

SPRING 2005



# geosciences

AT VIRGINIA TECH

*Magazine*

**Alum Discovers World-Class Dinosaur**

**2005 Spring Graduation**

**The Story of Professor Lynn Glover III**

**VT Geologists in Saudi Arabia**

## Message From The Chair

### Hearing from you is more important than you think . . .

by Don Rimstidt, Chair

Spring in Blacksburg is always pleasant and this year is no exception. The fine weather and beautiful spring flowers offer a wonderful backdrop to the Department of Geosciences' annual graduation exercises. This is truly a time of happiness. Faculty are happy because we have managed to get another class of sometimes reluctant students to meet our expectations. Students are happy because the faculty have stopped giving those unreasonably difficult assignments. Of course, parents are happy because the tuition bills have finally ended. Naturally, there is always sadness as friends part ways, but it is offset by the excitement of new beginnings elsewhere.

For the faculty, commencement holds special meaning. It is the time that we are acutely aware of our special role as educators. We have been entrusted with the responsibility of preparing our students to make the important discoveries and decisions that will keep our society and our environment healthy and prosperous. If we have failed in our task, the entire world will suffer. If we have succeeded, not only will our students flourish, but all of society will benefit. In light of this awesome responsibility, how can we show confident leadership in the classroom? The answer is alumni. When

*“. . . now as alumni,  
you have a special role  
in guiding and  
advising the faculty.”*

you tell us how you have used your education to achieve success, we know that we have chosen the right curriculum and set our expectations high enough. When you tell

us about the diverse opportunities that have come your way, we learn about new topics that should be introduced into our courses. When you tell us about how much fun your job is, we are inspired to prepare the next generation for exciting and challenging careers. It was the faculty's job to guide you and advise you when you were stu-

dents; now as alumni, you have a special role in guiding and advising the faculty. Through this news magazine, we will keep you informed about what we are doing. We hope you will reciprocate. We want to hear your thoughts, opinions, and suggestions. Please send us letters and emails. Maybe this is a good time to call your advisor just to keep in touch. We believe that we are doing an excellent job in preparing our students, but with your help, we can do even better.



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*Cover: A section of a 20-foot tail from a large Jurassic-age, plant-eating dinosaur partially exposed at Bob Simon's dinosaur digsite in Wyoming. The tail, from a Camarasaurus, has been fully excavated and will soon be prepared and mounted for display. See story on page 12.*

## From Occoquan to Blacksburg (with a few stops in between): The Remarkable Story of Professor Lynn Glover III

(B.S. '52, M.S. '53, Ph.D. '67, USGS '53 – '70, VT Professor '70 – '95)

by Michael Hochella

Lynn and Ellen Glover still reside in their charming Blacksburg home, the very house that they purchased when Lynn arrived at Virginia Tech in 1970 as an untenured full professor. I visited them on a glorious early spring day this past April to interview Lynn for this story. The stately and classic 18<sup>th</sup> century style furnishings and the warm landscaping outside clearly provide a perfect environment for the retirement years of this wonderful couple. Lynn said the home is Ellen's masterpiece and reflects some of the support she has provided during their marriage. In our two-hour conversation, I remember being impressed by Lynn's sharp recall of days long past, and seeing that he has been very comfortable, content, and busy in his retirement.

Academically, Lynn was influenced by his English mother, a school teacher, and by his father's aspirations for him. Lynn's father, Lynn, Jr., never finished high school, but worked hard in the depression years to support the family by managing service stations, serving as a reformatory captain, selling insurance, and during WWII, proudly serving as a chief petty officer in naval flight operations. He was the son of Lynn Glover, president of a small college in Oklahoma, the predecessor of Northern Oklahoma College. Another early influence in Lynn's life was John Johnson, a high school classmate (in a class of only 18) who became a physicist and developed night vision instruments for the military.

Lynn arrived in Blacksburg in 1946 as an electrical engineering major at his father's urging. Lynn's academic direction, however, changed forever when he heard geology professor Byron Cooper speak in his very first quarter of study. Cooper was only one of two geology professors at VPI at the time (Roy Holden had passed away just six months before). Wally Lowry, who would also become a big influence in the undergraduate career of Lynn, arrived in 1948. But Lynn had a tough time. As he explained to me, he was too interested in girls. With failing grades going into his senior year, he was in danger of leaving without a degree and Cooper was not sympathetic. Lynn's academic career was saved

by a combination of taking a year off, marrying Ellen (who would later become a school teacher) and Lowry giving him a second chance. He returned to VPI determined to not only finish, but obtain a Master's degree and go on to an Ivy League school for a Ph.D. Byron Cooper changed his mind about Lynn when he successfully completed physical chemistry just after returning. By

1953, Lynn had in fact completed his Bachelors and Masters with Cooper. Over his years in Blacksburg, he developed a strong interest in unraveling geologic history and tectonics from stratigraphic, structural and geophysical observations in the field. Lynn's lifetime career in the geosciences was finally on firm ground.

After the M.S., Lynn took a brief job at the Smithsonian Museum of Natural History, then moved on to the USGS where due to his assignment in uranium exploration, he found himself in the middle of the uncomfortable and intimi-



**Lynn and Ellen Glover (1992)**

dating situation of obtaining a high level security clearance (Q clearance) during the height of the McCathey era. Lynn remembers this as a scary time, and he must have been relieved to get through this unnecessary ordeal and back to science. The next few years saw him moving many times chasing the Chattanooga Shale, a uranium bearing strata, around the southeast, and then to Puerto Rico to begin to unravel the geology of that island for the USGS. There he learned to sail and developed an interest in Spanish culture. It was also at that time, specifically in 1960, that Lynn got his break into the Ivy League. With the help of Byron Cooper and the Survey, he was admitted to Harry Hess's group at Princeton. Hess had become world famous from his topographic mapping of sea floors while aboard Navy submarines and ships during WWII and his discovery of seamounts. Lynn's dissertation with Hess was a continuation of his Puerto Rico work, resulting in the completion of his Ph.D. in 1967, although he had continued to work on Puerto Rican geology for the Survey from 1964 to 1967.

Byron Cooper and Lynn stayed in touch professionally during the 60s, with Cooper showing interest in Lynn returning to Blacksburg as a professor. Professional arguments over "the

# Biography



**Ellen Glover and the Peregrine (Spring 1982, Hampton, Virginia)**

stratigraphic code” (using fossils vs. lithology for defining formations) kept the two apart, but Lynn’s reputation and fame continued to spread, and Cooper called him in 1969 to return for a formal interview. Within practically a blink of an eye, Lynn was made a full professor at his alma mater, and Byron was dead of a heart attack. They only overlapped for six months, and suddenly that life shaping relationship that began in the late 1940s was gone forever.

Without looking back, but clearly energized by his association with Harry Hess and scientific agreements and disagreements with Byron Cooper, Lynn launched a career at Virginia Tech that was to last two and a half decades. The Glover-Costain-Çoruh-team allied with Sinha, and Robinson at various times became a powerful force in the late 1970s and 80s in their pioneering studies of the thermal history of the Piedmont, from Maryland to Georgia, and their assessment of geothermal energy potential throughout the region. This team commanded enormous amounts of funding, even by today’s standards, from the National Science Foundation, the Department of Energy, and the Atomic Energy Commission. They did it using an ingenious mix of seismology, petrology, geochemistry, structural and stratigraphic work, heat flow modeling, and isotope geochemistry. Working across disciplines, so popular and supposedly innovative today, was standard faire for this team 30 years ago.

