

ELEMENTS

The Alumni Magazine of the Department of Chemistry at Virginia Tech - Fall 2010



From the Department Chair:

Dr. James Tanko

"Bureaucracy is a challenge to be conquered with a righteous attitude, a tolerance for stupidity, and a bulldozer when necessary." This quote comes from a poster that was popular in the 1990s, and that can still be found today (think Google!). Moreover, this poster has been a fixture outside my office since its original owner (Larry Brammer, Ph.D. 1996) graduated from Virginia Tech. With this background, the astute reader will likely wonder how an individual espousing such ideas would become chair of the Chemistry Department at Virginia Tech?

On August 10, following a vote of the faculty, I was appointed chair of the Chemistry Department. I joked at a recent Highlands seminar by one of our alums (Dr. Brian Bachmann, currently an assistant professor at Vanderbilt) that this was another example of something he talked about—"survival of the least fit." Quite seriously though, I am deeply honored and humbled to have earned the trust and respect of my colleagues. It is important to acknowledge and thank two individuals who have stepped down from departmental administration: Profs. Joe Merola and Brian Hanson. As many of you know, Joe was Department Chair for six years. He guided the Department through some very good times, as well as through times that were bleak and tragic. His strongest assets, sensitivity, wit and judgment, proved invaluable during these years and as a result, the department has emerged stronger than ever professionally, and with a strong sense of community. Brian served in two capacities: Associate Chair, and Director of Undergraduate Studies. Brian inherited huge problems in his role as associate chair, and through meticulous management practices and attention to detail, solved most of them, while maintaining his good humor. Though stressed by a bad economy, budget cutbacks, etc., the department's business operations are vastly improved. During the transition, both gentlemen were extremely supportive and helpful, and on behalf of us all, I thank them for their dedication, service, and friendship.

Prof. Hervé Marand has agreed to serve as Associate Chair, and Prof. Gordon Yee as Undergraduate Study Director. I thank both of them for willingness to serve. Herve's dedication to the Department, sound and fair judgment, and detailed analysis of problems and possible solutions will be an invaluable asset to us all. Gordon is selfless in his efforts on behalf of the Department, and deeply committed to the welfare and education of our students. Prof. Paul Deck (Graduate Program Director), Prof. Patricia Amateis (Director of General Chemistry), and Mr. Tom Bell (Assistant Department Chair) have agreed to continue serving in their respective roles, and I thank them for their continued service, and look forward to working with them in the future.

Continued on Page 2

<i>Alumni Spotlight</i>	3
<i>Awards</i>	5
<i>Chemistry News</i>	7
<i>Alumni News</i>	9
<i>Donors</i>	11



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Department Chair *(Continued from Page 1)*

One of our goals in the next few years, directly pertinent to the readership of *Elements*, is to strengthen our relationship with alumni. *Elements*, which was last published in Spring 2007, is a first step in that direction. The efforts of Larry Taylor and Angie Miller in resurrecting this publication are sincerely appreciated. Also, the Department of Chemistry Advisory Council will be meeting in November, 2010. Part of the agenda will be dedicated to redefining our relationship and determining how this group, and the larger community of alumni as a whole, can best promote the Department of Chemistry. It would be disingenuous to pretend that support in the form of donations is not one goal of this initiative, and sorely needed given the decreasing level of state support for higher education. However, there are also other important roles chemistry alumni can play in advancing the needs of the Department and its students.

Faculty hiring remains a high priority, and for the first time in about three years, faculty searches have been initiated. Two positions, one in bioanalytical chemistry, and another more open search in the general area of "energy and the environment," are available. The oft-delayed renovation of Davidson Hall may start as early as summer 2011 (contingent on economic factors and state funding). A clear objective during this time of expansion, relocation, and displacement is to maintain the spirit of camaraderie and community that this Department enjoys.

Though often used as a bad word, "status quo" is something that we would like to maintain in a few areas. The Department is blessed with an extremely productive faculty.

