Greetings from the Chair

Hello everyone! I hope 2011 was a good year for you.

2011 had its ups and downs, both for me personally and for the department. On the down side, Charlie Rich passed away last summer. Older alums will remember Charlie (AKA Silver Streak) from field camp. You probably remember him from behind as he was always ahead of everyone going up the hills. Charlie was one of the pillars of the department and we will miss him. Bob Vincent is retiring at the end of the year. Fortunately for all of us, he intends to maintain an active research program in the department. Joe Frizado continues to move upward in the administration, having been named the Vice Provost for Academic Operations and Assessment. We miss having Joe in the department, but are glad that he can use his talents to help the entire University. Our students are also performing well. Rosie Nyland, a recent graduate student of Kurt Panter, was awarded the 2011 outstanding thesis award from the graduate college at BGSU. Congrats Rosie! Our alums are also making news. Kathy Knierim, who received her BS in 2007, is crawling around in caves to study water quality while working on her PhD at the University of Arkansas. She has appeared on the local news and has won a number of prestigious doctoral fellowships, including a highly competitive Science to Achieve Results doctoral fellowship from the US EPA. Way to go Kathy!

The university has new leadership. Carol Cartwright retired after 3 years as President of the University. She was replaced by Mary Ellen Mazey, who began her tenure in the fall of 2011. We also have a new Provost, Rodney Rogers. With new leadership comes new ideas; improving the undergraduate general education program is one of the priorities of the administration. As a Chair of the general education committee, I am very involved in this area.

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Greetings from the Chair  ...continued from page 1

My professional life is going well. Asako Kawatsura, a graduate student of mine from Japan, completed her thesis looking at metal contamination in soils. She returned to Japan and just in time to experience the large earthquake in March of 2011. We were all relieved to learn that she was ok! I continue to teach undergraduate courses. In the fall, I developed and taught a 1000-level inquiry course about hydrology. The inquiry courses were designed to help students learn how people in different disciplines solve problems. I also taught GEOL 3230, a hydrology course for non-majors (primarily environmental science students). My graduate students, Wes Jordan and Corrina Bissel, are both working on metal contamination in water and sediment along the Ottawa River in Toledo and should soon finish their theses.

Personally, 2011 was not the greatest year for me. I had my right hip replaced in June and, due to what turned out to be a relatively minor complication, was unable to put much weight on my leg for 6 weeks. On the plus side, my sister was able to visit me and help out as I hobbed around on a walker. I was also able to teach GEOL 1000 online while recuperating—all I needed was a computer and an internet connection! After a lot of physical therapy, I’m almost back to 100%. Although the surgery and recovery weren’t fun, I’m now in much better shape than I would have been had I done nothing.

If you’re ever in Bowling Green, we’d love to see you! The Geology Department annual spring banquet is April 4th; stop by if you can.

Sheila Roberts
Chair/Associate Professor
sjrober@bgsu.edu

Cover photo:
Field camp students pose for a photo north of Durango, Colorado.
Happy 2012! 2011 was a very busy year for me and for GeoJourney – we ran two programs again this year during the summer and fall semesters. We had great groups of students and many of them are planning to continue on in geology courses as minors or majors. Even if GeoJourney students don’t continue in geology, they make a huge impact on campus as tour guides, student organization leaders, and recipients of awards and internships in their various programs.

In addition to directing and teaching on GeoJourney, I continue to teach the History of Man class on campus in the Spring. BaseCampus, the BGSU student organization comprised of GeoJourney alumni, continues to thrive – the students are planning their spring break trip this year to the Florida Keys as part of their certification as SCUBA divers.

If you ever want to meet up with the group, we would love to have you visit us in the field on GeoJourney. Check out www.geojourney.org for our schedule and contact info.

Hello! My time is divided four ways this year. First, I have been working with a large group of graduate students. In 2011, Senthil Yuvaraj finished his thesis on the depositional architecture of the Cretaceous Pictured Cliffs SS in Colorado and Bharat Banjade finished his thesis on the subsurface facies analysis of the Cambrian Conasauga and Kerbel formations in Ohio. This year Mary Faw finished her thesis on using pedogenic approaches to study underclay-coal sequences at study sites in Pennsylvania and Colorado. Josh Mauer is finishing his study on reinterpreting the Ignacio-Elbert sequence in Colorado as a Devonian incised valley sequence. Then there are four students starting work: Mihir Shah is looking at reservoir compartmentalization in the Rose Run Formation in Ohio; Scott Huck is looking at stratigraphic controls over natural fractures in the Utica Shale (a target for fracking operations) in Ohio; Matt Jenschke is studying the coastal evolution of Sleepy Bear Dunes National Lakeshore (Lake Michigan) and Saeed Al-Shahrani is studying tempestites and hypopycnites in Devonian shales in Ohio.

