

STONY BROOK UNIVERSITY

DEPARTMENT OF
GEOSCIENCES

2010 YEAR IN REVIEW



Letter from the Chair

I'm pleased to be sending the latest issue of our Year in Review, which I hope to make a long-standing tradition. The past year has been intensely busy, and there's a good deal of news that I want to share. Much discussion was generated this year by the National Research Council's release of graduate program rankings, the first since 1995. Although the rankings show that in terms of branding, Stony Brook still has room to improve, our Department's research activities are outstanding according to the NRC review. Among the more than 110 public universities with PhD programs in geoscience/earth science, our Department ranked among the top 15 nationwide and among the top three within the Northeast. This welcome news adds to the increasingly strong showing of Stony Brook University in other rankings.



Our faculty have been busy with more than just research. Professor Martin Schoonen has been appointed as Director of the Sustainability Studies Program. Originally developed at Stony Brook's Southampton Campus, this undergraduate program was transferred to our main campus during 2010 and promises to have strong connections to Geosciences. Professor John Parise was given a joint appointment with the National Synchrotron Light Source II (NSLS II) at Brookhaven National Laboratory. This reflects his expanding activities at the Joint Photon Science Institute and at NSLS II. Several other Geoscience faculty (Don Weidner, Teng-fong Wong, and myself) are involved in several beamline design and construction projects at NSLS II. This facility, expected to become available in 2015, will be the premier synchrotron facility in the world, offering many unique research opportunities for our students and faculty.

Geoscience Professors Dan Davis and Bill Holt became overnight celebrities following a minor earthquake off the south shore of Long Island. With the news media attuned to natural disasters of any sort, a magnitude 3.9 quake brought TV cameras and reporters to the ESS building, complete with follow-up interviews and telephone-in Q&A sessions. Dan and Bill expertly fielded questions and brought some nice attention to our new public display, which features a live seismograph.

Several of our faculty were recognized for their research accomplishments. Professor Teng-fong Wong received the Louis Néel Medal of the European Geosciences Union. Professor John Parise was named a SUNY Distinguished Professor. Professor Deanne Rogers was selected for a NASA Early Career Fellowship Award. Professor Scott McLennan was named a Fellow of both the American Geophysical Union and the Geochemical Society. In addition, Scott McLennan's recently published book titled *Planetary Crusts: Their Composition, Origin, and Evolution*, co-authored with Ross Taylor, received the Ansari Best Reference Work Award. I'm also pleased to see that Stony Brook alum Steve Shirey (PhD '84) was named an AGU Fellow.

The long-awaited renovation of the courtyard in front of the ESS building has been delayed by one year, reflecting overall budget concerns. However, renovation of the building's roof and windows is still planned to begin early this year, as is the re-grading and reconstruction project of the loading area behind the ESS building. These activities, combined with rehab projects for three research laboratories, will make for somewhat messy conditions in the near future. Those of you who may remember Professor Gil Hanson's isotope lab would be amazed by its transformation. The major instrumentation grant awarded to Professors Troy Rasbury, Gary Hemming, and Kirk Cochran will bring two new mass spectrometers into this lab, which is undergoing its first renovation in over 40 years. Stop by to see this if you can!

Planetary science research is undergoing a sort of renaissance in the Department. Among the exciting advances this year is Tim Glotch's discovery of highly silicic rock on the Moon's surface, based on data from the Diviner Lunar Radiometer. Equally exciting is the work by Stony Brook PhD Francis McCubbin and advisor Hanna Nekvasil, revealing that the Moon is not as dry as once thought, as shown by the presence of hydroxyl in Lunar apatites.

I'm happy to report that the David King Field Work Award now attracts much attention among students. In 2010 we provided funds to two graduate students for their field work. Lynnette Pitcher traveled to Kansas to collect samples from classic cyclothem sequences for Re-Os dating. Jessica Arnold, along with faculty advisor Timothy Glotch, analyzed inflation features and chemical weathering patterns of recent lava flows on the island of Hawaii.

As ever, I'm very appreciative of the assistance from our hard-working office staff: Yvonne Barbour, Diane Isgro, Gabrielle Tobin, and Owen Evans. I'd like to give particular thanks to Gabrielle Tobin for her assistance in putting this annual review together, and to Owen Evans for his tireless efforts in promoting lab renovation. In 2010 we bid farewell to electronics support specialist Bill Huebsch. After 41 years in the Department, Bill decided it was time to retire. He will be sorely missed, and we hope he visits us often.