Lynn’s geologic career came to a close in the 1990s when he was diagnosed with melanoma which spread to his lymph system. Knowing that his chance of survival was relatively low, he retired and finished up several manuscripts, including a major achievement (laying out his final thoughts on Appalachian evolution), in a volume entitled “Central and Southern Appalachian Sutures: Results of the EDGE Project and Related Studies” (GSA

Special Paper 314, 1997. Then, with his lifelong partner, Ellen, he overcame the odds and beat the cancer! Here they are, a decade later, still enjoying life to its fullest, safe in the knowledge that he was a player in bringing Virginia Tech geology to the internationally acclaimed position that it enjoys today.

In his retirement, Lynn has become a serious student of the Spanish language and Spanish culture; both great loves of his, as well as global current events, and gardening. He and Ellen miss being so far from good sailing waters and that is not likely to improve. But both have had a chance to travel extensively in Spain, England, Scotland, western and eastern Europe and Central America. Most importantly, at least for the Department of Geosciences, Lynn, with Cahit Çoruh and committee, founded and shaped with years of hard work, a vibrant, healthy and fully functioning alumni relations program. This has revolutionized how we stay in touch with our alumni and keep them involved. It has ultimately resulted in the creation of numerous scholarships, various endowments, annual social events, and even the news magazine that you are reading now.

So what would you expect from someone who dropped out of the department as a failing student in 1949? Against all odds, including beating cancer in the 1990s, his remarkable contributions to science, the department’s reputation, and the Alumni Relations Committee will live long into the future. Who would have ever imagined? Clearly, Lynn did.



**Lynn Glover III, Cadet - VPI, 1949**

# Carbonate Platforms, Global Climate Records and Petroleum Reservoirs

*by Fred Read*



**Aus Al-Tawil (VT Ph.D. 1998, on left) waxing poetic about a bit of local Miocene geology in Saudi Arabia. Camels linger in the vast desert above.**

**B**eneath the desert sands of Saudi Arabia lie some of the world's largest oil and gas deposits. Many of the reservoirs are in sediments that were laid down on a tropical carbonate shelf about 100 to 180 million years ago on the southern margin of an ancient ocean called Tethys. The Virginia Tech Carbonate Research Group has had quite a presence here over the years. George Grover, Fred Read's first student, is a Chief Geologist with Saudi Aramco, as is Aus Al-Tawil, who graduated from the Carbonate Lab in 1998. Other Carbonate Lab graduates who have worked on the Saudi Arabian fields include Jim Markello, Roger Barnaby, John Bova, Brian Coffey and Taury Smith.

Besides his day to day job, Aus Al-Tawil is heading up a team that includes personnel from the national oil company, the Texas Bureau of Economic Geology, a

Spanish University, as well as his ex-Carbonate Lab partner Taury Smith (New York State Museum) and Virginia Tech. The group is studying cores through the reservoirs. Nasser Al-Ghamdi, a new VT Masters student from Saudi Arabia, is studying a large reservoir formed by strange coral-like mollusks called rudists that filled the niche of corals after these underwent a near extinction. As a by-product, these cores also will tell a story of the changes in sea level and climate at the time.

Aus was born in Saudi Arabia, grew up in Egypt and spent part of his childhood in France where his father was in the diplomatic service. These hereditary diplomatic skills have served Aus well in his present

job, and many of you who knew Aus at Virginia Tech will remember him as a real “people” person and an avid cyclist. Aus was instrumental in refurbishing the core shed into the present superb facility, one of the best in the world. The highly porous carbonates of Arabia are quite a change from the “tombstone-like” Appalachian carbonates that many of the carbonate lab graduates “cut their teeth on.” However, the North American carbonates provide a great natural laboratory that continues to expose VT students to a tremendous variety of carbonate rocks and depositional settings.

Another international venture of the VT Carbonate Group has been instigated by Antun Husinec, a Fulbright postdoctoral fellow from the Geological Institute, Zagreb, Croatia. The classic karst region of mainland Croatia and its multitude of islands is on an ancient 6 km thick Mesozoic carbonate platform, as large as the present-day Bahamas. Like the Bahamas, small and large changes in sea level were recorded within the accumulating pile of carbonate sediments over 200 million years. However, instead of continuing to subside like the Bahamas, the Croatian platform was deformed and uplifted during Cenozoic mountain building about 30 million years ago, so that we can observe a very long record of global sea level and climate changes. Many of the islands are major tourist destinations, and the rocky carbonate coast and small villages are picture-perfect with white limestone mountains draped with greenery, and surrounded by clear blue waters. Antun and Fred Read visited several of the islands in 2004, prior to Antun and his family coming to Blacksburg. All these Mesozoic carbonate platforms provide a window into a hot time in Earth history that is relevant today with the concerns over greenhouse warming. Over the years, our group has stressed how the changes in the earth’s orbit, and the tilt and wobble of the axis, have repeatedly changed climate at scales of 20,000 to 400,000 years, resulting in sea level changes that have caused the pronounced layering we see in outcrops of carbonate rocks, as well as in reservoirs in the subsurface. These are very exciting times for us all in the carbonate group.



**Antun Husinec in the field in Croatia, with backdrop of Mesozoic platform limestone and blue sea.**



## FINDING YOUR PATH IN THIS NEW AGE OF DISCOVERY

### 2005 Geosciences Commencement Address

by Phillip E. Barnard, Jr.

**G**ood Morning! Thank you Chairman Rimstidt, Dr. Hochella, Members of the Faculty, Parents and Families and, most of all, the graduates of the Class of 2005. It is an honor for me to speak with you today on such a special occasion for all of you.

First, let me say that I am proud to have my parents and family here today. My father is a loyal graduate of this university from the Class of 1960. My wife is from the Class of 1980. My daughter represents the future Class of 2016! I recall a high school conversation I had with my dad. I had just received all of my college acceptance letters.

He said to me,

“So, what are your options?”

I said,

“Dad, I’ve been accepted to UVA for Pre-Law and to Virginia Tech for Geology.”

He asked,

“What is Geology?”

I said

“Geology is rocks, dad.”

He said,

“Ok. Let me get this straight. With UVA, you have pre-law and with Virginia Tech, you have rocks?”

He thought for a second about my choices and then said,

“So, tell me more about the rocks!”

And here I am.

I am also proud to have in attendance my faculty advisor and mentor from my undergraduate days here, Dr. Wallace Lowry. I credit Dr. Lowry with teaching me the most important concepts that any geoscientist in the field must understand. The ability to see the importance of what you recover. To visualize the earth history represented by your surroundings. To see the big picture beyond what you are holding in your hands. I have to admit, though, when he first took me out in the field to teach me this, I did not make a great first impression. We arrived somewhere near the top of this mountain in a couple of blue vans. I was so excited about what we were there to find. My new rock hammer did not have a mark on it. When I saw this stream bed below us, I was sure it was going to be a fossil locality. Just as we stepped out of the vans, this pickup truck full of garbage ran right past us on this single lane road up to the top of this

peak. It left us all in a terrible fog. We managed to stumble down to the outcrops he wanted us to see, only to hear him explain that we were there to see a significant unconformity in the Appalachian system. I couldn’t believe it. All this just to see something that was actually missing. Then, Dr. Lowry asked us all to close our eyes and picture an environment where rock strata would actually be eroded away.