My second “job” is I was selected to be one of the five faculty members representing the other approximately 800 faculty, and negotiate our first collective bargaining contract. The typical collective bargaining contract at a university is about 150 pages long. We have a long way to go, with a target of mid-July.

My third “job” is my extensive involvement with the American Geophysical Union, which includes organizing their first public policy conference in Washington D.C. this spring, selecting the two Congressional Science Fellows, revising and adding to the list of AGU public policy statements, making Hill visits, and trying to further the involvement of scientists in public policy at all levels.

Finally, my role continues as an expert witness in a Superfund case related to transport of contaminated sediment. Last year, I had my first experiences giving a deposition before teams of lawyers (represent the other side) and hours of hostile questioning. This year I look forward to testifying in court before a judge and jury. Needless to say, I have learned a great deal through this experience.

My family is well, one daughter helping Somali refugees in Seattle through an Americorps assignment, and the other in college. Please keep in touch, I am always glad to hear from former students and friends.
It was a busy field season, though it started late due to all of the rain. We were installing piezometers for the GLRI grant on the restoration of a wet prairie from an invasive species, buckthorn. The other project that I was working on with Peter Gorsevski in the School and a professor in the Biology department also involved an invasive species, flowering rush, but now trying to detect it with Landsat imagery. Is that a lot biology in a geology department? Jane Forsyth would disagree. The sciences are becoming more and more interdisciplinary. In the home front, my son, Julián keeps me busy. He never learned to walk just to run. I hope all is well, and stop by when you are around.

Greetings! Another productive year is behind us... Graduate student, Steven Cathcart, who worked with me using a collaborative spatial decision support system for wind farm site selection in Northwest Ohio, has graduated. Congratulations, Steven! My commitment to the spatial decision support area of wind energy research is still increasing and currently I’m leading two Department of Energy research projects that relate to the Coastal Ohio Wind Project. As a result, I have a new graduate student, Addisu Dereje from Ethiopia, who started at BGSU this semester. Addisu will continue Steven’s work, developing a web based collaborative spatial decision support system.

Last year I hosted a Fulbright Visiting Scholar from Macedonia, Dr. Katerina Donevska, from the University Sts. Cyril and Methodius - Skopje. The research that Dr. Donevska and I initiated was productive as we already published two peer-reviewed articles on multi-criteria evaluation analysis for landfill site selections in Macedonia. The articles were published in the journals of Waste Management and Environmental Earth Sciences.

I also diversified my research portfolio through the use of microscopic scale imagery and geospatial techniques, which is a new area for me. Two very different articles were also published in this area. One in Computers & Geosciences which deals with detection of grain boundaries in deformed rocks using cellular automata simulation, while the second article in International Journal of Cell Biology is focused on relationships of various oncogenically transformed cell shapes (i.e., cancerous cells which have a higher prevalence for creating protrusions than normal cells) and geospatial analysis.

The other two graduate students working with me, Kenny Brown and Arisca Droog, have made significant progress with their research and are almost at the end of their graduate program. The research that Kenny is conducting is in the area of landslide susceptibility using datasets from LiDAR, while Arisca’s work is in the area of mapping invasive wetland plants using different scales of aerial and satellite imagery.

I hope this note finds you well!
This is my second year here and I am starting to settle in. Went on my first consecutive GeoJourney trips this summer and fall. That was a new challenge but we had some amazing staff and some amazing students to make the trip go well. We also received some new vehicles for the trip, which makes life so much better on the trip especially with the new truck. It is a much more efficient way of running camp, and the staff has access to supplies even if the students bags are loaded up. The summer trip started off as a challenge for me because I had to have knee surgery a few weeks before we left, but by the end of the second trip I was almost back to normal. Fortunately Nikki Elkins was there to help me with recovery the day after and Ina Terry, the summer TA, was extremely helpful the first few weeks helping me with lifting and things I wasn’t able to manage on my own just yet. I am even back to working out now and again, though my knee doesn’t seem to like me jumping around as much.