In addition to excellence in research, the faculty are deeply engaged in the education of students. The working environment is exceptionally collegial. Ranging from the secretaries in the main office, to the technicians that run our advanced instruments, the Chemistry Department staff is extremely hard working, and committed to the Department.

Personally, my major goal as Department Chair is to facilitate faculty and staff development, by ensuring (to whatever extent possible), that individuals can achieve their goals. The historical success of this Department in so many areas was not the result of efforts of a chair, or dean, or the accompanying administrative policies. Success was the result of highly talent-

ed and motivated individuals pursuing their own interests and aspirations in terms of research, teaching, or service, while working for the common good of the Department.

Department, college, and university administration should not be an impediment to success. So why did I agree to become Department Chair? Well, perhaps it was Peter's Laws after all. Rule #7: "If you can't beat them, join them, then beat them?"



.....Chemistry Administrative Team.....

Gordon Yee
*Undergraduate
Study Director*



Jim Tanko
Department Chair

Hervé Marand
*Associate
Department Chair*



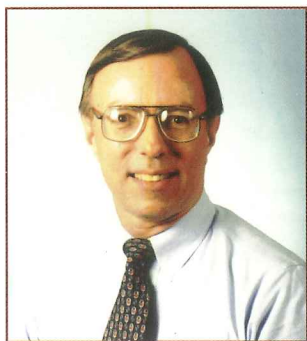
Patricia Amateis
*Director of General
Chemistry*



Thomas Bell
*Assistant Department
Chair*



Paul Deck
*Graduate Program
Director*



Alumni Spotlight

ROBERT E. SCHWERZEL

Ph.D. (B.S. CHEM, 1965)

A CAREER IN CONTRACT RESEARCH

My decision to attend Virginia Tech was strongly influenced by my cousin, George Clemans, who graduated from Tech with a B.S. in Chemistry in 1960. He invited me to visit campus my senior year at Falls Church High School. I was hooked! Once at Tech, though, I found Freshman Chemistry so boring that I seriously considered switching to Aeronautical Engineering (despite the fact that I couldn't draw a straight line if I had to!). I was saved by Prof. Brice, who was kind enough to place me in an advanced lab group he'd created, along with a number of other enthusiastic freshmen. We got to do some very cool "real" chemistry – color change reactions, distillations, and so on, and we came to call ourselves "Brice's Disciples". I've never regretted my subsequent decision to stick with chemistry! I was fortunate enough to win an NSF Undergraduate Research Grant for the summer between my Junior and Senior years, and spent my time "helping" (to the limited extent that an undergraduate can help) Prof. Krug and one of his graduate students with their organosulfur chemistry. I never appreciated how much your nose adapts to the smells around you until the grad student and I went to see a movie at the Lyric one afternoon while a reaction cooked, and realized partway through that there was a complete ring of empty seats all around us! After that experience, I always changed clothes before venturing out in public after lab.

From Virginia Tech, I obtained my Ph.D. in Physical Organic Chemistry with Prof. Jack Leffler at Florida State University, using electron spin resonance to study a number of stable

free radicals. I then did post-doctoral research in organic photochemistry at Cornell, and then at Brown in the newly discovered field of chemically induced dynamic nuclear polarization (CIDNP). I spent a year at Syva Research Institute in Palo Alto, CA working on drug assays using stable free radicals, and then found my "dream job" at Battelle Memorial Institute in Columbus, OH, where I was hired to work on a project in photochemical solar energy storage.



Pvt. 1st Class, "E" Co. (1962)

Battelle is the world's largest contract research organization, where the researchers have nearly academic freedom to work on whatever they can get outside funding for – but the wolf is always at the door, as there is no equivalent to academic tenure. For me, it was a great ride, though, and for nearly 20 years I led interdisciplinary research teams on a variety of projects involving light in one way or another: solar energy, "photochemical machining" (a technology that preceded today's rapid prototyping), laser dyes, the first demonstration of Laser-EXAFS (the acquisition of extended X-ray absorption fine structure spectra with a single pulse of laser-produced X-rays, for which we received an I-R 100 Award in 1980), and the development of nonlinear optical materials incorporating quantum-dot

semiconductor nanoparticles. In 1993, I was named "Technical Person of the Year" by the Columbus, OH Technical Council.

