

# ELEMENTS

*The Alumni Magazine of the Department of Chemistry at Virginia Tech*



## From the Department Chair

Greetings from Blacksburg! We have survived another January/February. The daffodils outside Davidson Hall are already blooming. Lots of things have happened in the Department of Chemistry since the Fall, 2003 newsletter. First Professor Joe Merola was appointed Department Chair by the Dean and Provost effective July 1, 2004. Yours truly will be returning to full time teaching and research. Next, staff and faculty enjoyed a modest raise in salary for the first time in three years effective November 2003.

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Tel: 540-231-5391  
Fax: 540-231-3255  
ltaylor@vt.edu  
www.chem.vt.edu

The start of the New Year saw the Department relocate all of its upper division teaching laboratories to the new Chemistry-Physics building. We owe Claudia Brodtkin and Stephen Burrows a great deal of thanks. They both worked long and hard during the holiday break to get everything in place for the start of classes January 15, 2004. Many others assisted in the move such as Via College of Osteopathic Medicine Students, but Claudia/Stephen made it all happen. The Department was extremely fortunate to have over \$1.5 M from the state to equip the new building. If you are on campus, I encourage you to come by the Department for a tour of the facility which is now being referred to as "ChemP". There are two 200 seat lecture theaters. Physics has 10,000

assignable square feet; while Chemistry has approximately 40,000 assignable square feet.

Later during the winter, the Department was given permission to search for two new faculty in the areas of Computational Chemistry and Nano/Bio Science. These are the first new faculty searches the department has been able to conduct during the past three years. Approximately 100 applications per opening were received. At press time, Diego Troya, Research Associate at North-western University, had accepted the Computational Chemistry position. The winter of 2004 also saw the state lawmakers deny the university's request for \$33M to renovate Davidson Hall for research purposes in FY 2005.

As my six year tenure as Department Chair winds down several realities have surfaced in my mind. The Department is blessed with a large number of capable, dedicated, and hard working individuals who range from custodians to graduate students to staff to faculty. I am deeply indebted to each one of them as they truly make the whole department greater than the sum of its parts. The custodians work hard and take pride in their work under

*Winding Down as  
Department Chair*

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# Faculty In The News



Governor Warner visited Blacksburg last fall to elaborate on his proposals for improving higher education by 2010. He got a demonstration of a general chemistry course being taught at Virginia Tech by Ketan Trivedi and Herve Marand using a DVD-ROM text instead of a regular textbook. It was developed

by CRC tenant Trivedi Technology Innovations International. It took Trivedi and Marand and 11 other people more than three years to create the interactive DVD which made its debut at Tech's summer school, 2003. The DVD contains 10 chapters. Students need not even read them as they come up on the screen, although they can do so by pushing the "mute" button. Otherwise, one of more than 80 voices does the reading. Those voices belong to students and faculty members from the Chemistry Department. "Chemistry is a language. You need to hear it and a textbook cannot do that" said Trivedi.



Harry Dorn has received a NUE (Nanotechnology Undergraduate Education) \$100K award aimed at involving college faculty in two hands-on short courses per year in making novel fullerenes and carbon nanomaterials at Virginia Tech. The proposal was prepared with the assistance of Professor DuChamp at Emory and Henry and Nathan Swami, Director, Initiative for Nanotechnology in Virginia.



The Governing Board of the Eastern Analytical Symposium, Inc. has selected Harold McNair to be the recipient of the 2004 Award for Achievements in the Fields of Analytical Chemistry. This award will be presented to Harold in recognition of his significant contributions to numerous areas of Analytical Chemistry in November 2004.



Daniel Crawford was quoted in articles that recently appeared in the Washington Post, San Francisco Chronicle, Atlanta Journal – Constitution, and Seattle Times concerning the Virginia Tech cluster of off-the-shelf G5 Power Macs which now ranks as the world's third-fastest supercomputer, at 10.3 trillion operations per second. The cost was about \$7 million to the University. Crawford said Big Mac will shorten the time he spends building computer models of chemicals from years to just days. "It opens an entire new area of chemistry".

Crawford has also been given a Cottrell Scholar Award entitled "Quantum mechanical studies of chirality: Local correlation methods for optical rotation in large molecules" - \$75,000.



Felicia Etzkorn has been selected as a mentor for one of the PREP scholars. PREP is an NIH grant, for which Ed Smith in Comparative Genomics is the Principal Investigator, that gives special attention to minorities in the biomedical sciences to prepare them for graduate studies. PREP scholars are supported as technicians for two years, taking classes in areas that need work as well as GRE preparation classes.



David Kingston appeared on Public Radio's "With Good Reason" during March, 2004. The show will also be available online, and the URL where it will be stored for at least a year will be at <http://www.virginia.edu/vfh/wgr/feb04wrg.html/>

Kingston is also collaborating in a third five-year ICBG (International Cooperative Biodiversity Group) to study tropical plants and marine organisms in Madagascar. The group includes Missouri Botanical Garden, Conservation International, the Madagascar National Centers for Pharmaceutical Research for Environmental Research and for Oceanographic Research, as well as Eisai Pharmaceutical Research Institute and Dow Agrosiences. The ICBF is funded through a consortium of federal agencies.

