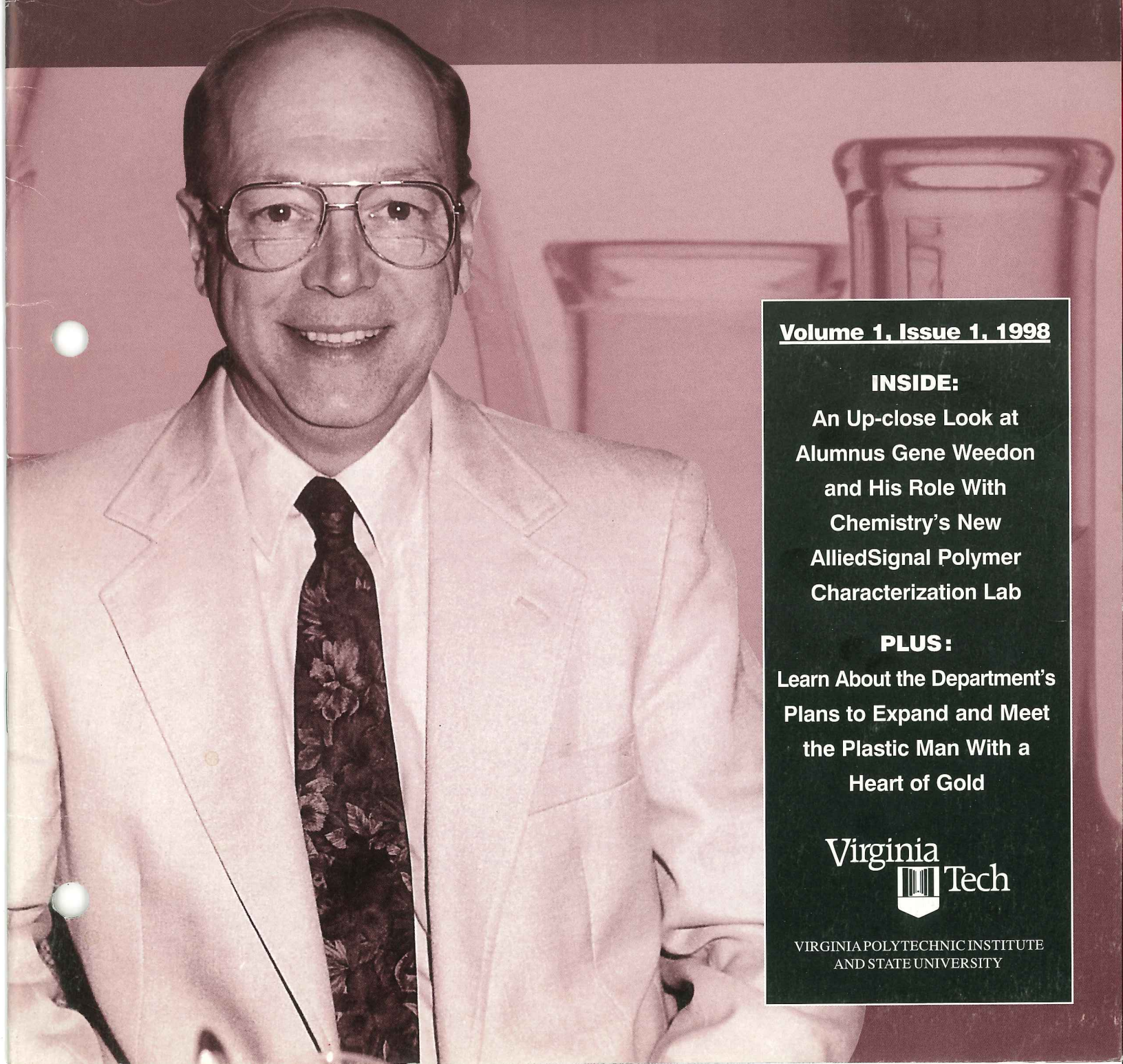
ELEMENTS

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



Volume 1, Issue 1, 1998

INSIDE:

An Up-close Look at Alumnus Gene Weedon and His Role With Chemistry's New AlliedSignal Polymer Characterization Lab

PLUS:

Learn About the Department's Plans to Expand and Meet the Plastic Man With a Heart of Gold

Virginia Tech

VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY

Dear Alumni:

What a pleasure it has been to serve as the Head of the Department of Chemistry of Virginia Tech these past five years! The Department has witnessed many changes during my term. For starters, we have welcomed five new faculty members and four new staff members, and bid farewell to five members and four staff members. We've written a governance document and changed from a Headship to an elected Chairperson. We've started the Distinguished Alumnus(a) Speaker series for spring graduation; established a Chemistry Learning Center for students; received approval to build a new building for undergraduate teaching laboratories; and begun a writing-intensive course around chemical information technology.

Still, there's more.

We have, with AlliedSignal's help, founded a modern polymer characterization laboratory; initiated a partnership with Hampton University for training graduate students; pioneered the use of the internet in our courses taught at Virginia Tech; and begun assembling an Alumni Advisory Committee.

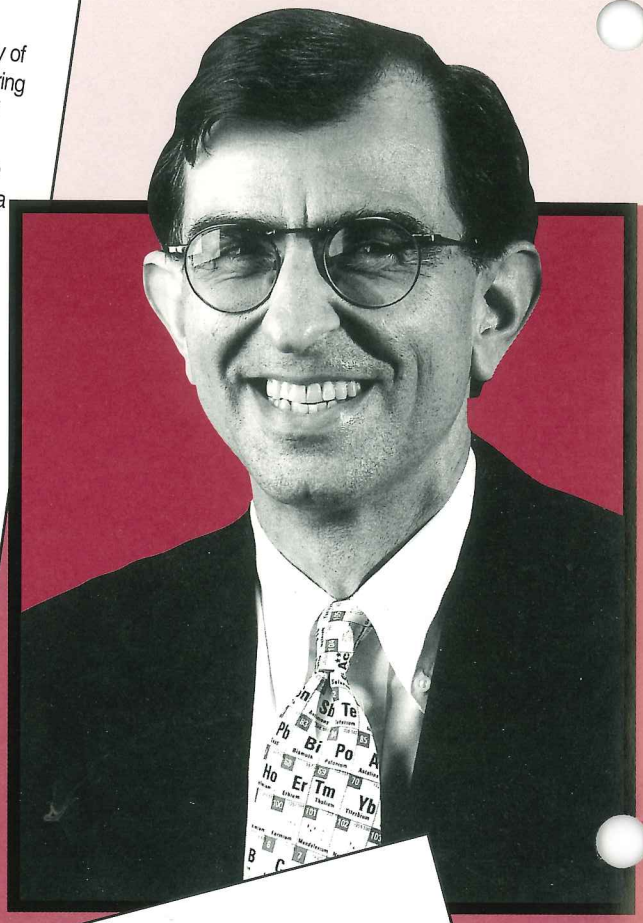
Due to the ideas, hard work and efforts of the student body, staff and faculty, these changes have not only been successful, but have occurred expediently and smoothly ... evidence that the "Ut-Prosim" spirit is alive and flourishing in the Department. I cannot adequately express in words my gratitude to everyone for their help.

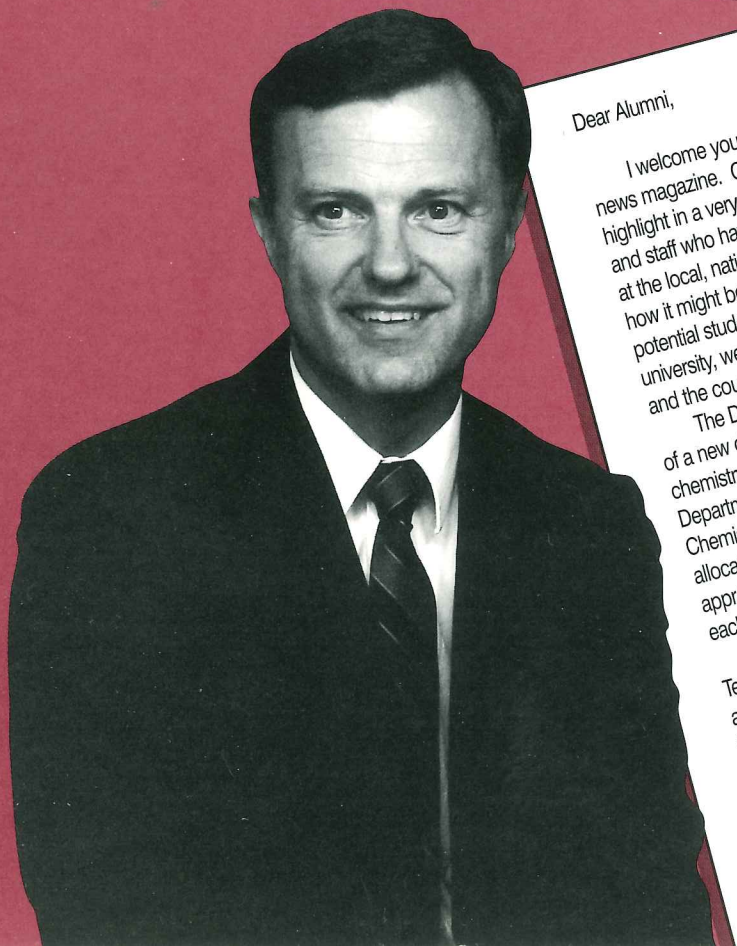
The rich history of the Department contains many new entries, but the legacy of the past — to perpetuate a sense of "family" — remains. I am honored to have served as the last Department Head and to have overseen the move to shared governance, a system where elected representatives along with the Chairperson will set the agenda for the Department. I am excited about the future and working with Larry Taylor and you to further build OUR Department!

