Message from the Chairman

Just as signs of spring are becoming quite apparent in southwest Virginia, signs of a brighter future for the Department of Geological Sciences are also emerging. This statement may come as a surprise while budget deficits are occurring in Virginia colleges and universities. Budget issues are indeed a problem; however, due to the hard work of our faculty and the upward trajectory of publications and external funding, I remain optimistic about our goal to move the Virginia Tech Department of Geological Sciences into the top five among public universities. This optimism is based on a solid foundation. Since 1996, after a downturn caused by retirements, we have been able to add eleven new, high-energy faculty members. I am happy to report that scholarly production is rising in terms of published journal articles, research abstracts, and funds attracted. Yes, I see a bright future for the Department by convolving these productivity trends with the fresh ideas and enthusiasm of our new faculty and the wisdom and knowledge of our senior faculty.

Speaking of our senior faculty, it gives me great pleasure to mention that Jim Craig, Professor of Geology, was the 2002 recipient of the State Council of Higher Education for Virginia (SCHEV) Outstanding Faculty Award. This is a very prestigious and much deserved honor; a detailed account is given below.

It is also my pleasure to note that our Sedimentology-Stratigraphy program was ranked number nine in the country by the *U.S. News and World Report’s, 2003 Edition of Best Graduate Schools*. Special thanks and recognition to Professors Fred Read, Kenneth Eriksson and their students. Another reason for my optimism comes from the fact that the Department has built much stronger relations with alumni and friends in the past few years. We very much appreciate the recently increased alumni/friend funding base for student support in terms of named scholarships. With encouragement from alumni and friends, I would like to invite our alumni to consider establishing a tax-deductible endowed fund to support the Department with: a) undergraduate scholarships, b) graduate scholarships and fellowships, c) endowed faculty chairs, or d) facility funds. Please see pages 22 and 23 for further details. You may also make a tax-deductible contribution to our present endowed scholarship accounts as explained on the back cover.

As always, thank you for your encouragement and support!

Cahit Çoruh
Craig Named SCHEV 2002 Outstanding Faculty Member

Craig Named SCHEV 2002 Outstanding Faculty Member

Board 1986-1994, serving as the chair 1988-1992. He is the author or co-author of more than 150 scientific papers on ore deposits, gold mineralization, sulfide mineral chemistry, metal corrosion, and environmental and resource issues. He was invited to serve on the research staff of the North Carolina Archaeology Unit’s recovery project on the Queen Anne’s Revenge, the flagship of the pirate Blackbeard, and has been analyzing metals and other items from the wreckage to try to establish the time period of the ship.

Craig has taught, or conducted teaching-related activities, from public school kindergarten to postgraduate level and advanced professional groups around the world - England, Norway, Russia, China, Scotland, Canada, Argentina, and South Africa. He has given invited lectures for NATO, the Chinese Ministry of Metallurgical Industry, the National Research Council in Washington and has given the Plenary Lecture at the International Mineralogical Association meeting.

Craig has earned numerous awards for teaching, including the Sporn Award for Teaching Excellence at Virginia Tech, membership in Tech’s Academy of Teaching Excellence, and the Certificate of Teaching Excellence three times.

Craig believes teaching must be closely linked to research, and that teaching is not merely the “dispersal of information whether or not there is any absorption or understanding of that information.” He believes good teaching provides students an “atmosphere conducive to learning and information, and a process in which students not only understand, but are also able to absorb and apply that information.”

“It is constantly rewarding,” he said, “when…I get a letter from someone in the Peace Corps in Africa saying that now he understands what I was talking about in terms of water shortages.”

Craig said that enthusiasm is an important trait for a teacher and that he wants “to encourage students to develop a sense of adventure so that they may be able to live rich and productive lives” as they serve others in the process.

“Jim has been involved in introductory-level large-class teaching for several years,” said Craig’s department head, Cahit Çoruh. “He has served more than 17,000 students and has always gotten really high evaluations from his students. He is an outstanding teacher, and we are extremely pleased to see that he was recognized by this award. Faculty members like Jim Craig make Virginia Tech a special place. We appreciate his contributions to the department, the college, and the university.”

Craig earned a B.A. at the University of Pennsylvania in 1962 and a M.S. and Ph.D. from Lehigh University in 1964 and 1965, respectively.
Dear Lynn:

Thought I’d better drop you a note of update. My partners and I sold our environmental and geotechnical firm and were working through our payout obligations as of the last time I communicated with you. At the end of 2000, I chose to leave the new company and “retire.” I spent the next eight months trying to get not only caught up, but three years ahead on chores here at our Florida farm in the swamps. Why? Well, last August, I entered law school. It’s a three-year program to the Juris Doctor, which means I’ll be 57 or 58 with, Lord willing, another 10 years to go. Many times over the past 33 years we’ve been married, Marilyn has asked me, “And what do you want to be when you grow up?” My flippant answer has always been, “If I grow up I’ll let you know!” But I figure this will probably be the last such adventure.

I’m on full scholarship at Barry University School of Law in Orlando, about a 70 minute commute from our location on the East Coast south of Daytona Beach. When I entered, the ABA had not accredited Barry, and as a result, enrollment was very limited; our entering class for Fall 2001 was eight. Fortunately, Barry gained accreditation earlier this month, and the school has already had over 2,000 requests for applications for next fall. Barry is a highly regarded Catholic university based in Miami.

So far, I’m doing well. In law school, all grading is on a strict curve. The mean grade is set at a C or C-, and the curve develops from there. The total number of grades of B- or above cannot exceed 30%, and for every grade above a C, there must be a grade below. Now that you’re in the proper frame of mind to be duly impressed, I set the top end of the curve in all of my first-semester classes with a GPA of 3.6. To maintain my scholarship, I must maintain a 3.0 ... so far, so good. The law curriculum is obviously structured to humble a class full of 23-year-old hot shots; I can say that it certainly attains its goal with a silver-haired, AARP card-carrying, middle-aged guy!

My intent is to combine my past experience, particularly my environmental regulatory compliance experience, with the law degree and either be a highly technical lawyer, or a legally attuned engineer/scientist. Several of my professors, however, are suggesting I consider patent law. I still have 2 1/2 years to take enough focused courses to decide.

Marilyn and I still look back on our time at VPI from ’70 to ’72 as one of the more exciting periods of our lives. I wish we’d been able to make it up for Dr. Lowry’s celebration dinner. Maybe sometime soon.

Hope all is well with you.

Marilyn and Jim Hayman
P. O. Box 100
Scottsmoor, Fl 32775-0100
(386) 345-2363
MARILYNANDJIM@prodigy.net
Who’s Who in the Hydrogeoscience Program within the Department of Geological Sciences at Virginia Tech
by Thomas Burbey.

If you’ve been following these newsletters on a regular basis, you know by now that the department has a Hydrogeosciences Program that was initiated at my arrival in 1996. As the granddaddy of the group, I have been here for all of six years now and just got tenure (hurray). I thought I’d fill you in on what we’re doing regarding our research interests and the personnel in our group. I’m sure you’re wondering “What do these water guys do all day?” We’ve graduated two M.S. students and one Ph.D. student since our inception in 1996. We currently have a great group of students. I’ll attempt to describe, in more detail than you probably want, our current personnel and projects beginning with the program’s newest faculty member, Madeline Schreiber.

Dr. Madeline Schreiber arrived as an assistant professor in Hydrogeosci- ences in 1999 to help build a world-class program. She finished her M.S. and Ph.D. in 1995 and 1999, respectively, from the University of Wisconsin-Madison. She received her B.S. from Yale University. Her research goal is to combine field, laboratory, and numerical approaches to improve understanding of hydrogeochemical problems. Since her arrival at Virginia Tech, Dr. Schreiber has been working in three main areas: anaerobic biotransformation of petroleum and chlorinated hydrocarbons, release and transport mechanisms of inorganic arsenic, and watershed cycling of organic arsenic. With the help of her students, Dr. Schreiber has set up a chemical hydrogeology lab, which currently includes an anaerobic chamber and a gas chromatograph equipped with flame ionization and thermal conductivity detectors. She teaches Resources Geology (undergraduate), Groundwater Hydrology (undergraduate and graduate) and Advanced Topics in Hydrogeology (graduate). So far, the topics for the graduate course have been Biogeochemistry of Environmental Contaminants (Spring 2001) and Environmental Isotopes: Applications to Hydrologic Systems (Spring 2002).