In this issue, we again hear from Professor Emeritus Robert Dodd, who's previous articles on the Department's early history have fascinated alumni. New Assistant Professor Michael Sperazza tells us about his research interests, which promise to broaden our scope in an important field. My long-term goal is to distribute this newsletter electronically, rather than on paper. For that to be effective, however, we need to obtain email addresses for more than 1500 alumni. This is a daunting prospect, and you will likely hear from us in the future about this.

Finally, let me invite all of you to contact me with your own news.

Rich Reeder (rjreeder@stonybrook.edu)

GEOSCIENCE FACULTY IN RESIDENCE



Daniel Davis, Professor
Geophysics, tectonics, analog modeling.



Timothy Glotch, Assistant Professor
Planetary geology, remote sensing,
Martian surface mineralogy.



Gilbert Hanson, Distinguished Service Professor
Environmental geochemistry, geology
and hydrology of Long Island.



William Holt, Professor
Tectonophysics



Robert Liebermann, Distinguished Service Professor
Mineral physics, solid earth geophysics.



Donald Lindsley, Professor Emeritus
Geochemistry, petrology.



Scott McLennan, Professor
Geochemistry, crustal evolution,
sedimentary petrology.



Hanna Nekvasil, Professor
Experimental mineral/melt equilibria,
planetary petrology.



Artem Oganov, Professor
Computational crystallography, high-
pressure mineralogy, computational
materials design.



John Parise, Distinguished Professor
Crystal structure-property relations, solid
state synthesis.



Brian Philips, Associate Professor
Mineralogy, low-temperature geochemistry.



Troy Rasbury, Associate Professor
Sedimentary geology and geochemistry,
geochronology.



Richard Reeder, Professor and Chair
Geochemistry and mineralogy relating to
near earth's surface processes.



Deanne Rogers, Research Assistant Professor
Planetary geology, remote sensing.



Martin Schoonen, Professor
Geochemistry of sulfur and sulfides,
hydrogeochemistry, catalysis.



Michael Sperazza, Assistant Professor
Paleoclimate change over the Pleistocene
and Holocene.



Christiane Stidham, Lecturer
Crustal seismology and tectonics, natural
hazards.



Donald Weidner, Distinguished Professor
Mineral physics and the earth's deep
interior.



Lianxing Wen, Professor
Seismology, geodynamics, global
geophysics and planetary sciences.



Teng-fong Wong, Professor
Rock deformation and fluid flow, physical
properties of geomaterials.

Starting ESS: III. Settling In

Robert Dodd, Professor Emeritus

Marya and I live on a old stream terrace about half way up a steep, slaty hill. Every spring, rain and melting snow flood our back yard to create Lake Hillsdale, which dissipates by way of our basement and a hyperactive sump pump. Two years ago, a contractor friend laid a perforated pipe across the yard to lead water away from the house. While trenching for it, John discovered the source of our problem. At a depth of about six feet, he began to encounter springs, and the more he dug the more springs he found.

The pipe seems to have solved our problem – Lake Hillsdale has been AWOL for the last two Aprils – but my exploration of the early days of Earth and Space Sciences reminds me of John’s experience in our back yard. Each person whom I tap for memories produces a flood of them and leads me to more such well springs. ESS old-timers love to talk, and most of them remember the Department warmly. Afraid at first that I’d have too little to write about, I’m now awash, and more material will come as I reach out to several astronomers who, though no longer attached to GEO, were important members of ESS for almost three decades.

In putting this year’s “contribution” together, I had to choose between teaching/students and research/staff as my focus. I settled on the latter but hope to deal with the former next year. Meanwhile, I hope other readers will, like Rick Hurst, take cursor in hand and add their own contributions to the developing picture. There are countless good stories out there. Some of them may even be true!

“And Research Too?”

In 1965, ESS had a faculty of three and it seemed that everything had to be done at once. Ollie, Sam, and I had to recruit more faculty, locate and attract graduate students (and conceive and sell academic programs for them), scare up equipment and materials, and – in my case – prepare lectures for what were, for me, new courses. *All of this and research too!*

What saved us from disaster was a wonderful supporting cast. The Department’s swift rise to prominence owes as much to talented and dedicated secretaries, technicians, and other “ancillary” personnel as it does to the faculty. In academia as in the armed forces, officers get the credit but sergeants do most of the work. ESS had many outstanding sergeants, some of whom are remembered here.