Sincerely,

Richard D. Gandour

Richard D. Gandour
Outgoing Department Head





Dear Alumni,

I welcome you to the inaugural issue of the Department of Chemistry of Virginia Tech news magazine. Our goal is to publish the magazine at least once per year and to highlight in a very readable format alumni, undergraduate and graduate students, faculty, and staff who have brought and/or continue to bring distinction to our chemistry program at the local, national and international level. I encourage you to read it, give thought to how it might be improved, suggest topics for future inclusion, and share it with friends, potential students and financial sponsors. As a Chemistry Department of a land-grant university, we need to stay abreast of the needs of students, the discipline of chemistry, and the country.

The Department of Chemistry entered a new phase in 1997-98 with the establishment of a new departmental chairperson, executive committee, alumni advisory committee, chemistry learning center, and extensive Internet-based course instruction. Now the Department has been afforded the opportunity of a lifetime. In recognition of the Chemistry Departments outstanding service to the University, monies have been allocated for the construction of a chemistry teaching building. This structure will enable approximately 3,000 undergraduate students who participate in a laboratory experience each semester to do it safely with modern instrumentation.

As alumni, we want you to be proud of OUR Department of Chemistry of Virginia Tech — its educational philosophy, its research effort, its service to the scientific community and most of all its future graduates. Our efforts can only be made better by your greater involvement. As your new chairperson, I welcome your input and feedback.

Regards,

Larry T. Taylor
Incoming Department Chair

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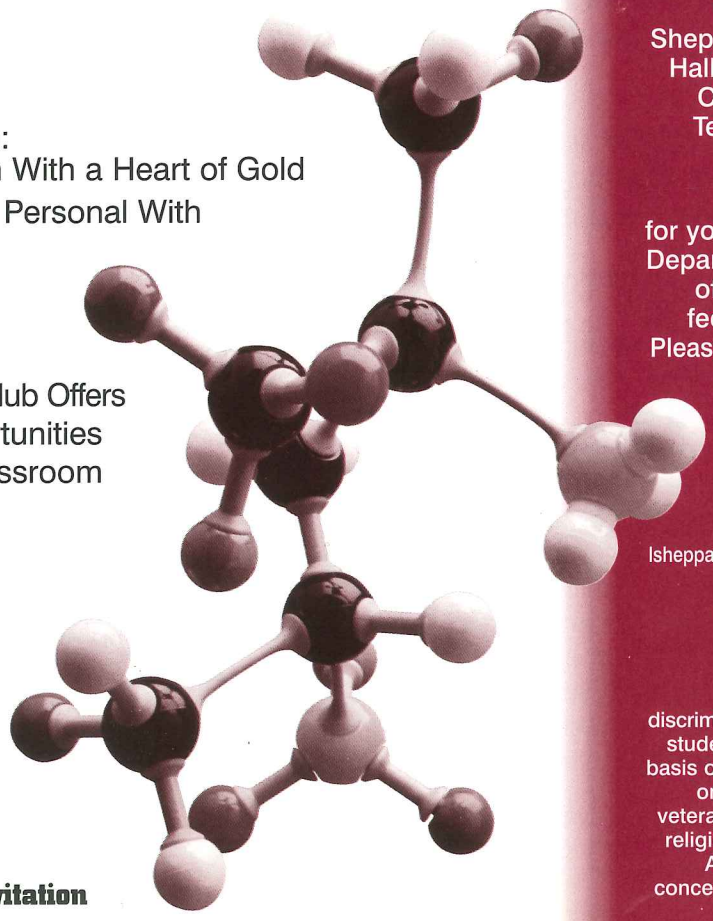

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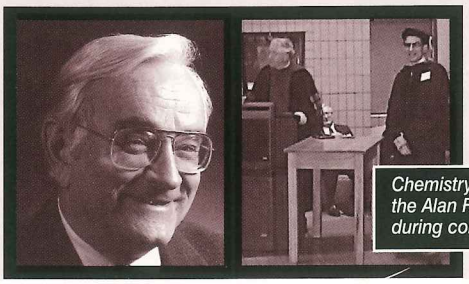
As a publication for you, the alumni of the Department of Chemistry of Virginia Tech, your feedback is welcome. Please feel free to contact Linda Sheppard by phone, 540-231-5966; fax, 540-231-3255, or e-mail, lsheppard@chemserver.chem.vt.edu And be sure to visit our web site at www.chem.vt.edu.



Chemistry professor James Wightman received the Alan F. Clifford Faculty Service Award during commencement ceremonies.

May Commencement

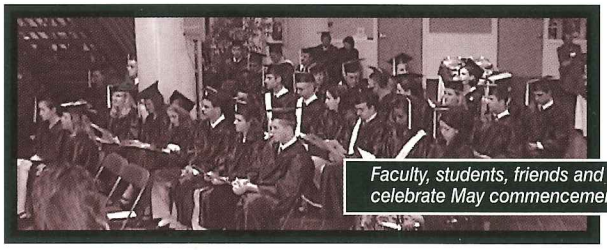
Each year, Virginia Tech's Department of Chemistry celebrates as new chemists enter society. Each year, the Department of Chemistry awards students with hard earned bachelor's, master's and doctoral degrees. And each year, the Department of Chemistry honors its accomplished faculty and students.

Commencement 1998 was no different.

In May, the Department awarded 44 bachelor's degrees, four master's degrees and 17 doctoral degrees. It also honored a number of faculty members for their accomplishments, including James E. McGrath, who received the Society of Plastics Engineers International Award; Paul Deck, the winner of a Cottrell Scholars Award; and Michael Calter, recipient of a National Institute of Health Award.

Inspiring graduates, friends, family members and faculty, Virginia Tech alumnus Orville L. Chapman — who earned his bachelor's degree in chemistry in 1954 — has established a worldwide reputation in academia and now serves as the Associate Dean for Education Innovation and Professor of Chemistry at the University of California in Los Angeles — addressed the audience as the Department's distinguished speaker.

The Department also honored professor James Wightman, who is recognized internationally for excellence in studies of the science of adhesion and has directed the degrees of approximately four dozen graduate students, with the Alan F. Clifford Faculty Service Award.



Faculty, students, friends and parents celebrate May commencement.

Chemistry Announces New Alumni Advisory Committee

The Department of Chemistry of Virginia Tech is in the process of forming an official Alumni Advisory Committee. Members will not only serve as liaisons between alumni and the Department, but will solicit feedback from alumni about the Department, its programs and future direction.

Sixteen alumni have agreed to volunteer their time and serve on the committee, which will hold its first meeting October 16 and elect a chair. Committee members welcome your input and include:

Roy H. Bible Jr. (B.S. '48)
Senior Research Fellow
G.D. Searle and Company
847-982-7787
email: rhbibl@monsanto.com

Edwin Boudreaux Jr. (B.S. '71)
Research Chemist
Phillips Petroleum
918-661-9976
email: eboudre@ppco.com

Elizabeth Calvey (B.S. '82, M.S. '84, Ph.D. '90)
FDA Deputy Sheriff Director
Joint Institute for Food Safety and Applied Nutrition
202-205-4716
email: ecalvey@bangate.fda.gov

Orville Chapman ('54)
Chemistry Professor
University of California at Los Angeles
310-825-4883
email:chapman@chem.ucla.edu

Joseph M. DeSimone (Ph.D. '89)
Mary Ann Smith Professor of Chemistry and Chemical Engineering Director
University of North Carolina
919-962-2166
email: desimone@unc.edu

Robin Kinser (B.S. '73)
Principal Scientist
Phillip Morris U.S.A.
804-274-5905
e-mail: kinser@talos.pm.com

Mitchell Koppelman (Ph.D. '72)
Vice President of research and development, Specialty Minerals Inc.

A. John LaRue (B.S. '56)
Retired
717-367-4133

Philmore Robertson Jr. (B.S. '72)
Director of Drug Disposition
Cephalon Inc.
610-738-6141
email: proberts@cephalon.com

James E. Smith (B.S. '66)
E.I. duPont
302-234-0449

Michael Smith (B.S. '71)
Professor of Chemistry
University of Connecticut
860-486-2881
smith@nucleus.chem.uconn.edu

William H. Starnes Jr. (B.S. '55)
Gottwald Professor of Chemistry
College of William and Mary
757-221-2552
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Roger Wayne Ogden (B.S. '72, M.S. '75)
Administrative Assistant to the Research Director
Westvaco Corporation
540-969-5138

Dean Webster (B.S. '79, Ph.D., MESc '84)
Research Associate
Eastman Chemical Company
423-224-0887
email: dwebster@eastman.com

Gene Weedon (B.S. '59)
Vice President, Technical and Engineering
Integrated Textile Systems Inc.
804-271-0259
email: gweedon@erols.com

Joseph Zoeller (Ph.D. '82)
Research Associate
Eastman Chemical Company
Research Laboratories
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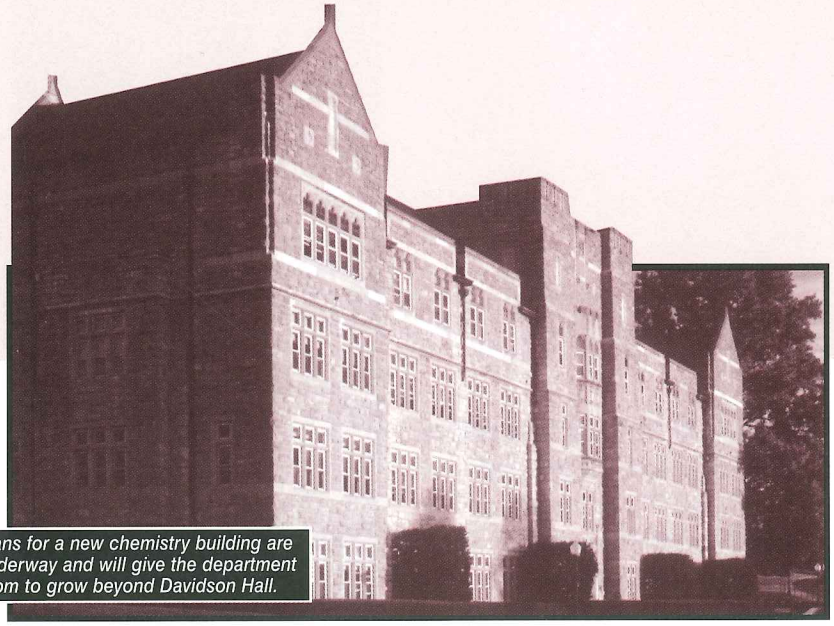
email: jzoeller@eastman.com



Plans for a new chemistry building are underway and will give the department room to grow beyond Davidson Hall.