Our graduate students reflect who we are as faculty in the sense that they have the time and energy to do what we can’t, and they’re doing a great job. These students are working on an eclectic array of hydrogeological problems. Here’s an overview of who they are and what they’re doing:

D. Isaac Jeng is an international student who originally came from Taiwan where he received his B.S. degree in Geology in 1984. His adventure in pursuing a graduate degree was appropriately from the department of “anything highly quantitative” and dealing with earth sciences. Isaac spent time in the area of rock mechanics, ground-water hydrology, environmental engineering, and surface geochemistry. After making a full circle through each of these disciplines, and moving from the University of Arizona to the University of Nevada, Reno, Isaac finally landed back in Earth Sciences and completed his M.S. degree in Hydrology/Hydrogeology from UNR in 1998. His thesis project involved computer modeling of ground-water flow and land subsidence of the Las Vegas Valley, a project that I supervised while I was still with the U.S. Geological Survey in Nevada. I guess Isaac didn’t mind working for me as he’s now in the Hydrogeoscience Ph.D. program here, where he arrived in the Fall of 1999. Isaac’s research interest is in quantitative ground-water hydrology and aquifer mechanics and he’s working on developing a three-dimensional flow and deformation model that incorporates a new material constitutive relation called poroviscosity, which more realistically simulates primary and secondary consolidation of the aquifer system resulting from the pumping of unconsolidated basins than does the traditional and universal poroelastic approach. Extension of this theory to three dimensions is challenging and requires a fundamental knowledge of mechanics and dynamics.

Brenda Brown attended The College of William and Mary and received a B.S. in Geology in 1980. She married a soldier upon graduation and lived in Washington, West Germany, North Carolina, New York, California, and Utah over a span of fifteen years. While in New York, she attended Syracuse University and completed 27 credits towards her Master’s degree in geology, but her husband was transferred and she was unable to finish her work. For her research, she studied the effect of naturally occurring clays on the movement of heavy metals beneath the Fresh Kill Landfill on Staten Island, New York. In 1995, Brenda moved back to Virginia, where she attended Virginia Tech to obtain her M.A.Ed. so she could teach Earth Science. She taught for two and one-half years, but during that time, she began to miss the stimulating and intellectual environment to which she had been exposed at Syracuse University. She
Brenda’s main research interest involves observing the biotransformation of Roxarsone, an organoarsenic animal feed additive. Roxarsone is fed to poultry to control coccidial intestinal parasites. Studies have shown that organoarsenic compounds do not accumulate in poultry tissue (Aschbacher and Feil, 1991) but are rapidly excreted, resulting in elevated concentrations of arsenic (~40 mg/kg) in poultry litter (Morrison, 1969). The poultry litter is then used as fertilizer. In a preliminary study by Garbarino et al. (in press), Roxarsone contained in aqueous poultry litter extract was rapidly degraded to arsenate, but when the extract was sterilized, the Roxarsone was recalcitrant. This strongly suggests that microbial processes are responsible for the biotransformation. It is well established that microorganisms can transform organic to inorganic forms of arsenic and visa versa (Cullen and Reimer, 1989). Previous studies of arsenic toxicity have shown that inorganic forms of arsenic are more toxic than most organic arsenic forms (Andreae, 1986). Thus, the biotransformation of Roxarsone to arsenate by microbial activity could result in localized inorganic arsenic pollution where poultry litter is applied as fertilizer.

This research is important because epidemiological studies have determined that arsenic is a human carcinogen (NRC, 1999). The U.S. EPA has reduced the arsenic drinking water standard from 50 to 10 µg/L. This will force all levels of government to test water supplies for potential contamination with even trace amounts of arsenic.

Jackson Spain is originally from Opelika, Alabama. He attended Auburn University in Auburn, Alabama, and received a Bachelor of Science degree in geology. He is currently working on his Master’s degree in the area of contaminant hydrogeology. Jackson’s current research with Dr. Schreiber is investigating the bioremediation of BTEX compounds in ground water (BTEX is an acronym for the aromatic hydrocarbons Benzene, Toluene, Ethylbenzene, and Xylene). Specifically, he is researching the effect of microenvironments on the microbial degradation of BTEX. The goal is to better quantify the degradation rates of BTEX in aquifers, enabling more accurate modeling and management of petroleum-contaminated sites.

In his free time, Jackson enjoys fishing, especially flyfishing, for trout. After graduating, he plans to get a job with an engineering firm, environmental consulting firm, or state/national agency.

Sam Harvey came to the department in the fall of 2000 from Concord College, where he earned a B.S. in Environmental Geoscience. Sam had summer fellowships with Berkeley National Lab and an internship with the USGS before beginning work on a Master’s degree with me (Tom) as his adviser.

While interning with the USGS, Sam had the opportunity to work on a coring operation aimed to learn more about the Chesapeake Bay impact crater. The crater is a 35 million-year-old structure buried beneath the unconsolidated sands, silts, and clays of Virginia’s coastal plain. Seismic imaging, well logging, and coring have helped characterize the crater as a 56 mile wide bowl-shaped evacuation of basement rock filled with tsunami breccia. The structure has been subsequently buried beneath coastal sediments. The crater coincides with a region of abnormally saline ground water known as the Virginia saltwater wedge. Many hypotheses have been put forth to explain the water quality anomaly, including reverse osmosis, flash evaporation of seawater, and the liberation of deep evaporates.

The goal of Sam’s research is to model the hydrologic conditions in and around the impact crater, so that the reasonableness of various theories explaining the salt-water anomaly can be tested. The finite-difference program Basin2 will be used as the primary code to model the ground water conditions. Of particular interest to Sam and I is the question of how excess pore fluid pressure may have resulted from the rapid deposition of the breccia and the thermal effects of the impact.

Sam is currently the Virginia Tech Graduate Research Fellow in the office of Congressman Rick Boucher. He will be leaving Washington this May and heading for New Orleans to intern with ChevronTexaco for the summer. Next fall, he will be back in the mountains finishing up his Master’s degree in Blacksburg. His future plans include pursuing a Ph.D., perhaps here at Tech, working on more perplexing issues regarding the impact crater (my wishful thinking).

Miles Gentry received his undergraduate degree in Geological Sciences here at Virginia Tech in 2000. After he graduated, he worked for four months doing geotechnical work at Schnabel Engineering Associates in Charlottesville, Virginia. The hot work outdoors made him realize he would much rather be in graduate school. Miles left Schnabel Engineering Associates in September of 2000 and took a temporary job as head of telecommunications for Litton Marine Systems in Charlottesville (now Sperry Marine, a subsidiary of Northrop-Grumman). He was uniquely qualified for the position, mostly because of his...
geophysics background and familiarity with digital filtering, multiplexing and digital processing. He left Litton Marine Systems in January of 2001 to pursue a Master’s degree working with me.

Miles entered the Hydro program at Tech with little idea about what he wanted to work on. I recommended a project in the Blue Ridge, which was a continuation of work by a former student, Bill Seaton, but with a slightly different direction. After visiting the field area with Bill and doing some background research, Miles decided to work on a project involving some springs located on our 1,000-acre field site in Floyd County. Springs are ubiquitous in the Blue Ridge, many of which flow perennially with little change in temporal discharge rates. Previously, the springs were thought to be a shallow phenomenon, where water table aquifers simply meet the ground surface. We decided to employ a technique known as hydrograph recession curve analysis to try and delineate whether or not these springs are being fed by shallow or deep aquifer systems, and what flow paths might be involved. Different flow paths produce different recession curves on springflow hydrographs after rain events. Miles had to develop a springflow-monitoring device to measure these small flows. He’s now pursuing a patent for his invention through Virginia Tech Intellectual Properties. Data collected from the system appears to reveal a complex deep/shallow water source for the spring in question. This has been verified by investigations with the department’s resistivity profiling equipment, and by chemical water analysis. Other research conducted at the same site has revealed at least two different flow systems for springs in this part of the Blue Ridge. Field investigations for this spring and summer have expanded to an additional field site in Grayson County that contains nine springs. Preliminary investigations using water chemistry indicate similar flow systems may be present, including an entirely deep aquifer fed spring not seen at the Floyd County site. Plans for the future include conducting numerous resistivity profiles at the Grayson County site, water chemistry, and flow monitoring. Plans for the Floyd County site include a short aquifer test to verify the connection between the deep aquifer system and the spring, and several collecting more resistivity profiles in the vicinity of additional springs at the site.

