FALL 2007

geo sciences AT VIRGINIA TECH Magazine

100th Year Anniversary Celebration

Also In This Issue: 2007 Graduation
Message From The Chair

by Robert Tracy, Chair

As we wind down to the end of our very busy centennial year of Geology/Geological Sciences/Geosciences at Virginia Tech, I reflect on the fact that 2007 has indeed been an extraordinarily eventful year, both for our departmental community - faculty, staff, students, and alumni - as well as for the larger Virginia Tech community. Of course the tragic events of April 16 cast a significant pall over our centennial festivities, and will mark the year forever as “not normal business”. We remain very thankful that none of our Geosciences people was directly involved as victims in the shootings, but memories and psychological effects linger for many of us. The Provost has already declared Wednesday, April 16, 2008, as a day for classes to be canceled and a time for the Virginia Tech campus to reflect on the first anniversary of the tragic events of last year.

In Geosciences, our busy year has included multiple stages of the Centennial Celebration, beginning with May Commencement, with distinguished alumnus Bill Thomas of the University of Kentucky as our Guest of Honor and Speaker (more on this elsewhere in the magazine), and concluding with a Centennial Reunion Weekend in early October, including departmental tours, a reception, field trips (highlighted by an appearance on the Valley and Ridge trip by Wally Lowry at the “Lowry anticline” in Newport on the day after his 90th birthday!), and ending with a festive banquet at The Inn at Virginia Tech. Nearly 250 people attended the Centennial, and the banquet was attended by President Steger, Vice President Hincker, Provost McNamee and Dean Chang, all of whom expressed great admiration at our departmental spirit in coming together in such numbers for this event.

The banquet program included two very special announcements: Matthew Banks, Director of Development for the College of Science, announced a large gift to the university by alumnus David Worthington (M.S., 1973) to endow the Costain Chair of Exploration Geophysics honoring Emeritus Professor John Costain, and Phillip Barnard (B.S., 1983) announced plans for a new building to house the department and for a remarkable Geosciences Discovery Center to accompany the academic building and to house greatly enhanced education, outreach and museum facilities. All in all, it was an amazing evening that will be remembered by all participants for many years.

The year 2007 also marked the arrival of our large contingent of new faculty hired in 2006 and 2007 - Ying Zhou (seismology), Scott King (geodynamics), Jake Sewall (paleoclimatology), Chet Weiss (E&M geophysics), and Erin Kraal (geomorphology and planetary science). All are now happily settled in Derring, have graduate students, and are quickly integrating themselves into our departmental research and teaching activities. Given the large number of projected retirements in the next five years or so, they are the first wave of a contingent of young faculty that will transform the look of the department and propel it actively to greater heights. One other item of very good faculty news was the selection of Mike Hochella last spring as one of the 14 University Distinguished Professors at Virginia Tech. Our department now has two - Mike and Bob Bodnar - marking us as the only department besides Chemistry that has two UDP’s.

All of us - current faculty, staff and students, retired faculty, and all of our loyal alumni can take great pride in the accomplishments of our department over the preceding 100 years. These accomplishments have laid the groundwork for a bright second hundred years that begins auspiciously with an endowed chair and imminent construction of a very special new building to house an expanding department. To completely fulfill the promise of the future, we will need to enlist your aid and support over the next few years to endow additional faculty positions, to provide funding for undergraduate and graduate student scholarships and fellowships, and to properly furnish our new departmental home. Future editions of this magazine will highlight the ways that you can help.

I wish each and every one of you a prosperous and healthy 2008!
2007 Geosciences Commencement Address

Dr. William A. Thomas, Chair of the Department of Earth and Environmental Sciences at the University of Kentucky, presented degrees to 22 B.S., 4 M.S., and 9 Ph.D. students.

6 Geosciences 100th Year Anniversary Celebration

On October 5 and 6, 2007, the Geosciences Department celebrated the 100th anniversary of the first graduate from the department, Joel Watkins. The festivities began Friday at 3 p.m. with an open house, poster session, slide show of historic pictures and a mineral sale which continued through Saturday. A reception was held early Friday evening on the Derring Hall balcony. Saturday morning there were two field trips. Both the Valley and Ridge and Blue Ridge trips had overwhelming support from alumni with over 60 participants on each trip. The culmination of the weekend was the reception and dinner at The Inn at Virginia Tech.