After a moment, he looks at me and says,

“Phillip, what do you see?”

I opened my eyes and said,

“Dr. Lowry, the only thing I can see is that garbage truck is heading right back for us!”

Everybody started running!

Anyway, I could not begin to talk to you about the challenge of finding your path in this world without showing you how important it is to recognize your foundation. Your rock! I am talking about your family and your professors! No matter what you do or where you go, never forget those who helped you to start your journey through life. They will always be your greatest source of strength. Let’s take a moment and give them a round of applause for all they have done for us.

**Editor’s Note:** The departmental commencement on May 14 was, as usual, the most important single event of the school year. The geosciences staff, led by Ms. Connie Lowe, did an impeccable job in arranging every detail. The guest of honor, Mr. Phillip Barnard, Jr., Chairman and CEO of Barnard Discovery Companies, presented degrees to 22 B.S., M.S., and Ph.D. students. Mr. Barnard’s commencement address, followed by his biography, are printed here. We invite all alumni to read this insightful address and reflect on it. Your comments are welcome.

# Graduation

Only 22 short years ago, I was sitting in your chair. This means that I am not old enough to have forgotten the kind of celebrating you are thinking about doing right now! I am here to celebrate with you. I am also here to express my excitement for each and every one of you. For you now have earned a degree from one of the very best Earth Science programs anywhere at a time when Mankind has a renewed passion for exploration like never before.

My friends, we are living today in a *New Age of Discovery*; a period of time that started some twenty years ago when advances in new technology began to inspire the common man everywhere to explore for and recover almost anything that Mother Earth or Mankind has ever hidden underground or underwater. In that twenty-year period, our world has seen the opening of many new frontiers of exploration and experienced a monumental "Quest for Knowledge." Each of you is the product of this New Age and now each of you is positioned to take full advantage of it.

Let us think, for a moment, about the Ages of Discovery from our past. We would have to start with the original period of world exploration begun by Columbus in 1492. The Spanish Conquest initiated by Cortez in 1519. The California Gold Rush in 1848. The first rush for crude oil in western Pennsylvania beginning in 1859. Each of these periods was defined by men with no previous exploration experience suddenly redirecting their lives in pursuit of a better life. The economies of entire populations were changed. The fortunes and balance of power among countries were altered forever. In each of these Ages of Discovery, a state of mind existed in the average person that allowed them to see opportunities that never existed for them before. Today, it is no different. But, we have something today that did not exist in any of these previous Ages of Discovery. We have the Earth Scientist!

I stand before you today, as someone who has immersed himself in this *New Age of Discovery* from its very first days, and I am here to tell you that having a background in Earth Science will give you a distinct advantage, no matter which path you should ultimately choose for yourself. I am not here to suggest which path is best for you. My goal today is to provide a measure of assistance to you as you endeavor to begin the complicated task of finding your path in this *New Age of Discovery*.

So what are these new frontiers of exploration that have emerged over the last 20 years and what opportunities do they offer for you?

How about entirely new localities for some of our most valuable natural resources; some on dry land, some now in the deep ocean. Add to this never before seen efforts to extract the world's greatest mineral and fossil specimens. Or, you could participate in the recovery of approximately 90% of all that Mankind has buried underground; 95% of all that Mankind has lost in shallow water; and 99% of all that Mankind has lost in deep water. In all four of these major areas of exploration and recovery, geoscientists today have an endless supply of opportunities in which to apply their training. Let me illustrate these opportunities for you by describing two very different perspectives on the value of what you could recover.

To illustrate tangible value, I need to ask you one question. How do you like your gold! You could be a part of new lode mining operation and see the results of your work poured out in 12.5 kilo gold bars at around \$430 an ounce. Or, if your preference is for a larger bar, we have 75 kilo gold bars, thousands of which remain buried in the Philippines since World War II. If \$430.00 an ounce sounds too low for you, you could add some historical value to your gold by recovering it from time capsules waiting on the sea floor. Finger bars from 17th Century Spanish shipwrecks have sold

for over \$5000.00 an ounce. Assay bars from gold rush period shipwrecks have sold for up to \$27,000.00 an ounce. Sound amazing? It gets better. A single 24-sided Trapezohedron crystal of gold recovered in a placer operation in Venezuela is being sold for \$255,000.00 an ounce. That's almost 600 times the market value of its gold content! In this New Age, if you can attach historical and scientific value to any basic material, the price will soar.

To illustrate intangible value, I have another question for you. How do you like your knowledge? For many, like me, what you value most isn't something that you can hold in your hands. The most valuable thing you can discover for Mankind is knowledge. When Mankind is suddenly motivated to search every square inch of the earth's surface, the human race as a whole has an opportunity for an unprecedented increase in knowledge and we must protect this precious commodity. Need I remind



**Phillip Barnard, Jr. handing diploma to B.S. recipient Sabrina Perrotta.**

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*Kate G. Anderson, BS*



*Christopher J. Buonassissi, BS*



*Jessica E. Burleigh, BS*



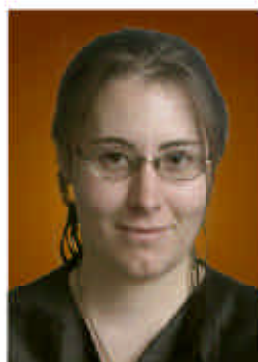
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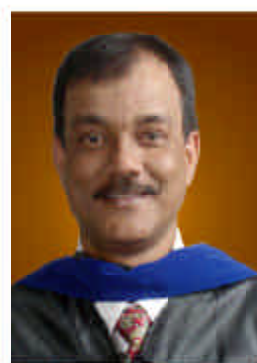
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# Geoscience Class 20

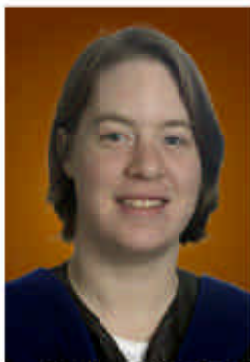




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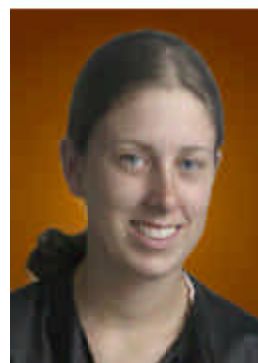
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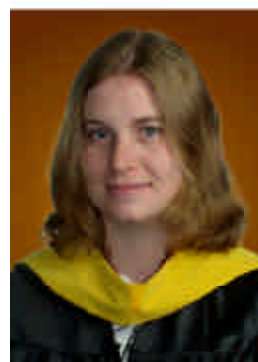
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*Sabrina G. Perrotta, BS*



*Adam N. Shumaker, MS*



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you that you are all part of the first *Discovery Channel* generation! That company also began twenty years ago. Now look at what the average person can learn today through their cable television. In this New Age, we have, for the first time ever, a true financial market for a project aimed at discovering nothing more than knowledge.

Want to combine your love for science and history? Imagine helping a country like Mexico discover if the shipwrecks in their waters hold precious reminders of their decimated population of 500 years ago. Imagine helping a country salvage the memory of their ancestors who died during World War II. Maybe you could help rewrite the early history of a lost civilization. Or, perhaps you could play a role in discovering the true origin of all life on earth; all over again.