Oliver Schaeffer had been at Brookhaven National Laboratory since 1947 and was well established in the converted barracks that many W.W.II veterans (my uncle included) knew as Camp Upton. Shortly after Ollie moved to Stony Brook, several members of his BNL team – Fred Gwinner, Ted Ludkewicz, and Jim Cobb – tagged along. Bill Huebsch would join them in 1969 and would stay in ESS and GEO for forty years, sharing a super-busy electronics shop with Ben Vitale for much of that time. Other members of Ollie’s original team were Herb Pevney, Bob Lewis, Bob Muller, and Rudy Schlott, the last a glassmaker in the Department of Chemistry.



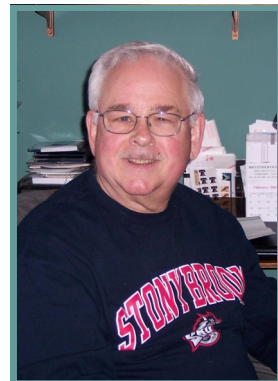
By 1969, when this picture¹ was taken, Schaeffer had assembled a formidable group of post-docs (John Funkhouser, Till Kirsten, Karen Carlson) and graduate students (Bob Warasila, John Remo, Willard Moore) and had even drawn in two undergraduates, Rick Hurst, who wrote of his experiences with Ollie in the last issue of this newsletter, and Gerry Barbara. Ollie’s army was ready and waiting when the first samples of basalt arrived from Mare Tranquillitatis.²

Although Bill Huebsch is second only to Gil Hanson in longevity of service to ESS and its successor department, GEO, Bob Warasila tops everyone in the number and variety of roles that he played therein. In September, 1966, he was working at Brookhaven part time while pursuing a Physics Ph.D. at Stony Brook. A life-long interest in astronomy, the lure of the moon, and exposure to Ollie’s interdisciplinary dream led him to resign from BNL and become a full-time graduate student. At first he kept his flag in Physics, where he had already completed part of his Ph.D. exams. He moved it to ESS in his second year, then back to Physics when it became unclear when ESS would be approved to offer the Ph.D. Bob’s sheepskin, dated 1976, reads “Physics,” but he was and still is one of us!³

¹ Front: Oliver Schaeffer, Fred Gwinner, and John Funkhouser. Rear: Gerard Dietz (sp?), Bob Lewis, Bob Warasila, Ted Ludkewicz, Karen Carlson, Rudy Schlott (Chemistry), Bob Muller, and Gerry Barbara.

² Some lunar researchers would argue that Ollie was too ready. Situated near Ross Taylor in NASA’s Lunar Receiving Lab, he had access to Ross’s potassium measurements and was able to use them and his own argon data to calculate and publish the first age for mare basalt. It was a scoop for ESS, the first such, but it infuriated other researchers who believed that dating the basalt was their job. Ollie’s protestation of innocence played poorly west of Brookhaven.

³While Bob was a student, his office mate was John Remo, who taught for many years at Nassau Community College and now, though retired, is consulting at Sandia National Laboratory and is a Research Associate Professor at Harvard where his tendency to think outside the box, which I remember well, finds good use. Bob and John remain good friends.



Starting ESS: III. Settling In

In 1971, Bob took a teaching job in Physics at Suffolk County Community College, where he remains today. Though emeritus, he still teaches physics labs and hence gets to work with some of the students who benefit from a SCCC scholarship that honors him. In 1980-81, Bob did a post-doc with Schaeffer and was back in ESS when Ollie died. He “wrapped up [Schaeffer’s] NASA affairs after his passing,” and describes Ollie’s early death as “one of the great losses in my life.”

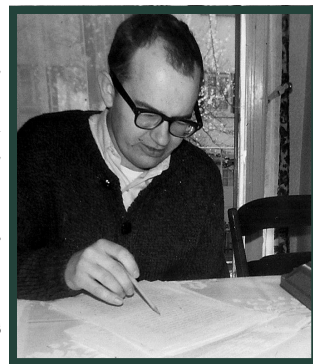
Bob had one more role to play in ESS. In 1985, when Gil Hanson, then the Chairman, posted an ad in *Newsday* for a Director of Laboratories, Bob took the job, following Arnold Benton and preceding Jim Broyles. He enjoyed being back in ESS and returned to SCCC with regret⁴ when his two year leave of absence expired and the college wouldn’t extend it.