Chemistry to Expand in the New Millennium

With the recent approval of funding by the Commonwealth, the Department of Chemistry of Virginia Tech will be able to greet the 21st Century with an expansion of its facilities.

A new 38,368 square foot building, slated for completion in 2001, will provide additional space for state-of-the-art student laboratories, recitation and briefing rooms and faculty offices, as well as a lecture hall designed and equipped to support the presentation of chemistry and physics demonstrations. In addition, a site will be provided for the newly established Chemistry Learning Center. Chemistry will share the building with the Physics Department to provide the latter with some teaching labs, especially for their astronomy course.

Once existing laboratories and offices relocate into the new building, substantially more space in Davidson Hall will be available for faculty and graduate student research. Chemistry will also maintain the 38,661 square feet it occupies in Hahn Hall.

"The Chemistry faculty are very enthused about the coming realization of a facility that will meet our longstanding need for better laboratories in which to teach our students," says Tom Bell, business manager of the Department. "This new building will allow us to move students from labs of a 1960s era design into modern, safer ones that will allow students to experience not only traditional chemistry, but also the new technology and techniques common in today's laboratories of the chemical industry, specialty chemical businesses and research facilities."

While the project has received $23.4 million from the Common-wealth and $3.6 million from Tech, the Department of Chemistry is seeking additional funding to purchase new equipment and special furnishings for the new labs.

"The Chemistry faculty are very enthused about the coming realization of a facility that will meet our longstanding need for better laboratories in which to teach our students."

—Tom Bell

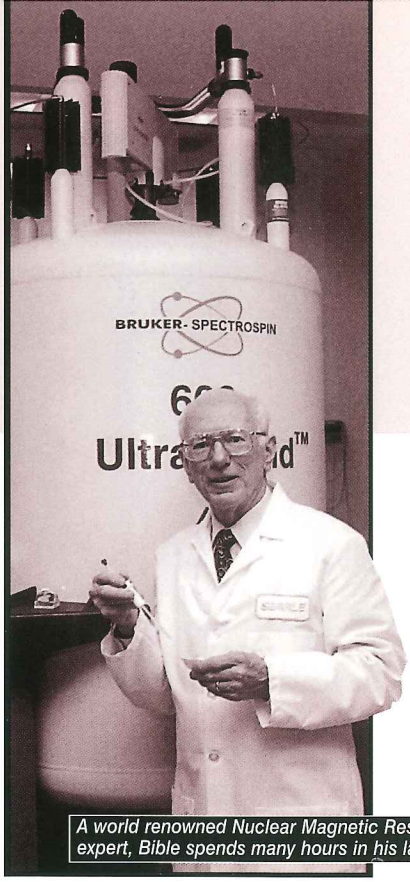
Roy Bible: A Man of Many Talents

by Christina Maccherone

Roy Bible never works. Instead, he plays.

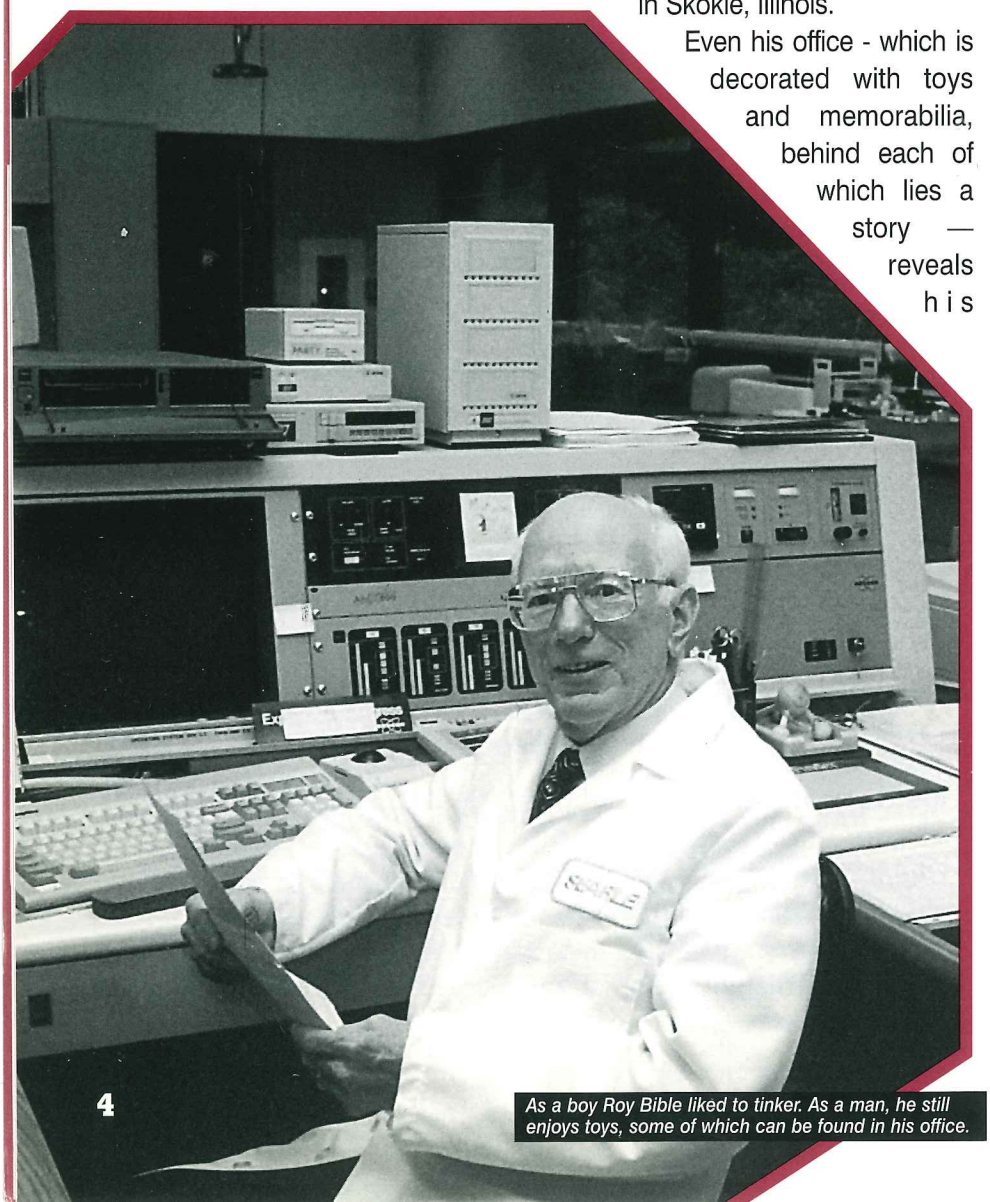
"It doesn't matter what I'm doing, I have fun," says the 72-year-old Virginian by birth.

One thing is for certain. He has plenty to do. A man of many talents, Bible is an artist. A photographer. A chemist. An explorer. An internationally renowned expert on Nuclear Magnetic Resonance (NMR). An author. A teacher. A husband. A father. And a senior research fellow with more than 45 years of service to G.D. Searle and Company, now part of the Monsanto Life Science Company in Skokie, Illinois.



A world renowned Nuclear Magnetic Resonance expert, Bible spends many hours in his lab.

Even his office - which is decorated with toys and memorabilia, behind each of which lies a story — reveals his philosophy about life. An engraved desk plate highlights some of his nicknames — guru, the spiritual leader, the holy spirit and dad - which have been bestowed upon him by colleagues and former staff members. The art that hangs on his walls — which he created — reminds him of places he's been. And an old spectrum, colored with signatures of those people that used it many years ago, is a favorite momento. With a true passion for life, Bible puts his heart and soul into everything he does.



As a boy Roy Bible liked to tinker. As a man, he still enjoys toys, some of which can be found in his office.

"I'm into having fun and solving problems," he says, noting the things that attracted him to chemistry. "That's my game."

As a boy, Bible liked to tinker. He used to make hydrogen using aluminum-foil and lye, and then would ignite the hydrogen with tin foil and a train transformer. In high school, he repaired radios and played with whatever he could get his hands on.

"My dad was a tinkerer, too," explains Bible, who earned his

bachelor's degree in chemistry from Virginia Tech in 1948 and attended graduate school at the University of Illinois where he received both a master's and doctorate degree in organic chemistry.

"He always had extra parts around. I remember making a phone system with ear phones and wires so my friend and I could talk to each other from opposite ends of the block."

Throughout his career, Bible has also tinkered with many things. In fact, he holds nearly 30 patents for compounds he's created over the years.

"I joined Searle 47 years ago because they wanted an organic chemist who could do lifetime research and that sounded like fun. They were a $30 million company then, and now they're approaching $3 billion," he says.