Later that year, I left Battelle to join several former colleagues at Georgia Tech Research Institute, where I was a Senior Research Faculty Leader and led projects in nonlinear optical materials and optical waveguide device development. In 2000, I joined MicroCoating Technologies, a company that had spun out of Georgia Tech, as the Director of their newly formed Photonics Business Unit, which was developing optical chips for telecommunications. When the company crashed and burned in the 2002 tech crash, I decided to become a consultant, and formed Technology Guidance Services, LLC to help companies with product development problems become more competitive in the marketplace. While I don't have the "flywheel" of a big organization, I have a lot of freedom, and I'm still going strong!



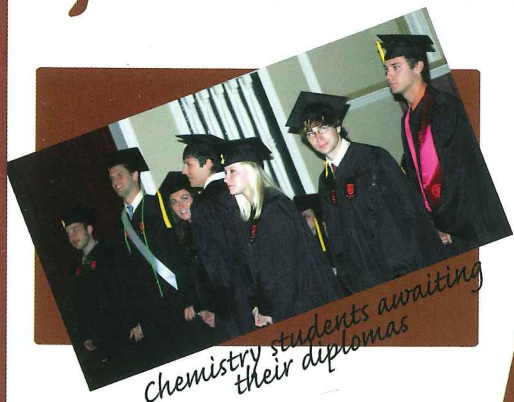
*Laser-EXAFS Team
with Model (1980)*

Chemistry Graduation - May 15, 2010

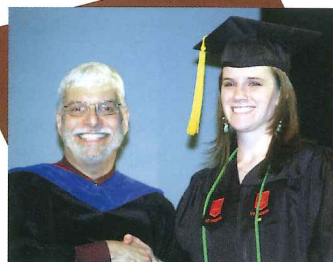


Lyric Theatre marquee the morning of the ceremony

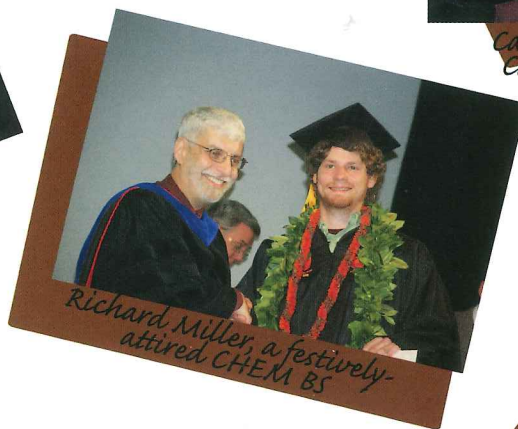
Graduation



Chemistry students awaiting their diplomas



Candace Wall, a Chem BS major



Richard Miller, a festively-attired CHEM BS



Kyle Moor, a summa cum laude CHEM BS major

2010



Ezra Yohannes, a cum laude Chem BA major



Kelly Daly, a summa cum laude Chem BS major

Awards



SCHUG AWARD

Edward F. Valeev received the 2010 Schug Research Award. The award, in honor of Prof. John Schug, was established to recognize a departmental faculty member who has demonstrated exceptional creativity and productivity in research. Dr. Valeev's research focuses on the development of computational methods for accurate prediction of molecular reactivity and spectra. The award includes a plaque and \$1000.

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CAMILLE DREYFUS TEACHER-SCHOLAR AWARD

Edward Valeev is one of 14 researchers across the country to receive the Camille Dreyfus Teacher-Scholar Award for 2010. The \$75,000 award recognizes leadership in chemistry research and education, providing funding for young faculty members in the early stages of their careers. Valeev's research group works toward accurate quantum-mechanical prediction of properties of molecules and materials.