Schaeffer’s research team was international as well as interdisciplinary. By virtue of a long-standing friendship with Wolfgang Gentner and Gentner’s brilliant protégé, Josef Zähringer, Schaeffer was closely attached to the Max-Planck-Institut für Kernphysik in Heidelberg. Till Kirsten and Gerd Heusser were two of several M-P-I post-docs who spent long periods in Ollie’s lab. In 1970-71, John Funkhouser returned the favor, spending a year at the M-P-I.⁵ In 1971-72, Marya and I and our three children replaced the Funkhousers in one of the Institut’s guest apartments. Ollie, Viola, and Alice Schaeffer lived across the hall. As wonderful as our Heidelberg year was for all of us, it was darkened at the outset by Joe Zähringer’s death in an auto accident shortly before we arrived. Ollie lost a good friend and the M-P-I one of its rising stars.

Not all of Schaeffer’s foreign post-docs were German. A conspicuous exception was Gerard Poupeau, a student of another of Ollie’s friends, Paul Pellas of the Natural History Museum in Paris. Like Ollie’s connection with the M-P-I, this contact would enrich my life as well, for it led to warm and scientifically valuable friendships with Poupeau and Pellas.

Like Schaeffer, Sam Goldich came to Stony Brook with research momentum, in his case a National Science Foundation grant to study Archaean rocks along the Minnesota-Ontario border. He also had an ongoing collaboration with C.O. Ingamells, a chemist at Penn State and, in the fall of 1966, acquired an invaluable colleague, Gil Hanson. Billed on the fourth floor of Old Physics, Sam and Gil set to work building a chemistry lab and setting up shop for a National Bureau of Standards (now NIST) mass spectrometer that would be producing data by the fall of 1967. Until then, Gil spent many Saturdays at Columbia’s Lamont Geological Observatory, using Paul Gast’s chemistry lab and mass spectrometer.

Gil and I had one problem that affected neither Ollie nor Sam. Both of us were assistant professors and obliged to show our senior colleagues and a faculty committee that we deserved to stay at Stony Brook. The need to build a lab made Gil’s research produce slowly at first. So did field work, which is, by its nature, time consuming. As I wrote previously, Sam took Elliott Golub, Phil Koenig, and other undergraduate students to the Rainy Lake and Saganaga Lake areas in 1966 to gather samples for analysis. In the summer of 1967, Gil accompanied Sam to the latter area with Janet, their children, Lynn and Kevin, and three graduate students: Peter Borella, Mike Mudrey (famous for black and orange neckties that advertised his Princeton origin), and Chuck Hallford, whose southern origin and drawl led other ESS students to call him “Buford.” Gil’s career at Stony Brook, which would be long, distinguished and multi-faceted, was under way.



Gil Hanson in 1966

Like Gil, I had to begin my research at Stony Brook with “a little help from my friends.” While I sought support for my meteorite research from the N.S.F. and NASA, I spent parts of two days each week using an electron microprobe in the Department of Metallurgy at Brookhaven. Ollie’s colleagues in Chemistry had arranged this, but my host was Jerry Sadofsky, who quickly became a good friend. The probe, a three-spectrometer ARL instrument, was state of the art, but very incompletely automated. I had to take numbers down long hand and have them punched and reduced by a student at Stony Brook’s Computer Center. This was a cumbersome process, but it provided work for several undergraduates, of whom Rick Hurst, Charley Faber, Elliott Golub, and Mike Malagold spring to mind.

Jerry’s probe was temperamental. Even if its filament didn’t burn out during a run – it often did – it warped enough to make measurements more or less unstable. Add optics that were poor for reflected light and impossible for transmitted light, and I often trudged home from Brookhaven after many hours on the probe with nothing to show but eye strain and foul data. Given the vagaries of my microprobe work, I seized as much time as I could get on Jerry’s machine. His observance of

⁴Having functioned as Executive Officer – in effect Director of Labs – in 1969, when Schaeffer became ill, I am puzzled that Bob found the job hard to leave. Maybe AC-1, the cantankerous air conditioning system that bedeviled me during our building’s shakedown year, had learned to behave by 1985.