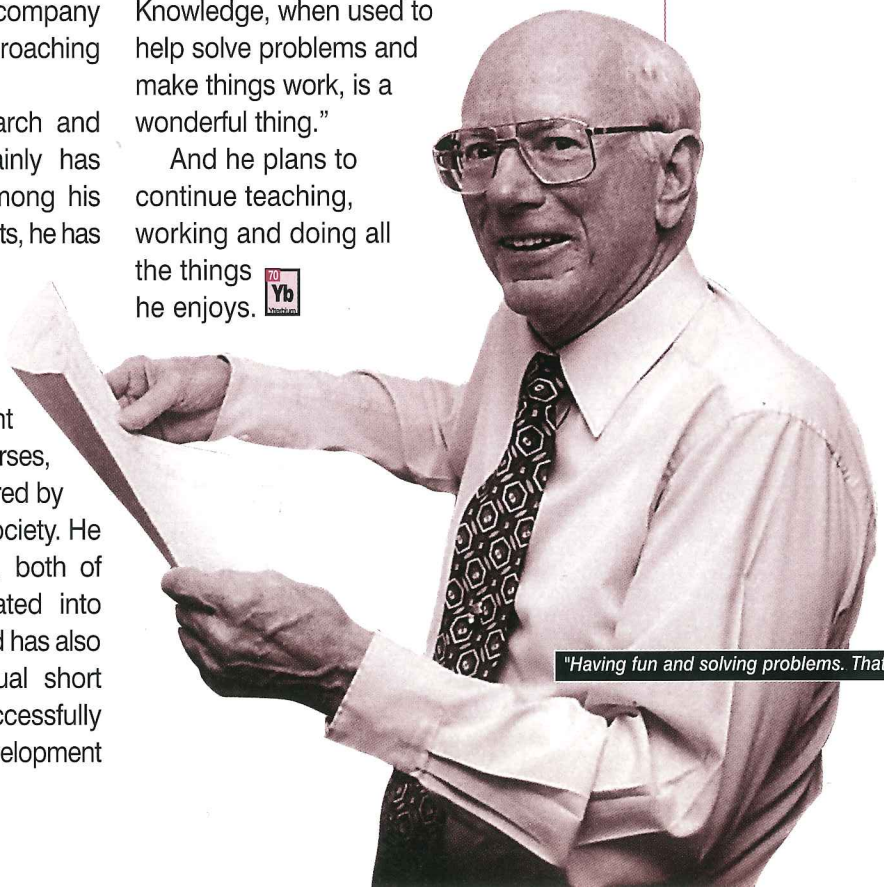
As a chemist in research and development, Bible certainly has impacted that growth. Among his many other accomplishments, he has seen and helped NMR technology evolve. He has taught people not just theory, but real life applications. He has taught in more than 100 short courses, many of which are sponsored by the American Chemical Society. He has authored two books, both of which have been translated into Russian and Japanese, and has also co-authored an audiovisual short course. And he has, successfully directed a research and development team of chemists at Searle that is capable of analyzing and identifying any organic compound, all in supporting Searle's efforts to discover and develop useful pharmaceutical products. Searle is, in fact, credited with creating the first oral contraceptive and inventing such products as Dramamine, Equal and Metamucil.

"My biggest contribution is teaching," says Bible, adding that he recently taught his 10th course on NMR at Virginia Tech, and had the honor to address chemistry graduates as the keynote speaker at Tech's 1996 commencement. "I'm able to take things that are complex, simplify them and share that knowledge with others. Knowledge, when used to help solve problems and make things work, is a wonderful thing."

And he plans to continue teaching, working and doing all the things he enjoys.

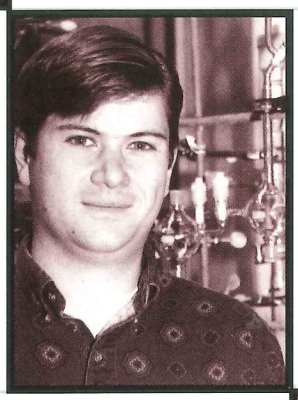
"I'll never retire, I'm having as much fun as I possibly can."

—Roy Bible, '48

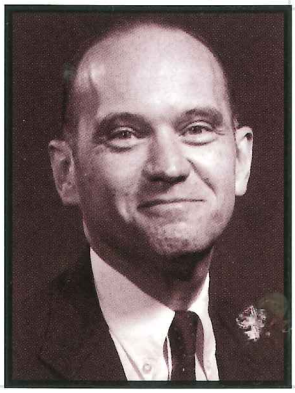


"Having fun and solving problems. That's my game."

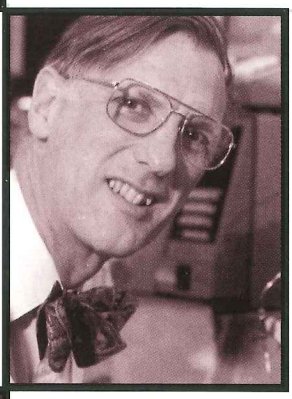
Jennifer L. Craft, a junior in the class of 2000, won the Barry M. Goldwater Scholarship of $7,000 through the Virginia Tech University Honors Program. She was nominated for the award by former Head of the Department of Chemistry, Richard D. Gandour.

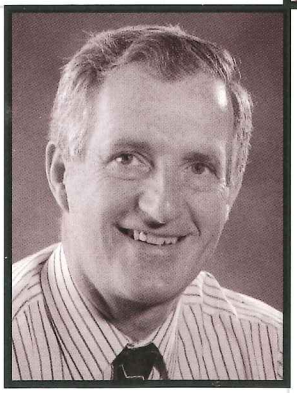


Paul Deck, assistant professor of chemistry, was awarded the Cottrell Scholarship from Research Corporation, which includes $50,000 for his research efforts. He was one of five chemists from across the nation to receive the award and one of 13 scholarship winners from a pool of 104 applicants.



Ray Dessy, chemistry professor emeritus, held an honors colloquium entitled, "Internet Impact," to a standing-room-only audience for nearly 20 Virginia Tech honor students from 12 departments. In addition, he has become a member of the Advisory Board for the Association for Laboratory Automation, has joined the group for Automation in Infectious Disease Research, and has co-authored a chapter on surface plasmon biosensors for inclusion in the book, *Industrial Applications of BioSensors.*



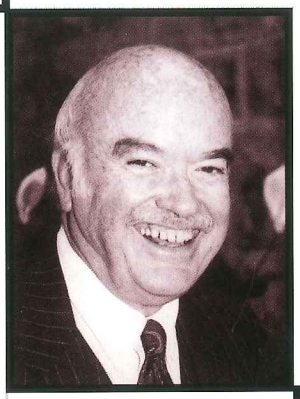


Harry W. Gibson, chemistry professor, took a leave of absence spring semester to conduct research. He spent several months at both the University of California in Las Angeles and Durham University in the United Kingdom. While in Europe, he presented a number of invited lectures.

David Kingston, chemistry professor, has been appointed as a member of the editorial advisory board to *Current Organic Chemistry*, has presented lectures in South Africa, Paris, Las Vegas, and Dallas, and has become a member of the Blue Ribbon panel to advise the National Cancer Institute on restructuring the Developmental Therapeutics Branch. In addition, some of his work was recently featured on the *Environmental News Network* and *ABC Discovery News.*

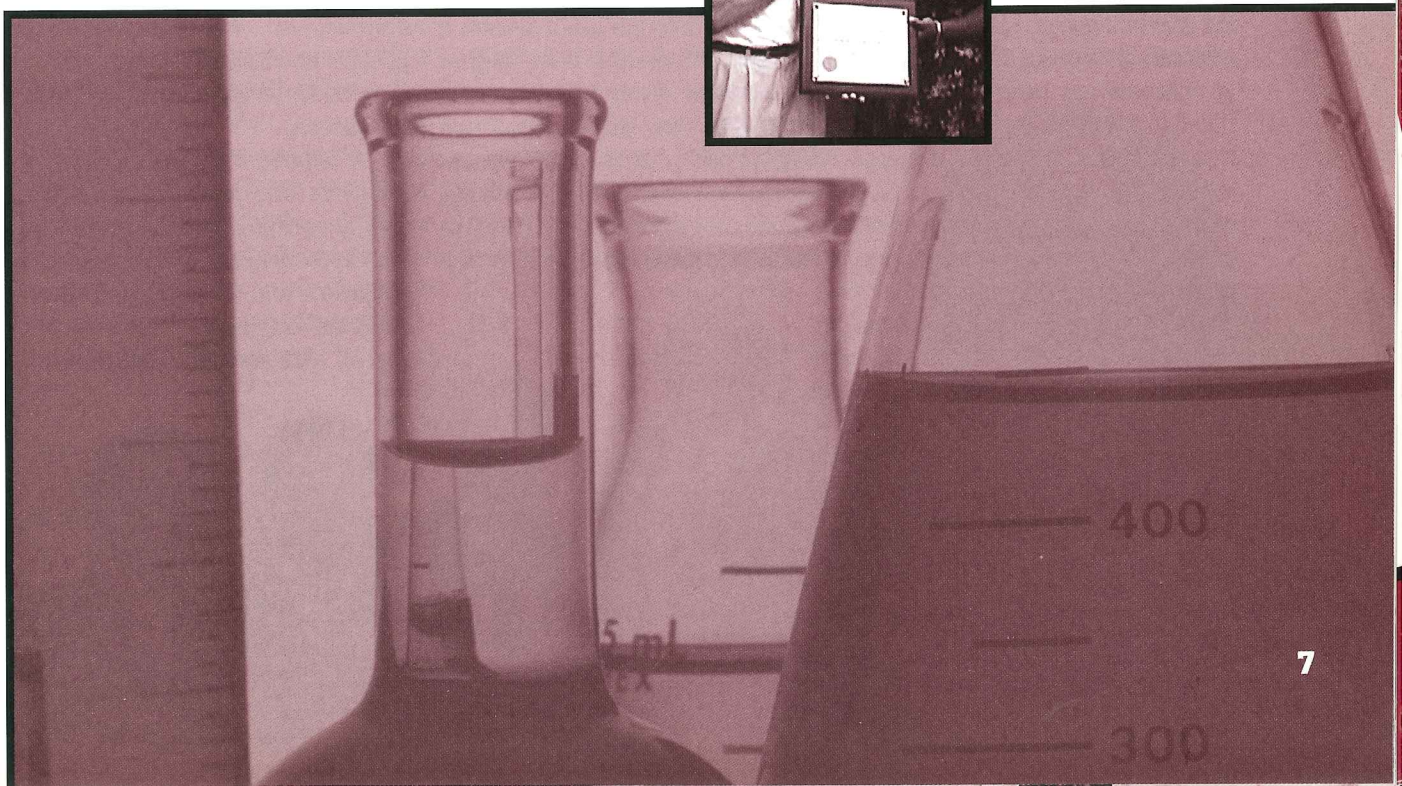
PEOPLE IN THE NEWS

Gary L. Long, an associate professor of chemistry, has accepted a one to two-year appointment with the National Science Foundation as a program director in the division of undergraduate education, after which he will return to Tech to continue his teaching and research efforts.