# Alumni Spotlights

## Reflections of Elizabeth Calvey

(BS '82, MS '84, PhD '90)

**Dateline 1959 to 1977** - I was born and raised in the Garden State and left NJ on my 18<sup>th</sup> birthday never to return but for short visits. I do not know how I learned about Virginia Tech, at the time VPI&SU (veepeesue). I applied to VPI because (1) it was far, far away from NJ; (2) it was cheaper to attend as an out-of-state student than it was as an in-state-student at Rutgers (alas no more!); and (3) it had a cooperative education program. As an undergraduate, my major was Biochemistry. While I enjoyed Biochemistry, I discovered during my co-op experience at the Food and Drug Administration (FDA)



that I really was an analytical chemist. Of course by that time, it was too late to switch to Chemistry and get a B.S. but I could get a B.S. in Biochemistry and a B.A. in Chemistry. The only course I needed for a B.A. by my senior year was Inorganic where I met Larry Taylor.

**Dateline 1982** -The job market was such that when Larry Taylor suggested I apply to graduate school at VA Tech to get my MS in Chemistry, it seemed just the right thing to

Continued on Page 4

## Reflections of Robin Kinser

(BS '73)

It was my senior year of high school, and I didn't have a clue about which college I wanted to attend. I was wandering the halls of the school one morning, convinced that I would have a better chance at winning a scholarship if I could specify on the application forms the college of my choice. One of my friends, a girl named Mary Ann, suggested that I come with her to VPI. She even invited me and another of our classmates (a boy named Mike (more about him later)) for a pre-admissions visit. I liked the campus and the Department of Chemistry. I didn't even apply anywhere else. Fortunately I was admitted.



The Chemistry Department assigned Harold McNair as my advisor, an act of great good fortune as far as I was concerned. Being able to say I learned gas chromatography from Harold McNair has never failed to open doors for me throughout my career. After 30 years as a chemist, I certainly have utilized the facts of chemistry as I learned them during my undergraduate years, but the most important aspect of that education was the concept of what an education was supposed to be. Dr. McNair summarized it best when he once told a group of us

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## Debi Anderson Wins Award

(BS '72)

The McGlothlin Award is one of the nation's largest awards for public school teachers. The award is sponsored by Blue Ridge Public Television and the McGlothlin Foundation. There are two \$25,000 grants, made to an elementary and a secondary school teacher in the Appalachian region, which includes Eastern Kentucky, Eastern Tennessee, Western Virginia, and Southern West Virginia. One of the unique features of the McGlothlin Award is that \$10,000 must be used on international travel.



Debi's international travel plans are outlined on her web-site under the calendar section. She and her husband will be in London for several days, then to Manchester, where they have a contact at the Museum of Science and Technology. Debi will be teaching in Kingussie, Scotland for three weeks. Kingussie is in the Highlands and is similar to Bland County geographically, economically

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### *Reflections of Elizabeth Calvey - Continued from Page 3*

do. Another very important thing happened in that fall I got engaged. Did I mention that I met my future husband, Bob, while I co-oped at the FDA? We set the date for December 1983.

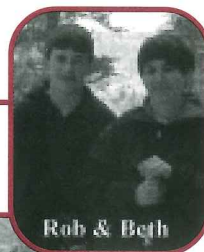
**Dateline 1984** -I started working at the FDA full time in April 1984 and graduated with a MS in Chemistry in May of 1984. I developed methods to analyze mycotoxins, secondary mold metabolites, and seafood toxins in foods. In 1986, Larry and I met up again at an ACS meeting in Utah. We began discussing the possibility of my returning to get my Ph.D. The idea appealed to me so I investigated how I could do it while, maintaining my job at FDA (returning to poverty was not an option!). I got approved for a program where I could return to Blacksburg for nine months to finish my course work and begin my research, which I was able to complete at FDA in Washington.

**Dateline 1990** -I successfully defended my dissertation in December 1989; got final signatures in March 1990; had my son in April 1990 and received my Ph.D. in May 1990. A pivotal year!

**Dateline 1996-2004** -I was provided an opportunity to help develop a new program, the Joint Institute for Food Safety and Applied Nutrition, a partnership with the

University of Maryland, College Park and the FDA. I am currently Deputy Associate Director of this program.

While I identify with research chemist/manager, I am also a being a research wife and mother. My husband, Bob, has supported my career and has provided that measure of balance between career, mother and child. My son, Rob, will be attending high school next year. As a family, we have spent many vacations at Disney World, New Orleans, and York, England (might as well take advantage of those scientific meetings!). We have also visited many of our National Parks despite the fact that there is no TV in Yellowstone, Volcano National Park or Zion National Park. For those of you who may not know, a week without TV is torture to any growing boy! I have always enjoyed the concept of gardening, but lack of time and a bad back has finally convinced me its time for the professionals. Our basic requirement is a garden that requires very little weeding, as my husband says it's easier to mow a lawn then to weed a garden!



Rob & Beth



Bob & Rob

### *Reflections of Robin Kinser - Continued from Page 3*

that he didn't expect us to have all the answers when we went out into the world; he just expected us to know where to find all the answers. Feeling as though you always know where to look, feeling as though it's ok if you don't have immediate recall of every fact—that's very empowering.

Remember Mike, who accompanied Mary Ann and me when we first visited what was then VPI? Although also admitted, he did not attend Tech, but he stayed in my life, and became my husband. He has personal ties to Virginia Tech other than being a spouse of an alumna: his dad was a Tech graduate (BS EE 1945), and Michael worked at the Rector Fieldhouse as a custodian, before we were married.

