

FALL 2010



# geosciences

AT VIRGINIA TECH

*Magazine*



## Message from the Chair

by Kenneth Eriksson,  
Department Chair



The department has faced numerous challenges over the past year related to declining state support for higher education. Our faculty numbers are down by 20-25% and support for operating costs has also decreased. Nevertheless, faculty in the department continue to teach as many, or even more, undergraduate and graduate courses than in the past while at the same time continuing to publish in top-tier journals and bring in even more research dollars. Over the past decade, active grants have increased from \$2 million to almost \$16 million. In addition, faculty members in the department continue to be recognized within the university with Patricia Dove being appointed as the first C.P. "Sally" Miles Professor of Science. External recognition includes Shuhai Xiao's Guggenheim Fellowship, Scott King's Humboldt Award, Ross Angel's receipt of the 2011 Dana medal from the Mineralogical Society of America, Tom Burbey's Fulbright scholarship to France and Mike Hochella's election as President of the Mineralogical Society of America (the fifth faculty member in the department to serve in this capacity).

I am pleased to announce that the department has received permission to advertise for two faculty positions this fall. On the basis of earlier discussions by the faculty that were incorporated into the 2010-2014 Strategic Plan, we are advertising for positions in Petrologic Processes and Sedimentology-Stratigraphy in anticipation of appointing two or more new faculty by fall, 2011.

As many of you know, a number of events have been planned this fall to honor Don Rimstidt for his many contributions to the department over almost three decades. Don remains an active member of our department through his research activities. I am pleased to report the formation of the "J.D. Rimstidt Field Trip Fund" which is an endowed Virginia Tech Foundation account that will produce revenue to support student field trips. Donations to this fund recognize the achievements and service of Don Rimstidt on the occasion of his retirement from the department. Don says, "I am honored by this recognition, which is especially meaningful to me. When I first transferred into geology as an undergraduate, I didn't really know if geology was going to be my best career choice. The next spring I went on a one-week field trip. After that I knew for sure that I wanted to be a geologist." I'm sure that many of you have had a similar experience and appreciate the importance of field experiences for our students. Donations to this account can be sent to Linda Bland, Virginia Tech Geosciences Department, Blacksburg, Virginia 24061, made payable to Treasurer of Virginia Tech.

Although Fred Read is now retired, he continues to advise graduate students. The department in collaboration with Fred's former graduate students is planning a two-day symposium and field trip next June to recognize Fred. The date of the symposium is Friday, June 17, with a dinner on that evening and a field trip on Saturday, June 18. In addition, a symposium is being planned for the AAPG sectional meeting in Baltimore during fall, 2011.

# DEPARTMENT OF Geosciences AT VIRGINIA TECH Magazine

www.geos.vt.edu

## Fall 2010

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Photo by Mark Fortney

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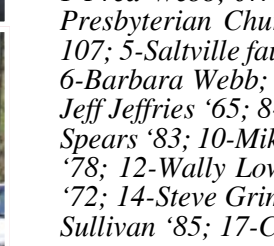
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**Cover:** - Fred Webb and alumni  
contemplating the Knox-Middle  
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Valley, near Saltville, Virginia.  
*Photograph by Mark Fortney.*

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# Department Hosts 16th Annual Alumni Celebration, October 2, 2010

The 2010 departmental fall alumni gathering was designed to celebrate Virginia Tech's Saltville field camp, a summer home for many geology students spanning four decades. Over 30 Saltville field camp alums and friends, from as far away as Florida, Texas, and California, attended the October 2, 2010 field trip from Blacksburg to the Saltville field station (still looking nearly identical to the way it looked in the 1960s!) and surrounding geologic sites. The intrepid Professor Fred Webb, field camp director between 1965 and 1984, led the trip with as much enthusiasm as he brought to the position decades earlier. That evening, more than 50 alums, faculty and friends of the department enjoyed a catered dinner at Virginia Tech's German Club, with Fred and his wife Barbara recounting their almost endless memories of field camp days gone by. This was a day (and night) to remember!