Let's face it. Twenty-five years ago, when a group of geologists studying deep ocean hydrothermal vents accidentally discovered plants and animals living in a purely chemical environment combined with major mineral concentrations, it was like Mother Earth looked at Mankind and said, "It's about time you showed up here!" And, "If it's precious metals you like, well here, like Mother always said, get it while it's hot!" And we are. The very first government permit for deep sea mining was issued just last year. Man has finally accepted the challenge of harvesting all that our deep sea earth surface has to offer.

The exploration and recovery business today is experiencing the same transition that the oil and gas industry saw in the early 20th century. This stems from two very important factors which I learned early in my career:

1. From the oil and gas business, I learned that a discovery site all by itself does not insure success as a recovery project. You need to have the right technology for the site; a pipeline allowing safe passage of the recovered material to the market; a vibrant, energetic market to establish price levels; local government support to provide established guidelines for both ownership and operations; and finally, you need adequate funding.

2. From my first experience with an international underwater recovery project, I saw that exploration in this New Age was going to involve a set of rules and principles that never existed in any previous Age of Discovery. Explorers were going to have to respect the environment and the value of the information found at their project site.

The wildcatting "smash and grab" days in this *New Age of Discovery* are over. All of the governments worldwide have now recognized the value of every type of resource under their control, and that includes their underwater cultural heritage. They have all established strict guidelines for controlling environmental issues, archeological value, cultural value and sharing monetary value. Projects need scientists, like you, because, today, they must run a very scientific recovery operation. This is exactly why you, as an earth scientist, have an advantage today. The amateurs are moving out. The professionals are moving in. We have a saying the recovery business. "Nothing makes a wildcatter madder than a bunch of scientific chatter." Take it from me. This is true.

When you decided to major in geosciences, you did so either because you were drawn to the science of the earth, the history of the earth or, the exploration of the earth. As an earth scientist, you are, together, a scientist, a historian and an explorer. You just need to discover what kind of explorer you are. Will your exploration take place in a laboratory, a corporate environment, in the field or on a research vessel?

Ask yourself these questions. Do you like to find things you don't think anyone has ever found before? Do you like to go places you don't think anyone has ever been before? Do you have a relentless drive to journey forth in search of something? Do you continue to think clearly when facing your worst fears?

Was there a problem with that last question? You earned a degree from this department. Facing your worst fears should present no difficulty! But seriously, any type of exploration you choose to undertake in life involves risks. The greater the exploration, the greater the risks. Progress always involves risk. Once you are prepared to face the fear you associate with the risks you are taking, you will be one giant step closer to reaching your goals.

Now, I need to ask each of you three tough questions:

1. Do you remember why you originally chose to become a geoscientist?
2. Do you remember what inspired you to choose geosciences as your career path?
3. Do you remember what your dreams were before you arrived at this university?

You may have the same answer to each of these questions or, you may not. Don't be afraid to be honest with yourself. The only wrong answer to these questions is to have no answer at all.

I remember my answers to these questions. I wanted to be an "oil man"! I dreamed of standing in front of my own handmade derrick, singing and dancing, with crude oil raining down all over my head! It took only a few years, after I graduated from this program, for me to realize that it wasn't the oil business that I was dreaming about. It was the singing and dancing. The thrill of discovery! That realization set me on my own path. It helped me to focus my goals and build the business plan for my companies.

How will you find your path in this *New Age of Discovery*? First, you need to find out who you are. What separates you from the person sitting next to you? Do you understand your own strengths and weaknesses?

In 1928, a noted psychologist, William Moulton Marston published, *Emotions of Normal People*, in which he described the DISC theory we still use today in behavioral research. Marston described four categories of human response. *Dominance*, the drive to overcome opposing forces you perceive to be inferior to yourself; *Influence*, the attempt to ally forces to yourself through persuasive means; *Submission*, the acquiescence of yourself to an allied force you perceive to be superior; and *Compliance*, the subordination of yourself to a hostile force you perceive to be of superior strength.

Personally, I like Dominance and Influence. But who wouldn't? The truth is, as each of you will have to do, I had to determine my own strengths and weaknesses in responding to each of these four situations. How you respond to each of these situations will absolutely determine which path you choose in pursuing your own interests.

How far you go on that path will require you to have something else entirely; *Vision*. Do you have vision today? If not, that's ok. Vision is very individual. Keep your mind open and it will come to you. It is the ability to see from where you are standing at any given time, all the way to where you want to go. Step by step. All the way up your own mountain to your own goals at the top. The higher your goals, the higher your mountain and the more critical it is that your vision be clear. Your vision is your power. Do not allow anyone to take it from you. Vision will pull you

# Graduation

out of the tough times and keep you on your chosen path. Refining your own vision along the way is normal, and it shows that you are taking a leadership role in reaching your own goals. Once you do that, you can lead others. Real leaders, after all, are just ordinary people with extraordinary determination.

Being a leader also means giving back to your younger generation. Wouldn't our world be a better place today if we started teaching our children to understand the earth at an earlier age? I have a suggestion that each of you is qualified to do tomorrow. I've done this. It's priceless. Offer to visit an elementary school class. Have the children bring to class that day a favorite rock or mineral specimen that they discovered. Teach them the local geological history using their own specimens to tell the story. When you ask each of those children to stand while you attach

importance to something they found, you will see the face of a child who has discovered what it means to explore the earth.

So, I leave you with these words which come straight from my soul. Never lose focus on your dreams, your goals, your path, and your vision. The greater they are, the more you need to keep them glued to your forehead. Leave room in your mind to explore and room in your life to grow. Leave room in your mind to grow and room in your life to explore. And in the words of Mr. Marston:

"Realize what you really, really want. It stops you from chasing butterflies and puts you to work digging gold!"

Thank you. Now, let's celebrate.

## Biography of Phillip E. Barnard, Jr.

Mr. Barnard received his Bachelor of Science degree in Geology from Virginia Tech in 1983. His undergraduate studies also included programs for the study of Field Geology in Switzerland and Invertebrate Paleontology at the University of Tübingen, in Germany. Upon receiving his undergraduate degree, Mr. Barnard had the honor of being accepted directly into a Doctoral Program at the City University of New York, where he was also the recipient of the program's highest fellowship grant and full tuition waiver. His doctoral research there began in the area of Stratigraphic Palynology and eventually turned to "Oil Potential in Back Arc Basins," a major new focus area for worldwide oil and gas exploration at that time.

Prior to the completion of his doctoral research, his growing interest in the business side of exploration led him to start his career as the Assistant to the Chairman of Owens & Company, Inc., an oil and gas industry corporate consulting firm in Arlington, Virginia. In this position, he gained first-hand experience in servicing management needs in the areas of mergers and acquisitions, corporate development, strategic analysis and project financing at the highest level.

In 1986, the oil and gas industry experienced a major downturn and suddenly new exploration projects for oil and gas became financially unattractive. This led Mr. Barnard to resign his position and form Barnard Associates, Inc. as a consultancy, offering similar corporate services for the local commercial real estate market. His focus on the business of exploration was quickly restored when he began to receive requests for similar services from start-up mining companies. The turning point of his professional career, however, came in late 1986, when his services were requested by one of the first international exploration projects in underwater shipwreck recovery. This project convinced him that a "New Age of Discovery" was beginning to appear worldwide.