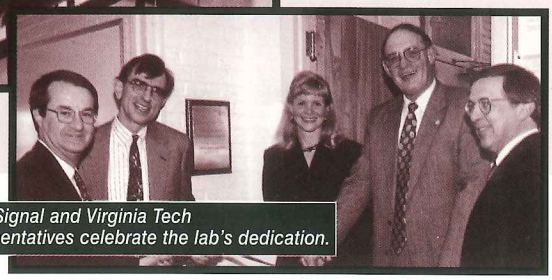


James E. McGrath, University Distinguished Professor of Chemistry and Director of the National Science Foundation Science and Technology Center for High Performance Polymeric Adhesives and Composites, received the 1998 Society of Plastic Engineers International Award for his outstanding contributions. The award consists of a gold-filled inscribed medal and a $5,000 honorarium.

Stephanye Armstrong, a doctoral candidate in chemistry at Virginia Tech, won a prize for the Best Student Presentation at the 54th Annual Meeting of the American Phytopathological Society held in Morgantown, W.Va. for her paper on "Microwave-assisted Extraction versus Thermal Distortion GC-ECD-MS of Propiconazole from Elm Wood." She holds a bachelor's degree from Winston-Salem State University, and a master's degree in chemistry from Virginia Tech.



Chemistry's newest lab features the latest polymer technology and equipment.



AlliedSignal and Virginia Tech representatives celebrate the lab's dedication.

Introducing the New AlliedSignal Polymer Characterization Laboratory

by Christina Maccherone

Extending its teaching efforts beyond the classroom, the Department of Chemistry of Virginia Tech educates future chemists by integrating theory and practical hands-on experiments. And now students will benefit from the addition of a new, state-of-the-art lab: the AlliedSignal Polymer Characterization Laboratory.

The lab, which was officially dedicated October 30, culminates a three-year funding and remodeling effort initiated by Tom Ward, Virginia Tech's Adhesive and Sealant Council Endowed Professor.

"Over the last 20 years, the Polymer Science Program at Virginia Tech has become known as a leader. Yet the number of undergraduates who can receive specialized training in polymers has been limited for a number of reasons, including the fact that we have not had a polymer laboratory," explains Ward. "It's extremely exciting that we've found the necessary space and funding to make this lab become a reality."

Housed in 110 Davidson Hall, the polymer characterization lab was largely made possible by $100,000 in donations from AlliedSignal Inc., a global, $14 billion technology and manufacturing company that provides aerospace and automotive products, chemicals, fibers, plastics and advanced materials. AlliedSignal contributes over $10 million annually to various non-profit educational, cultural and community organizations in the U.S. and other countries where the company maintains significant operations. The Fortune 500 firm operates a technical center in Richmond, as well as four polymer and fiber production plants throughout the Commonwealth, and hires a number of chemists and engineers from Virginia Tech each year. In fact, over the last five years the company has hired more than 60 Tech alumni.

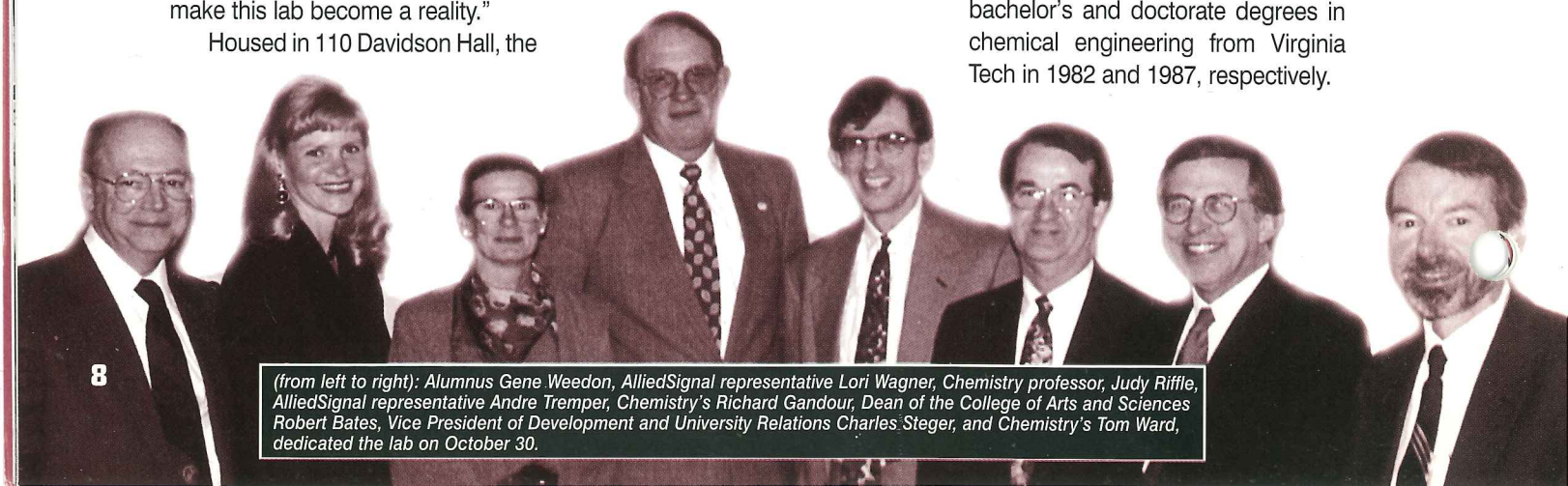
"AlliedSignal established a University Relations Program supported by the AlliedSignal Foundation with the intent to form a strong partnership with higher education as a way for us to reach and recruit top talent," says Lori Wagner, performance fibers technical service manager with AlliedSignal and the campus manager for Virginia Tech, noting that she receives anywhere from 20 to 40 proposals from Virginia Tech and hundreds of proposals from targeted schools requesting funding each year. "Based on university rankings in business and engineering, we identify which schools we want to target and Tech was one of the original schools we began working with five years ago."

When she and her predecessor, Gene Weedon (who earned his bachelor's degree in chemistry from Tech in 1959 and has been a key supporter of the Department ever since, and who was AlliedSignal's original Virginia Tech campus manager), received the proposal for the Virginia Tech Chemistry Polymers Characterization Lab, they knew it was a good match.

"Polymers is one of AlliedSignal's core businesses," explains Wagner. "This project was a nice fit. Tech and the Chemistry Department needed a polymers lab. We need top notch polymer chemists and engineers."

Besides, there was the personal connection.

"I remember having Tom as a professor and knew, that with his energy behind it, the lab would take off," says Wagner, who earned her bachelor's and doctorate degrees in chemical engineering from Virginia Tech in 1982 and 1987, respectively.



(from left to right): Alumnus Gene Weedon, AlliedSignal representative Lori Wagner, Chemistry professor, Judy Riffle, AlliedSignal representative Andre Tremper, Chemistry's Richard Gandour, Dean of the College of Arts and Sciences Robert Bates, Vice President of Development and University Relations Charles Steger, and Chemistry's Tom Ward, dedicated the lab on October 30.

The Man Making It Happen: Gene Weedon

Age: 62

Occupation: Vice President and Partner, Integrated Textile Systems Inc., Monroe, N.C.

Background: A native of Arlington, Virginia, Weedon attended Virginia Tech on a state scholarship where he earned a bachelor's degree in chemistry in 1959. He chose Tech because of its statewide reputation for excellence in science and engineering and the opportunity the school afforded for a regular Army commission through ROTC. While at Tech, he was a member of Phi Lambda Upsilon, the '59 Ring Dance Committee, the association of the United States Army, the Society of Military Engineers, the Capitol Club, the Judo club and the cadet Senate. In addition, he was awarded the Merck Award for Outstanding Junior Chemist, the American Chemical Society for Outstanding Senior in Chemistry and designated as a Distinguished Military Student.

His career has been a whirlwind ever since. After graduation, he joined the Polymers Division of Exxon Research and Engineering in New Jersey, but his career was interrupted when the Berlin wall was built. He completed his ROTC military obligation at Fort Bragg, N.C., where he taught at the Chemical, Biological and Radiological School. He returned to Exxon, however, where he worked until 1966, when he made his move to AlliedSignal (then known as Allied Chemical).

Throughout his 31-year career with AlliedSignal, Weedon has accomplished many things. For starters, he is the inventor or co-inventor on more than 40 U.S. patents. He has authored or co-authored over a dozen technical papers on ultra high strength polyethylene. He has been named a Fellow of the American Institute of Chemists. He is a member of the American Chemical Society, Phi Lambda Upsilon, the Society of Plastics Engineers, the Research Society of America and Sigma Xi. And with nearly 40 years' experience in the polymers industry, he has become a well-respected authority. Perhaps that's why he entered into a new business partnership the day after he retired from AlliedSignal. Today his firm, Integrated Textile Systems Inc., provides consulting on polymers and textiles to customers throughout the world.

Personal: Married for 37 years to Diane Decker Weedon. Father of three, grandfather of three. Hobbies include playing bridge, fresh and salt water fishing, traveling and archeology.