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Cover: Department’s 100th Year Anniversary Celebration Dinner at The Inn at Virginia Tech. See story on page 6 (Photo by András Fall).
I am highly honored and greatly pleased to be invited to address the 2007 graduating class of the Department of Geosciences at Virginia Tech on the occasion of the 100th anniversary of the awarding of the first geoscience degree from what was then VPI. It was 1907 when Joel Hill Watkins received that first degree. I, too, am a graduate of this department. I came to Virginia Tech in 1957, which, if you do a little arithmetic, turns out to be 50 years ago, on the 50th anniversary. In my memory, at least, that milestone went unremarked. Nevertheless, it is humbling and inspiring to realize that I have been associated with this department for half of its history. I do want to acknowledge someone here who has had an even longer and much more direct association with the department, Dr. Wally Lowry.

I finished my Ph.D. dissertation in the fall of 1959 and participated in commencement in 1960. At that commencement, the department awarded three Ph.D. degrees; these were the 2nd, 3rd, and 4th Ph.D.s granted by the department. Looking around us today, it is clear that the department has grown and prospered, along with the university, during the past 50 years.

I hope you will indulge me a bit of reflection on the department of 1957. Graphics software was tracing paper and ink; graphics hardware was a pen and a Leroy lettering device. Word processing was done on a typewriter, and the final dissertation required an original and five carbon copies. The department had a faculty of seven, and it shared Holden Hall with Mining Engineering and Metallurgical Engineering. We worked with the theory and technology of the day. We students learned to evaluate data and to derive conclusions by pursuing the scientific method. Most importantly, we learned to question established theory, to ask critical questions, and (in today’s vernacular) to think outside the box. What did we get from our geoscience education at Virginia Tech? That background has enabled us to adapt through the years as new ideas and technology have evolved. For example, the research of my recent students spans quantitatively balanced structural cross sections, foreland subsidence modeling, U-Pb ages of zircons, Sr isotopes, and interpretation of seismic reflection profiles. My work on construction of balanced structural cross sections uses no paper or pencil, only a computer program that I have adapted. The 1950s grads of Virginia Tech were prepared to adapt and grow, and the seeds of the present department were being sown 50 years ago through the leadership and vision of Byron Cooper and Wally Lowry.

So we come to today, recognizing the achievements of the 100th crop of Hokie geoscientists. This group of students has had access to a large and diverse faculty, to modern technology, and to a Virginia Tech tradition of research that involves thinking outside the box. This is now one of the premier departments of geosciences, and it is growing. To the class of 2007, I extend my congratulations. You are well prepared to take on the next 50 years.

Having taken a look back, I would now like to look ahead. During the time I was President of The Geological Society of America, we launched a series of strategic discussions of “The future of the geosciences.” What are the geosciences? What unites us as geoscientists? The growth of new lines of inquiry and diversity of specialties, as well as interdisciplinary studies, expands our horizons and strengthens our science. We do need to maintain our common ties to avoid a public and political perception that we are simply a disconnected collection of small groups of specialists rather than a large integrated force with common...
Graduation

goals. Unity and a common voice are essential if geoscientists are to achieve the strength of numbers necessary to gain greater public and political recognition and support. We are in this together. We would all like to see a greater use of geoscience data and advice in decision making at all levels. Of course, we know that the oil companies use geoscience data intensively; we would hope to see the same intensity in venues from city planners, to regional water boards, to the federal government, to international agencies. We can begin with greater emphasis on geoscience education at all levels, including the generally weak K-12 programs around the country. Improvement of geoscience literacy throughout the population is necessary to greater acceptance of our role in the solution of societal challenges.