WINE AWARD

Patricia G. Amateis received the university's 2010 William E. Wine Award. In winning the award, Amateis was cited

for her development of the General Chemistry curriculum, including the lab program, recitation-lecture instruction, and the Chemistry Learning Center; and for her long track record of consistently superior course evaluations from students. Professor Amateis oversees all the graduate teaching assistants for the course and coordinates all of the lectures while being directly responsible for several of those lectures herself. She is also responsible for the large number of laboratory sections that accompany the lecture course. In addition to serving as director of General Chemistry, Amateis also conducts freshman orientation for the department. She has written a comprehensive laboratory manual published by Hayden-McNeil which provides students with a high quality lab manual/notebook.



DIRAC MEDAL

Professor T. Daniel Crawford has been selected to receive the 2010 Dirac Medal for the outstanding computational chemist in the world under the age of 40. The award is given annually by the World Association of Theoretical and Computational Chemists (WATOC). Dr. Crawford was cited "for a range of outstanding advances in theoretical chemistry, including reduced-scaling coupled-cluster methods for computing optical rotation and CD spectra of large chiral molecules."



MCNAIR AWARD

The Harold M. McNair Staff Service Award was established to recognize the spirit of cooperation, dedication, and outstanding service of support staff. Anna Hawthorne has exemplified this ideal as Undergraduate Coordinator. The award includes a plaque and \$1000.



HOWE AWARD

Kelly M. Daly, a senior Chemistry major, has been selected to receive the James Lewis Howe Award, presented annually to outstanding chemistry graduates of institutions located within the boundaries of the American Chemical Society's Virginia Blue Ridge Local Section. A 2008 Wightman Scholar, Ms. Daly was also a finalist for both the College of Science Outstanding Senior Award and Virginia Tech's Woman of the Year Award. She will attend graduate school in nutrition science at the University of Utah.



ALUMNI RESEARCH AWARD

Prof. Timothy Long has received the Virginia Tech Alumni Award for Research Excellence for 2010. The ARE award specifically cited fundamental advances in the design of macromolecules and their impact on emerging biomedical and membrane technologies. Dr. Long noted that his success in research has rested on the willingness of over 150 student and postdoctoral co-workers from around the world to invest their collective intellect and energy on interdisciplinary, collaborative research programs.



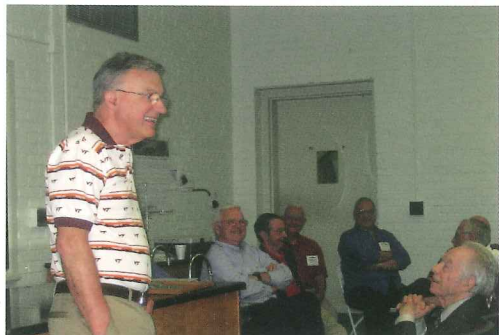
VIERS AWARD

Maggie B. Bump received the 2010 Viers Teaching Award. Alumnus E. Gary Cook established the award in honor of Prof. Jimmy W. Viers to recognize outstanding teaching by a departmental faculty member. Dr. Bump has developed recitations, guided learning activities, and interactive online homework to facilitate student engagement in 500-seat lecture sections of organic chemistry. She also advises the ACS Student Affiliates (SAACS), and students in her lecture courses earn credit for involvement in SAACS's K-12 outreach. The award includes a plaque and \$1000.

JOHNSTON AWARD

Michael Perfetti (MS, 2009) has received the G. Burke Johnston Award for his outstanding contributions to instruction in organic chemistry courses, especially the sophomore SynTech (majors) lab course. This annual, university-level award recognizes members of the faculty, staff, and administration for excellence in teaching and leadership in the academic community.