After graduation, Miles would like to move to the Eugene/Portland, Oregon, area and pursue research on aquifer systems with the USGS.

Sandra Warner grew up in a small town northwest of Baltimore, Maryland, and became interested in geology after various family vacation stops at show caves. She received a Bachelor of Science in Geosciences and a minor in Geographic Information Systems in May 2001 from Penn State University. In June 2001, Sandy married John Warner, who also grew up in her hometown, and the two moved to Blacksburg, Virginia, after I made a concerted effort recruiting Sandy to work on aquifer mechanics.

Sandy is currently researching land subsidence due to fluid withdrawal in southern Nevada. She is looking into using some new techniques such as interferometric synthetic aperture radar (InSAR) and a permanent geodetic GPS network to monitor both the horizontal and vertical deformation on the land surface due to the subsidence that results from pumping. Using the strain and deformation data, the storage properties of the aquifer and the relationship between the deformation and occurrence of earth fissures can be more adequately evaluated.

Sandy still enjoys caving as a hobby and hopes to work for an environmental consulting company and start a family when she completes her Master’s studies.

I hope you have enjoyed this synopsis of the Hydrogeoscience Program here in the Department of Geological Sciences. We’re having loads of fun and we’re learning a lot while keeping quite busy. Stop by and see us when you get the chance.

Tom Burbey
Associate Professor
Hydrogeosciences
Alumni-Faculty *Homecoming Dinner 2001*

On Friday, October 26, 2001, our seventh annual Alumni Faculty Dinner was held at the Blacksburg Country Club. Seventy-six alumni (Classes 1952 – 1997), guests and faculty attended. We presented (below) Dean Robert C. Bates of the College of Arts and Sciences with a painting of a scene in Giles County, Virginia, by local artist Robert Tuckwiller. The painting was a parting gift before Dean Bates left to become Provost and Vice President for Academic Affairs at Washington State University, Pullman, Washington. The Dean was a strong supporter of the Department during a period when we needed to replace many retiring faculty.

The Department also received a $15,000 check (page 5) from Texaco presented to Dr. Çoruh by Mark Sunwall. Texaco has a long history of generosity to the Department, and we hope that will continue under the merged Chevron/Texaco Corporation.

Donald Dalton ’60 donated the Hokie Bird shown below. Later, raffle tickets were sold and all proceeds of the raffle were to benefit the Museum of Geological Sciences.
Over the past several years, I’ve read with interest the narratives of the Department’s history, including stories about my Dad, Byron N. Cooper, who headed the department between 1946 and 1971. Although my Mom found some of those recollections hurtful, I’ve found them fascinating because each added a different and partial “truth” about my father. I wonder if you might indulge me, as a historian, a few recollections to round out the picture still further.

My best and most vivid memories of my Dad are when he was laughing so hard he looked like he might pop and could barely giggle out the next funny line. He loved a good story, a play on words, a silly joke. Jonathan Winters and Red Skelton were his heroes, but not far behind were the Marx Brothers. I remember him insisting I stay up past my bedtime one evening to watch the Marx Brothers on TV (The Great Jewel Robbery). He said it was the last time I might get to see them all alive at once and I shouldn’t miss it.

There were so many things he loved: popcorn, his dog Missy, and the Jackie Gleason show. Music was his passion. After listening to a song just once, he could sit down and play it on the piano or the electric organ in the living room. On weekends he and Mom got together with a group of friends who also played various instruments and they “jammed” the night away (when they weren’t playing bridge). He mail ordered a “hi-fi” in the early 1960s and had quite a collection of jazz and classical recordings. His kids made him proud, although he held them to the highest standards, a measure that had its costs as well as benefits. He was harder on himself than anyone else, however. He dearly loved my Mom and understood well what she contributed to make his professional life go so smoothly. When he realized I was interested in a career at a time when women didn’t customarily do such things, he encouraged me, but also warned that I needed to find a life partner who would support and assist me.

He loved his work and he loved to write. I can see him now with a yellow legal pad on his lap listening to booming music on a Sunday afternoon. I have great memories of going out in the field with him and some students in the “carry-all,” an odd sort of clunky van with uncomfortable seats. I remember stopping at roadside rock cuts while puzzled motorists wondered if we’d all been in a wreck and stopped to “help.” My favorite thing was visiting the summer field camp in Saltville, Virginia, where I met his students and joined in the fight against the kudzu that grew an inch a minute up the hill towards the building.

The Department was his pride and joy. He was so thrilled with having had a hand in helping to build it. The move out of Holden Hall into new digs made him especially happy. No one who visited our house could mistake his calling—rocks rested on every available space. Core samples piled up in the garage, while the cars sat out in the elements. Every Christmas, he broke a coconut stuffed in a rock sample bag on the basement steps with one of his rock hammers. These bags littered the house along with drafting equipment, maps, and little magnifiers that neatly collapsed into pocket-sized rounds.

From the mid-1950s on he lived much of his day in physical pain. It was explained as a shortened nerve at the base of his brain, inoperable at the time. In any case, I remember him sitting in traction in the kitchen trying to get some relief. Sometimes it got so bad he took painkillers and slept for hours. This condition began his yearly treks to the Mayo Clinic, which is where he also learned about his weak heart. There were also emotional pains and losses. His mother died of breast cancer when he was about 13 and his father, a printer who had only occasional work throughout the 1920s, died a few years later. I still have the locket his father gave his mother, Stella, when they were first married. His only sibling, Avin, who had devoted his own working life in part to making sure Dad got an education, died from a heart attack at age 46.

He liked to shock people and enjoyed nose-thumbing anyone in authority. My mother was horrified one winter to find that he had built a snow “man” out front with gigantic breasts—what would people think? He wore a Nehru jacket with a peace symbol hung around his neck (it now dangles from a hook in my office), which she also found somewhat mortifying. He mocked people who were self-important and never suffered fools lightly. Don’t take anything too seriously, he cautioned, especially yourself. His vocabulary was precise and expansive and he frequently read and reread the dictionary to sharpen it, vestiges of a working class insecurity that never left him. During graduate school, he always told us, he never checked his grades because he wanted to focus on the content of his education, not obsess on grades. I remember finding this somewhat implausible as a kid because he was so insistent that my brother John and I made good grades.
He was full of contradictions like that. He hated the commercialization of leisure (having to pay to have fun), but was drawn into his own forms of consumerism with the cars he drove and the clothes he wore. His black cashmere overcoat was a prized possession and he rarely left the house without his fedora, unless it was exceptionally cold and then he wore a wool cap with funny earflaps. For years his shoes were wing tips, but later he switched to penny loafers, which for him was rather radical.

His sense of community and spiritual responsibility grew over the years. He and Mom helped found United Christian Aid in Blacksburg, which provided emergency assistance to area families. An elder in the Presbyterian Church, he also strongly supported the church’s campus ministry. After he died, the latter was renamed Cooper House in his memory.

Near the end of his life he underwent some rather profound personal transformations. The fearsome “glare” he shot anyone committing a transgression pretty much disappeared. He talked about his students in new ways—not as adversaries to be disciplined (no shirt, no shoes, no class), but as allies in learning and thinking about geology and about life. He once wrote me that he felt like he had fallen way behind in his sensibilities about what was truly important about being alive and was running for his life to catch up. He began writing poetry—in addition to the silly limericks he was always making up—and had pieces of what appeared to be a novel among the things we found after he died. He came to support civil rights, oppose the Vietnam War, and ponder how good Christian people had allowed so much poverty and misery in the world. A complicated and moody man, he was at heart good and caring and loving.

I was home for spring break in March 1971 and it snowed overnight on the 26th, the day before I was heading back to school. Dad got up early, shoveled the driveway, and headed off to work and a morning meeting with colleagues and President T. Marshall Hahn. It was there that he was stricken with the fatal heart attack he had expected and dreaded. We Coopers appreciated all the love and support everyone extended for years after he died and I would like to thank the Department for the kindnesses you gave to my Mom. You always made her feel welcome and she loved going to your events. The letters of thanks she got from student award winners brought happy tears to her eyes every year—she was so tickled to hear from students. Now I receive them and hold them dear as well. Many of you took her to special places including Cooper’s Vantage at Wintergreen, invited her to your home, and extended help and affection in other ways. It meant the world to her. Thanks for letting me into your newsletter and your histories.