⁵John and his wife, Andy, retired to a *casa* near Guadalajara, Mexico four years ago after a long career at Michigan State University in East Lansing. He credits Ollie with getting him to teach. “My father was a teacher and I vowed that I would never be one, yet Ollie got me to teach courses in Chemical Oceanography and Low-Temperature Mineral Equilibria after I returned from Germany so that he could go. I worked like hell and actually enjoyed it. However, it was over 12 years before I got another chance – I taught Analytical/Physical Chemistry labs at MSU for about six years in my spare time as Operations Manager.”

Starting ESS: III. Settling In/The Geology Club

Passover gave me a whole day to myself in the spring of 1967. I was delighted at first, but at day's end, after a parade of blown filaments, faulty carbon coats, and wild fluctuations of standard measurements, I went home with nothing but bad news. Happy Passover!

The next time I went out to Brookhaven, I told Jerry about my experience and asked, "Do you suppose your machine knows I'm part Jewish and had no business working on Passover?" Jerry shook his head. "It has nothing to do with *your* religion," he said. "The problem is that the probe is *all* Jewish!"

I was immensely relieved when Ted Bence joined our faculty in 1968, bringing with him technical expertise that I lacked and a sophisticated program for correction of analyses that he had created with Arden Albee at CalTech. I was even happier when a brand new ARL microprobe with better optics arrived shortly thereafter. Ted and his technical assistant, Walter Holzwarth, would provide invaluable support to many researchers, present company definitely included. Stay tuned...

The Geology Club: Who, What, Where, When and Most Importantly, Why?



By Megan Bednarz

The year two thousand ten presented the Stony Brook University Geology Club with an exceptionally exciting growth in numbers. We more than doubled in size and currently stand strong at twenty-three active members. This is a mind-blowing expansion from steadily maintaining eight to ten active members like we have in the past. In the last year, our members have traversed the entirety of Long Island, visiting beaches on the North and South Shores and venturing as far east as Custer Observatory in Southold, NY and Atlantis Marine World in Riverhead, NY. We even made it off the island and into the surrounding areas of coastal New Jersey and into the heart of Manhattan.

The club kicked off the fall semester with a day hike along the Palisades complete with sunshine, comfortable shoes, and a roadside guidebook to geology. We also experienced our second behind-the-scenes tour of the Earth & Planetary Sciences section of the American Museum of Natural History, with the Museum's researcher and Stony Brook Professor, Dr. Alan Rice. Our return to NYC was completed with a lovely tour of Central Park lead by Dr. Gary Hemming, Associate Professor at the School of Earth and Environmental Sciences at Queens College and Adjunct Faculty at Stony Brook.

The Club reaches out to undergraduate students of all levels and backgrounds, and offers tutoring for 100 level geology courses. We are home to geology, earth & space sciences, history, music, art, physics, biology, environmental studies, and math majors alike. Our group includes outstanding undergraduate researchers in geology such as Kate Schwarting and Niya Grozeva and student leaders from other groups around campus such as the Marching Band, Chess Club, Literary Club and Hall Council. There is one common theme that binds us all together and that is being desirous of understanding and experiencing the world around us. We are constantly asking questions and seeking to broaden our knowledge, and we consistently advocate learning outside the confines of the classroom. With such an eclectic group you could imagine that there is never a dull moment.

You can be sure to catch us at on-campus tabling events that are both entertaining and informative such as Involvement Fairs, Recyclemania, Earthstock, Shirley Strum Arts Festival, and at the Science Open Nights, where we fundraise by selling T-shirts, hand lenses, and specimens from our collection. We have also participated in the famous Roth Regatta for three consecutive years, racing boats that are constructed solely from cardboard and duct tape.

The Geology Club has big plans for the coming year. For the spring we are planning a trip to West Virginia to go camping, climbing, spelunking, and rock and mineral collecting. The club is also working to install an exhibit at Sweet Briar Nature Center, a not-for-profit corporation dedicated to natural science education services located in Smithtown, NY. The installation will include informative diagrams and illustrations as well as rock and mineral samples that have been collected by club members, or generously donated to us by Mrs. Conroy and the late Mr. Conroy of Mastic Beach, NY.

If you would like to contact our club you may do so by emailing us at sbu.geo.club@gmail.com. You may also find us on Facebook by searching for "Stony Brook University Geology Club." All past, current, and future members are welcome to join this virtual group to stay in touch, and see what the club has been up to.