About Chemistry: "Chemistry comes easily to me and I was attracted to its logic, as well as the way it helped explain some of the wonders of the world to me. But I think chemists are unnecessarily singled out by society as environmental 'bad-guys' when, in fact, the opposite is true. Chemists are finding innovative solutions to many of today's environmental problems. And it is chemists who, by application of their science, have helped develop many of today's miracle drugs as well as provide many of the things that contribute to our quality of life."

"Tech is close to my heart," says Weedon, who joined AlliedSignal in 1966 and retired after 31 years as the Director of Research and Development for the High Performance Fibers Department. "My career wouldn't have been possible without all that I learned there."

Weedon, who was the keynote speaker for Chemistry's 1997 commencement and most recently has been invited to serve as a member of the Department's Alumni Advisory Committee, has been actively involved with the Department of Chemistry of Virginia Tech for the past seven years.

"I've always been involved with recruiting graduates and hiring co-op students," he says. "When AlliedSignal started the University Relations Program, they wanted people who were already familiar and involved with the University. I jumped at the chance! I volunteered to work with Tech and feel fortunate that Tech has received more money than any other AlliedSignal targeted school."

AlliedSignal typically tries to spread its wealth and contributions among its targeted colleges and universities, of which there are more than 30. However, for Tech's Polymer Characterization Lab, they donated $25,000 in 1994 to help get the idea off the ground; $25,000 in 1995 for equipment purchases; and another $50,000 in 1997 to make the lab a reality.

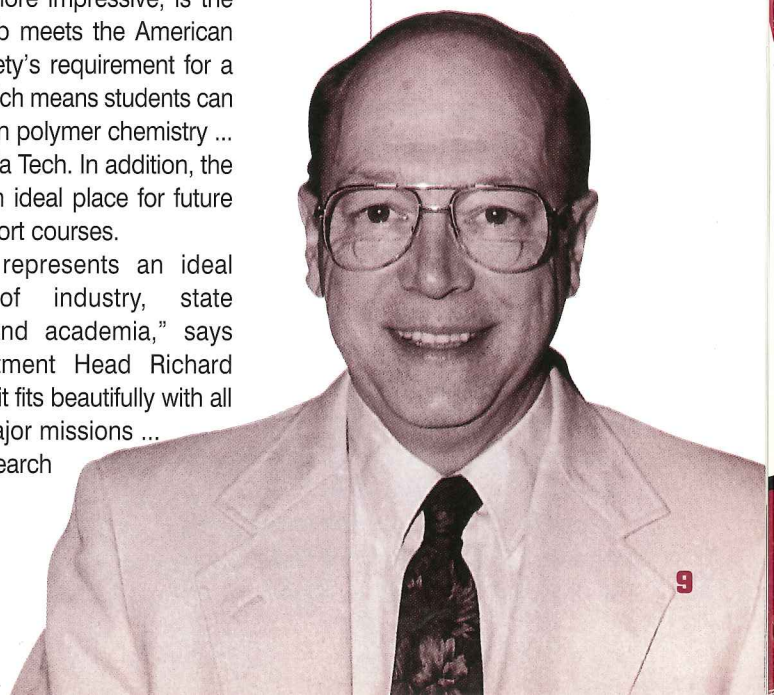
Already classes are being taught in the lab by chemistry professors Tom Ward and Judy Riffle. Already experiments are being performed using such new, computerized equipment as a differential scanning calorimeter, mechanical analyzers, optical microscopes, Instron test systems and viscometers. And already new research is underway by students and faculty members.

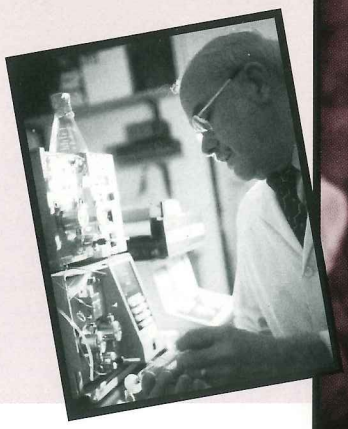
But even more impressive, is the fact that the lab meets the American Chemical Society's requirement for a polymer lab which means students can actually minor in polymer chemistry ... a first for Virginia Tech. In addition, the lab provides an ideal place for future professional short courses.

"This lab represents an ideal partnership of industry, state government and academia," says former Department Head Richard Gandour. "And it fits beautifully with all three of our major missions ... instruction, research and outreach."

"My philosophy on life was derived from a respected friend. I believe that if you have a dream, now's the time to fulfill it."

—Gene Weedon, '59





A Virginia Tech University Distinguished Professor of Chemistry, James McGrath is known as a premier scientist in the polymer industry.

James McGrath: The Plastic Man With a Heart of Gold

by Sally Harris and Christina Maccherone

When Laurie Good told her boss, James McGrath, that her mother had suffered a stroke in California, he immediately gave Good a frequent-flyer ticket to get to her mother's side.

"Generous" is one of the adjectives that crop up often when people discuss "Jim" McGrath, University Distinguished Professor of Chemistry of Virginia Tech, one of the world's premier scientists in polymer science, major author, academic leader, and director of the National Science Foundation (NSF) Science and Technology Center For High Performance Polymeric Adhesives and Composites, which he established in 1989.

"He's a giving person," says colleague Garth Wilkes. "He's not just a power player for himself, but he's a power player for the school. He would take the shirt off his back if he thought you needed it."

McGrath, 63, is also known as someone whose work and leadership have provided a strong research base in the development of materials for electronics and aerospace. He is in fact, credited with helping to move polymer composites into transportation and infrastructure uses. One look at his accomplishments and it's no wonder why.

He was elected to the National Academy of Engineers in 1994, received the 1996 Herman Mark Award for outstanding research and leadership in polymer science from the American Chemical Society's Division of Polymer Chemistry, was named Virginia's Outstanding Scientist of the Year in March, 1997, was named to the Society of Plastics Engineers Plastics Hall of Fame in June, 1997, and received the 1998 Society of Plastics Engineers International Award for outstanding contributions in the field of plastics. All of these accolades for a man who began his academic career with little intention of going to graduate school, much less of becoming a professor.

"Getting elected to the National Academy and being promoted to a University Distinguished Professor are my highest honors," he says. "I couldn't have done it without a lot of hard work, a strong background in industry, and the help of good students and colleagues."

Born in the Adirondacks of upstate New York near Saratoga, McGrath grew up on a 400-acre dairy farm. He attended a one-room school for six years; one hour devoted to each grade. In 1946, at age 12, McGrath started taking trombone and the instrument became one of the great loves of his life. In high school, he discovered his love for chemistry.

"Like many young people, I was influenced by good teachers," he explains, "and I had a great biology, chemistry and physics teacher."

He attended Sienna College in Albany, where he majored in chemistry and joined ROTC. For extra income, he swept the floor in the chemistry department, worked in the chemistry stock room and played in his own jazz-dance band, The Keynotes.

"I agree with the idea that chemistry is the central science," says McGrath. "It involves all the basic elements critical to our survival, defines the environment and materials we use, and helps generate new ideas and products that will benefit society."

After a stint in the military, McGrath got a job at Rayonier - the company that introduced rayon — working in cellulose fibers and films.

"I learned about polymers for the first time," he recalls.

He's been hooked ever since.

Deciding to pursue graduate school, McGrath took a position with Goodyear Tire and Rubber Company in Ohio, where he worked during the day while taking night classes at the University of Akron. He earned a master's degree in chemistry in 1964, completed his doctorate in 1967, and joined Union Carbide Corp. in New Jersey where he conducted research for eight years on a variety of different thermoplastic materials.

But for quite some time, McGrath had been thinking about getting into an academic career. In 1975, he was offered a job at Virginia Tech at about half his industry salary. He accepted, but, with a family (he now has six children, three of whom are graduates of Virginia Tech, and seven grandchildren), decided to take a year's leave of absence from Union Carbide. "They didn't want me to go, and I didn't want to burn any bridges."

McGrath never recrossed that bridge he had refused to burn. Instead, he's served Virginia Tech for 23 years.

He first taught freshman and sophomore chemistry and organic chemistry. He started the polymer

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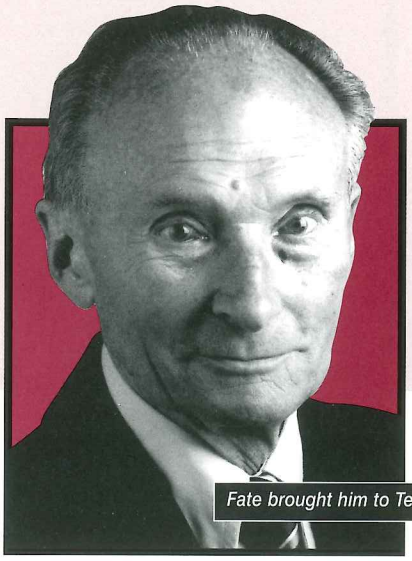

Fate brought him to Tech 30 years ago.

Up Close and Personal With Milos Hudlicky

by Christina Maccherone

Life for Milos Hudlicky, a 79-year-old native Czechoslovakian, world-renowned fluorine chemist and professor emeritus of chemistry at Virginia Tech, has been an interesting and rewarding journey.

"I was inspired to become a chemist after reading Jules Verne's book The Mysterious Island when I was about 10-years-old," he recalls. "The hero, a chemist who gets stranded on an island and makes the things necessary for the group's survival, became my idol."

Since then, Hudlicky knew he would become a chemist. But his journey has had its share of challenges.