Warm regards,
Patricia Cooper
Associate Professor
History and Women’s Studies
University of Kentucky
Alumni Careers: Mark J. Gresco Ph.D. ‘85
by John K. Costain

Mark and Jeannie Gresko arrived in Blacksburg in September 1981, after spending the previous year and a half in Houston. Mark had graduated from Ohio University in Athens, Ohio, in June 1980 with his M.S. in Geology. They married in May of that year, and moved to Houston where Mark started his professional career as a petroleum geologist with Exxon.

When Mark and Jeannie moved to Blacksburg, it was the second in a series of moves (but not the last) that introduced them to the term “Culture Shock.” After adapting to the “Urban Cowboy” times of Houston, they arrived in Blacksburg during the height of the “Punk Rock” scene (spiked hair, razor blade earrings [Jim Isabel, where are you?]).

Mark was enrolled in the Geophysical Ph.D. program under the guidance of Gil Bollinger, while Jeannie resurrected her career in insurance. Mark had a long interest in earthquakes, and hoped to meld his petroleum company experience in reflection seismology with earthquake seismology. His first year in Blacksburg was spent attending classes and tending the Blacksburg Seismic Observatory (BLA); going out everyday changing the film in the seismometers, regardless of the weather conditions.

Mark’s research interest gravitated closer to John Costain’s seismic reflection programs than earthquake seismology, and Mark became John’s student in his second year at Virginia Tech. It was about that time that he, John Costain, Lynn Glover, Gil Bollinger and others organized the Virginia Tech Vibroseis Consortium (VTVC) to acquire seismic data in the Fold and Thrust Belt near the Giles County Seismogenic Zone. With oil prices high at the time, and many oil companies interested in drilling in the region, it was decided to approach several oil companies to join in a program to acquire relatively inexpensive seismic reflection data using Virginia Tech’s seismic vibrator crew and processing facility. The consortium was a success and for two years raised nearly $250,000 and acquired several P-wave and SH-wave seismic lines over the Bane Dome in Giles County. The resulting work and analysis was used in Mark’s Ph.D. dissertation that combined reflection and earthquake seismology with regional and structural geology in the area of the Bane Dome.

With the completion of the work and being awarded his Ph.D., Mark and Jeannie reluctantly said goodbye to all the friends they had made at Virginia Tech through the years: Tom Pratt, Tom Boyd, Paul Dysart, Steve Miller, Laura Pyrak, Kathy McCarron, Jeanne Brennan, Delphine Welch, Julia Sullivan, Rick D’Angelo, Tim Belcher, Gordon Love, Kathy McManus, and many others. They would keep in touch with many of these people through the coming years, meeting them in places as far away as England, Jakarta and Australia.

Mark graduated from Virginia Tech in spring, 1985 and took a job with ARCO (Atlantic Richfield Company) Research Center in Plano, Texas, as a senior research geophysicist working on P- and S-wave research. After two years in geophysical research, he moved to geological research where he spent three years as a seismic interpreter/geologist in the Sequence Stratigraphy Group working on projects in the Gulf of Mexico, California, Alaska and New Zealand. In 1990, he moved out of research into International Exploration when ARCO International moved from Los Angeles to Plano. His projects included working in Australia, New Zealand, China and Papua New Guinea.

In 1992, Mark and Jeannie moved to Jakarta, Indonesia, where Mark was a Geophysical Advisor at ARCO Indonesia. Jakarta was beautiful, exotic, at the same time impoverished, but always amusing. Jeannie and Mark instantly adapted (Jeannie likes to point out it was less of a culture shock to move there than Blacksburg). Mark was involved in regional studies and prospect generation, and was responsible for several modest discoveries. While in Jakarta, Mark renewed friendships with other former Virginia Tech graduates, including Stephen Scott and Skip Lemanski.

Mark and Jeannie enjoyed living in Jakarta, but Mark grew tired of ARCO, so he quit ARCO in September, 1996 and moved down the street to work for Santa Fe Energy Resources -- a smaller, more vibrant company. There, Mark was Chief Geophysicist and later Subsurface Manager for the Betara Development Project - a large gas/oil field complex in South Sumatra. He was responsible for over 30 successful wells including one new discovery larger than 120 million barrels of oil equivalent.

After spending nine wonderful years in Jakarta, witnessing and surviving several riots and one evacuation, but meeting lots of new friends and rekindling old friendships, it was time to move on and in early 2001, Mark transferred with Devon Energy (who took over Santa Fe Energy the previous year) to China where he is currently Geological and Geophysical Manager in Shekou, People’s Republic of China.
Shekou is only 26 miles (by ferry) from Hong Kong, but is world’s away from anything they had experienced before. They are adapting to living in China, trying to learn the language, learning and appreciating the culture, and would hope to hear from all their old friends from Virginia Tech.

Looking back at his career to date, Mark sees that his experience at Virginia Tech helped him become a better scientist, geologist, geophysicist, and an oil finder. The level of professionalism, the quality of the teaching, and the diversity of the students, faculty and research areas, helped make Virginia Tech a unique and richly rewarding experience. Mark is pleased to see that the geophysical section at Virginia Tech remains strong under the guidance of Cahit Çoruh with the continued assistance of John Costain, and wishes them continued success in the future.
“Who remembers this ball club??? Let’s have some stories from those who played under this (ugh!) banner.” Lynn Glover
The annual Alumni-Faculty Homecoming Dinner has been set for Friday, October 18, 2002. This is Homecoming weekend. If you are a football fan, the Hokies will be playing Rutgers.
Dr. Rhesa M. Allen, Jr. ‘38
by Lynn Glover III ‘52

During the Second Dynasty of the Department of Geological Sciences ("The Cooper Years," 1945-1971) several professors who were here for short periods of time made important contributions to the academic growth of the Department. Among them was Associate Professor Rhesa Allen who taught introductory geology, petrology, ore deposits and other courses from 1948-1950. Ore Deposits was an excellent course that Allen taught from Lindgren’s text. Unfortunately, he had picked a time in my junior year (in an all-male college!) when other things were on my mind. My grade for that quarter helped bring me back to reality – thank you, Dr. Allen!

Rhesa Allen had been through WW II and was serious and mature. Nevertheless, he could identify with students, adding human insights and humor to his lectures. Students thought of him as a practical person who communicated the real world of geology to them. The theory and jargon followed easily later. Some of his students were ex-GIs, like Harry Page and Curt Horton, who had flown a full set of missions in Europe, and Ben Dickerson, a Marine Dog Scout, who managed to survive fierce, close combat while invading several islands in the South Pacific. Major Allen found communication easy with such students.

Born on June 6, 1916, in Washington, D.C., his hometown was Mt. Jackson, Shenandoah County, Virginia. He attended Central High in D.C. In 1938 he received a B.S. from VPI and was commissioned 2nd Lt., Corps of Engineers. In 1940 he was awarded a M.S. from the University of Idaho School of Mines, and in 1947 a Ph.D. from Cornell University.

In June 1940 Rhesa was called to active duty and in June 1941 attached to the 2nd Bomber Group, Army Air Corps at Langly Field, Virginia. Then followed service in Newfoundland, Labrador 1942-1943, with the Army Anti-Submarine Command. He was A-4 and Engineering Officer, First Bomber Command, First Air Force, Mitchell Field, New York 1943-1945, after which he served with the U.S. Air Force, Strategic Air Force headquartered at Guam from 1945 until he was discharged on November 24, 1945, as Major C.E.

Before WW II, as a student, and during summers, he gained broad experience in a number of jobs. He was an electrician’s helper, U.S Dry Dock, Balboa, Canal Zone; clerk, Crop Production Loan Administration, Washington, D.C.; teaching assistant, School of Mines, University of Idaho; topographic and geology field assistant, U.S. Geological Survey; and senior fellow, Geology Department, Cornell University.

After graduating from Cornell he was Assistant Professor of Geology at Rutgers University for a year. During 1946-1947 he did summer work for the Oregon Department of Mines and Minerals, and the California Company (in Pennsylvania, Alabama and Georgia).

In 1948 he came to Virginia Tech (which was then called VPI) where he was promoted to Associate Professor. The Department of Geology at that time occupied about half of Holden Hall. Byron Cooper was Department Head, Wallace Lowry, and Wayne Moore were professors and Charles Sears was on leave of absence getting a Ph.D. at the Colorado School of Mines. We had less than 25 students then including B.S. and M.S. levels. VPI college total enrollment was about 4000; ninety-nine percent of the students were male cadets and veterans. The campus was crowded and many students were housed at the Army’s Radford Ordinance Works (the “Powder Plant” or “Rad-Tech” to the students). Geology students Frank Lesure, Bill Johnson, Bill Siapno, Lynn Glover and many others spent their freshman or sophomore years there commuting to the campus by bus. It was a different era!