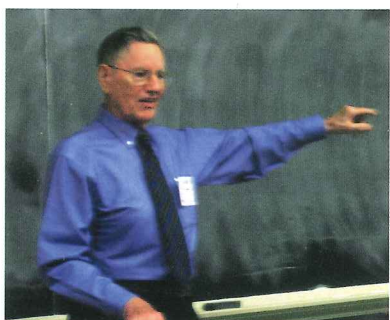
Chemistry Alumni Reunion and Awards - April 30, 2010



LARRY TAYLOR



J. GRAYBEAL, J. VIERS, T. WARD AND M. OGLIARUSO



JACK GRAYBEAL



M. OGLIARUSO, T. WARD
AND H. MCNAIR



LUTHER BRICE

Chemistry Reunion



MAGGIE BUMP



PAUL DECK



JOE MEROLA

BRIAN HANSON



PAUL DECK AND
LOU MADSEN



BRIAN HANSON



Chemistry News



BLACKWOOD FELLOW

Webster Santos was recently appointed as the Blackwood Junior Faculty Fellow of Life Sciences by the Virginia Tech Board of Visitors. The fellowship was established in 2006 and awarded for the first time this year with a gift from Mary and Willis Blackwood to support and advance instruction, research, and collaboration in the life sciences with a complementary focus on the development of entrepreneurial opportunities. The recipient will work with the Bringing Science to Market program, a collaborative effort between the College of Science and the Pamplin College of Business. The fellowship appointment is for three years. A member of the Virginia Tech faculty since 2006, Santos is an expert in drug discovery and has a strong interest in drug development. His research is currently focused on the development of new drugs for cancer therapy; his work has implications for patients with breast, ovarian, and prostate cancer.



CAREER AWARD

Louis A. Madsen, assistant professor of chemistry, has earned a \$475,000 National Science Foundation (NSF) Faculty Early Career Development (CAREER) Award. Madsen's research focuses on improving advanced polymers for fuel cells and reverse-osmosis water purification by combining detailed analysis of these materials with theoretical understanding. CAREER awards are made to outstanding young faculty members who present career development plans that effectively integrate research and education, with an emphasis on combining the excitement of research with inspired teaching. Madsen's project plan encompasses education of promising university students and will build an outreach program specifically for girls in elementary school and their parents.



FACULTY FELLOW IN NANOSCIENCE

Harry Dorn has been appointed the Dr. A.C. Lilly, Jr., Faculty Fellow in Nanoscience by the Virginia Tech Board of Visitors. The Dr. A.C. Lilly, Jr., Faculty Fellowship in Nanoscience was established to provide support for an outstanding faculty member in the field of nanoscience. This fellowship recognizes Lilly's contributions to both his professional and academic research in physics and his ongoing support of Virginia Tech. The fellowship appointment is for three years. Harry's expertise in nanomaterials is recognized internationally. He served on the National Science Foundation's Working Group to Define Major Research Facilities for Nanoscale Science and Technology in 2001; the First and Second Conferences on Nanoscience and Nanotechnology in 2000 and 2001; and the steering committee of INanoVA, a conference on nanotechnology in Virginia. Dorn is also active in nanoscience education. He developed "A Hands-On Short Course On Buckyballs, Nanotubes, and Other Nanomaterials," which was funded by a grant from the National Science Foundation/Nanotechnology Undergraduate Education. He also created a new graduate-level interdisciplinary course on carbonaceous nanomaterials that was first offered in 2008 and co-taught with University of Virginia Professor Mool Gupta.

FELLOWS OF THE AMERICAN CHEMICAL SOCIETY

Four Virginia Tech Chemistry faculty members have been named to the founding class of Fellows of the Division of Polymer Chemistry of the American Chemical Society (ACS). Included in this class of 59 honorees were Professors James E. McGrath, Robert Moore, S. Richard Turner and emeritus Professor Tom Ward. All are members of the Macromolecules and Interfaces Institute at Virginia Tech. Election as a POLY Fellow recognizes significant scientific accomplishments and outstanding service to the profession. The fellows were named during the 2010 spring national meeting and exposition of the American Chemical Society in San Francisco.