1-Fred Webb, Jr. '59; 2&3-Lunch, supplied by Rich Valley Presbyterian Church members; 4-Saltville Overlook on VA 107; 5-Saltville fault at State Highway 91 Roadcut, Plasterco; 6-Barbara Webb; 7-Stephanie Bishop, Eddie Meade '74 and Jeff Jeffries '65; 8-Fred Poland '77; 9-Bill Henika and David Spears '83; 10-Mike Hochella '75; 11-Nancy McCarthy Dwyer '78; 12-Wally Lowry and Rick Nolting '66; 13-David Hight '72; 14-Steve Grimsley '79; 15-Curtis Huffman '65; 16-Julie Sullivan '85; 17-Cletus Lee '69; 18-Buster Whitt '79.



**BS '83 Steven J. Uzmans, (B.S. '83)** passed away on April 10, 2010. Steven was an online instructor for the University of Phoenix and was living in West Danby, New York.

**MS '85 David J. Levy (M.S. '85)** is a Principal at Southeast Remediation Technology, Inc. in North Beach, Florida. David writes, "Hello from Florida. I won my third term on the Palm Beach Gardens City Council on March 9, 2010, in a landslide and was appointed Mayor of the City by the City Council on March 18, 2010. It is a great honor for me to serve as Mayor for this great city." David can be reached at 4788 Holly Drive, Palm Beach Gardens, Florida 33418 or by e-mail at Strinc@bellsouth.net.

**MS '86 Dwight Holland, M.D., Ph.D. (M.S. '86)** has been awarded the Meritorious Service Medal for his Staff Officer work at Headquarters, Air Combat Command, Langley AFB, Virginia, and for his ongoing work in the Flight Test arena at the Test Pilot School at Edwards AFB, California. He has also been appointed to the relatively new VT Multi-Cultural Diversity Board.

**BS '00 Dave Luer (B.S. '00)** has left Golder Associates in Anchorage, Alaska, to work as a Deputy Director of QA at Hampton-Clarke Veritech Labs, which is an environmental lab in Fairfield, New Jersey.

**MS '04 Laura Lukes (M.S. '04)** has been awarded the Albert Einstein Distinguished Educator Fellowship for 2010-11. Laura is an Earth and

Space Science teacher at Saguaro High School in Scottsdale, Arizona. She also serves as adjunct faculty in the Physical Science departments at both Mesa and Rio Salado Community Colleges. Congratulations Laura!

**BS '06 Dean Snidow (B.S. '06)** received his M.S. degree from Ball State University and is a Geological Technician with Apache Corporation in Midland, Texas. Dean can be reached at 5018 Mount Vernon Court, Midland, Texas 79705 or by e-mail at dsnidow@vt.edu.

**BS '07 Nathaniel Miller (B.S. '07)** is a Joint Program Student at MIT/WHOI in Woods Hole, Massachusetts. Nathaniel can be reached at 21 Amvets Avenue, Falmouth, Massachusetts 02540 or by e-mail at ncm@mit.edu.

**MS '08 Nicole (Nikki) West (M.S. '08)** is studying for her Ph.D. at Penn State University in State College, Pennsylvania.

**PhD '10 Kelly Plathe (Ph.D. '10)** is working as a post-doc at Ecole Polytechnique Federale de Lausanne (EPFL) in Lausanne, Switzerland.

**PhD '10 Lisa Tranel (Ph.D. '10)** is now an Assistant Professor in the Department of Geography-Geology at Illinois State University in Normal, Illinois.

## Geosciences Graduation 2010

**T**hirty exceptional students, 17 B.S., 8 M.S., and 5 Ph.D. degrees, graduated on May 15, 2010, marking the 104th year since the first graduate, Joel Hill Watkins, finished his geoscience degree not far from Hancock Hall where the latest ceremony took place. The featured speaker was Dr. Suzette Kimball, Deputy Director of the U.S. Geological Survey, Reston, Virginia. Her talk was entitled "From Beowulf to Basalt". Dr. Kimball has a doctorate in environmental sciences with a specialty in coastal processes from the University of Virginia, a masters in geology and geophysics from Ball State University, and a bachelors in English and geology from the College of William and Mary.



