry department after earning tenure at Everett Community College just outside of Seattle and completing her Ph. D. from the California Institute of Technology, in that order. (Cathy notes as an aside to any graduate students reading this that deciding to finish writing your thesis long-distance

while working full time is not the best of ideas, although it can be done.)

Cathy's graduate work, conducted with Steve Mayo, focused on computational redesign of proteins for improved stability. The key to doing computational design, she says, is to use a design cycle. Although projects may begin on a supercomputer, there is always a transition to the wet lab, where proteins are expressed and characterized by CD and NMR. The results from the wet lab are then used to improve the scoring function used in the computational work, completing the cycle.

More recently, Cathy is working in collaboration with her spouse, biochemist Tim Johann at Radford University, to identify residues

involved in catalysis in the enzyme 5,10-methylenetetrahydrofolate synthetase. This spring, they were awarded a grant from the Jeffress Memorial Trust for this research.

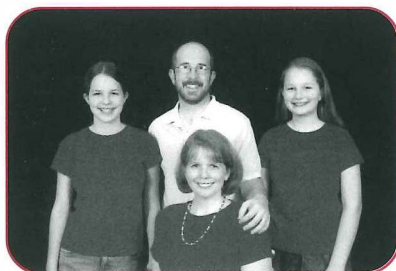
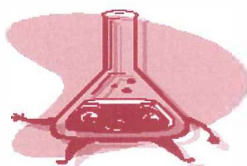
Cathy is also collaborating with Dr. Bob White in the Virginia Tech Biochemistry department. She is bringing some of her computational/proteomics skills to bear on problems in identifying novel genes in archaeobacteria.

When they aren't glued to their computers or arguing the subtleties of biochemistry, Cathy and Tim may be found renovating the couple's 80-year old house, hiking with their three dogs, or cooking vegetarian meals in their 40's era kitchen.

Alumni Highlights



“There is no reward worth gaining if it means you must compromise either someone’s trust or your integrity. If an employer or even a friend trusts you they will do their best to open doors for you to enter. You will have plenty of times in your career when you can compromise this trust but you must make every effort not to do so. While trust can be easily earned, it is almost impossible to regain when lost. I will also tell you without a doubt you must protect your integrity at all cost. While trust and integrity may not ensure your success, the loss of them will define your failure.”



Les Horning (M.S. '84) and family: Pastor, Christiansburg, VA, Mennonite Fellowship since May, 2005.

Scott Banks (B.S. '81)

May 2005 Spring Commencement Speaker
Department of Chemistry

There is another old saying that ‘A ship in the harbor is safe, but then that’s not what ships were made for.’ Today you leave your safe harbor, but with all you have learned, a safe harbor is not where you are meant to be. Take risk, but take them wisely.

This is what it comes down to. Believe in yourself. Believe in yourself so much that anything less than pursuing your dreams is unacceptable. Pursue those dreams with passion that fuels itself. Gandhi once said, “The difference between what we do and what we are capable of doing would suffice to solve most of the world’s problems.” Achieve what you are capable of achieving and you will be successful. Believe in what you are doing and you will be happy.

Pursue your goals, both personal and professional. Make a difference, no matter what you do. My fellow alumni, congratulations. Good luck in the coming years.”

Scott Banks was born in Richmond but grew up in North Carolina. He graduated from Virginia Tech with a bachelor degree in Chemistry in 1981. As part of the Chemistry and College of Sciences advisory board he has remained involved with Virginia Tech. His business opportunities have allowed him to travel extensively including Russia, China, Europe and South America. Married to Missy, they have two daughters, Meredith (8) and Anna (6) and reside in Charlotte, NC.

Raymond A. Swirsky, former professor of chemistry, died April 30 at the age of 64. Swirsky, who



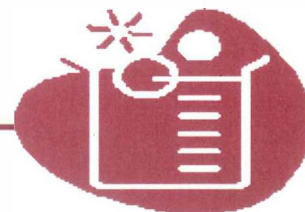
earned his Ph.D. in chemistry from Virginia Tech in 1971, taught in the Department of Chemistry for several years before going on to become a chemical consultant. He later owned two chemical plants. Swirsky also served in Korea and Lebanon as a parachuter in the 101st Airborne Division and was a member of Mensa.

Raymond O. Keto (B.S. '72) was awarded the U.S. Treasury Department’s Albert Gellatin Medal upon retiring after 32 years in forensic chemistry (16513 Raven Rock Dr., Gaithersburg, MD 20878).