Chemistry News ... (Continued from Page 7)

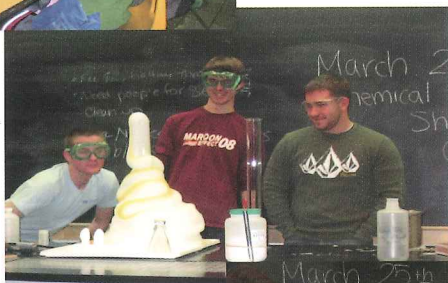
The department's chemistry club, a chapter of the Student Affiliates of American Chemical Society, is cel-



brating after another exciting year. The club was awarded the ACS's Green Chemistry Award and a Certificate of Achievement for their activities during the 2009-2010 academic year. From planning the annual chemistry shows and educational programs for elementary students to tie-dyeing lab coats and helping with the Davidson reunion in April, officers and members have been busy. The club did demonstrations at the Auburn and Gilbert Linkous elementary science

fairs, and held chemistry workshops at Gilbert Linkous and Floyd elementary schools. Several events qualified the club for the Green Chemistry Award. Members planned a recycling activity that was done with 4th and 5th graders. Participants were able to separate different plastics based on their densities. Members also traveled to Kingsport, TN and toured Eastman Chemical, learning about industrial energy saving measures. See more

photos and our club designed T-shirts at our website, <http://www.files.chem.vt.edu/chem-club/index.html>.



*"Chemist
+
Hokie Athlete"*



Martha Blakely was born in Bryn Mawr, PA. Martha majored in chemistry, economics and mathematics. She is the recipient of several awards ... the Skelton Award, given to the top Virginia Tech female scholar-athlete; she was named to the 2010 ESPN The Magazine Academic All-America Women's At-Large Third Team; is one of 60 national winners of the Phi Kappa Phi Emerging Scholar Award; and was named to the 2009-10 All-ACC Academic Women's tennis team. She also received the Frank Loria Award, given to only one Virginia Tech student-athlete annually who exemplifies outstanding leadership and scholarship.



Assistant Professor Lou Madsen's dynamic group shown, from left to right: Rachel Leslie (Senior Chem major), Zhiyang Zhang (3rd yr PhD), Kacey McCreary (2nd yr PhD), Jim Wahmhoff (2nd yr PhD), Bryce Kidd (1st yr PhD/summer 2010 student), Kyle Wilmsmeyer (5th yr PhD), Jianbo Hou (4th yr PhD). Lou is down in front. The Madsen group investigates detailed behaviors of macromolecular systems such as ionomer membranes and liquid crystalline surfactants, primarily using "multi-modal" NMR techniques. Fundamental understanding of these macromolecular systems is illuminating paths toward efficient water purification and energy conversion, as well as revealing mysteries of shear-dependent fluids such as lubricants and coatings.

Support for the group has come from diverse sources such as ACS (2007), ARO (2007), Dow Chemical (2010), and NSF, including a CAREER award (2009) and an IUPAC/NSF international collaborative grant (2010). The group is excited to contribute to the collaborative and close-knit atmosphere of VT Chemistry and the MII, both scientifically and socially, and has collaborations ongoing with academic and corporate labs across the US and worldwide.

Alumni News



IN MEMORIAM: ROY BIBLE

It is with much regret that we announce the death of Roy H. Bible, Jr., the founding Chairman of our Alumni Advisory Council. A 1948 VPI graduate and an Army veteran (World War II), Dr. Bible earned a doctorate at the University of Illinois. In 1952, he joined Searle (which eventually became Pfizer), where he remained until he retired in 2003. We will remember Roy for his sharp intellect, winning personality, and enviable energy. A full obituary was published in the May 10, 2010 issue of Chemical and Engineering News.



IN MEMORIAM: MARSHALL WATSON

The Chemistry Department was saddened to learn of the death of Marshall T. Watson, one of the founding members of our Alumni Advisory Council. A 1943 graduate of VPI and an Army veteran (World War II) Dr. Watson went on to a Ph.D. at Princeton University and a successful career at Eastman in Kingsport, Tennessee. His quiet wisdom and gentlemanly manner will be greatly missed.