Dr. Suzette Kimball

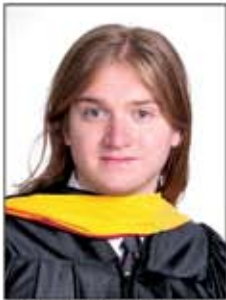
The Undergraduate Student Address was given by Devan Thompson. The Graduate Student Address was given by Elizabeth Diesel. Their photos along with the rest of the graduating class can be found on the following two pages.

The picture below is a group photo of the attending graduates.

## Congratulations to our graduates!



Photograph by Richard Godbee



*Evan P. Anderson, M.S.*



*Peter M. Bookger, B.S.*



*Kelly M. Brennan, B.S.*



*Summer J. Brown, M.S.*



*Michael V. Cangialosi, B.S.*



*Keith A. DePew, B.S.*



*Elizabeth A. Diesel, Ph.D.*



*Beverly E. Faraday, B.S.*



*Christine M. Frasca, B.S.*



*Jonathan D. Gerst, M.S.*

# Geosciences Class of 2010



*David C. Greenawald, B.S.*



*Joshua D. Hoover, B.S.*



*Eric M. Kazlauskas, M.S.*



*Changyeol Lee, Ph.D.*



*Jeremy W. Moore, B.S.*



*William O. Nachlas, B.S.*



*Robert J. Perkinson, B.S.*



*Benjamin L. Roth, M.S.*



*Majken K. Schimmel, M.S.*



*Devan M. Thompson, B.S.*



*Lisa M. Tranel, Ph.D.*



*Arati A. Umarvadia, B.S.*



*Thomas W. Vance, B.S.*



*Dongbo Wang, Ph.D.*



*John G. Wyatt, M.S.*

*Kaleigh A. Beverly B.S. – Not Pictured*

*Jesse C. Buckner M.S. – Not Pictured*

*Ryan P. Grimm Ph.D. – Not Pictured*

*Robert S. Thompson B.S. – Not Pictured*

# An Interview with Fred Webb, Field Camp Director (1965-1984)

Key: FW — Professor Emeritus Fred Webb Q — Questions from Geo Magazine Staff



1958 photo of Fred Webb taken shortly after he completed field camp in Saltville. He is standing on an outcrop of the Martinsburg Formation in the NW side of Walker Mountain.

Q — Why do you suppose Dr. Cooper asked you to teach and your wife, Barbara, to cook for the camp?

FW — The department needed someone to fill in for Dr. Jack Redden, the previous instructor, who had left for another teaching position. As I was a student at the field camp in 1958, I knew the camp routine, was familiar with the area and had graduate thesis and dissertation field research in SW Virginia. I also had helped as a teaching assistant for Jack Redden for a couple of weeks in 1961, and had coordinated graduate student research projects in SW Virginia.

Q — You taught at the field camp for 20 years. Did you do it all alone or did you have help?

FW — I was the only teacher for the first six years and Barbara cooked all of the meals though she did have student kitchen helpers/dishwashers. From 1971 through 1974, Dr. Jim Craig and his wife, Lois, shared teaching and cooking

duties with Barbara and me. That was great as the camp enrollment was more than 30 students for several years. From 1974 through 1984, when I stopped teaching field camp, I always had one or two graduate student assistants from Tech and Barb always had someone helping in the kitchen. As our daughters - Jennie Lee and Ann - grew older, they helped in the kitchen. I enjoyed teaching the more than 400 students who attended field camp during our 20 summers in Saltville.

Q — What did you do when you were not teaching field camp?

FW — I taught geology at Catawba College until 1968 when I became a faculty member at Appalachian State University, where I taught until retirement in 2004. At Appalachian, I was the first chair of the geology department and served as chair for 20 years. Our department grew from three faculty to eight by the time I ceased to be chair in 1994.

Q — How did your background at Tech play a role in helping start a new geology department?