Frank D. Straus (B.S. '76) was elected president of the Richmond Dental Society (12120 Ormond Dr., Richmond, VA 23233).

Continued on Page 10

Grants Received *Continued from Page 2*



- Investigator: Esker, Alan R.; Roman, Maren
Project: Bioinspired design of interphases in wood-plastic composites
Sponsor: USDA, CSREES
- Investigator: Bloomquist, Jeffrey; Carlier, Paul; Paulson, Sally; Wong, Eric
Project: Molecular design of selective anticholinesterases for mosquito control
Sponsor: Foundation for the National Institutes of Health
- Investigator: Dillard, John G.
Project: Development of a sealant adhesion and corrosion test
Sponsor: DACCO SCI Inc.
- Investigator: Ward, Thomas C.
Project: Continuing investigation of the puncture-healing properties of carbon nanotube filled polymers
Sponsor: NASA, Langley Research Center
- Investigator: Brewer, Karen; Winkel, Brenda
Project: Visible light induced interactions with DNA by rhodium centered supramolecular assemblies
Sponsor: National Science Foundation
- Investigator: Deck, Paul
Project: Monomer design validation
Sponsor: Sandia National Laboratories
- Investigator: Dorn, Harry; Gibson, Harry; Wyatt, Chris
Project: NIRT: An optimized nanosphere platform for high resolution multi-modality imaging applications
Sponsor: National Science Foundation
- Investigator: McGrath, James E.; McNamee, Mark G.
Project: Bridging the gap between new materials, fuel cell devices, and products: an alliance of Virginia universities (VT-VCU) Battelle, Virginia's Center for Innovative Technology, industry partners, and the Los Alamos National Laboratory
Sponsor: National Science Foundation

Selected Alumni Publications

Kevin Schug (Ph.D. '00), et al. "Measurement of Solution-Phase Chiral Molecular Recognition in the Gas Phase Using Electrospray Ionization-Mass Spectrometry", *Anal. Chem.* **2005**, *77*, 3660-3670.

Joseph DeSimone (Ph.D. '91), et al. "Continuous Precipitation Polymerization of Acrylic Acid in Supercritical Carbon Dioxide: The Polymerization Rate and the Polymer Molecular Weight," *J. Polym. Sci. Part A: Polymer Chemistry*, **2005**, *43*, 2546-2555.

Joe Hedrick (Ph.D. '92), et al. "The Analysis of Perchlorate by Ion Chromatography/Mass Spectrometry," *Amer. Lab.* **2005**, July, p. 16.

Chemistry Awards



2005 Wine Award for Excellence in Teaching

Gary Long

Professor Long says he got his fascination with science by watching the scientists fix every problem that came up with the Mercury, Gemini, and Apollo space programs. But some of the laboratory courses he took lacked the “joy of discovery” he had felt about the space program. When he came to Virginia Tech in 1983, he decided to restructure his courses so that lab experiences would be times of “discovery” for the students. He developed four courses and also made it his goal to get up-to-date equipment for the labs.

He is developing hypermedia tutorials and aids for undergraduate Analytical Chemistry and mathematic tutorials for General Chemistry. During his term as project director of the Mobile Chemistry Laboratory, Long worked with more than 60 chemistry teachers at 42 high schools in Southwestern and Southside Virginia and inner-city Richmond. He and his team trained teachers and took the essential lab equipment to the schools, helping improve the scores in the chemistry Standards of Learning for those students. Long received a B.S. from Wake Forest University and the Ph.D. from North Carolina State University. He did postdoctoral research at the University of Florida and was a Fulbright Research Scholar at the Weizmann Institute of Science. He has served as a program director for the National Science Foundation.

2005 Alumni Award for Excellence in International Outreach and Research

David Kingston

Selection is based on contributions to the internationalization of Virginia Tech, global impact, significance of the research/outreach, and sustainability of the research/outreach.



Kingston holds 14 U.S. patents, has worked with 24 international visiting scholars, and has given 361 lectures and presentations to national and international meetings and pharmaceutical companies.

He is program leader of the International Cooperative Biodiversity Group (ICBG) in Madagascar, which has contributed to drug discovery and the preservation of biodiversity and the economic development of Suriname and Madagascar. In part, as a result of his work, the Central Suriname Nature Research now protects land from the devastation of logging.