In 1939, he began studying organic chemistry at the Institute of Chemistry and Technology in Prague. The same year, German Nazis closed all Czech universities, and Hudlicky was forced to find a job. With luck on his side, he landed a job at a pharmaceutical laboratory where he worked for half a year before accepting a position as a technician in the Research Institute of Rubber Technology of the Bata Shoe Factory, which was at that time the world's largest shoe manufacturer. He caught on quickly and was assigned the task of developing the "Wichterle reaction." The work kept him busy until the end of the war when he returned to the re-opened university to complete his degree.

In 1946, he earned a doctoral degree in chemistry, specializing in the chemistry of 1.3 dichloro-2-butene, married his wife Alena, and continued working for his alma mater, the Institute of Chemistry and Technology in Prague.

Life ran smoothly for a while.

He enjoyed teaching and made strides in his research. In 1948, he was awarded a UNESCO fellowship to study at Ohio State University where he learned fluorine chemistry. After his return, he started developing fluorine chemistry in Czechoslovakia, and celebrated the birth of his son, Tomas, in 1949, and daughter, Eva, in 1955. He also started writing and publishing books on experiments and synthetic methods in organic chemistry.

But with 1958 came another obstacle.

"I wouldn't comply with the communist regime, wouldn't keep my mouth shut and got fired from the university for political reasons in 1958," shares Hudlicky. "But I was lucky to land safely, took a job as a senior chemist with the Research Institute of Pharmacy and Biochemistry, and was able to continue my research."

Again, many years went by and Hudlicky continued to enjoy work, publishing and his family.

"Destiny brought me to Virginia Tech in 1968," he says. "I was invited to speak at the 2nd European Symposium on Fluorine Chemistry in Gottingen, West Germany. But a few days before, the Red Army invaded Czechoslovakia. Unexpectedly, I was able to get across the border and learned that my talk had been cancelled. They did reschedule

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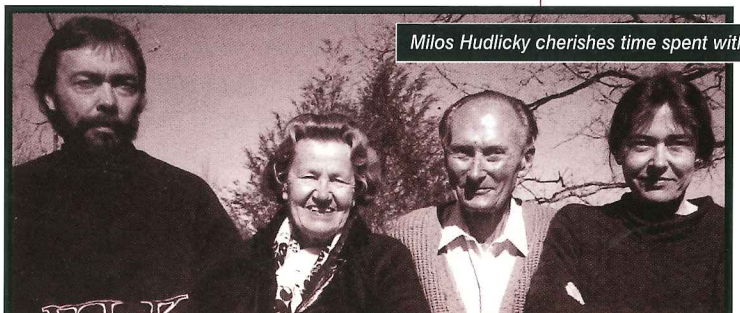
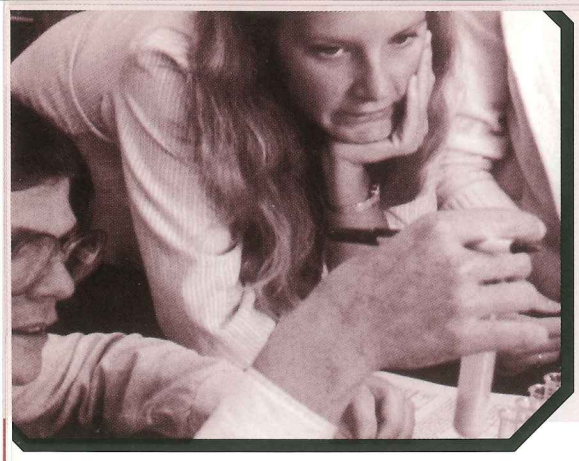
"Destiny brought me to Virginia Tech in 1968."

—Milos Hudlicky



Milos Hudlicky cherishes time spent with family.



STUDENT SPOTLIGHT

The Chemistry Club Offers Learning Opportunities Beyond the Classroom

As part of its mission to find innovative ways to instruct students, the Department of Chemistry of Virginia Tech offers students another learning opportunity through The "Chem" Club.

More formally known as the Virginia Tech student chapter of the American Chemical Society (ACS), The Chemistry Club provides undergraduates with a forum to exchange ideas; interact with faculty members, practicing Chemists and career professionals; present talks and papers to their peers; and pursue practical knowledge that will help them jump-start their future careers.

"We've had an active group here for about 10 years and have completed another very successful year," says Chemistry Club faculty advisor and professor of Chemistry Mike Calter.

As evidence of a successful year, the group received an Honorable Mention from the ACS as one of the nation's Outstanding Student Affiliate Chapters during 1996-97. And that is not a first. Tech's students received the same recognition for the 1995-96 academic year and a Commendable Student Affiliate Chapter Award in 1994-95.

Also to its credit, Tech's Chemistry Club — which involves more than 20 active undergraduates — sponsored the 18th Annual Undergraduate Research Symposium this year, with nearly 30 students from six universities participating. AlliedSignal provided funding as a corporate sponsor as it has done for the past four years. The symposium, which Tech students initiated and have maintained, is held each spring to provide undergraduate students a chance to give organized presentations in front of their peers. It is open not only to Chemistry majors, but undergraduate students pursuing degrees in any science, engineering or related field. And students from across the Commonwealth are invited.

The Chemistry Club was also selected by the ACS to lead the undergraduate program section of ACS' Southeast Regional Meeting, which was held in Roanoke last fall.

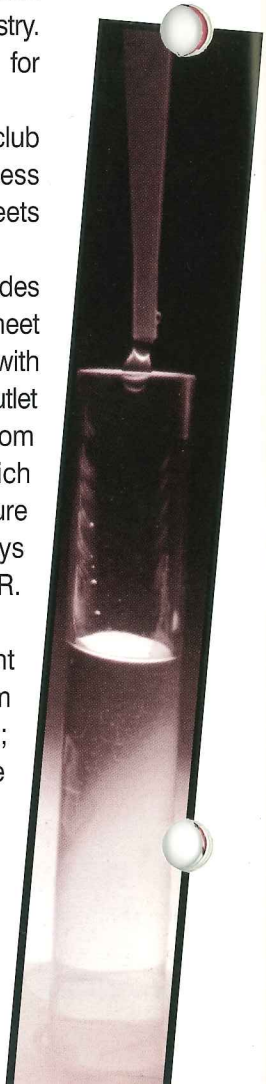
"Our group coordinated social events, student speaker presentations and a round table panel discussion," explains Calter. "The Chemistry Club lets undergraduates experience Chemistry as a profession, not just as a collection of courses. As members of the club, the students do a number of things that they will be expected to do as graduate students or industrial Chemists, like interviewing, learning about the work of others through presentations, and presenting their own work in written or oral form. This experience often prepares the students to make the important career decisions required of them before they graduate."

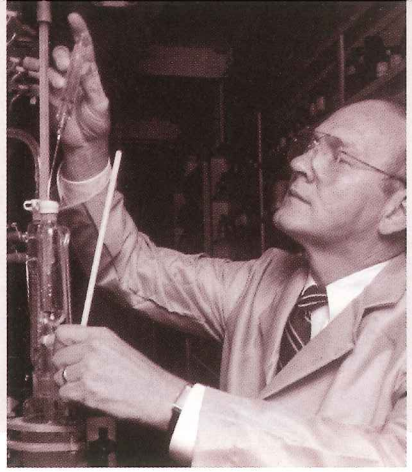
In addition, the Chemistry Club holds a variety of activities throughout the year, including social functions such as pizza parties and guest speakers who cover a wide range of practical, technical and fun topics. Among favorite topics this year were "how-to" mock interviews, the art and science of brewing beer, the chemistry of wine, and white lies and half truths of organic chemistry. The group is always looking for alumni volunteers to speak.

At the same time, elected club officers hold weekly business meetings and the group meets once each month.

"The Chemistry Club provides students with a chance to meet professors, build camaraderie with each other and gives them an outlet to make contacts with people from industry and academia, which could help them in their future careers as Chemists," says Chemistry Club president, R. Graham Robinett.

The current group of student leaders, includes R. Graham Robinett ('99), president; Jennifer Milora ('99), vice president; Jennifer Craft (2000), secretary; and Mason Haneline ('99), treasurer. New officers are elected each fall.





CLASS NOTES

Class Notes

'48 Charles L. Harowitz, Richmond, has retired.

'53 Campbell Epes (B.A. '53, M.A. '54), Waynesboro, retired in 1985.

'55 William H. Starnes Jr., Williamsburg, is a Gottwald Professor of Chemistry at the College of William and Mary.

'57 Halley Merrell, Washington, D.C., has been promoted to secretary for the American Chemical Society.

'65 Steve Allen, Manassas, retired from government service in January to begin his own consulting firm, Forensic Science Resources.

'70 W. M. Coleman III (M.A. '70, Ph.D. '77), Winston Salem, N.C., serves R.J. Reynolds Tobacco Company as a research chemist.

'72 Roger Wayne Ogden (B.A. '72, M.A. '75), Covington, serves as a senior chemist and administrative manager for Westvaco Corporation's Research Center.

Philmore Robertson Jr., West Chester, Penn., director of drug disposition for Cephalon, Inc., says he is enjoying life and its challenges.

'75 Randolph B. Perfetti (Ph.D.), Arlington, is the associate director for the Health Effects Division of the United States Environmental Protection Agency.

'78 David A. Colby (B.A. '68 foreign languages, Ph.D. '78) lives in Marietta, Ga., and works for the Coca Cola Company as a principal quality assurance specialist.

Dr. Michael G. Macon, Clarksville, Md., is a medical doctor.

'80 Robert H. Walker III, (B.A. '80), Hampton, is the president of Environmental and Industrial Hygiene Laboratory.

'81 Colleen McGrath Kraft, Mechanicsville, works as a pediatrician and associate professor of community pediatrics for the Medial College of Virginia at Virginia Commonwealth University in Richmond.

'86 James M. Lambert (Ph.D.), Covington, Ga., a research chemist and materials expert for C. R. Bard, is married with two children and the technical program chairperson of the Society of Plastics Engineers' Medical Plastics Division.