Rhesa left VPI to become an engineer for three companies, the French Coal Company, Peter White Company, and Home Creek Smoky Coal Companies in Bluefield, West Virginia from 1950-1957. During these years, he also served as director of the Commercial Bank in Bluefield. From 1957-1973, he was Professor of Geology, Director of Engineering Research, and Associate Dean of Engineering at Louisiana Polytechnic Institute. He worked in New Mexico as a consulting engineer in resort development from 1973-1983. During this period the Allens lived in Angle Fire, New Mexico.

He is a Fellow of the Geological Society of America, and past member of the American Institute of Mining, Metallurgical, and Petroleum Engineers (AIME), American Association of Petroleum Geologists (AAPG), Society of Economic Geologists and the American Geophysical Union. Honorary societies include Phi Beta Kappa, Phi Kappa Phi, Tau Beta Phi, Sigma Xi, Sigma Gamma Epsilon, Gamma Alpha and Phi Delta Epsilon.
Since 1983 Rhesa and his wife, Mary, have been retired in Nicholasville, Kentucky, and Rhesa has found time to keep in touch with some of his old Tech alumni and colleagues. The Allens have two children – a son with an architectural firm in Dallas and a daughter in interior design in Phoenix.

1 Department of Geological Sciences Newsletter May ’66, June ’97, November ‘98

2 Thanks to classmate Bill Siapno ’51 for contributing additional memories of Rhesa Allen.
Faculty News

Susan Eriksson Named College of Arts and Sciences Associate Dean

Susan Eriksson, Associate Professor of Geology, has been named the Associate Dean for K-12 science and math education: curriculum and outreach by Dr. Robert C. Bates, former Dean of the College of Arts and Sciences. Susan’s new responsibilities will be to enhance the role of the College of Arts and Sciences in teacher preparation in science and math and to create a more nurturing environment for students who want to be teachers. She will also coordinate the college’s efforts in continuing education for those currently teaching.

Susan is currently teaching Physical Geology and was Executive Director of the Virginia Tech Museum of Natural History from 1990 through the spring of 2001.

Patricia Dove to give Gast Lecture at 2002 Goldschmidt Conference

Patricia Dove, Associate Professor of Geochemistry has been chosen to give the Gast Lecture at this year’s Goldschmidt Conference in Darvos, Switzerland, August 18-23, 2002. Approximately 2,000 geochemists from all over the world will be in attendance. The lecture is in honor of Paul Gast, a prominent lunar scientist who died very young; therefore, a young, internationally known geochemist is chosen each year by the Geochemical Society and the European Association of Geochemistry to give this special lecture. This is a great honor.

Hochella Receives Humboldt to Study Acid-mine Drainage

Michael F. Hochella, Jr., Professor of Geochemistry and Mineralogy, has received the Humboldt Research award to work in Germany on acid-mine drainage. He is working with Andrew Putnis from Universitat Munster of Germany to collect and interpret data from drainages coming from two major acid-mine drainage sites, one in Germany and one in the United States. According to Hochella, “In this study, by identifying toxic-metal-bearing phases and determining their distribution in the drainage system using the equipment in Germany, and combining this information with thermodynamic considerations, it will be possible to develop much more robust metal-transportation models than currently exist.”
G.V. Gibbs to give Plenary Lecture at EMSL-2002 Technical Symposia

G.V. Gibbs, University Distinguished Emeritus Professor, has been selected to give a Plenary Lecture at the EMSL-2002 Technical Symposia (May 21-22) at the William R. Wiley Environmental Molecular Sciences Laboratory (EMSL) in Richland, Washington. The symposia are focused on recent developments and opportunities in several areas of environmental molecular science.
The Geological Sciences Student Research Symposium (GSSRS) is an annual event held by the Department of Geological Sciences at Virginia Tech. It is organized by graduate students with the help of two faculty advisors, Dr. Robert Tracy and Dr. Cahit Çoruh. GSSRS provides an opportunity for graduate and undergraduate students to present their work in a format similar to professional society meetings. It also allows the department and university community to learn about current student research in geological sciences.

Damon Simmons with Marathon Oil Company and Steve Jones with BP attended this year’s symposium. Contributions were received from Andrew Bush, B.S. ’97, M.S. ’99, John Vines, M.S. ’99, Brian Coffey ’99, Ginger Coffey ’97, Michal Kowalewski, Assistant Professor of Geobiology, Virginia Tech, Marathon Oil, Draper Aden, and our Department. The GSSRS committee would like to thank all of our contributors.

Presentations were given by the following students:

- Jeremy Odom (M.S.) Detailed Seismic Velocity Structure across the San Andreas Fault (Dr. John Hole, Advisor)
- Kelley McDaniel (B.S.) Raman Spectroscopic Characterization of Carbonaceous Material in Chondritic Meteorites (Dr. Robert Bodnar, Advisor)
- Susan Barbour Wood (Ph.D.) Multi-Scale Analysis of Microstratigraphy and Spatial Faunal Variability of a Storm Bed in the Fairview Formation (Upper Ordovician), Cincinnati, Ohio Area (Dr. Michal Kowalewski, Advisor)
- Reeshidev Bansal (M.S.) Seismic Fracture Characterization in a Naturally Fractured Gas Reservoir (Dr. Matthias Imhof, Advisor)
- Brian Cook (Ph.D.) Structural Response of the Pell City Thrust Sheet to an Oblique Lateral Ramp in the Footwall, Appalachian Thrust Belt, Alabama (Dr. Richard Law, Advisor)
- Walter Sullivan (Ph.D.) Investigating the Geometry, Kinematics and Age of the White Mountain Shear Zone, Eastern California (Dr. Richard Law, Advisor)
- Sailendra Mahapatra (Ph.D.) Post-Stack Seismic Reservoir Characterization in the Highly Heterogeneous Coalinga Field (Dr. Matthias Imhof, Advisor)
- Sandra Warner (M.S.) Using InSAR Radar and GPS Methods to Measure Small Scale Vertical and Horizontal Deformation Due to Land Subsidence in the Las Vegas Valley Region, Nevada (Dr. Thomas Burbey, Advisor)
- Darren Wilson (M.S.) Nanoscale Growth of Calcite in Synthetic Seawater: Establishing a Baseline for Understanding Biominalization in the Absence of Vital Effects (Dr. Patricia Dove, Advisor)
- Jenny LaGesse (M.S.) Facies, Sequence Stratigraphy and Diagenesis of Tertiary Cores, North Carolina (Dr. Fred Read, Advisor)
- Stacie Dunkle (M.S.) Romarchite as a Product of Tin Corrosion in the Natural Environment (Dr. James Craig, Advisor)
- Maria Fokin (M.S.) A Geodynamic Model of Late Precambrian Extension in The Central Appalachian Orogen: A Test for Plume Related Rifting (Dr. A. K. Sinha, Advisor)
- Mariano Velázquez (Ph.D.) Nanoscale Controls of Peptides and Polypeptides on Calcite Crystallization: A Simple Model System for Biominalization (Dr. Patricia Dove, Advisor)
- Jacob Beale (M.S.) Resolution Analysis of Seismic Tomography at Mt. Pinatubo, Philippines (Dr. John Hole, Advisor)
Jamie Buscher (M.S.) The Role of Glacial Erosion on the (Rapid) Exhumation of the Active Chugach/St. Elias Range, Alaska (Dr. James Spotila, Advisor)

Brenda Brown (M.S.) The Biotransformation of Roxarsone, an Organoarsenic Animal Feed Additive (Dr. Madeline Schreiber, Advisor)

Miles Gentry (M.S.) Blue Ridge Province Spring Characterization: Recent Geophysical and Geochemical Evidence of Complex Flow Systems (Dr. Thomas Burbey, Advisor)

Andrew Madden (Ph.D.) Enzymes as Nanochemical Sensors: Applications to Mineral–Microbe Interfacial Geochemistry (Dr. Michael Hochella, Advisor)

Ethan Nowak (Ph.D.) Object Based Stochastic Facies Inversion: Application to Fluvial Reservoirs (Dr. Matthias Imhof, Advisor)

Megan Elwood Madden (Ph.D.) Geochemical Modeling of Basalt-Water Interactions as an Analog for Mars Near-Surface Processes (Dr. Robert Bodnar, Advisor)