Our recent discussions have turned to some specific questions, and I’ll address those questions to you. Think for a minute. What are and will be the major issues facing the national and world population over the next 15 to 20 years? I’m sure that we here could quickly agree on an imposing list: water quality and quantity; energy resources; food supplies; global climate; sources of industrial raw materials; natural hazards—earthquakes, volcanoes, landslides, storms, bolides; population density; government stability and distribution of wealth; religious extremism. Now, the next question is, which of those issues has a geoscience component and/or a geoscience solution? Perhaps partly because we are geoscientists, our list of issues is dominated by geoscience issues. Food supply, for example, encompasses the geoscience issues of soil, water, and mineral fertilizer. Distribution of wealth is related to distribution of natural resources and to the development of those resources. Clearly, many of the global issues of the next two decades have roots in the geosciences. Having recognized that, the challenge to us is, what will we as geoscientists do about it? We can strive to improve geoscience education, including continuing education, to have an informed public involved in decision making; and perhaps we can improve comprehension of the geosciences by better public relations. Nevertheless, the most direct challenge is to have our research provide the actual solutions for the big problems. If our research clearly is having an impact on improving global living conditions, a public awareness and demand for improved geoscience education and understanding will follow. The challenge is to ourselves: what are the big issues? And how does our research address those issues? I’ll personalize the question, and address it to each of you individually, how does your work address those issues? While this question may seem as advocacy for short-term, goal-oriented, directly applied research, it is more. The future of our understanding of the processes that drive both challenges and solutions depends on fundamental, curiosity-driven research; indeed, many of our issues are complex, long-term, and multi-context. We are challenged both to resolve current problems and to provide the theoretical basis for future applications. To the class of 2007, you face grand challenges that offer you grand opportunities. The future of the geosciences is in your hands; indeed, considering the issues we have just listed, the future of the world is in your hands. Standing here with you in this room today, I have a sense of comfort, because I am confident that you will meet those challenges.

Ordinarily, I would stop here. I would repeat my congratulations to the class of 2007 and wish you well. I do most sincerely congratulate you and wish you well. However, we all remember that this graduating class has gone through an unimaginably horrifying experience. We will always remember. Your graduation today stands as a reaffirmation that order will prevail, as well as a reaffirmation of our free and open system of higher education, of a positive sense of purpose, and of dedication to a meaningful goal. I am sure that all of you were, as I was, touched and inspired by the words of Professor Nikki Giovanni, and I will close with a quote.

“We will prevail.
We will prevail.
We will prevail.
We are Virginia Tech.”

continued on page 15

Editor’s Note:
The department’s commencement was held Saturday, May 12, 2007. The guest of honor, Dr. William A. Thomas, presented degrees to 22 B.S., 4 M.S., and 9 Ph.D. students. Dr. Thomas’ commencement address, followed by his biography, are printed here.
Festivities for the celebration of the department’s 100th anniversary of the first graduate began at 3:00 p.m. with a Departmental Open House. There were lab tours, a poster session and an incredible slide show of historic pictures. A mineral sale was held both Friday and Saturday. Minerals were provided by Don Dalton ’60 and Keith Williams, of Williams Mining Company. All of the proceeds from the sale of the Dalton minerals and a portion of proceeds from the sale of the Williams minerals were donated to the Geosciences museum. A reception was held on the Derring balcony. Everyone enjoyed talking with past and current professors, students and friends from the past.