Times, they are a changin’: new President, new Provost (6th in five years), collective bargaining, debate over a general education overhaul, and on and on. In the School (of which Geology is one of three departments), we are looking for new opportunities in the areas of energy and geospatial science. Ohio is now the new frontier for shale gas with the big play being the Ordovician Utica Shale. Projections vary from staggering (from the gas companies) to impressive (from government sources). If they are even partly right, Ohio will benefit from cheaper natural gas, an opportunity to move away from dirty coal for power generation, and lots of jobs. Of course, there is are potential problems, especially with disposal of drilling fluids, but the hope is that Ohio has learned from Pennsylvania and will avoid making the same mistakes. On the geospatial science side, we are proposing a new MS degree program to meet the demand for specialists.

Outside of my administrative duties, I am back on an every year schedule with the undergrad structure course, now that our enrollments have rebounded. This year’s class was a real great one, which validated my decision to pursue a career in teaching. My grad class rotates between structural geology, engineering geology, and geophysics: this year was the structure class. I have several MS students working with me on a variety of structure and geophysics projects. I have been interested in learning more about MASW (multichannel analysis of surface waves) and figured what better way to learn than get a student interested in
In the last newsletter, I reported processing Lake El’gygytgyn diatom samples to about 2 million years. I now have initial analyses to 3.3 Ma. The rest of the record since the 3.6 Ma impact should be delivered in the coming months. Hopefully, this is only the start, because the initial diatom analyses indicate many interesting hypotheses to explore with the help of eager students.

Last spring I was reappointed for another term as coordinator of the graduate program. We presently have 25 full-time students in residence, our largest number for many years. We continue to recruit many excellent students with a variety of backgrounds and interests.

In 2011, we were deluged with external applicants to our field camp, about four times our typical numbers. Undoubtedly, we are seeing the rise in geology enrollments and the declining number of field camps nationally. We increased our capacity to 20 students, with participants from California to Connecticut. This year looks to be another good year for applications.

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Our recent graduate, Cosmas Kujjo of Sudan, who will complete his Ph.D. in Geophysics at the U. of Kentucky in May, 2013, called me recently and told me that his M.S. thesis on using satellite remote sensing data to find gold deposits in the Nuba Mountains of Sudan had been downloaded over 2,300 times since it became available on Ohio Link during 2010. His friends describe it to him as their “Bible” for gold exploration in that part of Africa. This is the region that the Nubian gold of the Egyptian pharaohs (including Cleopatra) came from. Your might say that Cosmas has become a golden graduate of BGSU.

Second-year grad student Teagan Loew will defend his M.S. thesis on Feb. 28, 2012, and he is on a patent that was applied for today in the U.S. Patent Office for a new high range total phosphate in water algorithm with LANDSAT TM data. High phosphate content of the water is known to promote the growth of cyanobacteria in Lake Erie and other fresh water lakes in the world. Also, I will retire from BGSU sometime near June 30, 2012, after 19 years of teaching here, which followed 19 years of founding and running GeoSpectra Corp. in Ann Arbor, MI. I don’t know what it is about the number 19, but there you have it.

Two areas of focus have dominated my work over the past year: ammonoid evolution and paleontology education. I have been working on the phylogenetic systematics of ammonoids, with a paper coming out in Geobios in early 2012 on the phylogenetic information content of characters typically used in cladistic analyses of ammonoids. I was also asked to collaborate with some French colleagues on a more theoretical paper involving the implications of over-splitting character states when coding characters for cladistic analysis. And I co-organized a very well-attended session at the 2011 Geological Society of America meeting on “Species and Speciation in the Fossil Record”.

My other focus has been on paleontology education. I am in the final stages of co-editing a special publication for the Paleontological Society on “Teaching Paleontology in the 21st Century”, focusing on undergraduate classrooms, which will be available in Fall 2012. Look for my chapter on active learning strategies! As Education and Outreach Coordinator for the Paleo Society, I have also been working to develop hands-on K-12 classroom activities involving fossils and paleontological concepts. We’ve received some good feedback so far from teachers and hope to have these materials ready to distribute nationally via the Society website soon.