Kingston’s own research led to the identification, from the study of plant extracts, of a potential anti-cancer drug currently under investigation, and has shared his work with audiences around the world. He has trained scientists from Madagascar, Suriname, Taiwan, Japan, Thailand, India, Saudi Arabia, China, Pakistan, Ethiopia, Korea, Nigeria, South Africa, Egypt, Brazil, Turkey, and the United Kingdom.



Alan F. Clifford Faculty Service Award

Kay Castagnoli

The Clifford Service Award is a faculty award recognizing outstanding service at the department, university, and community levels.



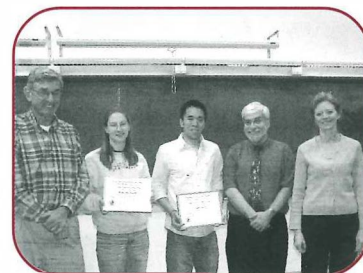
Analytical Chemistry Award

Paul Williams

The ACS Division of Analytical Chemistry provides an Undergraduate Award in Analytical Chemistry to a chemistry major to recognize students who do well in college-level analytical chemistry.

Viers Achievement Award

Katherine Howell
and Tyler Luong



A Virginia Tech alumnus, Dr. Don Lee, donated funds in honor of Dr. Jimmy Viers to provide awards to students who have overcome large odds to succeed in General Chemistry.

Alumni Highlights *Continued from Page 7*



Gregory C. Slack (Ph.D. '92) has been selected to lead Clarkson University's Division of Research (DOR). As director of the Division of Research

and Technology Transfer, Slack will

oversee the conduct and promotion of all research activities at the University.

He has over 13 years of experience in the pharmaceutical industry at Dupont, Bristol-Myers Squibb and most recently at Wyeth Pharmaceuticals. Slack has also had academic experience, serving as adjunct research

assistant professor of Chemistry at Clarkson, adjunct professor at SUNY Plattsburgh and Instructor of Analytical Chemistry at the University of Massachusetts, Lowell. He has authored or co-authored numerous publications and presented at professional conferences.



Pat Martin (Ph.D. '88) started working at RJ Reynolds Tobacco after leaving Virginia Tech in 1987. She worked as an analytical chemist in various groups at RJR for 16 years. Through research and continuing education she worked toward board certification in toxicology and in 1996 became a Diplomat of the American Board of Toxicology (DABT). In 2003, Pat joined Lorillard Tobacco Company in the Scientific Affairs Division. Her current research involves a pilot biomarker study and QSAR studies of biologically active compounds. She is also working towards Regulatory Affairs Certification.

James E. Smith (B.S. '66) is the new Alumni Association President and has begun a one-year term. Smith, who retired from E.I. Dupont in Wilmington, Del., is self-employed and resides in Williamsburg, VA



Henrik T. Rasmussen (Ph.D. '90) was co-instructor of a short course at the recent Eastern Analytical Symposium entitled "HPLC Method Development in Pharmaceutical Analysis".



Joe Hedrick (Ph.D. '92) and Leah Mulcahey (Ph.D. '91) have moved back to Wilmington area after 9 years in Houston. Joe comments: Strangely enough, a nice graduate student from Tech called 2 days after the move with the new number and address, which we had not updated, asking for money for the new graduate student building. Amazing how alumni affairs keeps up. Dupont decided to move Leah back. She's now doing 6 sigma blackbelt projects. I took the opportunity to change jobs within Agilent and am now a GC product manager. Other than the move, things are pretty much status quo. The departmental newsletters still find us.

Hokie Chemistry Major Creates Maternity Clothing Line

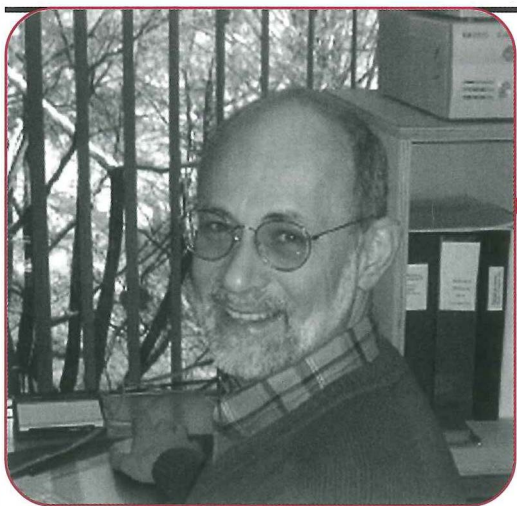


Mimi Harrison (B.S. '93) owns and operates University maternity in Christiansburg, VA, which markets maternity shirts in college colors. Her business goal is to provide licensed maternity wear from all Division 1A Universities.