In 1991, he formed Barnard Discovery Corporation, the first in a series of Companies with one prime mission — "To capitalize on emerging opportunities in an era where recent developments in new technologies would allow even the common man to open new frontiers in all four major fields of exploration and recovery: earth's Natural Resources and Natural Specimens, and man's Buried Treasure and Sunken Treasure." His services began to focus on areas of business vital to the success of these "new age" exploration projects. This served to unite his vocational interests in the business of exploration with his avocational interests in historical research and antiquity.

Today, after nearly 20 years in servicing the needs of new age exploration efforts all over the world, Mr. Barnard has played a valuable role in projects and transactions in every major field of exploration and recovery. Through the Barnard Discovery Companies, project management clientele receive a selection of trade and investment services, which is unique in the world of new age exploration. His private practice and strictly confidential delivery of services attracts a global clientele that currently includes foreign governments, numerous private exploration companies and some of the world's richest private investors. In 2005, the proven asset value of the projects and transactions requesting his services will exceed One Billion USD.

He is married to the former Diane Hofmeister, who is herself a 1980 graduate of Virginia Tech with a Bachelor of Science degree in Education. They reside in Northern Virginia with their 11 year old daughter, Marlana. Mr. Barnard is a certified wine sommelier and is a retired tennis teaching professional with top certification from the United States Professional Tennis Association for the past 22 years. He has served as a member of the Dean's Roundtable for the former College of Arts and Sciences, and has recently agreed to serve on the Alumni Advisory Board for the Department of Geosciences.

# Digging for Dinosaurs in Wyoming

*A Profile of Bob Simon, M.S. '81*



The dig team begins digging around and among the dinosaur bones, carefully removing the enclosing rock to expose more of the stegosaurus skeleton.

piece of rock removed another bone would appear and the diggers followed the vertebra column back into the rock wall until they could go no further.

Bob's volunteers left in late July and he was faced with the daunting task of what to do with the bones in the ground. He decided to remove what he could and cover the remainder and leave the site until next year's digging season. Good fortune soon appeared as a Swiss paleontologist (Kirby Siber) arrived in the area, with an experienced digging crew, needing a place to work. Once Kirby saw the specimen, the decision was immediate ... work here with Bob for the entire time of his stay. The work proceeded very quickly with an experienced crew, and the dinosaur was fully exposed, jacketed, removed from the digsite and flown to Switzerland for preparation. The Stegosaurus was named Sarah, in honor of the ranch owner's daughter.

The stegosaurus bones were all numbered and a site map was constructed. This is crucial for a number of reasons. It is important to know where each bone was found relative to one another. The bone list, site map, and photos give valuable insight into how the dinosaur died, was buried and fossilized. Once the documentation

Bob Simon's dinosaur business is nestled in the foothills of the beautiful Big Horn Mountains in north central Wyoming. He searches for and excavates dinosaur bones from the Jurassic-age Morrison Formation on a private ranch and opens up the digsite for customers during the summer digging season. He has excavated many bones from over 14 species of dinosaurs from bone beds and last summer, discovered and excavated a virtually complete, articulated stegosaurus skeleton.

Late in July, 2004, Bob and his two volunteers (Robert Boscarelli and Don Pfister) began exploring an area in which he had unearthed 13 articulated Stegosaurus vertebrae the previous year (late in the season and with tons of overburden needing removal before additional excavation could occur). Due to the orientation of the vertebrae, he thought he would just be lucky to find the tail spikes and a few back plates. He soon realized there was more work in store for his volunteers and himself. The tail spikes were found immediately as were a few plates and then the fun began. After a week and a half of very careful excavation, approximately 80% of an articulated Stegosaurus had been exposed. This was an amazing experience, as with every



The various skeletal elements (ribs, vertebrae, plates and other bones) have been numbered, mapped and photo-documented prior to plaster jacketing and removal.

# Alumni Profiles



With Kirby Siber 'up in the air' taking photos, part of the digging team poses next to the fully exposed Stegosaurus skeleton.

phase was completed, the daunting task of removing the fragile bones was begun. The smaller bones were carefully wrapped or encased in plaster jackets to make sure no bone breakage would occur during transport. Since the stegosaurus was very articulated and some of the bones were either touching one another or overlapping, decisions had to be made on how to best excavate the bones with as little breakage as possible. Suitable areas for separation were located and the difficult process of digging around the bones and removing the encasing rock was begun. The bones were left on pedestals and then top jacketed with burlap and plaster. After hardening, further undercutting was performed and the bones were then given their final plaster jacket. The bones could then be 'flipped' in their jackets with, hopefully, all of the bones remaining intact. Sometimes, due to the overlapping nature of the bones, areas were located where the diggers needed to cut through a bone or two to better jacket and preserve the entire specimen.

The biggest task was excavating and removing the 'chest' section of the stegosaurus. This section contained a major portion of the spinal column, ribs and dorsal plates. This portion of the dinosaur was too articulated (bones in living position) to separate into smaller blocks so it was decided to remove it as one large block. The group excavated around this section and then tunneled underneath at various points and then stabilized the undersides of the tunnels. Once the entire block was completely encased in a strong plaster jacket (supported by 2 by 6 boards), it

was time to lift this section onto a specially designed pallet. Using the trackhoe, chains and straps, the large plaster jacket, weighing in excess of 1500 pounds, was successfully lifted and placed on the pallet. The trackhoe again lifted the stegosaurus chest section and the pallet into a pickup truck for transport from the dig site. Everyone celebrated the successful 'raising' of the stegosaurus as after this last block had been safely removed, all that remained was loading all the jackets and boxes into an awaiting trailer for transport.

Sarah the Stegosaurus is now in the preparation laboratory of the Saurier Museum in Switzerland. Swiss paleontologist, Kirby Siber, is supervising the preparation and mounting of the stegosaurus. Kirby and his crew have excavated, prepared and mounted over 10 Jurassic-age dinosaurs at his own dig site in Wyoming. It will take anywhere from two to four years to prepare the stegosaurus, but the wait will be worth it for such a rare and scientifically significant specimen.

Bob and Karen visited 'Sarah' in Switzerland in April to observe the preparation progress. Numerous skeletal elements have been prepared and the skull, although disarticulated, appears to be all there (only three or four Stegosaurus skulls have ever been found). Sarah may be one of the most complete North American stegosaurus ever discovered. The articulated nature of the skeleton may now allow paleontologists to better understand the function and placement of the back plates, making this a very important scientific find.

Bob Simon received a B.S. degree in Environmental Science from the University of Virginia in 1977 and a M.S. in Geology from Virginia Tech in 1981. He worked for Chevron (now ChevronTexaco) as a petroleum geologist in New Orleans for over 20 years. He is married to Karen Obenshain who has a Doctorate in Environmental Health (Tulane University, New Orleans, LA) and works in D.C. as a research scientist with a major law firm. They moved back to Virginia from Louisiana in 2002 and currently reside in Spotsylvania County. Bob began his dinosaur digging company, Dinosaur Safaris Inc., in 1998 and spends the summers in the Big Horn Basin of Wyoming, excavating Jurassic-age dinosaurs. During the remainder of the year, Bob prepares and sells the bones from his home in Virginia. Bob and Karen have 'a few' cats and two horses. Bob's websites are <http://www.dinosaursafaris.com> and <http://www.dinosafaris.com>.