The BGSU students are also very active. Several undergraduates are currently working on research projects, ranging from crocodile tooth microstructure to ostracode taphonomy, and a substantial new group of freshman Paleobiology concentrators has enrolled this year. Two MS students are also working on paleontology theses, one focusing on the spatial relationships between late Quaternary mammal and human occupation sites and the other on morphological variability in a scaphitid ammonite using GIS to quantify shell form. Always so many interesting ideas in the paleo lab!
Stephen Reynolds from Arizona State University was the 2011 Mayfield lecturer. He gave two fascinating talks about teaching and learning in introductory geology courses. His talks, titled “Visualization, cognition, and learning in introductory science courses” and “Strategies for teaching breadth, depth, and inquiry in introductory college geosciences courses: Lessons from cognitive studies, educational research, and a course-redesign effort” were well attended, not only by people from the geology department, but people from the other sciences and science education.

Mayfield Lecture

There were two GeoJourney trips in 2011, one in the summer and one in the fall. A total of 40 students participated in the program. All had a wonderful time!

Field camp continues to be popular—a total of 20 students went out in 2011, many of them from other universities.

Alumni and Friends Support

The Department wishes to thank these alumni, faculty, and friends for their generous support of the department and its programs during 2011.

Conrad Allen
David and Constance Atwater
Bank of America
Jeffrey and Suzanne Bates
Glenn Bear
David Buchanan and Merrianne Hackathorn
Gregory and Renee Burns
Jim and Martha Busanuas
Bill and Carol Butcher
Jerome and Virginia Cuzella
Nichole Elkins
Penelope Evans-Meyer
ExxonMobil
Eugene and Barbara Filipow
Joe and Patti Frizado
Francis Furman
Jack and Anne George
Enrique Gomezdelcampo
Raimund Hahn and Cynthia Artist
Dick and Mary Ann Hoare
Tom and Nina Hendrix
Henry and Elizabeth Jacques
Tom and Donna Jones
Arthur Kuljian
Macy’s
Judith Martin
Thomas and Jackie Mcclain
Northwood Energy Corp
Charles Onasch
Kurt Panter
Toledo Gem and Rockhound Club

Dan Pfeiffer
Sheila Roberts
Bernard and Gayle Regal
Walter and Deborah Schobel
David and Marguerite Schneider
Ken and Phyllis Scott
Craig and Beverly Stichnoth
Eric and Annette Telljohann
Carol Thatcher
Western Mesquite Mines
Patricia Wilhelm
Tom and Janice Wolery
Margaret Yacobucci
Bruce Young
Departmental Award and Scholarship Winners

The department is fortunate to have many scholarships for both undergraduate and graduate students. Thanks to the generosity of alumni who endowed the awards and those who help them grow through annual giving, student support is at a record level in the department. Your contributions to any of these scholarships go directly to the students.

**Departmental Scholarships**

**THE CONRAD AND DEANNA ALLEN AWARD**
Given to an outstanding undergraduate student going to field camp

**THE DAVID V. JACQUES MEMORIAL SCHOLARSHIP**
Recognizes academic excellence of an undergraduate student

**M.S. LOUGHEED SENIOR GEOLOGY SCHOLARSHIP**
Recognizes academic excellence of an undergraduate student

**TOLEDO GEM AND ROCKHOUND CLUB SCHOLARSHIP**
Recognizes academic excellence of an undergraduate student and gives consideration to financial need and students from NW Ohio

**MANCUSO FIELD STUDIES SCHOLARSHIP**
Supports students going to field camp

**THE RICHARD D. HOARE GRADUATE RESEARCH SCHOLARSHIP**
Supports graduate student research

**FURMAN ECONOMIC GEOLOGY RESEARCH FUND**
Supports graduate student research in areas of economic geology and minerals research

**PRACTICAL GEOPHYSICS INC. SCHOLARSHIP**
Supports student research in the area of field geophysics

**DENNIS L. RODER GEOLOGICAL FIELD EXPERIENCE SCHOLARSHIP**
Supports a Junior or Senior completing a field experience

**Departmental Award and Scholarship Winners – 2011**

**Student Awards**

**OUTSTANDING UNDERGRADUATE STUDENT**
Allison Bryan

**LOUGHEED SCHOLARSHIP**
Abbey Tobe

**LOUGHEED BOOK SCHOLARSHIP**
William Frederick, Joanna Hamilton, Angelic Mandell, Kelsey Ruckert, Emily Shufeldt and Monica Weir