Marie E. Krafft (Ph.D. '83) returned to Virginia Tech this fall to present a Chemistry Department seminar. Marie is Professor of Chemistry at Florida State University. The title of her talk was "New Life for an Old Reaction; Unprecedented Reactivity in the Morita-Baylis-Hillman Reaction".





Alumni Spotlight

Thomas A. Perfetti

(1978 Ph.D., Physical Organic Chemistry)

During the 1970 and 80s there were five Perfettis that “graced” the halls of the Chemistry building at VaTech. In the mid 1970s my brother Randy (known as R) worked for Phil Hall and his wife Gracia Ann (known as G) worked for J.P. Wightman. They graduated with their Ph.D.s in 1975. I (known as T) started my graduate days in 1974 working for the Big “O” (Mike Ogliaruso). So during 1974-76, four Perfettis (R, G, T and my wife Pat) were roaming the halls of Davidson (and elsewhere). My wife Pat worked for Larry Taylor and Bill Coleman on a coal gasification project in the summer of 1976. I can remember that we all worked hard at school (the faculty was demanding but fair). And I also remember that we all (the faculty and the graduate students) played even harder (Intramural games, the famous Christmas parties, “meetings” at The Greeks, and various sundry parties!). Some say the first wave of Perfettis (ending in the summer of 1977) was “memorable”; others have said things that I do not wish to repeat. In the early 1980s my sister Barbara (the fifth Perfetti) attended the Chemistry Department. According to her, they were still talking about us (R, G, and T) when she attended. We are all proud graduates of the Chemistry Department at VPI-SU.

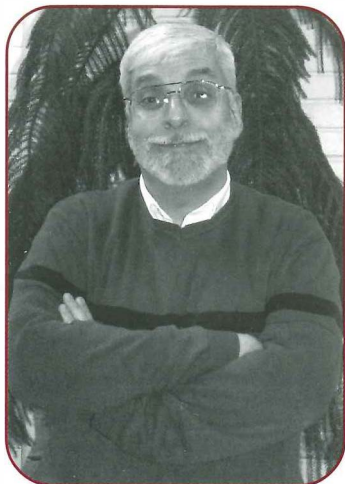
In the late 1970s, there was a glut of Ph.D. chemist on the market and it was depressing going to the mailbox everyday to get the rejection letters. I was fortunate to find employment at R.J. Reynolds Tobacco Company (RJRT, now Reynolds American Tobacco), and after defending my thesis in the late summer of 1977, I began work at RJRT R&D in October 1977 as a research chemist. Although I was a fresh Ph.D., I had to be trained (again) as a tobacco scientist (a field not taught in universities). To my delight, over the years, I was engaged in some of the most exciting research that any chemist could imagine. I worked in both fundamental and applied research in various departments (tobacco chemistry, smoke chemistry, sensory evaluation, brand development, cigarette design technology, process engineering, flavor development, etc.). During my 26 year career, I wrote over 300 formal program reports, published

over 30 papers in various peer-review journals, made lots of presentations nationally and overseas, and received nearly 40 U.S. Patents. RJRT afforded me many opportunities over the years; good science, good friends, and good financial support. Unfortunately sometimes “good things” come to an end. My wife (Pat) and I both retired from RJRT in 2003. We worked together in R&D for many years. She retired as a Master Scientist and I retired as a Principal Scientist.

Since retiring (and I do use that word loosely) we have been very busy. There were loads of projects to do both inside and outside the house (room painting, floors to be fixed and cleaned, a 27-year pile of mulch to turn, shrubs to be tended, trees to be trimmed, etc). Day-to-day events seem to take more time than I expected before retiring. I’m not sure how we raised two young men (Michael and David), worked, and kept everything going while we were employed. Michael (22) and David (19) are in college now and are doing very well. Michael will graduate with a B.S. in chemistry from the University of North Carolina at Chapel Hill in December, 2005. David is a sophomore at Appalachian State University studying Construction Management.