I didn't forget how important it was that I find scholarship money to help fund my education. Our strong ties to Tech made it the logical first choice for any contri-

butions we would make. The generous matching gift program provided by my employer (Philip Morris USA) extended our gifts.

By donations to the Friends of and endowment ship named



Robin & Michael 1999



Robin & Michael 1973

Chemistry fund ment of a Chem-partment scholar-in memory of our fathers, Michael and I hope to alleviate some financial concerns of a few current chemistry students.

A final note to all alumni—I recommend a visit to the new Chemistry/Physics Building the next time you're on campus. The lecture space is marvelously equipped, but you will not believe the labs.



## Alumni Highlights



Andrew P. Brogan is the recipient of an ACS Division of Medicinal Chemistry (MEDI) 2003-04 Predoctoral

Fellowship. The fellowship is sponsored by a pharmaceutical company and consists of a \$20,000 stipend and travel funds to attend the fall ACS national meeting, where the awardees will orally present their research results in an award symposium. Andy Brogan received a B.A. (1999) in chemistry and a B.S. in biochemistry from Virginia Tech while conducting undergraduate research with Richard D. Gandour and James E. Wolfe.

Kenneth B. Williams (PhD '85) received the Award for Excellence in Teaching from Francis Marion University in South Carolina, where he holds the Drs. Bruce and Lee Foundation Chair in Chemistry.

O. L. Chapman, (BS '54 Chem.), VPI 1954 died on Thursday, January 22, 2004. Gerry Bass and Orville were roommates at Tech as undergraduates. He died of lung and heart troubles.

William J. Madia (PhD '75) was promoted to executive vice president of laboratory operations at Battelle's world headquarters in Columbus, Ohio.

Ronald L. Earp (BMG Labtechnologies, Inc.) (PhD '98): "I'm off in Germany for one of our internal strategy meetings. I'm over there about 5 times a year plus the US travel so it is a lot of time on the road. My German is not so bad now though, so I suppose that is one positive note."

William M. Coleman received a PhD degree from our Department in 1977. In 1970 he received a MS degree from Virginia Tech prior to shipping out to the US Navy during the Viet Nam conflict. After four years he returned to Blacksburg at the Navy's expense to pursue a PhD degree under L. Taylor's direction. Bill has been promoted to Senior Principal Scientist at RJR in Winston Salem. The SPS is the highest scientific position in the company.

Walter Zajac (BS '57) has announced his retirement after 42 years of teaching and research in organic chemistry at Villanova University.

Stuart Lewis who is a Va. Tech Chemistry graduate of 1996 has completed all his requirements for his Ph.D. in Chemistry at the University of Akron. His father, Hudnall H. Lewis, M.D., graduated with a degree from Virginia Tech in Chemistry, 1959.

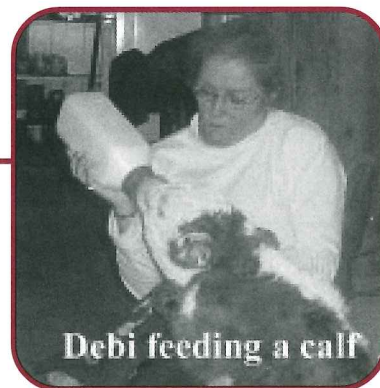
Jenn Stockdill (BS '03): "California is great. It's warm and sunny most of the time, of course, but I really miss the rain, ironically enough. Classes are going well, I'm cramming more information into my brain each day than I thought remotely possible. I started a project this summer in Brian Stoltz's lab. I am working on the total synthesis of a natural product called Zoanthanol. You'll be thrilled to know, I'm sure, that the lab courses we suffered through at Tech were really great preparation. The only thing I wish I had that we didn't was a course that emphasized more synthetic methods and retrosynthesis and stuff."

Dana A Brewer: I worked as a contractor at NASA Langley for about 10 years doing tropospheric chemistry modeling and some modeling of the internal environment of the Space Station. I went to Reston as a Civil Servant in 1987 and, when Reston closed in 1992, I came downtown to NASA HQ. I perform engineering functions now as a Program Executive, focusing on the living with a star program and space environmental effects.

### Debi Anderson Wins Award - Continued from Page 3

and ethically. When they leave Scotland in late June, she and her husband will tour Northern Ireland and Ireland before spending a week at Oxford University. After Oxford, they will be visiting friends in Kent, and going to France.

Most exciting for Debi is to be able to share her American teaching style with Scottish teachers and students and to learn from them. "So much of scientific heritage comes from the British Isles, it seems like a perfect opportunity to study the history of science."



Debi feeding a calf

# Student News

Scott Gaynor was selected outstanding young researcher in nano-science by Technology Review. Gaynor, who holds 10 patents and has three more pending, joined Dow Chemical in 2000, where he has developed new techniques to synthesize variants of common plastics, with improved properties. Gaynor is now preparing light-emitting polymers that could result in video displays that are thinner, sharper, and brighter than current flat-panel liquid-crystal displays.

Four of our chemistry undergraduates presented papers at the Polymer Undergraduate Conference held at the University of Southern Mississippi. Amanda Rudicin (biology major, Tim Long's group) won the best paper award in Polymer Science and Jon Goff (chemistry major, Judy Riffle's group) won the best paper award in Materials Science.