IMPORTANT NOTE: Please see page 14 for a key to all the 100th Anniversary pictures on this and subsequent pages.
Blue Ridge Field Trip
The Blue Ridge field trip, led by Ryan Thigpen, Jim Spotila, Carol Simpson, and Bill Henika, consisted of three stops. The trip began at the Fries fault mylonite zone near the Little River at the boundary between Montgomery and Floyd Counties. Field trip participants viewed some classic mylonite textures. The Fries fault zone contains some of the most outstanding shear band cleavage in the world. (There was also some fairly entertaining bridge graffiti!) The stop at Rocky Knob along the crest of the Blue Ridge allowed participants to learn about the relationship between the geomorphic evolution of the Blue Ridge escarpment and the regional geology and tectonics, with outstanding views of the active escarpment to the southeast. These stops were followed by a delicious lunch at Château Morrisette, a winery along the Blue Ridge Parkway, and a pleasant drive returning to Blacksburg. Please see page 14 for a key to these pictures.
Field participants on the Valley and Ridge field trip went first to the Radford Dam viewing exposures of Late Cambrian limestones where Fred Read demonstrated how the different facies can be interpreted in terms of changing depositional environments. The next stop was the famous Lowry Anticline at Clover Hollow where Wally Lowry and Rick Law talked about the faulting and folding of
these Middle Ordovician rocks. This was a particularly significant day for Wally who, unknown to most of the participants, celebrated his 90th birthday on Friday! The Clover Hollow stop was followed by lunch at Mountain Lake Hotel and then a couple of optional stops led by John Chermak and Rick Law, before returning to Blacksburg for the Centennial Dinner. Please see page 14 for a key to these pictures.
Virginia Tech Geosciences
Centennial Celebration Dinner
The Celebration culminated with a reception and dinner at The Inn at Virginia Tech attended by some 250 people. The festivities that evening were punctuated by a number of speeches and presentations in what may be remembered as the most important in the 100-year history of the Department. Virginia Tech’s President, Dr. Charles Steger, welcomed the guests and presented a sterling tribute to the Department. Other university keynote speakers included the Dean of the College of Science, Dr. Lay Nam Chang, and Department Chair Dr. Robert Tracy. There was also an unforgettable speech by Robert Watkins, Jr., an internationally-known engineering geologist and the grandson of Joel Watkins, the first student to graduate from the department in 1907. Many descendants of Joel Watkins attended the dinner.

A very important address was delivered by the Director of Development for the College of Science, Mr. Matthew Banks, announcing the establishment of the John K. Costain Endowed Chair by David Worthington. Mr. Worthington’s extraordinary generosity will allow for the first endowed chair in the history of the Department, graciously named in honor of his mentor, Dr. Costain.

The climax of the evening (perhaps of the first century of the department!) came from alumnus Phillip E. Barnard, Jr., as he unveiled plans for a new Geosciences building and Discovery Center. Mr. Barnard has spent his professional life building a consulting practice that helps the private sector worldwide make exploration and recovery both responsible and profitable. His long-term vision and passion in what he calls “the New Age of Discovery” on Earth will lead to a magnificent new home for the Department, one that is intended to touch the lives of every student at our university, and draw visitors from the region, the country, and the world.

“While the paths to great research and exploration often lead to the ultimate thrill of discovery, let us not forget that it is our first encounter with the thrill of discovery that often leads us to take these paths.”

Phillip E. Barnard, Jr.
October 6, 2007


Our commencement speaker for 2007 is William A. Thomas, James S. Hudnall Professor and Chair of the Department of Earth and Environmental Sciences at the University of Kentucky. He and his wife, Rachel, arrived on campus in Blacksburg as students in the fall of 1957, fifty years ago. The math is inevitable: Bill Thomas has experienced exactly one-half of our 100-year history of Geology at Virginia Tech. He is, therefore, an admirable witness to share his perceptions of both the past and the future of this department, and its place in the greater geosciences community.

I have known Bill Thomas for fully thirty years. As a graduate student and post-doc in the 1970s, I was very much aware of his pioneering work on the tectonics of the Appalachians, and on global tectonics in general, and I had some great learning experiences hearing his presentations at meetings and talking with him on field trips. Bill graduated from the University of Kentucky in 1956 with a B.S. in Geology. He then obtained his M.S. from Kentucky in 1957 (in one year) and finished his Ph.D. at Virginia Tech in 1959 (two more years). His official degree date is the 1960 spring commencement, but he tells me he left Blacksburg for a job with the California Company (now Chevron) on the Gulf Coast in the fall of 1959. So in just a little over three years, he was able to jump from B.S. to Ph.D. His field-based Ph.D. thesis (sedimentology-stratigraphy-tectonics) was under the direction of the renowned (and famously hard-nosed) task-master Professor Byron Cooper.