Besides the day-to-day stuff, Pat and I have also opened a scientific consulting firm, Perfetti & Perfetti, LLC (more later). Pat is working part-time for a psychologist, and I am consulting with a few companies. I am also working as a historian with the Division of the History of Chemistry at the ACS. Recently, I completed 48 biographies of Dexter and Edelstein Award winners. Next year (2006) will be the 50th Anniversary for this prestigious ACS Award. We have also been visiting Pat’s farm in southwestern Pennsylvania where we are restoring an old barn and trying to reforest the 130-acre farm that has been in her family for over 200 years. We haven’t taken any major trips, but hopefully I can convince Pat to travel to a little town in Italy called Salsomaggiore Terme where I visited once (on a business trip) and ran into another fine Italian and VaTech Chemistry professor, Neal Castagnoli. It is a small world! All-in-all “Life is Good”, actually great!

From the Department Chair *Continued from Page 1*



So, the faculty staff and students (past and present) are to be congratulated for this accomplishment. What makes this milestone even more amazing is that the VT Chemistry department is smaller than most of its peers in the 20-30 ranking group. In addition, this research is accomplished while our faculty are teaching over 17,500 student credit hours each semester. We are no slouches in the teaching arena either. Last spring, the weighted average for student evaluations for all courses taught by the chemistry department was 3.5 on a 4.0 scale.

I personally want to thank all of the previous department heads and chairs, especially my two immediate predecessors, Rich Gandour and Larry Taylor, for providing me with such tall shoulders on which to stand because the view from here is wonderful.



Jim Viers Retires from the University

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Staff Spotlight

Twenty-seven years ago, at the age of eighteen, very inexperienced and scared to death, I began my adventure at Virginia Tech. After working for eight and a half years in the Center for Environmental Studies (for Professor John Cairns), a new opportunity presented itself in the Dean's Office. As luck would have it, a few months later the person I was working for decided to move and their position would not be filled. My position was offered to the Chemistry Department with the stipulation that I be accepted with it if I wanted the job. I decided to take a chance even though I had heard 'interesting' things about the Chemistry Department. And now, eighteen years later I am sure I made the right decision and feel very blessed to be a part of the Chemistry Family.



Angie Miller
Chemistry Secretary

that I may have one beautiful daughter but I have many girls. Girl Scouting is not only a part of my life, it has become a way of life. And this year, my granddaughter is a Daisy Girl Scout and, guess what, I'm her leader too. And so the story continues

Working in the Main Chemistry Office with Wanda and Linda is never boring. We are co-workers but we are also friends. We often joke that we know more about each other than our families know about us. And one thing is for sure, I know that if I ever need them, they will be there!

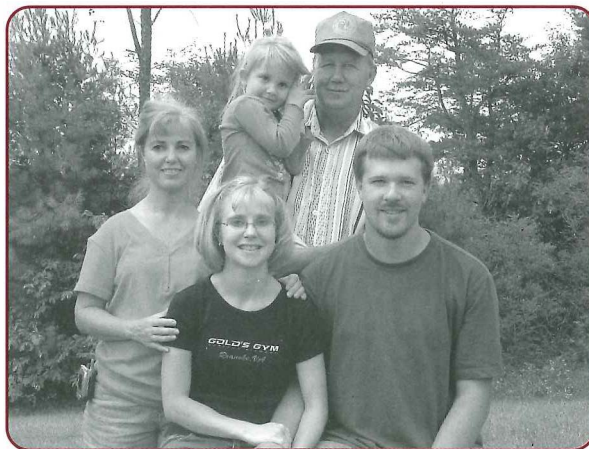
Life is never boring

Most people in the Chemistry Department know that I am involved with Girl Scouting and am often referred to as the Girl Scout lady. My interest in this area began when my five year old daughter said, "Mommy, I want to be a Daisy." Well naturally I began checking into making that happen. And wouldn't you know it, they needed help. So, I helped with my daughter's troop and took on the leadership of a Brownie Troop the same year just so my daughter would have somewhere to go the next year. That leadership has continued now for twenty wonderful years. My girls and I have camped, attended lots of events and taken trips. Through all of this they have learned about leadership, helping others, learned new skills and had a lot of fun too. In addition to being a leader, I serve in many other positions (trainer, manager, etc.). I feel that Girl Scouting was a blessing – God's way of showing me my strengths and giving me the opportunity to work with children. I have always said

My granddaughter, Bridgette, is such a little joy. If you are in the main office very often you will most likely hear one of my 'Bridgette' stories. She is now five years old and has given me enough material to write a book. She has all of us (my husband, Tommy, daughter, April-Dawn, her fiancé, John and myself, of course) pretty much wrapped around her little finger.

My family and I attend The Little White Church located in Check, VA, where I serve as a teacher, trustee, program director and sing in the choir.