POWELL IS DEAN

Jason D. Powell (B.S., Chem '96), Ferrum, Va., is dean of natural sciences and mathematics at Ferrum College.



GILMORE WINS CAREER AWARD

Prof. Jason G. Gillmore (B.S. 1996, MS 1998) has received a CAREER

Award from NSF. The accompanying \$549,000 grant will support several educational initiatives as well as research program directed toward understanding and controlling the molecular electronic properties of a family of organic photochromes, dyes that undergo light-induced rearrangements, with ultimate applications in microfabrication and volume holographic data storage. Dr. Gillmore is Associate Professor of Chemistry at Hope College in Holland, MI.

CORESTA PRIZE

Thomas A. Perfetti (Ph.D. 1977), retired from R. J. Reynold R& D, is the recipient of the 2010 CORESTA Prize, which includes an honorarium of 10,000 euros (about \$13,000). Perfetti (and Alan Rodgman) was honored for writing a book published in 2008 titled "The Chemical Components of Tobacco and Tobacco Smoke." The prize was awarded for their "extensive work on documenting the vast literature on the chemical composition of tobacco and tobacco smoke," and it was announced during the CORESTA (Centre de Cooperation pour les Recherches Scientifiques Relatives au Tabac) Congress in Edinburgh, Scotland.

Chemistry News ... (Continued from Page 8)



INTERIM ASSOCIATE DIRECTOR OF ICTAS

Bob Moore, Professor of Chemistry, has been named Interim Associate Director for the Institute for Critical Technologies and Applied Sciences (ICTAS). Dr. Moore will serve as chief technical officer and advisor to the institute's director and will share with him responsibilities for technical administration, setting strategic directions and allocating resources on behalf of the institute.



BREAKTHROUGH INNOVATORS

Professor Karen J. Brewer (Chemistry), Professor Brenda Winkel (Biological Sciences) and Roger Dumoulin-White (Theralase Corporation) were named "Breakthrough Innovators" for their work on light-activated compounds for the treatment of cancer. Popular Mechanics cites their work by saying "Two Virginia Tech scientists may have invented the future of cancer treatment - a way to eradicate tumors without the harmful side effects of chemotherapy, radiation or a surgeon's scalpel."



DIVERSITY CONTRIBUTIONS

Judy Riffle was named the winner of this year's College of Science Diversity Award.

Riffle was recognized for her role in facilitating the university's participation in a national alliance to attract more minority students to the research fields of polymer science and medicine. She was also cited for her leadership in building relationships with Historically Black Colleges and Universities (HBCUs) and her success in expanding a summer research program for minorities.

INTERNATIONAL FELLOW

Judy Riffle was one of only three chemists worldwide to be named a PSME Fellow for 2010. She was recognized for her significant contributions to the science and engineering of polymeric materials. Riffle's polymer research has led to the development of materials used in heart transplants, arterial grafts, and contact lenses. Currently, her research is focused on synthesis of macromolecular magnetic particles that may be used in retinal treatments and fundamental aspects of delivering therapeutic molecules into immune cells to treat intracellular pathogens.



POLYMER-BASED INNOVATION

The Macromolecules and Interfaces Institute at Virginia Tech held its 2010 Technical Conference and Review, "Macromolecular Science and Engineering at Virginia Tech: Enabling a Healthy and Sustainable World - II", Fall, 2010, at the Holtzman Alumni Center and Skelton Conference Center at the Inn at Virginia Tech. Chemistry Professor Richard Turner directs the Insti-