Graduate Student Caitlin Young Looks at Nitrogen in Long Island's Groundwater

What's in our water?

This is a question Suffolk County residents are asking with increased frequency as suburbanization marches steadily eastward across Long Island. The Suffolk County Water Authority is the largest municipal supplier that is entirely reliant on groundwater, so keeping up with population growth demands while maintaining low pollution levels is no easy feat. Groundwater nitrate contamination has grown with population, as individual homes discharge waste to cesspool systems and nitrate fertilizers create the green turfgrass that homeowners crave.

I arrived at Stony Brook in 2007 after serving for two years in rural southwest Jamaica with the Peace Corps, where I focused on community water sanitation and environmental sustainability. While in Jamaica I saw first hand how developing nations make environmental sacrifices to promote economic growth. In Jamaica, a combination of karst terrain and tourist resort sewage causes coastal water eutrophication, damaging coral reefs and depleting fish populations. My interest in hydrology led me to work with Professor Gil Hanson at Stony Brook, focusing on the fate of nitrogen in groundwater in Suffolk County. In some Long Island communities, such as Northport, nitrate concentrations exceed the federal drinking water limit of 10 mg/l. My research looks at how local geology influences denitrification, the microbially mediated reduction of nitrate to nitrogen gas, in groundwater and submarine groundwater discharge.

In Northport, where groundwater nitrate concentrations are high, we determined that microbial denitrification cannot account for mass balance calculated nitrogen deficits. Although groundwater from Northport municipal supply wells is sufficiently old enough to experience hypoxia, the thick vadose zone of the Upper Glacial aquifer allows for advection and diffusion-driven oxygen reaeration. Aquifer reaeration promotes nitrification of cesspool-derived nitrogen, thereby maintaining high nitrate concentrations in groundwater.



My work in Northport led me to study controls on denitrification in other parts of Long Island. Investigations in Patchogue and Watch Hill (Fire Island) have yielded insights into how coasts and barrier islands process groundwater nitrogen. These coastal areas are typically underlain by a layer of peat formed by burial of back bay marshes (Fire Island) or infilling of marshes during suburban expansion (Patchogue). This peat provides a carbon source to drive microbial biomass growth, eventually rendering the system hypoxic and promoting denitrification. Groundwater in these communities does not contain nitrate, but often contains significant concentrations of ammonium, which pose an eutrophication threat to surface waters like Great South Bay during submarine groundwater discharge.

Nitrogen transformations in submarine groundwater discharge are a topic gaining increasing attention due to coastal population expansion. Long Island Sound experiences submarine groundwater discharge via embayments such as Port Jefferson and Stony Brook Harbors, but very little is known about the fate of nitrogen during this process. Professors Gil Hanson and Teng-fong Wong were recently awarded a grant from SeaGrant to study denitrification during submarine groundwater discharge into Long Island Sound embayments. This work provides an exciting opportunity for me to expand my studies of denitrification from groundwater to the coastal transition zone.

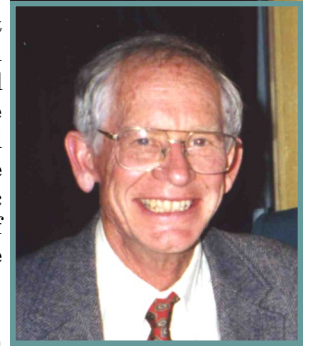
Although I did not envision working with groundwater nitrogen processes when I started my graduate work, I find it is a perfect fit for my future plans. Nitrogen pollution impacts coastal areas worldwide, particularly in the developing world. I feel that my research at Stony Brook is preparing me to work on groundwater pollution issues facing communities worldwide.

-- Caitlin Young



Retired Geosciences Professor Finds New Challenges as a Champion Cyclist

William J. Meyers was a faculty member in our Department from 1973 until his retirement in 1998. Before coming to Stony Brook, Bill had spent 6 years as an exploration geologist with Marathon Oil Co. and then returned to school for his PhD at Rice University. Many alumni will remember taking Bill's stratigraphy course, which developed a reputation as being quite rigorous. Much of Bill's research focused on sedimentation and diagenesis of carbonate rocks and related issues of porosity development and compaction. Bill is widely attributed with establishing the field of cement stratigraphy, which revolutionized the study of diagenesis in limestones and dolomitic rocks. He was one of the first researchers to combine petrographic and geochemical investigations of carbonates on the microscopic scale. Bill's research attracted many graduate students, who are themselves now leaders throughout the petroleum industry and in academia around the world.