Feihe Huang, a graduate student in the Gibson group, received the William Preston Award in Life Sciences. The Selection Committee remarked that "Mr. Huang's thesis was the best example of high quality research done by graduate students at Virginia Tech and that he is highly deserving of this award from the Society".

Kenton Wiles, a graduate student in Jim McGrath's group, has been selected by the Graduate Research Development Project (GRDP) evaluation committee to receive \$500 from the Graduate Student Assembly (GSA). The GRDP is a program administered by the GSA to assist Virginia Tech graduate students with their degree contingent research.

The Department hosted a breakfast at the Four Points Sheraton Friday morning, December 19, 2003 prior to graduation for graduates and their families. Undergraduate students attending were: Courtney Eisen, Jonathan Goff, Drew Griffin, William Harrell, Ryan Weyers. The lone graduate student was Eric Iezzi (PhD with H. Dorn) whose Mother and Father accompanied him. Professor Viers presented certificates which could be "cashed in" for a real diploma next month.

Hyong-Jun Kim has been granted a Postdoctoral Travel Fund award of \$1000 by the University to attend the National ACS meeting in Anaheim, CA.

## Chemistry Department Honors Head Secretaries

In April 1986, Dr. Alan Clifford hosted a reception for faculty, staff and invited guests at which time photographs of former department heads were unveiled in the Davidson Hall conference room. The photographs of 8 former and the present department head are now found in the Hahn Hall conference room. In light of the many contributions that the staff makes to the department, it was felt appropriate that we recognize those persons who have served as Head Secretary. The Department is much better because of their loyal attention to the daily matters of running a comprehensive academic department. The department therefore hosted a luncheon for faculty and secretarial staff in December 2003 to honor some of our departmental head secretaries. Doris Smith [1969-1973] of Blacksburg, Donna Maciorowski [1974-1978] of Shepherdstown WV, Brenda Mills [1979-1990] of Fairlawn and Linda Sheppard [1990-present] of Radford were able to attend. Nell Trent [1943-1958] of Christiansburg and Karen Porter [1978-79] of Austin TX were unable to attend because of illness. After an enjoyable lunch, welcoming comments by Larry Taylor

preceded the showing of a few slides of each honoree with humorous comments from the attendees. Each honoree was presented with a corsage and a scented candle inside a glass jar with a sketch of Davidson Hall on the outside. Framed photographs of the head secretaries will be hung in the main office in Davidson Hall similar to our department head photos in Hahn Hall. Former Department heads, Harold McNair and John Dillard, were able to attend the luncheon. Retired faculty members, Harold Bell, Jack Graybeal, Harold McNair, Mike Ogliaruso, and Jim Wightman, lent some historical perspective and a certain needed decorum to the luncheon.



# What's New In Chemistry

Professor Mallakpour, visiting professor in the Tim Long research group, has received a prestigious scientific award: The ISI Scientist 2003 award given by the Ministry of Education in Tehran, Iran.



For over 20 years the Center for Adhesive and Sealant Science has provided graduate fellowships to many of our chemistry students. Unfortunately, this source of funding has not been recognized in the past as much as it should have been in my opinion. Jim Wightman, John Dillard, and David Dillard have provided excellent leadership of CASS over the years. Brian Mather has recently received a CASS Fellowship based upon his proposal entitled "Adhesion at the Molecular Level: Implications from Molecular Recognition". Brian is a student in the Tim Long research group.



The fall workshop for participants in the Industrial Scientific Partnership Program of the Mobile Chemistry Laboratory met in Blacksburg in November 2003. The ISP program, which is directed by Gary Long, involves the partnering of Virginia Tech with regional chemical industries and local community colleges to extend the outreach of the Mobile Chemistry Lab and ChemKit Program to inner city schools in Virginia and underserved regions of Appalachia. The goals of the partnership are to increase the number and relationships with regional chemical industries.

Our American Chemical Society Student Affiliate Chapter has been selected to receive an Honorable Mention Award for its chapter activities conducted during the 2002-2003 academic year. Carla Slebodnick, faculty advisor of the chapter, deserves special commendation.



The NSF has recently funded an unprecedented second Virginia Tech IGERT proposal (\$3.2 M/five years) entitled "Macromolecular Interfaces with Life Sciences: Oxidative Processes". This educational program will catalyze research and educational initiatives at the interface of chemistry and biology, and approximately 35 graduate student fellowships will be awarded over a five year period. Profs. Sue Duncan (College of Agriculture and Life Sciences), Craig Thatcher (College of Veterinary Medicine), and Tim Long (College of Science) as co-PIs will co-direct the development of new interdisciplinary educational mechanisms and research activities.

The \$1.6 M set aside for Chemistry to equip the new building is pretty amazing in light of the budget reductions we have been forced to endure for the past three years. John Dillard has done a terrific job in assessing the faculty's wishes concerning how the money should be spent. The break-down of expenditures by undergraduate laboratory is as follows:

Analytical - \$281,356  
Inorganic/Instrumental - \$277,678  
General/Intro - \$168,357  
Organic - \$176,596  
Physical - \$212,847  
Polymer/Syntech - \$453,310

Printers/Computers - \$76,765  
Furniture - \$73,627

The Department of Chemistry is very grateful to the Commonwealth of Virginia for not only constructing the building but also for setting aside funds to adequately equip it for chemistry students.