## '50s

**Gordon C. (Bud) Presley (B.S. '58)** writes, "My main interest is in industrial minerals. Forty-four years of experience in forty-one different industrial minerals. Not much going on in these areas these days. I need work!" Gordon is an owner/consultant in Mineral Resources. Contact him at 8581 E. Dry Creek Place, Centennial, Colorado 80112 or by e-mail at [gordonpresley@aol.com](mailto:gordonpresley@aol.com).

**Fred Webb, Jr. (M.S. '59; Ph.D. '65)** writes, "After 37 years of teaching in the Geology Department at Appalachian State University, I retired on July 3, 2004. I was the department's first chair and served in that position for 20 years. In addition to my work at Appalachian, I also taught the Virginia Tech geology summer field course for 20 years (1965-1984) in Saltville, Virginia. I helped start and taught Appalachian State's geology summer field course in the northern Italian dolomites from 1996-2004. Since retirement, I have started geologic mapping of the Saltville quadrangle for Virginia Division of Mines, Minerals and Environment. My wife, Barbara, and I spend our free time traveling and visiting our daughters and their families.

## '60s

**Joseph Smyth (B.S. '66)** writes, "I just returned to Colorado from a full year sabbatical in Germany. I received a Humboldt Senior Research Award and spent the year at the University of Bayreuth. Con-

tact Joseph at 515 Dixon Road, Boulder, CO 80302 or by e-mail at [smyth@colorado.edu](mailto:smyth@colorado.edu).

**Jim Ming (M.S. '69)** has retired. He and his wife, Marilyn, are living on Vancouver Island in British Columbia. Jim is doing all the finishing carpentry on their house as well as working on their boat, Coyote Moon (a tautology if there ever was one!). (See the Fall 2000 Newsletter for a picture of this beauty). Marilyn has a job as the Chief Librarian of the Salt Spring Island Public Library (their first paid librarian).

As of this writing, they now have 2.99 grandchildren, all girls. Marin, their youngest, is due with her second. Marin's first daughter, Makeda (a biblical name with connections to Africa – a challenge for you!) was three last December. Siri, their oldest, had her first daughter, Iris, July 1. Tobi, their middle daughter, states that she is "not a breeder" so she seems to be out of the picture as far as grandchildren are concerned.

Jim and Marilyn recently joined the local volunteer search and rescue group, and Jim is also active in the Ham Radio Emergency Communication group affiliated with SAR. Jim says, "It is a good thing I retired, I need a vacation!" Greetings to Jim and Marilyn at [mingjdmm@shaw.ca](mailto:mingjdmm@shaw.ca).

## '70s

**David Barna (B.S. '73)** will complete 30 years of Federal service this summer (2005). He plans to continue as the Chief of Public Affairs for the National Park Service

in Washington, D.C. David previously worked as Chief of Public Affairs for the National Science Foundation and also completed 20 years as a Navy reserve officer in the Civil Engineer Corps – the Seabees. David is currently a Commander and Desert Storm veteran. He is still married to Linda (VT '74 French) and two of their three children are Virginia Tech grads. His youngest son finished at UVA. Both sons are currently in graduate school. David would like his old friends to send him an e-mail at [david\\_barna@nps.gov](mailto:david_barna@nps.gov).

**Sandra L. Powers (B.S. '75)** writes, "After a 14 year retirement, I am back doing geology as a consultant, still in the field of exploration geology (minerals and gold). So far, I am working mostly in Nevada and some in Idaho. After living 25 years in Reno, Nevada, I spent two years in Anchorage, Alaska, near my parents, and I am now "at the lake" at Lake Almanor." Sandra is doing well and says "Hi to all." Write to Sandra at 3631 Lake Almanor Drive, Lake Almanor, CA 96137 or via e-mail to [sl-powers@earthlink.net](mailto:sl-powers@earthlink.net).

**Steve Novak (M.S. Geology '79)** writes, "I continue to manage the SIMS group at Evans East, where I have been for 15 years. My most recent projects of geological interest involve analysis of gem sapphires for Be treatment and analysis of obsidian artifacts for obsidian hydration dating. This latter project is with Chris Stevenson, an archaeologist at the Virginia Department of Historic Resources. We will be looking at glass from Monticello for dating too. Contact Steve at 9

Galston Drive, West Windsor, NJ 08550 or by e-mail at [snovak@evanseast.com](mailto:snovak@evanseast.com).

**Kevin Selkregg (M.S. '79)** writes, "I often think of the department and my experiences there working with Dr. Bloss. I have been with the same company for 26 years and my title is Manager, Analytical Laboratory. I spend much time in electron microscopy, light microscopy, and x-ray diffraction and fluorescence of fusion cast refractory materials. I usually give at least one paper each year at technical society meetings. I must say that Virginia Tech prepared me well. Our daughter, Rachel, is in her freshman year at the University at Albany. She currently is a member of the women's track and field team which helps to keep her busy. Contact Kevin at [Kevin.Selkregg@US.vesuvius.com](mailto:Kevin.Selkregg@US.vesuvius.com).

## '80s

**Wendy Hart (Nielson) Beckman (B.S. Geology '81)** writes, "In 2004, my second and third books were published: *Communication Tools Made Easy* (Kendall/Hunt) and *National Parks in Crisis: Debating the Issues* (Enslow). I have finished my fourth book, which is on trends in dating and relationships of teenagers. It will probably be out in 2006. I am now working full time for the University of Cincinnati in public relations. My 'beat' at the university covers the Colleges of Engineering and Business, as well as the science departments from the McMicken College of Arts and Sciences. As such, I frequently interact with Arnie Miller (M.S., 1981), who is the head of UC's Department

of Geology! Folks can see my work (and a picture of Arnie) if they visit one of our news pages: <http://www.uc.edu/news/NR.asp?id=2167>, which talked about UC's contingent to last fall's GSA. Contact Wendy at 2836 Westbrook Drive, Cincinnati, OH 45211 or [wendy.beckman@uc.edu](mailto:wendy.beckman@uc.edu).

**Bob Simon (M.S. '81)** writes, "Hello to my Virginia Tech classmates and friends. I am enjoying life back in Virginia and really enjoying digging dinosaurs in Wyoming. See my websites: <http://www.dinosaursafaris.com> and <http://www.dinosaurs.com>. You can contact Bob at 8567 Old Mill Lane, Spotsylvania, VA 22553 or by e-mail at [dino\\_safaris@yahoo.com](mailto:dino_safaris@yahoo.com).

**Chris Cochrane (B.S. '83; M.S. '86)** is a project manager with the Ordnance and Explosives Directorate of the Army Corps of Engineers in Huntsville, Alabama. She is working on environmental remediation of bombs and bullets at formerly used defense

sites. She has projects in Alaska, Hawaii, Puerto Rico and also more mundane places like Macon, Georgia. Geology is actually a part of her work! She and Ted Johnson celebrated their 20<sup>th</sup> wedding anniversary this March and continue to enjoy their Morgan and Thoroughbred horses. "We're hoping Carolyn Rebbert will visit us this summer and we'd love to hear from any of our classmates." Contact Chris at [jcc311@aol.com](mailto:jcc311@aol.com).

**Wilson McClung (M.S. '83)** writes, "I am still in Midland, Texas, working as a development geologist for ChevronTexaco. I work a West Texas field called McElroy, a mature waterflood in the Permian-aged Grayburg Formation at a depth of about 3,000 feet. I also work a field in northwest Colorado called Rangely, another mature water flood and CO2 flood, this one in the Weber Sandstone of Pennsylvanian age at about 6,700 feet in depth. Between the two fields, I have been in-

involved in the drilling of some 150 wells over the last three years – keeps me real busy and out of trouble – plus, it helps keep you guys back there supplied with gasoline!