FW — My background at Tech was extremely valuable. For instance, I observed how Byron Cooper built Tech's program. I was able to adapt some aspects of his approach to acquiring resources, recruiting, and advising students. My teaching philosophy was based on Dr. Lowry's discipline and sense of fairness combined with the enthusiasm for geology of both Lowry and Cooper. Academic rigor and course content of our program were strongly influenced by Tech. I always tried to integrate some of the humor, work ethic, and down-to-earth, but hard-charging attitude of Jack Redden in my courses. Appalachian's program strongly stressed the importance of acquisition of accurate field data in a three-dimensional context.

Q — What are your favorite memories of life as a university professor?

FW — I mostly remember the experiences I have shared with my students and colleagues. The accomplishments of my former students are a

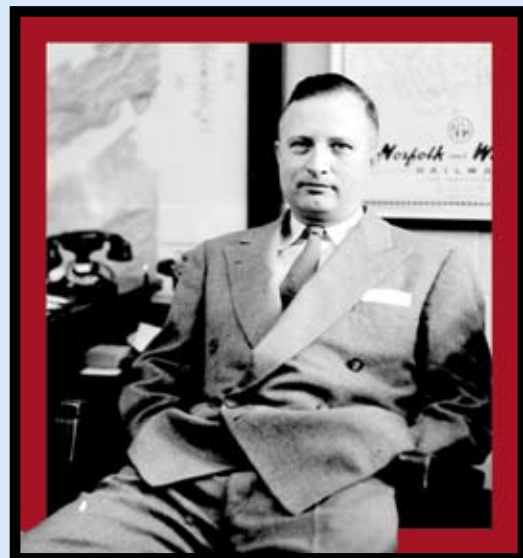


(Left to Right) Drs. David Hergenroder, Fred Webb, Wally Lowry and Bill Thomas. Three of Wally's Ph.D. students from the late 1950s and early 1960s, taken at the department's centennial celebration in 2007 at the Clover Hollow anticline.

Photograph by Mark Fortney.

Continued on Page 11

## A FASCINATING LOOK INTO THE PAST THROUGH THE EYES OF BYRON COOPER, PROFESSOR AND HEAD, CIRCA 1950



Photograph courtesy of Special Collections,  
University Libraries, Virginia Tech

Have you ever wondered what the V.P.I. Department of Geology Newsletter, the very first one ever written, read like when written some 60 years ago? Of course not, but you are about to find out! Written by the incomparable Byron Cooper, who is most responsible for setting the department on its meteoric rise starting in the 1960s, the newsletter of 1950 was a virtual history lesson through the eyes of a visionary. We hope that you find these words as wonderful, insightful, and in places as touching as we have!

Dr. Cooper wrote: “The geology department at V.P.I. dates from 1904, when Professor Thomas L. Watson was brought to V.P.I. as Professor of Geology and Mineralogy. . . . Prof. Roy Holden was given charge of the department upon the departure of Dr. Watson in 1906. For the next 40 years, Dr. Holden served as a faithful and inspiring mentor for all who took geology at V.P.I. . . . It is safe to say that Dr. Holden epitomized the qualities that we generally associate with a geology “prof” of the Old School. He and many others like him were extremely interesting characters, and needless to say, rugged individualists. His type of college professor is, I am sorry to say, fast disappearing from the American scene. These lovable characters provided an inexhaustible reservoir of inspiration and enthusiasm for all who came in contact with them.”

“In 1940, when Dr. Holden reached the age of 70, he was by no means ready to retire and he carried on during the war years in spite of declining health. . . . His spirit and his mental acuteness were nowise impaired up to the day of his death on Sunday evening, December 16, 1945.”

“Prof. Holden loved the field and was at his best on the outcrop. Some of you may recall such humorous remarks of his as “Behold, the monarch of the Ordovician seas” (when pointing to a large cephalopod near Luster’s Gate) or “take off your shoes, you are walking on hallowed ground” (when he conducted

a party of students to some special phenomenon such as a classic exposure of the St. Clair fault in The Narrows).”