After his four years with Chevron, Bill Thomas moved into academia and has been in five departments: Birmingham Southern (1963-1970), Queens College of CUNY (1970-1972), Georgia State University (1972-1979), the University of Alabama (1979-1990) and the University of Kentucky, where he is currently both the Hudnall Professor of Geology and Chair of the Department of Earth and Environmental Sciences. He has spent 47 years as a professional geologist, 43 of them in academia, and has published more than 160 articles in geological journals. Most recently, he served as President of the Geological Society of America from 2004 to 2006. His awards include the Burnum Distinguished Faculty Award from the University of Alabama, the Distinguished Service Award of the Geological Society of America, the Distinguished Service Award of the Alabama Geological Society, and the Distinguished Alumnus Award of the University of Kentucky. He has served with distinction as the Editor of the Geological Society of America Bulletin from 1981 to 1988 and has made innumerable contributions to the international Geosciences community over the last 47 years. It is truly both a great pleasure and an honor for me to present to you our own alumnus, Professor William A. Thomas, who will share with you and our graduates his thoughts on “The Geosciences at Virginia Tech: 100 Years and Counting.”
to whence I came, having started with BP, after 5 years with Marathon. Marathon was great, but the opportunity to return to BP still here in Houston was too good to pass up. I’m returning with credit for 18 years of prior service with ARCO.” You can reach Ric at Ric.simmons@bp.com or fnsimmons@yahoo.com.

**'70s**

**B.S., ’75**

Gale Claytor McKinley writes, “I am currently a project geologist working for the environmental company, SENCOR International in Houston, Texas. My husband, Rex, has recently retired after 28 years with Conoco (Phillips). Our son, Steven, is a junior business major at Oklahoma State and our daughter, Ellie, is a high school senior. Ellie is on the varsity golf team with aspirations of playing golf in college (not Tech, no girls team, yet!). I am very active in the National Railway Historical Society as the National Director for the Gulf Coast Chapter here in Houston. I would like to hear from ’75 alumni!” Gale can be contacted at 1926 Royal Downs Drive, Katy, TX 77450.

**B.S., ’81**

Sean McPherson is a Professional Geophysical Advisor with Anadarko Petroleum Company in The Woodlands, TX. He writes, “Hi to all. I have been married 24 years, have two kids, ages 22 and 17. I am nearing early retirement after two industry mergers – can’t wait!!! After 26 years of finding and developing hydrocarbon resources, it’s time for something else. GO HOKIES!!!!” You can reach Sean at 3007 Cedar Village Drive, Kingwood, TX 77345.

**B.S., ’84**

Bill Bour is an Assistant Professor and Geology Program Head at the Northern Virginia Community College. You can contact Bill at 21019 Coach House Square, Ashburn, VA 20147.

**B.S., ’84**

Philip Jagucki is Program Manager for Battelle in Columbus, OH. Philip writes on April 18, “Virginia Tech was already on my mind this week as I was planning to send out a response to the 100th anniversary information. Now, with much sadness, Tech is ever more present in my thoughts. Know that alumni and friends around the world are pulling for the University to emerge from this tragedy stronger and brighter than ever. Among the many great experiences of my life, attending and graduating from Virginia Tech are two of the best and most satisfying.” You can contact Philip at 325 Electric Avenue, Westerville, OH 43081.

**M.S., ’86**

David J. Levy writes, “Greetings from South Florida. In recent years, my partner, Bob Brooks and I developed an innovative method of cleaning soil and groundwater and now have applied this technology with great success in FL. On a side note, I got elected to the City Council in 2004 and I am now the Vice-Mayor of Palm Beach Gardens. My wife, Penny, and I have two children.” You can reach David at 4788 Holly Drive, Palm Beach Gardens, FL 33418. E-mail: srtinc@bellsouth.net.

**M.S., ’89**

MAJ Michael R. Mason has been recalled from military retirement and is serving on active duty in Baghdad. He is a Strategic Plans and Assessments Engineer Planner at the headquarters of the Multi National Force – Iraq. MAJ Mason will serve in Iraq until January 2008. He writes, “I especially enjoyed reading about the dinner in honor of Dr. Costain in the Geosciences Magazine and seeing the photos of y’all. My best to Drs. Costain and Coruh. Michael.”

**’90s**

**B.S., ’92**

Janice Bedford-Hughes writes, “Hello from sunny Tucson!” I’ve recently become Project Manager for our drainage team and given up teaching at the community college. After 13 years, it’s tough to be giving up a connection to the geology world. I’ll have to settle for lessons with my 6 year old son and 4 year old daughter – the next generation of geologists! Civil Engineering is a good substitution though. I’m a Registered Geologist and Professional Civil Engineer in the State of Tucson working on drainage design for land development and public works projects. Hello to Hokie-land!” You can contact Janice at 4721 N. Palisade Drive, Tucson, AZ 85749. E-mail: geologygeek@msn.com.