## Create a Chemistry Scholarship

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 Larry Taylor at ltaylor@vt.edu or 540-231-6680.



## Faculty In The News Continued from Page 2



Dr. Joe Merola has been appointed Chair of The Committee of Examiners for the Chemistry Test of the Graduate Record Examinations. This is a group of 8 chemists (2 each from the areas of analytical, inorganic, organic and physical) who write, review and revise questions for the Chemistry GRE Test as well as compile the final exam. Joe has been a member of the Committee for the past four years.



Paul Carlier has received an Honorary Professorship from the Kunming Institute of Botany. Funding from the Chinese Academy of Sciences will make possible a visit to the Institute where Paul will be honored.

Professor Carlier's manuscript which is published in JACS, **125**, 11482 (2003) appeared as a Chemical & Engineering News Science & Technology Concentrates in September, 2003.



Gary Long presented an invited lecture at the Fifth K-12 Outreach Conference held in Raleigh, North Carolina in February 2004. The conference was organized by the Science House of North Carolina State University and funded by the Burroughs Wellcome Fund. The title of the paper was "Outreach to High Schools with a Mobile Chemistry Laboratory".



Paul Deck has been granted Research Study Leave from Virginia Tech for one semester, from December 2003 through May 2004. He will be conducting research at the Max Planck Institute fuer Polymerforschung in Mainz, Germany.



Tim Long's article entitled "(Polymerization of A2 with B3 Monomers: A Facile Approach to Hyperbranched Poly(aryl ester)s)" (Macromolecules; 36(26) pp 9809 "C 9816; 2003) has been introduced to the readers of "Heart Cut", an E-journal of the American Chemical Society (ACS).



Larry Taylor has been selected for induction into the Thomas Green Clemson Academy of Engineers and Scientist at Clemson University.



Alan R. Esker, assistant professor of chemistry has won a five year, \$500,000 National Science Foundation CAREER award designed to encourage promising young researchers. Esker's research is aimed at understanding the properties of polymer stabilized magnetic nanoparticles (MNPs) at surfaces and interfaces and providing insights into using MNPs for biomedical diagnostics and the treatments of diseases such as cancer and blindness resulting from macular degeneration.



The ACS Petroleum Research Fund Advisory Board has recommended that Karen Brewer receive an ACS PRF grant of \$80,000 in support of her proposed research.



Jim Glanville has been approved by the Board of Visitors for designation as Associate Professor Emeritus of Chemistry.

Tom Ward/Jim McGrath from Chemistry and Garth Wilkes from Chemical Engineering have won the Flory Award by the ACS Polymer Division for their outstanding teaching of polymer related shortcourses.



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# Staff Spotlight

James (Jim) M. Hall has worked in the Department of Chemistry Electronics Shop for 28 years, first, as a laboratory instrument maker, then a computer systems analyst A, and now computer systems senior engineer. During this period there has been a dramatic shift in the nature of the services performed by Jim for the Department of Chemistry. The shift has been away from maintenance and repair of conventional electronic instrumentation to that of computer controlled instrumentation and the development and implementation of laboratory and department wide computer networks. This shift has resulted in a substantial upgrading of knowledge by Jim through attendance at seminars and short courses as well as through self-study. Jim had the motivation to learn the new technology. He had the ability to lead the Department of Chemistry into the computer age. He had the talent to teach staff, students, and faculty the merits of computing both in the laboratory and in the office. He now continues to exhibit the patience to keep the computers of our 120 graduate students, 35 faculty, and 30 staff "up and running." Without his easy style, generous nature, and forgiving spirit, the Department of Chemistry would be much less "computer literate and savvy". Jim is no 8 am to 5 pm staffer. He reminds me of some medical doctors - he is on call all the time and never becomes exasperated by the dumbest of questions. Everyone knows if you have a computer problem the response is "have you called Jim Hall!"

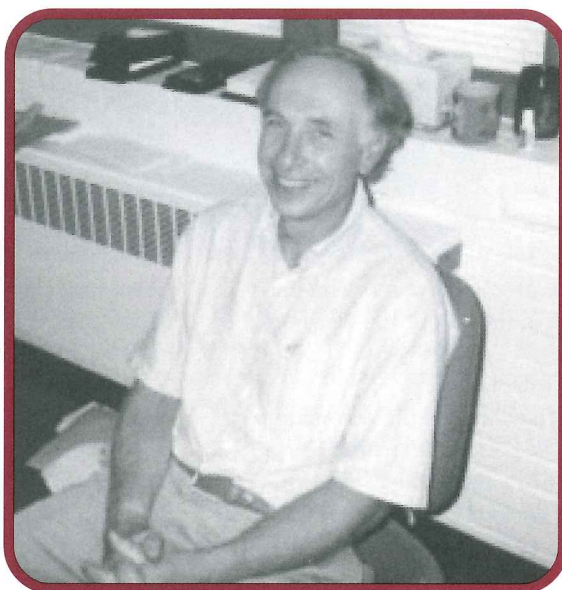
Jim is also a ready resource of computer-related information. If you are going to make a computer purchase, chemistry folks ask Jim Hall's advice first. Jim's work ethic and style have been translated to the Electronics Shop that he supervises. All the staff, which he supervises, are just as supportive as he is. Jim Hall has truly enhanced the work of all people working in the Department of Chemistry for the past 20+ years. The many students passing through chemistry each year are much the better for Jim Hall's experience and guidance.