After retiring from Stony Brook, Bill moved to Colorado and began devoting his energy to competitive road cycling, for which he had already developed an interest and displayed natural talent. His success in local and regional races soon led him to the US Masters Road National Championships, which attracts the best cyclists throughout North America. His success continued with numerous 1st place wins in his age group at the Nationals. Bill was National Champion in the time trial event in 2002, 2003, 2004, 2006, 2009, and 2010. He was also National Champion in the criterium event in 2004, and has finished on the podium numerous times. He also set and still holds national time trial records in two age classes. This remarkable record of accomplishment shows how the competitive spirit remains alive in one of our former faculty.

We recently caught up with Bill during his winter break from competition when he relaxes by skiing.

What made you begin competitive cycling?

After riding regularly with Gil Hanson and grad students, my son and one of his former team mates from the Stony Brook bike racing team encouraged me to enter a local training race. I found it really exhilarating and fun, and realized I was not the slowest guy in the pack.

Is the training required to reach and stay at your level of condition a full-time job?

From spring through early fall it's a major part of my day for about 5 days out of the week. The other days are recovery, travel, races, etc.

Was there any aspect of scientific research that carried over to your approach for training or competition?

The skills involved in developing and implementing a research plan probably carries over to training plans. During structured training sessions and during time trials I monitor the important numbers – heart rate, cadence, speed, and download them in graphs to see how I did.

What other activities have you pursued since moving to Colorado?

During the winter I alpine and skate ski, and snow shoe. I also have a modest woodshop in my garage that keeps me busy.

What is your best memory of Geosciences at Stony Brook?

Two things – working with a great bunch of grad students in the lab and the field, and interacting with department colleagues.

Do you still follow recent studies in geology?

I read books dealing with such things as climate change, history and supply of world oil, articles in Scientific American and Science News.

What do you consider the most critical issue facing the geosciences today?

Having been out of the profession for a decade I'm not really qualified to answer this. However, as a citizen with a science background I think there is a huge need for educating politicians and media pundits about the earth, and assuring they're using the information in an intellectually honest manner. This seems particularly relevant to climate change, evolution, and world oil supply.



Bill Meyers (center), 2010 National Championships

Faculty Profile: Michael Sperazza Brings New Research Directions to Geosciences

It is very exciting to be part of a Department with such a distinguished academic history and a current dynamic presence in the Geosciences. I have officially been in the Geosciences Department for just over one semester and I am amazed with the research of our students, researchers, and faculty. I was totally unaware of some of the great work being done here and learn of new research every week.

I joined Stony Brook University in the Fall of 2008 as part of the Sustainability Studies Program at the Southampton Campus. When that program was moved to the Main Campus in the Fall of 2010 I joined Geosciences as an Assistant Professor. In the short term, I will continue to be involved with some teaching, research, and administrative duties with the Sustainability Programs, while I settle into Geosciences and build my research program here.

Coming to Stony Brook meant returning to the east coast after 13 years of living mostly in the Rocky Mountains of Montana. I have a diverse background that is not traditional for a geologist. Starting with a BS in Business from the Leeds School of Business at the University of Colorado, I spent over a decade building a very successful marketing career. But then I decided to completely change directions and to follow my passion for science. After returning to academics for a graduate program, I earned a Masters of Art in Physical Anthropology from the University of Montana. I have always been fascinated by deciphering the fossil record, particularly the record of hominid evolution. My hominid research mostly focused on Australopithecine teeth, trying to understand how they evolved and the factors contributing to the adaptations. The hominid fossil record is intimately associated with the rocks and sediments where they are discovered, not only providing data used for age determinations, but environmental data as well. With this in mind, I decided to move over to study the rocks and sediments directly, and in 2006 I completed my PhD in sedimentary geology from the University of Montana. My dissertation, *Acquisition and Evaluation of Sedimentologic, Paleomagnetic, and Geochemical Time-Series Data from Flathead Lake, Montana: Implications for Late Pleistocene and Holocene Paleoclimate* focused on developing, refining, and quantifying methods used in lacustrine paleoclimate studies.