**B.S., ’96**

Jason Hinkle is a Geotechnical Specialist with the Oregon Department of Forestry in Forest Grove, OR. Jason writes, “I enjoy keeping in touch with the department.” You can contact Jason at jhinkle@odf.state.or.us.

**B.S., ’96**

Bonnie S. Ware writes, “Connel Ware (B.S. ’93) and I, with our two children, Brock and Sharon, moved to Greensboro, NC in 2003. Connel is currently working for S&ME as a Senior Geologist/Project Manager.”

**B.S., ’96**

Ken Clinard writes, “I enjoy reading about the dinner and the photos of y’all.” My best to Drs. Costain and Coruh. Michael.”
M.S. B.S. ’98

Amy Johnson Bern, a chemist with the U.S. Environmental Protection Agency, has been awarded the Environmental Protection Agency’s Trudy A. Speciner Non-Supervisory Award for Advancing Environmental Protection. This national honor award is given to an EPA employee with less than seven years of service who has shown unusual analytical ability, creativity, and judgment and whose outstanding analytical achievements have advanced the cause of environmental protection. Amy was recognized for her successful performance of noteworthy and progressively difficult assignments, including collaboration with EPA’s Office of Research and Development and the US Geological Survey to develop a scanning electron microscopy method for distinguishing World Trade Center dust from urban background dust. She was also acknowledged for personifying strong scientific expertise, a spirit of collaboration as a team player, and leadership skills beyond her formal grade level. Amy will be traveling to Washington D.C. in mid June to accept this national honor award. Congratulations Amy!

Kyle Rottkamp, writes, “I would like to say hi and hope everything is going well with everyone in the department. I have been working in Blacksburg with an environmental consulting firm (Simon & Associates, Inc.) that specializes in groundwater monitoring and remediation of gas stations and residential sites. It is a smaller firm with approximately 30-35 employees and has been in business since 1986. I may be interested in exploring a Masters Degree in hydrogeology at some point in time after I complete the geologist licensure exam for the state of Virginia. I saw that Dr. Tracy was named the new chair of the department and that’s great news! He was always one of my favorite professors as an undergrad.”

Chelsea M. Raven Feeney and her husband, Dennis moved to Missoula, MT.

Justin Kennedy writes, “I will travel to Australia and Papua New Guinea from April 2007 through August 2007 for geo-technical work at the Porgera Joint Venture mine in the Central Highlands of PNG. I will use geomechanical and core oriented logging as part of a feasibility study for Barrick Gold Corporation. I currently work for URS Corporation, out of the Gaithersburg, MD, office.” You can contact Justin at 200 Orchard Ridge Drive, Ste. 101, Gaithersburg, MD 20878.

Ashley Hogan is a staff geologist with Geo Concepts Engineering, Inc. in Ashburn, VA.

Andrew and Megan Madden and their children left Oak Ridge and moved to Norman, Oklahoma the week of July 16. Megan and Andy began their faculty appointments in August in the School of Geology and Geophysics at the University of Oklahoma. They write, “Eleanor and Alex are doing great, and we are all excited about the move.”

Sabrina Perrotta is a science teacher at Ocean Lakes High School in Virginia Beach, VA. She writes, “Just wanted to say that I am so grateful for the wonderful staff and professors at Virginia Tech. All my experiences carry with me in my career, and I am sending some high school students to the Geology Department at Virginia Tech.”

Stephen Becker is a Postdoctoral Fellow at the University of Texas, Austin, TX.

We want to hear from YOU!

Send us news to share with your Geosciences friends and colleagues. Include your name, home and office addresses, phone numbers and email addresses. Also, if you have a photo you would like to share, and space allows, we will include it in the next publication. Please mail your news to:

Geosciences Dept. 4044 Derring Hall Blacksburg, VA 24061 Attn: Mary McMurray or email to: mcmurray@vt.edu
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