Rebecca Kavage (M.S.) The Influence of Bedrock on Headwater Stream Morphology and Sediment Transport in the Blue Ridge and Valley and Ridge Provinces of the Southern Appalachian Mountains (Dr. James Spotila, Advisor)

Karen Michelsen (M.S.) The Internal Structure and Emplacement of the Mount Barcroft Pluton, White Mountains, California (Dr. Richard Law, Advisor)

Stephanie Nowak (Ph.D.) The View from Above: Synthetic Aperture Radar Interferometry and its Application to Geologic Hazards (Dr. Cahit Çoruh, Advisor)

Jackson Spain (M.S.) Patterns of Terminal Electron Acceptor Utilization Coupled to BTEX Biodegradation: The Role of Microenvironments (Dr. Madeline Schreiber, Advisor)

Jennifer Stempień (Ph.D.) Testing for Variation in Shell Shape of a Small Mactrid Bivalve across Temporal Paleoenvironmental and Geographical Gradients (Dr. Michal Kowalewski, Advisor)

Tracy Cail (Ph.D.) Measuring Microparticle Trajectories (Dr. Michael Hochella, Advisor)

Viktor Liogys (Ph.D.) Pyroxene Sub-Solidus Exsolution and Geothermometry in Blue Ridge Granulites (Dr. Robert Tracy, Advisor)

Brad Atkinson (M.S.) Development of a Model for the P-T-X Properties of Water-NaCl (Dr. Robert Bodnar, Advisor)

D. Isaac Jeng (Ph.D.) Poroviscosity: A New Constitutive Relation (Dr. Thomas Burbey, Advisor)

Fang Lin (Ph.D.) Determination of PVTX Properties of Petroleum Inclusions using Confocal Laser Scanning Microscopy (Dr. Robert Bodnar, Advisor)

Jay Thomas (Ph.D.) The Role of Boundary Layers During Entrapment of Melt Inclusions: Evidence From Melt Inclusions in Plagioclase, Quartz, Allanite, and Zircon (Dr. Robert Bodnar, Advisor)

Jesse Korus (M.S.) Incised-Valley-Fill Architecture of the Lower Pennsylvanian New River Formation, West Virginia (Dr. Kenneth Eriksson, Advisor)

Kathryn St. Clair (Ph.D.) A Deeper Look into the San Andreas Fault Drill Site (Dr. John Hole, Advisor)

Treavor Kendall (Ph.D.) Investigating the Mechanism of Siderophore Fe Release from Mineral Surfaces using Chemical Force Microscopy (Dr. Michael Hochella, Advisor)

David Rodland (Ph.D.) Controls on the Encrustation of Brachiopods on a Recent Tropical Shelf (Dr. Michal Kowalewski, Advisor)

Luca Fedele (Ph.D.) Trachyte Petrogenesis at Ponza, Italy: Melt Inclusion Geochemistry and Computer Modeling (Dr. Robert Bodnar, Advisor)

Jason Reed (Ph.D.) Aspects of Pennsylvanian Sandstone Diagenesis, Central Appalachian Basin: Qualitative and Quantitative Analysis (Dr. Kenneth Eriksson, Advisor)
Thomas Wynn (Ph.D.)  High-Resolution Sequence Stratigraphic Model for Transition from Greenhouse to Ice-House Conditions of a Carboniferous Ramp, West Virginia, USA (Dr. Fred Read, Advisor)

Kevin Anderson (M.S.)  Investigating the Paleoseismic History and Complex Fault Behavior of the North Frontal Thrust System at the Intersection of the Transverse Ranges and Eastern California Shear Zone, Southern California (Dr. James Spotila, Advisor)

James Student (Ph.D.)  Geochemistry of Silicate Melt Inclusions from the Red Mountain, Arizona, and Tyrone, New Mexico, Porphyry Copper Deposits (Dr. Robert Bodnar, Advisor)
Our Administrative Staff

Did you ever wonder if Linda Bland is still here, or who Connie Lowe is? Well this is to acquaint or re-acquaint you with an important part of our family:

Connie Lowe’s official title is Student Program Coordinator, but the students fondly refer to her as “Mom.” This is not surprising since she has an open door policy and a listening ear. She is the department’s expert on academic and student policy. She also assists the faculty by scheduling classrooms and working with the Graduate and Undergraduate Student Affairs Committees.

Ellen Mathena would never refer to herself as “jack-of-all-trades” but most everyone would agree that she is very versatile. Her primary duties revolve around support for the Seismological Observatory and assigned faculty. In addition to those duties, she assists with bookkeeping, travel arrangements, sorting mail and overseeing details of the many and varied departmental seminars. She is also a great conference coordinator—the 2001 Goldschmidt Conference at the Homestead was a huge success in part due to Ellen’s organizational skills.

Mary McMurray is located in our front office and in most cases is the public’s first contact. She handles the many and varied daily events, happenings and circumstances extremely well and can always figure out where the paper jam in the copier is located. Mary is Design and Copy Editor of the departmental newsletter and oversees all promotional literature for the department. She also serves on the Alumni Relations Committee and coordinates most of the activities of this committee.

Linda Bland is known as the “money person” in the department. No, she didn’t win the lottery, however, she does keep tabs on all departmental accounts. She is the department’s full-time financial officer and her primary duties consist of monitoring and reconciling the budgets for all accounts.

Carolyn Williams serves as administrative assistant to the Department Chairman and writes mini news articles, such as news about the staff. In addition to assisting the Chair, she oversees personnel and payroll procedures and is Co-Copy Editor for the departmental newsletter. Carolyn coordinates industry-recruiting visits and wears the “hat” of Special Events Planner.
## FACULTY