Faculty and staff have gained confidence with computing to go further than imagined. With Jim's leadership, the Department of Chemistry has truly changed the way it does business over the last five years.

Jim's devotion to his community is as strong as that of his wife, Joanne. With their busy lives as a father/mother, husband/wife, and state employees, they somehow find the time to stand in as short-term foster

parents to local children in need. Jim has many loves of which family, basketball, and sailing are just a few. Jim's devotion to his family can be seen in family get-togethers at the beach and visiting family members in Northern Virginia. Jim's mother will cook an authentic Italian dinner for anyone in a flash. Playing basketball or watching a high school, college or professional game, Jim is in his element. Jim and Joanne share everything. They are even willing to share their vegetables with the local wildlife, particularly with a

groundhog that eats everything they plant. Anyone is welcome aboard the sailboat Jim and Joanne captain together. During the summer, Jim and Joanne enjoy driving their sports car from one antique shop to another and visiting the local wineries for wine tasting and music.



## *Son of a Virginia Tech* *Chemistry Department Head*

### MARSHALL T. (TOM) WATSON

BS '43

I grew up in Blacksburg with my three brothers in a house behind Davidson Hall. Because my father, John W. Watson, was on the faculty, it was a foregone conclusion we would all attend VPI (as Virginia Tech was known then), so I enrolled in the fall of 1939. At Tech, I tried out (unsuccessfully) for freshman boxing. I had a part in several plays staged by Maroon Mask, the dramatics club, whose director was on the faculty of the English Department and an alumnus of Mask and Wig at the University of Pennsylvania. I majored in chemistry, thus I joined the Chemistry Club, and I was elected to Phi Lambda Upsilon and Phi Kappa Phi. I was in ROTC, as were nearly all the able-bodied males then, as well as the Corps of Cadets, and though I lived at home, I participated in all the Corps activities. Among these was a train ride to Roanoke every Thanksgiving and a march to Victory Stadium for the annual Turkey Day football game with VMI. My senior year we won 20-6, the first time in several years. That fall - 1942 - enrollment at Tech was 3,500, about 100 of whom were coeds.

While I was at Tech, there was considerable dissatisfaction with the quality of food at the Mess Hall, where the Corps took its meals. This grew until in the summer of 1942, while Tech was still in session, the entire Corps assembled on the drill field and marched to President J. A. Burruss's residence, where we burned him in effigy. A good many people disapproved of this action, but it did result in an investigation from Richmond of the situation at the Mess Hall. Presumably the quality of food improved thereafter. Because school had been in session through summer 1942, our class graduated a quarter early, in spring 1943. Everyone in ROTC went directly into military service following graduation. I spent the remaining years of World War II as a flight instructor with what was then the Army Air Corps at Luke Air Field in Arizona, and was separated from the service in late 1945. I taught for two quarters as an instructor in the Math Department at VPI, before entering graduate school in Chemistry at Princeton University in fall 1946.

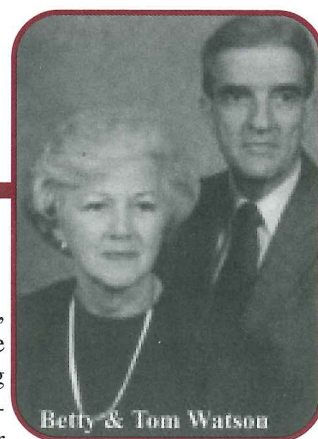
In 1949, I graduated with my Ph.D. from Princeton University in Physical Chemistry and went to work in the Research Labs of what was then the Chemical Division of Eastman Kodak in Kingsport, Tennessee. My entire career was spent there, culminating with retirement in 1986 as director of the Fibers Research Division.

Since my retirement, I've done some consulting, including reviewing the operations of a polyester

producer in Valencia, Venezuela; assisting a company in Taipei develop a new polyester staple fiber product variant; and advising a company in Canada that wants to make insulation, to replace fiberglass, out of reclaimed polyester bottle polymer.

Much of my spare time now, however, is spent enjoying retirement with my wife, Betty. I enjoy traveling, gardening, reading, and working double acrostics. I used to enjoy playing racquetball with my children, but they've flown the coop, and anyway could probably beat me now. My son Marshall will complete his residency in neurosurgery at Strong Memorial in Rochester, New York, next year, and we're eagerly waiting to see where he and his wife Marta will settle to start his practice. My daughter Elizabeth and her husband Martin Rapisarda both work at Vanderbilt University, and they have 3 children. Derek (21) and Kyra (18) are at Purdue University, and Maria (7) is a first-grader and budding ballerina and equestrienne. I

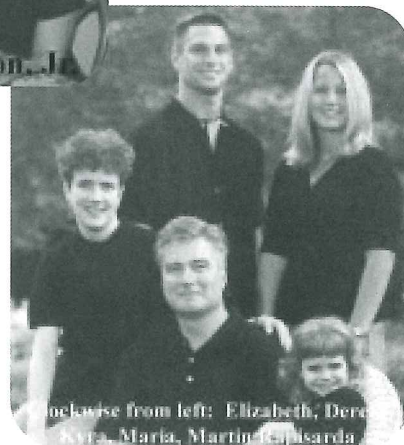
am pleased to be a member of the Advisory Council of the Chemistry Department which affords me an opportunity to re-visit Blacksburg on a regular basis.