"I don't know where the 22 years have gone since I graduated and left Blacksburg – seems like it was only several months ago I was roaming around Derring Hall with Mike Hochella and Art Prunier (whatever happened to him?) trying to teach me Optical Crystallography. As I have said many times, many thanks to Dr. Lowry for convincing me to pursue a career in Geology rather than Biology!" Contact Wilson at [WSMC@chevrontexaco.com](mailto:WSMC@chevrontexaco.com).

**Timothy P. Roche (B.S. '83)** is a consul at the US Consulate in Guadalajara, Mexico. He has a four year old son, adopted in Mongolia, and a two year old daughter, born in Peru. Tim's previous tours were in Peru, Mongolia, D.C. and Honduras. He spent a month at the US Embassy in Baghdad last fall.

**Charles L. Smith, Jr. (B.S. '83)** can be contacted at 9716 Rossetti Court, Burke, Virginia 22105. Phone: (703) 440-8198 or by e-mail at [charleslsmith@yahoo.com](mailto:charleslsmith@yahoo.com)

**John H. Piggott (B.S. '85)** writes, "Since leaving with my geophysics degree, I received a MSCE in Geotechnical Engineering from Virginia Tech in 1988 and a Ph.D. in Geological Engineering from the University of Missouri-Rolla in 1994. I presently work for the US Army Corps of Engineers. My office handles designs for the Middle East, Iraq and Afghanistan. I have deployed as a civilian with the troops during OEF and OIF by providing civil engineering support, construction oversight, and project management for various projects such as the Afghan National Army Camps in Afghanistan, the bridge project between Afghanistan and Tajikistan, Forward Operating Bases in Kuwait and Airbase construction projects in Uzbekistan and Iraq. I have

## VT CareerLink

### WHO BETTER TO HELP THAN A FELLOW HOKIE?

Today's students want to learn more about careers, majors, and what other Hokies are doing—who better to tell them than you? By becoming a Virginia Tech CareerLink volunteer, you can also help young alumni who may still be unsure what path they want to follow, or other alumni who may be considering a career change. It's easy to volunteer; simply complete the online registration at <http://www.career.vt.edu/VTCLHokie/>

Students are utilizing the database in increasing numbers. For the first three months of 2005, 81 College of Science students searched the database, but only two Geosciences alumni are currently registered. They need your help!

Note: VT CareerLink has changed their operating systems. If you were registered on the old system, you need to reregister on the new system to remain a volunteer.

much more to mention but time is short.

**Dwight Holland (M.S. '86)** writes, "I will soon be promoted to Major in the USAF Reserve and am currently serving as the Chief of Systems and Flight Test Engineering for a USAF Wing in San Antonio, Texas. I just learned that I have won an international scientific professional association's Won J. Kay Award for "...the most significant contributions to international aerospace medicine/human factors for 2004." Contact Dwight at 4874 Glenbrook Drive, Roanoke, VA 24018 or by e-mail at [Dwightholland@aol.com](mailto:Dwightholland@aol.com).

## '90s

**Lily Ann Hume (M.S. '91)** writes, "I retired from the oil and gas industry in 2001 to pursue my interests in pottery and develop a small business. Recently, I accepted a position at the local university (University of Louisiana Microscopy Center) and enjoy being in an academic environment again. I'm also able to continue my research in crystalline glazes (willemite) and am writing a glaze chemistry book."

**Michael Jones (B.S. '92)** writes, "Howdy all from wild and wonderful West Virginia. Come on over and let's go canoeing!" Mike is a Soil Data Quality Specialist – Soil Scientist for USDA-NRCS in Morgantown, West Virginia. Contact him at 2002 Pierpont Heights, Morgantown, WV 26508 or by e-mail at [mikethesoilguy@adelphia.net](mailto:mikethesoilguy@adelphia.net).

**James R. (Rusty) Hall (B.S. '93)** writes, "Hello, all. It's hard to believe it's been 12 year since graduating from VT. Since graduation, I have worked for three different environmental and engineering consulting companies, obtained a M.S. degree in Geology and obtained my Virginia Professional Geologist Certification and Virginia Professional Soil Scientist Certification. I have been working as an Engineering Geologist for the Virginia Department of Transportation for the past five years and find the work very enjoyable. If anyone wants to chat, feel free to drop me a line." Contact James at 753 Mountain View Drive, Culpeper, Virginia 22701-3967 or by e-mail at [james.hall@vdot.virginia.gov](mailto:james.hall@vdot.virginia.gov).

**Shannon Maini Hicok (B.S. '94)** and her husband, Daniel, Aerospace Engineering '95, are expecting their second child in July 2005. Their daughter, Morgan, is two years old. Shannon is a Physical Science Teacher at Irving Middle School in Springfield, Virginia. Contact Shannon at 7327 Charlotte Street, Springfield, VA 22150, or by e-mail at [lucky.hicok@verizon.net](mailto:lucky.hicok@verizon.net).

**Anna Snider (B.S. '95)** was married to David Bord on Saturday, May 22, 2005. Anna and David are residing in Albuquerque, New Mexico. Congratulations Anna!

**Rich Viso (B.S. '95)** is the Assistant Director for CCU Center for Marine and Wetland Studies in Conway, South Carolina.

**Wendi Tibiletti (M.S. '96)** writes, "Hello to every-

one in Blacksburg! Things on my end are going really well. I'm enjoying working for a small company (Output Exploration) and spending my spare time with Gabe, who is now four. I would have loved to attend the Alumni Dinner, but a 14,000 foot mountain in Colorado was calling to me and it won out! It was my first of what I hope to be several more 14er's." Contact Wendi at 3922 Royal Plantation Lane Missouri City, TX 77459 or by e-mail at [wtibiletti@opex.cc](mailto:wtibiletti@opex.cc).

**Isaac Segal (B.S. '98)** is a Staff Geologist for ATC Associates, Inc. in Centennial, Colorado. Contact Isaac at 5400 S. Park Terrace #4-205, Greenwood Village, CO 80111 or by e-mail at [isaacsegal@hotmail.com](mailto:isaacsegal@hotmail.com).

**Brad Atkinson (B.S. '99; M.S. '02)** is an Ore Control Geologist for Phelps Dodge Mining Company in Morenci, Arizona.

## '00s

**David L. Rodland (Ph.D. '03)** writes, "Just a quick note updating y'all on my status. After a year teaching as a visiting professor at Southern Connecticut State University, I got a research fellowship from the Alexander von Humboldt Foundation to work with Bernd R. Schoene here at the University of Frankfurt, Germany. We're working on a variety of projects involving sclerochronology (tree rings and clam growth bands) and paleoenvironmental/paleoclimate reconstruction. At the moment, I'm looking for evidence of biological

clocks in a variety of bivalve species, which we hope to tie to high-resolution growth records." Contact Dave at [d.rodland@em.uni-frankfurt.de](mailto:d.rodland@em.uni-frankfurt.de).

**Lauren Velander (B.S. '03)** writes, "Hello, all. I am working on completing a M.S. in Biomedical and Veterinary Science at the Virginia Maryland Regional College of Veterinary Medicine. In August 2005, I will start medical school at the Virginia College of Osteopathic Medicine. Life is good. I hope similar fortune has followed by classmates from 2003 and my other Geo-friends."