<table>
<thead>
<tr>
<th>Name</th>
<th>Rank/Title</th>
<th>Research Area</th>
<th>Phone No.</th>
<th>E-mail</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ross J. Angel</td>
<td>Research Professor</td>
<td>Crystallography &amp; Mineral Physics</td>
<td>540-231-7974</td>
<td><a href="mailto:rangel@vt.edu">rangel@vt.edu</a></td>
</tr>
<tr>
<td>Barbara M. Bekken</td>
<td>Assistant Professor</td>
<td>Geoscience Education</td>
<td>540-231-4466</td>
<td><a href="mailto:bekken@vt.edu">bekken@vt.edu</a></td>
</tr>
<tr>
<td>Robert J. Bodnar</td>
<td>C. C. Garvin Chair</td>
<td>Experimental Geochemistry</td>
<td>540-231-7455</td>
<td><a href="mailto:bubbles@vt.edu">bubbles@vt.edu</a></td>
</tr>
<tr>
<td>Thomas J. Burbey</td>
<td>Associate Professor</td>
<td>Hydrogeosciences</td>
<td>540-231-6696</td>
<td><a href="mailto:tjburbery@vt.edu">tjburbery@vt.edu</a></td>
</tr>
<tr>
<td>Martin C. Chapman</td>
<td>Research Assistant Professor</td>
<td>Earthquake Seismology</td>
<td>540-231-5036</td>
<td><a href="mailto:mcc@vt.edu">mcc@vt.edu</a></td>
</tr>
<tr>
<td>Cahit Çoruh</td>
<td>Department Chair and Professor</td>
<td>Exploration Seismology</td>
<td>540-231-6894</td>
<td><a href="mailto:coruh@vt.edu">coruh@vt.edu</a></td>
</tr>
<tr>
<td>James R. Craig</td>
<td>Professor</td>
<td>Metal-bearing Minerals</td>
<td>540-231-5222</td>
<td><a href="mailto:ircraig@vt.edu">ircraig@vt.edu</a></td>
</tr>
<tr>
<td>Patricia M. Dove</td>
<td>Associate Professor</td>
<td>Biogeochemistry of Earth Processes</td>
<td>540-231-2444</td>
<td><a href="mailto:dove@vt.edu">dove@vt.edu</a></td>
</tr>
<tr>
<td>Kenneth A. Eriksson</td>
<td>Professor</td>
<td>Siliciclastic Sedimentology</td>
<td>540-231-4680</td>
<td><a href="mailto:kaeson@vt.edu">kaeson@vt.edu</a></td>
</tr>
<tr>
<td>Susan C. Eriksson</td>
<td>Associate Professor</td>
<td>Geoscience Education</td>
<td>540-231-3703</td>
<td><a href="mailto:serikssn@vt.edu">serikssn@vt.edu</a></td>
</tr>
<tr>
<td>Michael F. Hochella, Jr.</td>
<td>Professor</td>
<td>Nanogeoscience, Biogeochemistry</td>
<td>540-231-6227</td>
<td><a href="mailto:hochella@vt.edu">hochella@vt.edu</a></td>
</tr>
<tr>
<td>John A. Hole</td>
<td>Associate Professor</td>
<td>Crustal Geophysics</td>
<td>540-231-3858</td>
<td><a href="mailto:hole@vt.edu">hole@vt.edu</a></td>
</tr>
<tr>
<td>Matthias G. Imhof</td>
<td>Assistant Professor</td>
<td>Exploration Seismology</td>
<td>540-231-6004</td>
<td><a href="mailto:mgi@vt.edu">mgi@vt.edu</a></td>
</tr>
<tr>
<td>Michal J. Kowalewski</td>
<td>Assistant Professor</td>
<td>Geobiology</td>
<td>540-231-5951</td>
<td><a href="mailto:michalk@vt.edu">michalk@vt.edu</a></td>
</tr>
<tr>
<td>Richard D. Law</td>
<td>Associate Professor</td>
<td>Structural Geology</td>
<td>540-231-6685</td>
<td><a href="mailto:rdlaw@vt.edu">rdlaw@vt.edu</a></td>
</tr>
<tr>
<td>J. Fred Read</td>
<td>Professor</td>
<td>Carbonate Sequence Stratigraphy</td>
<td>540-231-5124</td>
<td><a href="mailto:jread@vt.edu">jread@vt.edu</a></td>
</tr>
<tr>
<td>J. Donald Rimstidt</td>
<td>Professor</td>
<td>Aqueous Geochemistry</td>
<td>540-231-6589</td>
<td><a href="mailto:jdr02@vt.edu">jdr02@vt.edu</a></td>
</tr>
<tr>
<td>Nancy L. Ross</td>
<td>Professor</td>
<td>Mineral Physics, Crystal Chemistry</td>
<td>540-231-6356</td>
<td><a href="mailto:nross@vt.edu">nross@vt.edu</a></td>
</tr>
<tr>
<td>Madeline E. Schreiber</td>
<td>Assistant Professor</td>
<td>Chemical Hydrogeology</td>
<td>540-231-3377</td>
<td><a href="mailto:mschreib@vt.e">mschreib@vt.e</a></td>
</tr>
<tr>
<td>A. Krishna Sinha</td>
<td>Professor</td>
<td>Petrogenesis, Isotope, Tectonics</td>
<td>540-231-5580</td>
<td><a href="mailto:pitlab@vt.edu">pitlab@vt.edu</a></td>
</tr>
<tr>
<td>J. Arthur Snoke</td>
<td>Professor</td>
<td>Earthquake Seismology</td>
<td>540-231-6028</td>
<td><a href="mailto:snoke@vt.edu">snoke@vt.edu</a></td>
</tr>
<tr>
<td>James A. Spotila</td>
<td>Assistant Professor</td>
<td>Geomorphology and Neotectonics</td>
<td>540-231-2109</td>
<td><a href="mailto:spotila@vt.edu">spotila@vt.edu</a></td>
</tr>
<tr>
<td>Christopher J. Tadanie</td>
<td>Research Assistant Professor</td>
<td>Environmental Biochemistry</td>
<td>540-231-4315</td>
<td><a href="mailto:ctadanie@vt.ed">ctadanie@vt.ed</a></td>
</tr>
<tr>
<td>Robert J. Tracy</td>
<td>Professor</td>
<td>Igneous and Metamorphic Rocks</td>
<td>540-231-5980</td>
<td><a href="mailto:rtracey@vt.edu">rtracey@vt.edu</a></td>
</tr>
</tbody>
</table>

## STAFF

<table>
<thead>
<tr>
<th>Name</th>
<th>Rank/Title</th>
<th>Phone No.</th>
<th>E-mail</th>
</tr>
</thead>
<tbody>
<tr>
<td>Linda Bland</td>
<td>Grants Specialist</td>
<td>540-231-8822</td>
<td><a href="mailto:blandsl@vt.ed">blandsl@vt.ed</a></td>
</tr>
<tr>
<td>Charles Farley</td>
<td>Laboratory Specialist</td>
<td>540-231-8472</td>
<td><a href="mailto:mfortney@vt.e">mfortney@vt.e</a></td>
</tr>
<tr>
<td>Connie Lowe</td>
<td>Student Program Coordinator</td>
<td>540-231-8824</td>
<td><a href="mailto:clowe@vt.edu">clowe@vt.edu</a></td>
</tr>
<tr>
<td>Mark Lemon</td>
<td>Geophysics Equipment/Computer Systems Engineer</td>
<td>540-231-5129</td>
<td><a href="mailto:lemonnn@vt.e">lemonnn@vt.e</a></td>
</tr>
<tr>
<td>Ellen Mathena</td>
<td>Program Support Technician</td>
<td>540-231-6729</td>
<td><a href="mailto:mathena@vt.e">mathena@vt.e</a></td>
</tr>
<tr>
<td>Mary McMurray</td>
<td>Office Services Specialist</td>
<td>540-231-6521</td>
<td>mcmurray@vt</td>
</tr>
<tr>
<td>Hal Pendrak</td>
<td>Mass Spectroscopy/Electronics Specialist</td>
<td>540-231-5264</td>
<td><a href="mailto:hal@vt.edu">hal@vt.edu</a></td>
</tr>
<tr>
<td>Dan Smith</td>
<td>Laboratory Instrument/Designer/Manufacturer</td>
<td>540-231-5680</td>
<td><a href="mailto:smithdm@vt.e">smithdm@vt.e</a></td>
</tr>
<tr>
<td>Carolyn Williams</td>
<td>Program Support Technician Senior</td>
<td>540-231-6894</td>
<td><a href="mailto:wilcar@vt.edu">wilcar@vt.edu</a></td>
</tr>
<tr>
<td>Eric Wonderley</td>
<td>Computer Systems Engineer</td>
<td>540-231-7002</td>
<td><a href="mailto:elderley@vt.e">elderley@vt.e</a></td>
</tr>
</tbody>
</table>
ALUMNI NEWS

'66

Roger Amato (B.S. '66; M.S. '68) recently moved to Warrenton, VA to get a little closer to work (Minerals Management Service). <Rvasda@aol.com>

'72

Scott S. Hughes (B.S. '72) was in Virginia at Thanksgiving to visit his siblings and mother, who live in Waynesboro. Scott, his wife, Vivian, and son, Jonathan visited the Tech campus because they are a Hokie family and he hopes Jonathan maintains the family tradition. He has wanted to be a paleontologist since he was six years old, yet he just recently announced that he would probably change his mind. Scott writes, “Whew, I was a bit worried there for awhile. Anyway, he is still interested in geoscience, or some sort of science or engineering, and will probably apply to Tech in a couple of years. He is doing quite well in school (sophomore at Pocatello High School) and I believe he has the horses to become a good scientist.”

“I greatly appreciate John Costain’s congratulatory note about being Professor and Chairman of the Department of Geosciences at Idaho State University, although I am still trying to get the hang of it and leave some time for family and friends. Any success I have in this career is a direct reflection on the excellent undergraduate education I received at Tech. John’s influence helped me stay in geology, and not jump ship to some other profession in the wake of trying times for geologists in the ‘70s. Thanks!”

David F. Briggs (B.S. ‘72; M.S. ‘75) has resided in Tucson, Arizona since 1977. David has worked in Tucson as an exploration geologist for a number of mining companies, including Quintana Minerals Corporation, Shell Mining Company, Kennecott Minerals Company, Battle Mountain Gold Company and Echo Bay Minerals Company. Over the years, he has evaluated the mineral potential of many areas throughout the western United States, with the majority of this work occurring in northern Nevada. Self-employed as a consultant since early 1990, David has published comprehensive reports on the geological, technical and financial aspects of more than 550 base and precious metals mining operations. For more information on these studies visit his website at www.geomineinfo.com.

With the decline in the metals mining industry over the last several years, David is presently examining other career opportunities. <davidfbriggs@aol.com>

'81

Robert I. Simon (M.S. ‘81) is leaving his job after 20 years as a geologist at Chevron to pursue his dream. He is the owner of Dinosaur Safaris Inc., a Wyoming based company that digs dinosaur bones in the Jurassic-Age Morrison Formation in the Big Horn Basin. They open the dig site to customers during the summer months and it is a great vacation and learning experience for adults and kids. His web site is http://www.dinosaursafaris.com. After 20 years in Louisiana, he is returning to Spotsylvania County, Virginia. His wife Karen works in D.C. and has a doctorate in environmental health. Bob’s advice: follow your dream. Life is short!!