“In April 1946, I was called to V.P.I. to handle the affairs of the Geology Department. I make no claims to having taken Professor Holden’s place, but through coincidence I have been fortunate enough to hold the position of Head of the Department of Geology during the time of unprecedented growth of the department and school.”

Professor Cooper remained head of the department, building it up to a remarkable strength, until his untimely and sudden death in 1971.

### *Continued from Page 9 - An Interview with Fred Webb*

major source of pride. Building a successful undergraduate geology program by my colleagues and me has also been quite satisfying. One of the payoffs of my teaching the Tech field course was that every year I came in contact with bright students from Tech and, over the years, more than 50 other universities. This enabled me to constantly compare Appalachian geology majors with students of other programs.

Q — Anything else you would like to share?

FW — I also have great memories from the academic exchange trips I had in the People’s Republic of China from 1982 through 1994. During the last eight years before retirement, I started and taught a six week-long geology summer field course in the Italian Dolomites. That course was modeled on the Tech field course. This was an exceptionally rewarding experience for all of us as we lived in small villages, ate Italian food, were immersed in a non-English speaking culture, and studied classic geology set in the Italian Alps.

Since retirement in 2004, I have enjoyed mapping the Saltville and Broadford quadrangles in our old field camp area for the USGS STATEMAP program with my Appalachian State geology colleague, Dr. Loren Raymond, also recently retired. We have spent four years on this project. The maps are finished, and now we are writing a report on the geology of both quadrangles for the Virginia Division of Geology and Mineral Resources.

**Editor’s note:** Please visit <http://www.geology.appstate.edu/rockgarden.htm> for a look at the Fred Webb Jr. Outdoor Geology Laboratory at Appalachian State University.

## A Seismic Moment in Time with Martin Chapman

**M**artin Chapman's long association with the Geosciences Department began his freshman year at Virginia Tech in 1973, receiving his B.S. degree in 1977 and M.S. degree in 1979. After a four year absence, he returned as a research associate, earning his Ph.D. in 1998. Two years later, Martin joined the faculty.

Martin's research is the study of the earthquakes and seismic hazard of eastern North America. The observational element is a high priority. The Virginia Tech Seismological Observatory currently operates high-dynamic range telemetered seismograph stations at several locations in Virginia (see <http://www.geol.vt.edu/outreach/vtso/>). The on-campus seismic vault near the airport houses short-period and broadband seismographic instruments that collectively comprise seismic station BLA, which has been recording ground motion data nonstop since 1963. Martin is assisted by research associate Jacob Beale and graduate students Jesse Buckner and Cable Warren. Ground motion propagation in the east is different from that in the more tectonically active parts of western North America, and the physics of the earthquake rupture process differs in the two regions as well. As a result, empirical ground motion prediction models developed in California cannot be applied directly in this region of the country. The work these days is mostly aimed at trying to understand the causes and potential effects of earthquakes in the eastern United States, particularly in the Appalachian region. Recent discoveries by Martin's group concerning the faults responsible for the 1886 Charleston, South Carolina, earthquake have finally solved the long-standing mystery concerning the geologic setting of that enigmatic event. Martin is now in the process of numerically modeling near-fault vertical ground motions using models that capture some of the differences between strong ground motions in eastern North America and California. Other ongoing work involves the eastern Tennessee seismic zone, where a 300 km long belt of earthquake activity extends from beneath the Paleozoic thrust sheets to the mid-crust, suggesting the potential for a major shock in the future. Martin teaches a graduate-level course in probabilistic seismic hazard analysis and strong motion seismology for students in both geosciences and engineering and collaborates with other seismologists and earthquake engineers in this country and abroad.

*Photo on right - Martin is standing on the Eurasian tectonic plate, with the North American plate on the opposite side of the barbed wire fence. The intervening fault rupture is the result of the magnitude 6.6, June 17, 2000, earthquake in the southern Iceland seismic zone.*



*Photograph by Kyle Lawson, CCE, Virginia Tech*



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