**Megan E. Brown (M.S. '04)** is working for the Bureau of Land Management in Vale, Oregon.

**Joe Lachewitz (B.S. '04)** is a staff geologist for Mactec Engineering and Consulting in Richmond, Virginia.

**Laura Lukes (M.S. '04)** writes, "I will finish up my M.Ed and teaching license this June at Ohio State. I am looking for high school and middle school teaching positions in Phoenix, Arizona, and Orlando, Florida or by e-mail at [lukes.2@osu.edu](mailto:lukes.2@osu.edu).

**Ethan and Stephanie Nowak (Ph.D. '04)** write, "We hope all is well in Blacksburg and the springtime tree-blooming is in full force! Our daughter Ameila now has two teeth, the first of which appeared on her 1<sup>st</sup> birthday." Stephanie left ChevronTexaco and has joined Ethan at ConocoPhillips as a geophysicist.



Fall '04 Geosciences Magazine Cover

## Letter to the VT Geosciences Magazine

Clay Stowers (B.S. Geology 1976) wrote: "I live in the area of the photo (on cover of The Department of Geosciences Fall 2004 Magazine) and have been there numerous times. The photo is in the Mt. Rogers recreation area, but it is taken on Buzzard Rock on White Top Mountain on

the Smyth/Washington line. The formation in this area is a phenocryst poor rhyolite of the Mt. Rogers group. Hope this helps. Clay Stowers, CPG, Abingdon, Virginia

Response to Mr. Stowers from Geosciences Professor Robert Tracy:

Thanks for your comments on the cover photo for the recent Geosciences Alumni Magazine. As it turns out, there was no photo credit given in the magazine, but I am the photographer. The digital photo was made on October 9 during my Volcanology course fieldtrip to Mt. Rogers with about 20 students (some of whom are pictured). This picture and one other from that trip were also published in the Virginia section of the Roanoke Times on Tuesday, October 12, to accompany an article on long-ago volcanic activity in Virginia.

The photo was taken from Wilburn Ridge, just NW of the Massie Gap parking lot in the Grayson High-

lands State Park (and a bit southeast of the peak of Mt. Rogers), and looking essentially south toward the North Carolina line (Twin Pinnacles and Buzzard Rock would be just off to the left of this picture). It is likely that some of the higher peaks seen in the distance in the photo are in the North Carolina Blue Ridge. This location where the students are standing is just above Doug Rankin's mapped fiamme zone in the lower part of the Wilburn Rhyolite Member of the Mt. Rogers Formation, above the top of the Whitetop Rhyolite Member, and is several hundred yards west of the Rhododendron Trail near where it merges with the Appalachian Trail.

You might be interested to know (if you didn't already) that Doug Rankin and Steve Novak recently published a paper on the petrology and geochemistry of the rhyolites at Mt. Rogers in a memoir of the

Geological Society of America (Memoir 197) that has collected numerous papers on the tectonic evolution of the Grenville Province in eastern North America. The paper is a bit technical, but you might want to look it up if you follow new developments in geologic study of the Mt. Rogers area.

This area is truly one of the most beautiful parts of Virginia, and is especially scenic on nice early fall days when the foliage colors are near-peak (as on October 9). I envy you the opportunity to be in this area more frequently than I can be.

## Centennial Memories

### What Equipment Does it Take to "Do" Geology? How Times have Changed!

Is there any piece of equipment in the geological sciences as important as a rock hammer? Perhaps not, but these days, our equipment needs go dramatically further. Recent planned instrument additions run into the millions of dollars. One hundred years ago, instruments needs were a bit different. The following is taken verbatim from the 1906 VPI catalog. Put yourself back in that time and imagine what it was like . . .

*"Equipment.—The Professor's office, three laboratories, and a large lecture room, are all well lighted.*

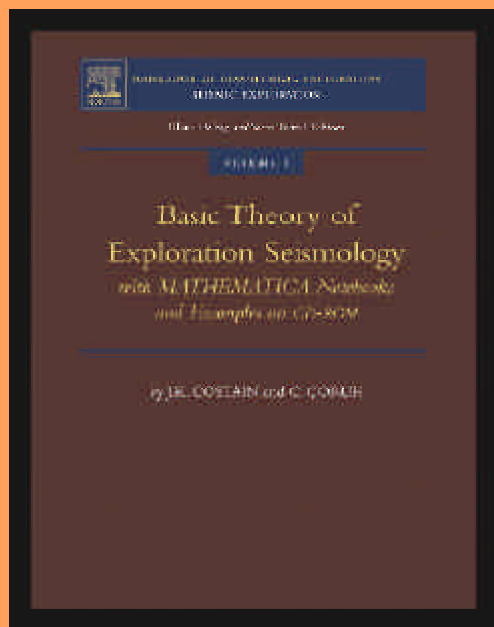
*The lecture room is provided with a Bausch and Lomb projection apparatus for lantern and microscopic illustrations. The laboratories are well equipped with new cabinets for storing mineral and rock specimens, and work tables or desks. Beginning September, 1904, much new material was added, consisting of maps, charts, models and specimens of minerals, rocks and fossils. A collection of the natural inorganic sources of Virginia has been started to illustrate the geology and mineralogy of the State, which will be increased as rapidly as possible."*

**Editor's note: In the Fall 2004 issue of this magazine, we celebrated the 100<sup>th</sup> anniversary of the founding of the geology program at Virginia Tech. In the next several issues, we will continue to remember times long past in the column "Centennial Memories."**



V. P. I. Band 1901

## New Book



Elsevier has just published the book “Basic Theory of Exploration Seismology” by John Costain and Cahit Çoruh. This is Volume 1 of a multi-volume (at least 20) set to be published by Elsevier. Virginia Tech geophysics majors will recognize much of the material in the book from John and Cahit’s classroom lectures, laboratories, and homework problems. An added feature is a CD-ROM in the back of the book that contains complete *Mathematica*, programs along with all of the plot statements used to generate most of the figures in the book. Free *Mathematica* software can be downloaded to view the programs and plots. If you have access to *Mathematica* then you can change the parameters and test new ideas. For those of you who might not have taken our courses and want to know what “predictive deconvolution” is all about, this is the place to look! Have you forgotten what Fourier and Hilbert transforms are? Refresh your memory about refraction and reflection seismology with this lavishly illustrated (288 figures!) book. It is 571 pages with a nice index all the way from absorption to Zoeppritz. And of course, the cover is Hokie maroon and orange!

## Mark your Calendar!

The 2005 Eleventh Annual Alumni-Faculty Geosciences Homecoming Dinner will be held Friday, September 30, 2005, at The Inn at Virginia Tech and Skeleton Conference Center in Blacksburg. Join us for an evening of good food and fun. We will be honoring Dr. Lynn Glover III, Professor Emeritus and past Alumni Relations Committee Chair, and Dr. Donald Bloss, Alumni Distinguished Professor Emeritus.

The evening will begin with a cash bar at 6:00 p.m. and dinner will begin at 6:45 p.m. We have reserved a block of rooms at the Hampton Inn and Microtel Inn & Suites, both in the NRV mall area with great room rates. Rooms will also be available at “The Inn” at Virginia Tech and Skelton Conference Center (shown below).



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