NOVEL POLYMER DELIVERS GENETIC MEDICINE

Theresa M. Reineke, associate professor of chemistry and colleagues in her lab at Virginia Tech and at the University of Cincinnati, have developed a new molecule that can travel into cells, deliver genetic cargo, and packs a beacon so scientists can follow its movements in living systems. Reineke's focus is cancer and cardiovascular disease. "Traditional drugs are aimed at treating disease at the protein level," she said. "Genetic drugs - such as those that can alter or control gene expression - aim to treat disease at the genetic level and have the added benefit of being more specific for their medicinal target." A challenge has been that DNA and RNA drugs cannot diffuse through the cell the way traditional small molecule drugs can. One such vehicle has been engineered viruses. Reineke's group has been working on a more elegant solution. Their discovery is the topic of the Proceedings of a National Academy of Sciences (PNAS) article. The scientists created a novel polycation which contains chemistry (oligoethyleneamines) that binds and compacts nucleic acids - pieces of the DNA - into nanoparticles. It also incorporates a group of rare-earth elements known as lanthanides. The repackaged DNA is protected from damage as it travels into the cells and the lanthanides allow visualization of the delivery into cells. At the nanometer or cellular scale, the researchers are able to track the polymers using sensitive microscopes, which capture the nanoparticle luminescence.



CARLIER DELIVERS PLENARY LECTURE

Prof. Paul Carlier delivered a plenary lecture at the first ACC Interdisciplinary Forum for Discovery in Life Sciences. The Forum was held October 3-6, 2010 at various venues on the Virginia Tech campus. His talk was titled "Chemistry & Biology: Inseparable Partners For Meeting Challenges In Medicine & Public Health."



MORRIS FUNDED TO STUDY SURFACE REACTIONS

Prof. John R. Morris has received a grant from NSF for molecular beam studies of surface chemical reactions. The \$430,000, three-year award will help Dr. Morris and his co-workers further molecular level understanding of how common atmospheric pollutants react on surfaces of environmentally important organic materials, including surfactant-coated water droplets or aerosols, soot particles, and polymers.

tute. Three distinguished plenary lecturers served to focus the program: Larry Wendling, vice president, 3M Corporate Research, discussed the innovation process at 3M and how it continues to generate new products from new technology, Robert Weiss, the Hezzleton E. Simmons Professor of Engineering at the University of

Akron, discussed the properties of ion containing polymers and their role in alternative energy and other applications, and Marc Hillmyer, of the Elmore H. Northey Professor of Chemistry at the University of Minnesota, discussed new polymeric materials from sustainable non-petroleum sources.

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, 2010 - June 30, 2010.

GENERAL FUND

Alumni and Friends

Maria Arner
Fred Davidson
Campbell Epes
Jennifer Filbey

Michael Glasgow
Bertha Greulich
Edith Marsh

David Morgan
Kimberly Morgan
Robert Shenton

Margaret Sleevei
Kenneth Yost
Philip Young

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OGLIARUSO FAMILY SCHOLARSHIP ENDOWMENT

Faculty

Michael Ogliaruso

FRIENDS OF LARRY TAYLOR CHEMISTRY ENDOWMENT

Alumni

Robin Kinser
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Roger Ogden
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Companies

Minerals Technologies

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Alumni

Robin Kinser
Philmore Robertson

DALLAS KINSER & R.T. JOHNSON SCHOLARSHIP

Robin Kinser / Michael Johnson

SUPPORT THE CHEMISTRY GENERAL FUND

The Department of Chemistry has established a "Chemistry General Fund." Your contributions to this fund will be used to support the seminar and colloquium program, curriculum enhancements, student and faculty recruiting, student travel, and a variety of other activities. These unrestricted gifts provide special mechanism of support to foster an intellectual community of faculty and students. There are two ways to contribute: 1) ONLINE: Go to www.chem.vt.edu and click the link "Giving to CHEM". Detailed instructions will be provided. 2) CHECK: Checks should be made payable to the VT Foundation, Inc. and sent to: VT Foundation, 902 Prices Fork Road, Blacksburg, VA 24060-3261. (Please designate "Chemistry General Fund" on the memo line.)

Does your company provide matching gifts? If so, please complete the paperwork to double, or triple, your contribution. We appreciate your support.

SURFACE VS. EMAIL

Those friends and alumni who prefer to receive Elements via Email, please send your address to:
ltaylor@vt.edu.

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Blacksburg, VA 24061

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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. 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.