Suzanne Wilson Maben, Standardsville, is a laboratory specialist for the Shenandoah Watershed Study at the University of Virginia's Department of Environmental Sciences.

'87 James D. Rancourt (Ph.D.), Blacksburg, invented NewMerc, a liquid metal alloy with no known toxity developed with Larry Taylor, Virginia Tech Chemistry Department Chair and professor, has created his second company, NewMerc Ltd. and moved a small staff into the Virginia Tech Corporate Research Center. He will serve the new company as president.

'88 Lee Allen (Ph.D.), South New Berlin, N.Y., works as an analytical chemist for Procter and Gamble Pharmaceuticals, is married to Karen, has two children, Caitlin and Lane, and lives on a small farm.

'89 Gregory D. Coffey, San Diego, Calif., married Cristy in September, 1995, and has taken a new job as a research supervisor for W.G. Clarke.

'91 Nick Anousis, Albany, Ga., serves Merck and Company as a project chemist.

'92 Rob Keyes (Ph.D.) was named the Scientist of the Year by the Chemical and Agricultural Division of Abbott Laboratories for 1996.

Katherine E. Small, Richmond, is a pharmaceutical sales representative with Fertility Specialist.

'94 Venkat Sckharipuram (Ph.D.), Roanoke, is the manager of materials research for Innotech Inc.

'95 Gerry Meyer (Ph.D.), Framingham, serves Norton Company as a senior research engineer.

(EDITOR's NOTE: We want to hear from you and share your news with fellow alumni! Please either complete and return the enclosed card, or send items for this section directly to ***Elements*** Editor, Serendipity Communications, 3290 Eaglebrook Rd., Christiansburg, VA 24073. Photos are welcomed.)

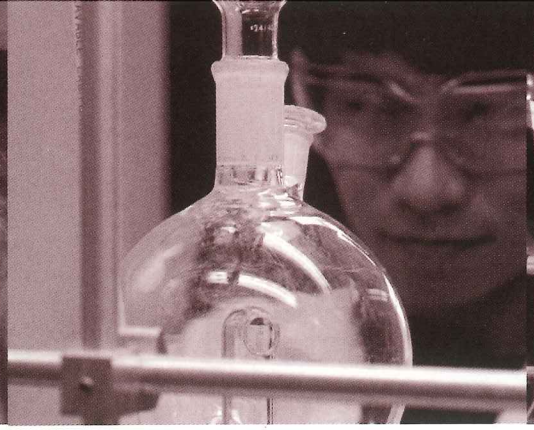
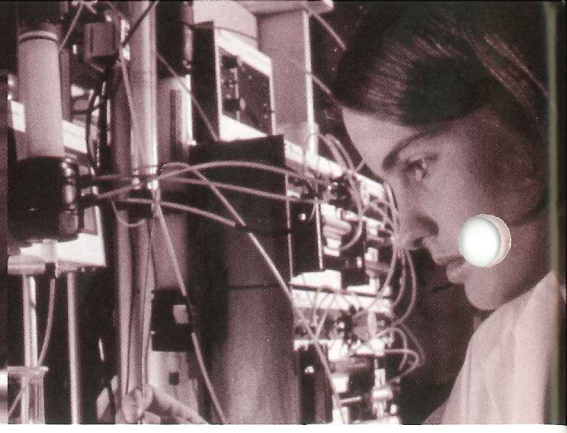
Your comments:

"I always read the newsletter cover-to-cover. It's nice to see so many familiar faculty and alumni names."

- Roger Ogden, '72

"Chemistry was simpler in 1953. We had only four elements: earth, air, water and fire. I'm truly impressed with the growth of the Department and faculty over the years."

- Campbell Epes, '53

MCGRATH FROM PAGE 10

program with Tom Ward, and later Garth Wilkes, the Fred W. Bull Professor of Chemical Engineering, with whom he has shared his music interest. Together, Wilkes and McGrath started the Polymer Materials and Interfaces Laboratory, a multidisciplinary lab that involves faculty, students and industry sponsors from chemistry, chemical engineering and forestry.

Today, McGrath continues teaching both undergraduates and graduate students.

"At the undergraduate level, it's rewarding to introduce students to synthetic materials and polymers," he shares. "At the graduate level, it's challenging to keep students motivated, teach them how to apply the knowledge and keep them current." He continues directing the NSF Science and Technology Center For High Performance Polymeric Adhesives and Composites, which is now in its 10th year and has brought approximately $20 million in research funding to Tech. The center addresses the critical scientific issues of processability and durability of known materials as well as newly discovered materials, and focuses its research on new polymeric adhesive and composite materials, establishing the fundamental mechanisms that govern performance.

He continues impacting the industry through his research which is directed toward the synthesis and characterization of high-performance matrix polymers and structural adhesives, new composite matrix polymers for possible use in aerospace, new high-temperature polymer dielectrics for computer development, and fire-resistant polymers.

So what's next for this highly accomplished man?

"I want to see my 11 graduate students complete their work," he says. "I want to start passing on my administrative responsibilities to my younger colleagues. I want to provide a continuation of the many successes I've seen during my 20-plus years here, and I want to start slowing down a bit."

HUDLICKY FROM PAGE 10

me, however, as the last presenter on the last day. To my surprise, I spoke to a packed room. After my talk, Alan F. Clifford, at that time the head of the Chemistry Department at Virginia Tech, approached me and offered me a position at Tech."

He accepted, glad and sad to leave his native country, packed his family and 177 lbs. of possessions, and traveled to the United States.

"The first years were tough," says Hudlicky. "My children did not know English and we were all home sick. My job wasn't easy either. With all the modern instrumentation, I had to learn a lot of new techniques."

But again, life improved with time and things got better.

"My wife studied Spanish at the university, my son obtained his Ph.D. in chemistry and became a professor, and my daughter received her Ph.D. in artificial intelligence," he says, noting that all of these accomplishments would have been out of the question in communist Czechoslovakia. He and his family became American citizens in 1976.

Meanwhile, he gained the respect of colleagues, continued his research on fluorinated compounds, supervised the sophomore organic chemistry labs, prepared videotapes on experimental techniques, continued publishing and created and published a Department newsletter (which he did for 17 years). After 21 years, he retired.

Today, he has no regrets. And, as an accomplished professor, author and chemist, he has much of which to be proud.

He has authored or co-authored more than seven books in Czech, one of which has been translated into German, Russian, Polish, Romanian and Hungarian. He has written nine books in English, of which *Chemistry of Organic Fluorine Compounds, Oxidations in Organic Chemistry and Reductions in Organic Chemistry* became very popular.

He won Virginia Tech's Teaching Award, received the Alan Clifford Award for his contributions to the Chemistry Department, and saw his son join Virginia Tech as a professor of chemistry. In 1992, he received a Fulbright fellowship in Spain. The same year, he visited his native country for the first time since he'd left, and was honored with the Votocek Medal, the highest scientific award presented by the Institute of Chemistry and Technology in Prague, which had fired him 34 years before.

"I've done what I wanted to do, and I've lived a good life," he says. Until his journey ends, he will continue to write (he currently has three books in-the-works) and enjoy his family.

DONORS

Appreciation is extended to all alumni, friends and organizations that have contributed to the Chemistry Department of 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 list recognizes contributions made from January, 1997 to May, 1998.

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If you prefer that your name not be published, or if your name and gift were overlooked, we apologize for the error and encourage you to notify us, or the University Development Office at 1-800-822-5146 so we can correct the problem in future issues of ***Elements***.

Also, subject to your wishes, we ask that you continue to designate and earmark your gifts specifically to the Department of Chemistry of Virginia Tech or any of its specific labs, scholarships and programs. Your gifts do make a difference and impact the quality of educational programs we can offer our students.)

An Invitation

As part of Virginia Tech's homecoming celebration, the Colleges of Arts and Sciences and Human Resources and Education wish to invite you to an alumni reunion and tail-gate event from 10:30 a.m. until kickoff, Saturday, October 17.

Rain or shine, alumni are encouraged to come visit with college deans, department faculty and staff, fellow alumni and enjoy a free lunch under a tent that will be set upon West Campus Drive, in front of Wallace Hall.

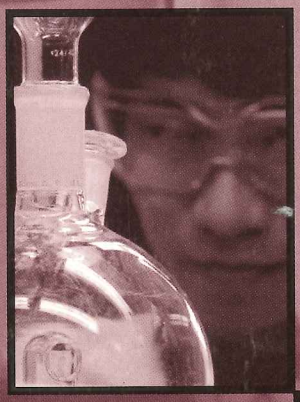
R.S.V.P. by October 10 to Teresa Mutispangh with the College of Arts and Sciences by phone, 540-231-6394; fax, 540-231-3380; or e-mail; tmotispa@vt.edu.

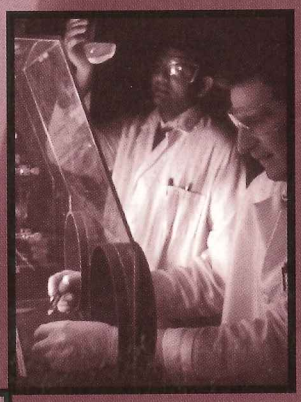
For tickets to the Tech vs. Temple game, please call the Virginia Tech Athletic Ticket Office at 1-800-VA-TECH 4.

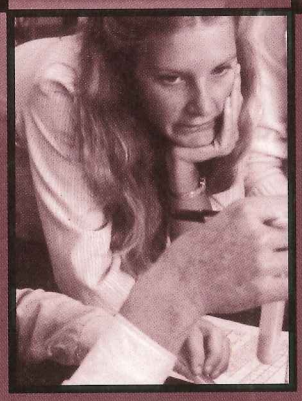
THE DEPARTMENT OF CHEMISTRY OF VIRGINIA TECH'S MISSION

The Department of Chemistry of Virginia Tech 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 Department of Chemistry of Virginia Tech 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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