Someone once told me that I was living life too fast – that I was going to be old before my time. Well, I don't feel old – tired maybe – but not old. And I sure don't plan on sitting around just waiting for old age to catch up with me – I'm going to make it chase me!



Chemistry Awards *Continued from Page 9*



Cook Faculty Research Award

James McGrath

Jim has had an illustrious academic and industrial career spanning more than four decades, which has firmly established him at the top of his profession. He is widely acknowledged to be a world leader in the

synthesis of a variety of high performance organic polymeric materials as well as in their applications to engineering problems.

Harold McNair Staff Service Award

Geno Iannaccone

The Harold McNair Staff Service Award is a classified staff award recognizing outstanding service at the department, university, and community levels.



Phi Lambda Upsilon Award

Charlie Thomas

Phi Lambda Upsilon, the national chemistry honorary society, recognizes an outstanding senior in our department each year.

Analytical Chemistry Award

Paul Williams

The ACS Division of Analytical Chemistry provides an Undergraduate Award in Analytical Chemistry to a chemistry major to recognize students who do well in college-level analytical chemistry.



Undergraduate Research Award

Sarah Huffer
Matthew Jeletic
Mariam Konaté

The Chemistry Department Undergraduate Research Award recognizes excellence in research. Students are nominated by their research supervisor and approved for the award by the Undergraduate Committee.

Cook Faculty Teaching Award

Daniel Crawford

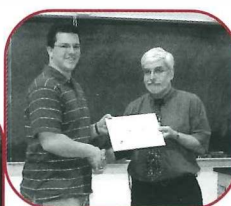
Daniel's student evaluation for undergraduate courses taught is an outstanding 3.82/4.00 in "Physical Chemistry" and "Physical Chemistry for the Life Sciences". Not only do the numerical ratings reflect Daniel's success as a teacher, the student comments support and amplify on the meaning behind those ratings. One student comments "I think I just walked out of a calculus-based physical chemistry class understanding quantum mechanics." Another student comments "The best professor in the department. He is very good at lecturing and cares about the students, but I hated the material."



CRC Freshman Chemistry Achievement Award

Stephanie Moore

This award, provided by Chemical Rubber Company Press, recognizes outstanding scholastic achievement in first-year college chemistry.



American Institute of Chemists Award

Robert Schmidt

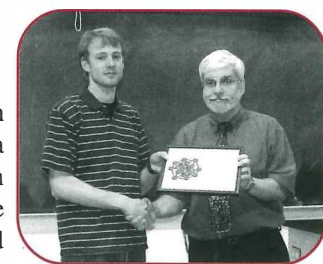
This award is presented by the AIC to a senior chemistry major chosen by the Chemistry Department.

Hypercube Scholar Award

Jeffrey Carter

This senior award, which consists of a certificate and a copy of the Hyperchem molecular modeling software package, is presented annually by Hypercube, Inc.

We try to select a recipient who will make effective use of this very expensive - it retails for more than \$2000! - and powerful software.



Donors

Appreciation is extended to all alumni, friends, faculty and organizations that have contributed to the Department of Chemistry at Virginia Tech over the years. Your gifts make a difference and can be designated for general department needs or specific programs and scholarships. The following names are donors for the period January 1, 2005 to June 30, 2005.

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A scholarship in your name or the name of a special loved one is a gift that will live forever. You can help our students to become tomorrow's leaders in industry, academia, and medicine. The Department of Chemistry offers scholarships to both undergraduate and graduate students based on academic potential, academic performance, and financial need. For more information on how to create a scholarship for a deserving Chemistry student, please contact Joe Merola at jmerola@vt.edu or 540-231-4570.

VIRGINIA TECH DEPARTMENT OF CHEMISTRY'S MISSION

The Virginia Tech Department of Chemistry has a long history, a solid reputation and a bright future. Our courses provide the chemical foundation for all Virginia Tech science and engineering students and broaden their understanding about the structure and properties of matter. Our undergraduate and graduate degree programs prepare society's future chemists and scientists. Our faculty's research and scholarships generate and disseminate chemistry knowledge to the Commonwealth, the Nation and the world. And our outreach programs offer opportunities to share this knowledge with others, including practicing professionals, as well as primary and secondary school children. To achieve our mission, the Virginia Tech Department of Chemistry will continue to pursue multi-disciplinary research within and beyond the University, to find innovative ways to instruct students, to forge partnerships with industry and government and to establish a reputation as one of the world's highest ranking chemistry departments.

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