Betty & Tom Watson



Marta & Marshall Watson, Jr.



In clockwise from left: Elizabeth, Derek, Kyra, Maria, Martin Rapisarda

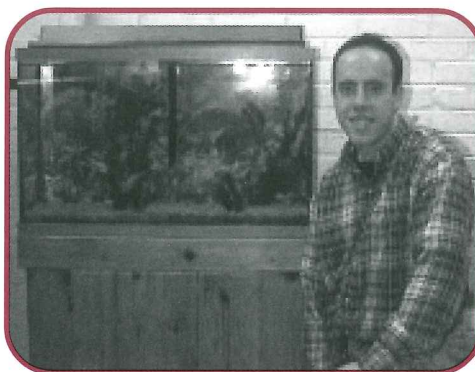
# Student Highlight

Brian Hoffman is the founder and caretaker of the department's fish tank, which sits in the main office. In addition to being a top-rated graduate student, he has a plethora of interests such as wood working, fire fighting, skeet shooting, cooking, exotic fish, etc. Here is the "rest of the story" as told by Brian himself.

I was born and raised in Northeast Philadelphia for the first 12 years of my life, before moving to the suburbs. While in the Upper Dublin school district my interest in chemistry expanded in large part to my high school chemistry teacher. In high school I was also active as a member of the varsity swimming and lacrosse teams. Since a very early age I was interested in becoming a firefighter. At age 16, I became a junior member of the Fort Washington Fire Company No.1. I continue to be an active member of the FWFC to the present day. My combined interest in firefighting and chemistry lead me to enroll at the University of Maryland at College Park.

Initially, I intended to double major in fire protection engineering and chemistry but decided I was more interested in chemistry. The major reason I chose to attend UMD was due to the close proximity of the local fire/rescue company to the campus. During my four years at Maryland, I was a member of the College Park Volunteer Fire Department performing as a firefighter, emergency medical technician, and hazardous material technician. During my last two years at Maryland, I conducted undergraduate research jointly between the Department of Entomology and Department of Chemistry/Biochemistry. Research included biomoni-

toring of natural streams and golf course run-off through the use of benthic macroinvertebrates and analysis of pesticides and nutrients in

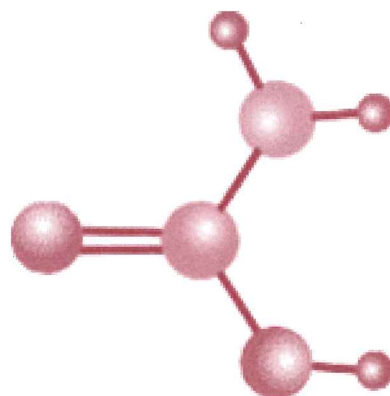


the streams through analytical chemistry methods. Stream ecology research brought me in contact with the United States Department of Agriculture (USDA). In between classes, the fire company and performing research, I also worked as a lifeguard for Maryland's campus recreation services.

Research conducted at the USDA National Research Institute's Agricultural Research Services in the Environmental Quality Laboratory (USDA/NRI/ARS/EQL) was performed under Dr. Clifford P. Rice (10/1999-9/2000). The analysis of APEOs found in the tissue of fish from the Great Lakes region. Research was performed due to the known endocrine disrupting ability of some APEOs and their presence in the fish. Duties included the routine analysis of fish samples by accelerated solvent extraction (ASE), solid phase extraction (SPE) clean-up, HPLC-fluorescence analysis, and gas chromatography coupled with mass spectrometry (GC-MS) analysis. Individual research performed under

Dr. Rice included the development of a clean-up method for fish extracts containing octylphenol ethoxylates. Dr. Rice encouraged me to attend Virginia Tech and work in Dr. Larry Taylor's research group. Following his advice I visited VA Tech and made contacts with Dr. Taylor.

My initial research project carried out in Dr. Taylor's research group was the analysis APEOs via supercritical fluid chromatography (the same compounds I had worked with at the USDA). My current research involves development of analysis methods for alcohol polyethers in collaboration with The Procter & Gamble Company (David Pinkston) and Uniqema (Stephen Rumbelow). Currently, I am writing my thesis and testing the job market.



## Department Chair Continued from Page 1



less than ideal conditions. Even at 6 am, they are cheerful and willing to do anything you ask. The graduate teaching assistants represent the department well in laboratory instruction which as far as I am concerned is the most important pedagogical experience for the undergraduate student. Outstanding staff are invaluable at the teaching-research interface, and we have lots of them both in the technical and clerical areas. Their loyalty, experience, and expertise many times, unfortunately, go unnoticed. A professional, productive, and well-recognized faculty is vital for achieving the teaching-research-service missions of the department. You only have to serve as Chair of the Department one year to realize the great excellence of the faculty. I appreciate very much their hard work and strong support of the department. Read one of the semi-annual issues of Elements and I believe you will gain this point of view.