My research efforts here at Stony Brook will be broad ranging and include continuing some of the work on Flathead Lake and new climate research in western Montana with some collaborators. I currently have a couple of undergraduate and graduate students working on small projects and look forward to expanding the Flathead research. But the most exciting opportunity for me is to incorporate all of my diverse background on a new research focus at Lake Turkana, Kenya. The Turkana Basin has long been known for the outstanding hominid fossil record, much of this work having been conducted by Richard and Meave Leakey. In a collaborative program between the Leakeys and Stony Brook we have two base camps at Lake Turkana, collectively known as the Turkana Basin Institute. My research will focus on improving our understanding of the types and timing of climatic changes in the basin and how these changes would have stressed early Hominids, forcing evolutionary adaptation. Working with the Leakeys, including their daughter Louise, I will seek to reconstruct a detailed history of climate change covering the past 5 million years. Part of this effort will include detailed Geographic Information System (GIS) mapping and analyses to better visualize the 130,000 km² basin.

Michael Sperazza



Congratulations to our 2010 Graduates!



Students, family, friends, faculty and staff gather to celebrate our graduates' achievements at the Department's May ceremony

Professor Nekvasil with 2010 Oliver Schaeffer Award Recipient Lily Wu



Life After Geology Club: What Our Alumni Had to Say

What awaits us after graduation? Where will we spend each Wednesday afternoon if not in the Geology Club room? With whom will we dream and conspire every which way to spend our club's budget on trips to Iceland or Hawaii? How will we spend our time if we are not trudging through problem sets or endless sketches of fossils? These questions flooded my mind when considering life after Geology Club. I had the pleasure of talking with three graduates who were active members in the Stony Brook University Geology Club to clear up some of the mystery.

Trish Wood is the most recent member to enter the "real world," having graduated in December 2010 with a BS in Geology. Wood confirmed my suspicion that the club is a powerful outlet for camaraderie among peers when she shared, "It made my undergraduate experience much more enjoyable and connected me to people sharing the same interests as I." She was a crucial part of the club, serving on the Publicity & Marketing Committee and later as Secretary. She is actively searching for job opportunities in her field. Like many others, the Spring 2007 road trip to Mammoth Cave, Kentucky is highlighted as her favorite trip.

Former President of the club, Janette Wilson, is one of those who consider that same trip to Kentucky as standing out among other great trips to places such as Pennsylvania coal mines. Wilson led the club for a year and a half before graduating in 2009 with a BS in Geology with Honors, Cum Laude. She is currently a student at Brown University. She is studying remote sensing/spectroscopy, especially pertaining to Mars, and is on the PhD track, set to have a M.S. in Geological Sciences this coming May. While at Stony Brook, Janette worked as a project assistant to Tim Glotch in his remote sensing lab. Wilson believes that "the best way to learn is by doing" and this simple conviction is fundamental to the club's philosophy and continued success.

James Girardi earned a BS in Geology in 2005 and fondly remembers mineral collecting across the tri-state area with fellow club members, particularly for garnet in Connecticut. He also recalls bonding with his peers over difficult coursework in subjects such as Mineralogy and Petrology, Geophysics and Optical Mineralogy, which is a feeling that each generation of club members can surely relate to. Girardi currently studies isotope geochemistry as well as continental arc magnetism and economic geology. He works as a graduate researcher and has completed an M. S. in Geochemistry at the University of Arizona and is a current PhD candidate expected to graduate in 2012.

It seems unanimous that being a member of the Geology Club is an irreplaceable experience. Girardi stresses how important it is to "make the most of your time with your peers because in a few years you will all go in different directions." If college consists of the best years of your life, Geology Club certainly makes these years even better. Former office holders emphasize that they have learned how to organize a group around a central idea, how to keep morale high and most importantly how to respect deadlines. But any member past, future, or present will agree that finding a group of adventurers with similar interests is very rewarding and can result in lifelong lessons and friendships.

Megan Bednarz, Undergraduate Correspondent

Spring Barbeque

The annual spring barbeque is one of several great traditions enjoyed by faculty, staff, and students.



Tim Glotch and his daughter Charlotte (right); Meagan Thompson talking with Artem Oganov (far right).



Field Photos



Jessy Arnold examining a pahoehoe collapse pit in Hawaii.



Teng-fong Wong examining arrays of compaction and deformation bands in Valley of Fire, NV.



Troy Rasbury and Rutgers geologist Craig Feibel preparing for a day in the field in Kenya.

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