'83

Richard G. Gibson, III (M.S. ‘83; Ph.D. ‘87) recently transferred to Calgary with BP. His wife, Janet Schweitzer (M.S. ‘84, Ph.D. ‘91), left her job with Landmark Graphics Corp. when they moved from Houston to Calgary in December 2001 to work as a freelance writer.

'84

Janet Schweitzer (M.S. ‘84; Ph.D. ‘91) moved from Houston to Calgary in December 2001 when her husband, Rich Gibson, transferred with BP. Janet left her job with Landmark Graphics Corp. and is now a freelance writer.
Andrew Bush (B.S. ‘97; M.S. ‘99) is working on his Ph.D. at Harvard, looking at changes in paleoecology and biodiversity at the Frasnian-Famennian boundary in New York State. He also spent a month and a half in China last summer helping one of his classmates study the Permo-Triassic extinction and the recovery from it in the Early Triassic. “Now that Richard Bambach has moved up here, it’s almost like the old times at VT!”

Robin Guynn (B.S. ‘99) received her Masters degree in December 2001 from Penn State and is now a Staff Geologist with Environmental Resources Management in Annapolis, Maryland. <robin_guynn@erm.com>

Jonathan Mullis (B.S. ’00) is a Junior Geologist with Groundwater and Environmental Services, Inc. (GES) in Richmond, Virginia. GES currently has eight employees, including Jon. Shawn Weimer, B.S. 2000, and a 2001 Tech engineering graduate also work with Jonathon. Basically, 38% of his office consists of Tech alumni. <jmullis@esonline.com>
ALUMNI UPDATE

Please let us know where you are and what you are doing. Return this update form about yourself. If you move, remember to include us on your change of address list.

Your Name: First, Maiden/Middle, Last

Spouses Name: First, Maiden/Middle, Last

Virginia Tech Class and Degree

Further Degrees; From What University?

Home address

Home phone

E-mail address

Employer

Your Title

Business address

News or updates

Return to Newsletter Editor, Department of Geological Sciences, 4044 Derring Hall, Blacksburg, VA 24061. Fax: (540) 231-3386. Alternatively e-mail your Alumni Update from our home page at http://www.geol.vt.edu/general/arc.html.
Geological Sciences Endowed Gift Accounts

Undergraduate and Graduate Scholarships

Alumni Endowed Scholarship
Established by Dr. Lynn Glover, III (Class of 1952, Professor Emeritus) to provide scholarships for undergraduates or graduates majoring in Geosciences who demonstrate academic merit and financial need.

Geosciences Faculty Endowed Scholarship
Established to recognize the contributions of Geosciences faculty and their commitment to enhancing the Department. Support will go to students majoring in Geosciences who demonstrate academic merit.

Charles J. Gose, Jr. Scholarship for Geological Sciences
Established by family to support students enrolled in Virginia Tech’s College of Arts and Sciences pursuing a degree in Geological Sciences.

Thomas T. Jeffries Geological Sciences Endowed Scholarship
Established to honor the memory of Thomas T. Jeffries, Jr. (Class of 1936, I.E.) by his son Thomas T. Jeffries III (Class of 1965, Geophysics) by supporting undergraduate or graduate students in the Geological Sciences who demonstrate academic merit and leadership within the Department or University.

Matthew J. Mikulich Endowed Geophysics Scholarship
Established in honor of Dr. Matthew J. Mikulich, long-time friend and supporter of the Department. Funds support upper level undergraduates or graduates majoring in Geophysics who are U.S. citizens, demonstrating academic merit and financial need.

Heath Robinson-Roy J. Holden Geoscience Endowed Scholarship
Established by Susie Robinson Manges in memory of her brother, Marvin Lawrence, to benefit the Department.

The Charles Edward Sears Endowed Scholarship
Established by family and friends of Charles E. (Rosy) Sears to commemorate 39 years of dedicated teaching. The scholarship is intended to provide support for students in the Department of Geological Sciences based on academic achievement.

Undergraduate Scholarships

Geological Sciences Endowed Scholarship
Established to provide undergraduate scholarships in Geochemistry, Geology, Geophysics or Hydrogeosciences.

Geosciences Undergraduate Research Endowed Scholarship
Established from small contributions of alumni to support undergraduate research in Geosciences at Virginia Tech. Scholarships support research or required field-experience courses for Geoscience undergraduates who demonstrate academic merit.
Lowry Field Camp Scholarship
Established by friends and colleagues in honor of W. D. “Wally” Lowry to support teaching, research and education in Structural Geology (Geology of the Appalachians and Rockies, Alpine Geology and Petroleum Geology).

Graduate Fellowships/Scholarships

Byron Cooper Geoscience Endowed Fellowship
Established by friends and colleagues to honor Byron N. Cooper and to provide graduate student support for teaching, research, and education with a focus in Appalachian geology.

The John K. Costain Graduate Geophysics Endowed Scholarship
Established by David W. Worthington to recognize Dr. Costain’s impact on geophysics at Virginia Tech by supporting both research at the “John K. Costain Geophysics Computing Facility” and graduate students in Geophysics who have demonstrated academic merit and a strong work ethic.

The Wallace D. Lowry Geosciences Endowed Graduate Scholarship
Established by Dr. William H. Hazlett, Jr. and family to recognize the long-term contributions of Dr. Wallace Lowry, Professor Emeritus of Geology, by supporting scholarships for graduate students majoring in Geosciences who are U.S. citizens, doing field work for their research, and demonstrating academic merit.

Aubrey E. Orange Endowed Award in Geophysics
Established as a tribute to Mr. Aubrey E. Orange by his grateful nephew, Steve Scott (BS 1979; MS 1988). The support is made to a geophysics graduate student who has demonstrated academic excellence and is actively engaged in research.

Petroleum Industry-Geosciences Endowed Graduate Scholarship
Established by the Department of Geological Sciences from the petroleum industry’s contributions to recognize their long-term support of the Department. Support is for graduate students working on petroleum industry related research topics who have demonstrated academic merit.

Tillman Teaching Excellence Endowed Award
Established by friends and colleagues in memory of C. G. “Jake” Tillman to support teaching excellence and research and education in Paleontology.

David R. Wones Geoscience Endowed Scholarship
Established by friends and colleagues of David R. Wones to support teaching, research, and education scholarship awards in the Geological Sciences.

Facilities Endowments

Donald V. Dalton Endowed Fund for the Museum of Geological Sciences
Established by Donald Dalton (Class of 1960) to support the programs of the Museum of the Geological Sciences and to recognize the dedication of Museum Director Susan Eriksson.
3-D Subsurface Imaging Laboratory Fund
Established by gifts from the petroleum industry to support the maintenance of the 3-D Subsurface Imaging Laboratory and to share costs for using the laboratory for instruction in petroleum industry topics in Geosciences at Virginia Tech.

Undergraduate and Graduate Industry Scholarships

In addition to our endowed scholarships, the following industry scholarships/fellowships benefit our students:  BP-Amoco Fellowship, Chevron Geophysics Fellowship, Marathon Oil Geosciences Scholarship, and Texaco Geophysics Scholarship.
DONORS

If you would like to consider making a gift to the Department of Geological Sciences, simply send your check payable to the Virginia Tech Foundation in care of Chairman, Department of Geological Sciences, Virginia Tech, Blacksburg, Virginia 24061, Ph: 540-231-6894. Please include a brief note stating how you would like the money used. Currently there is a financial need especially for:

*Undergraduate scholarships and fellowships including funding for field studies and research
*Graduate scholarships and fellowships
*Endowed chairs for faculty
*Laboratories, research and teaching including our Geosciences Museum

Donations from our alumni and other friends are critical to our plans for endowing scholarships, professorships and programs within the Department. Most people know about making cash donations, but there are other methods to give that may better suit your financial situation. You may be surprised to learn what kinds of gifts Virginia Tech accepts, and how you can avoid some taxes you thought you would have to pay. For more information about giving stock, receiving income in exchange for your gift or making a donation through your estate plans, please contact Mr. Dan Palmer, Assistant Director of Development, College of Arts and Sciences, 103 Old Security Building (0136), Blacksburg, Virginia 24061, (540) 231-8739.