A Chemistry Department, however, is more than students, staff and faculty. It is alumni! One of the most enjoyable aspects of being Chair is the great interaction one has with chemistry alumni. The semi-annual Advisory Council Meetings in conjunction with Alumni-Faculty banquets each spring and fall served to nourish the alumni-department relationship. This edition of Elements highlights a number of alumni who are very supportive of the department with their time, talents, and money. I am positive that you will enjoy reading their stories. A final resource for the department is the various retired faculty who continue to live in the Blacksburg area. I am indebted to Emeritus Professor Jim Wightman for organizing monthly luncheons for the group. Many of this group continue to maintain an office and active laboratory in Davidson Hall. We greatly appreciate the tremendous effort the retired faculty gave to the department during their 30-40 year

tenure of service. Thus, custodians + staff + students + faculty + alumni + emeritus = an effective Department of Chemistry.

Obviously, no one person could ever be involved in all aspects of a department as large as ours. Several persons should be identified who really 'made me look better than I really was': my wife, Gail, who was always a willing listener; my secretary, Linda Sheppard, who always pulled me back to reality; the associate chair, Jim Viers, who gave me much wisdom that saved me many sleepless nights; the chief financial officer, Tom Bell, who wrote many of 'my' memos; Brian Hanson, who rescued the department and I from the brink of financial disaster; and Mehdi Ashraf-Khorssani who helped me maintain a research presence. It can truly be said that it takes more than a Department Chair to run a department. I have been blessed with a great supporting cast.

## Faculty In The News Continued from Page 8



*Emeritus Professor Ray Dessy Remembers....*

Shortly before I joined the ACS I published my first scientific manuscript in *Analytical Chimica Acta* with Henry Freiser as a mentor. I was a rising Sophomore. A little after my 50<sup>th</sup> year of ACS membership the Dreyfus Award allowed me to repay Henry for his guidance as I worked with Chemistry major, Paul Williams as a Senior Mentor. In between, a great deal of pleasure has passed under the bridge, and some scientific progress.



Emeritus Professor James P. Wightman continues to be on the road almost weekly to represent the University at various alumni chapter meetings. Here are some of the places Jim has spoken: Lynchburg VA, Emporia VA, Mendenhall PA, Austin TX, Dallas TX, Wilmington NC, Kingsport TN, Columbia SC, Boston MA.



Mark Anderson has been selected to receive a Certificate of Teaching Excellence award by the College of Science for 2004. Mark is now a candidate for an Alumni Teaching Award this Fall.



Emeritus Professor of Chemistry - Jack D. Graybeal, B.S. '51, Ph.D. '55 at the University of Wisconsin, in June 2002 completed six years as National President of Phi Lambda Upsilon after serving for 15 years as National Editor and National Secretary.

## *A Few More Chemistry Faces*

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Melba Edwards



Millie Ryan



Tammy Jo Hiner



Tom Glass



Esther Brann



Bill Bebout



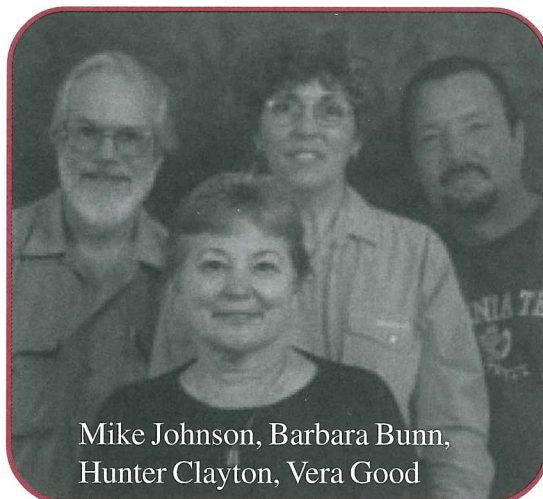
Claudia Brodtkin



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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 July 1, 2003 to December 31, 2003.

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## AN INVITATION TO BE PART OF SOMETHING SPECIAL ....



Virginia Tech's Department of Chemistry is known world-wide. Our faculty members are discovering cutting-edge technologies and creating innovative solutions. They are successfully collaborating, reaching across the disciplines and building partnerships with industry to produce results—results that impact society, improve lives and ultimately make the world a better place.

Students participate in hands-on learning with exposure to real-world business applications and the latest technologies for scientific investigation. Our commitment to our students is to create knowledge, to open their minds to that knowledge, and to enable them to make the most of their educational opportunities. Our goal is to graduate citizens who will be accomplished professionals and leaders in their fields, able to reason and problem-solve as well as communicate, adapt and innovate.

To accomplish our goals—to achieve Virginia Tech President Charles Steger's hope of becoming one of this nation's top research institutes and through that a top institute for graduate and undergraduate education—we need your support. Virginia Tech receives less than a third of its funding from the state of Virginia. To face the new challenges of today's global marketplace with increased competition for funds and students, we need you—business leaders, government officials, individual citizens, and alumni—to make a gift for our present and our future.

We've made every effort to make giving to Virginia Tech and the Department of Chemistry easy. You may choose to contribute in any of the following ways:

- Write a check made payable to the Virginia Tech Foundation, Inc. and earmarked to Chemistry and mail it with a copy of the form below.
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The Department of Chemistry will use these funds for graduate student fellowships, undergraduate scholarships, and various program initiatives. We are also seeking special funds to equip the new Chemistry/Physics building and to establish chaired faculty positions.

For information about estate planning, special gifts, or anything else, please contact **Dr. Kylie Johnson, Director of Development for the College of Science at 1-866-401-9926 or 540 231 2551 or [kyliej@vt.edu](mailto:kyliej@vt.edu)**. Thank you for your support.

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## **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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