**DAVID V. JACQUES MEMORIAL SCHOLARSHIP**
Stephen Hendricks

**DENNIS L. RODER GEOLOGICAL FIELD EXPERIENCE SCHOLARSHIP**
Abbey Tobe

**CONRAD AND DEANNA ALLEN FUND**
Stephen Hendricks

**TOLEDO GEM AND ROCKHOUND CLUB SCHOLARSHIP**
Brittany Muncy

**CHARLOTTE PARKER BOOK SCHOLARSHIP**
Erick Anderson

**MANCUSO FIELD STUDIES SCHOLARSHIP**
Allison Bryan, Trina Dennison, Matthew Fleming, and Megan Smith

**OUTSTANDING GRADUATE STUDENT**
Roseanne Nyland

**RICHARD D. HOARE GRADUATE RESEARCH SCHOLARSHIP**
Shiva Basnet

**FURMAN ECONOMIC GEOLOGY RESEARCH FUND**
Randolph Williams

**DEPARTMENTAL SERVICE AWARD**
Emily Freeman

**SWEETY MAZUMDAR OUTSTANDING GRADUATE STUDENT TEACHING AWARD**
Neal Cropper

**Alumni Award**

**DOROTHY J. STOUT DISTINGUISHED ALUMNI AWARD**
Bruce Young
Scholarship Winners

Outstanding Undergraduate Student, Allison Bryan

David V. Jacques Memorial Scholarship, Stephen Hendricks

Lougheed Book Scholarship, Kelsey Ruckert, William Frederick, Emily Shufeldt, Angelic Mandell, Monica Weir, and Joanna Hamilton (L-R) with Lougheed Senior Scholarship winner, Abbey Tobe (center)

Conrad and Deanna Allen Fund, Stephen Hendricks

Toledo Gem and Rockhound Scholarship, Brittany Muncy, with Mike and Carol Mayers of the Toledo Gem and Rockhound Club.

Charlotte Parker Book Scholarship, Erick Anderson
Sweety Mazumdar
Outstanding Graduate Student Teaching Award, Neal Cropper

Richard D. Hoare Research Scholarship, Shiva Basnet

Furman Economic Geology Research Fund, Dan Chandonais

Richard D. Hoare Research Scholarship, Emily Freeman


Dennis L. Roder Geological Field Experience Scholarship, Abbey Tobe

Outstanding Graduate Student Award, Roseanne Nyland

Practical Geophysics, Inc. Scholarship, Randolph Williams
Students

M.S. Theses Completed in 2010

WILLIAM EMERY
(advisor: Kurt Panter)
Geology and the eruptive history of the late Oligocene Nathrop volcanoes, central Colorado volcanic field

BENHUR TEDROS
(advisor: Robert Vincent)
Application of advanced spaceborne thermal emission and reflection radiometer (ASTER) data to the mapping of minerals associated with hydrothermally altered rocks in the Zara Gold Prospects, Eritrea, NE Africa

ASAKO KAWATSURA
(advisor: Sheila Roberts)
Establishment of the background concentration in arable soils, Wood County Ohio

SENTHIL YUVARAJ
(advisor: Jim Evans)
Use of architectural-element analysis to interpret the depositional environment and the reservoir characteristics of Pictured Cliffs Sandstone, San Juan Basin, Colorado and New Mexico

*ROSANNE NYLAND
(advisor: Kurt Panter)
Evidence for early-phase explosive basaltic volcanism at Mt. Morning from glass-rich sediments in the Andrill and 2A Core and possible response to glacial cyclicity

STEVEN CATHCART
(advisor: Peter Gorsevski)
A spatial decision support system for wind farm site selection in Northwest Ohio

BHARAT BANJADE
(advisor: Jim Evans)
Subsurface facies analysis of the Cambrian Conasauga Formation and Kerbel Formation in East-Central Ohio

*Awarded the BGSU outstanding MS thesis award in 2011

Undergraduate Geology Majors Graduated in 2010

ALLYSON BRYAN
CARRIE MILTZ
ERIC DICKERSON
TERESA MENDOZA
Our Staff

The department wishes to recognize the hard work of its classified staff, instructors, and work study students, without whom we could not function.

PAT WILHELM  
Departmental Secretary

The software upgrade to the financial system started out and is still quite challenging. At this stage of the game my brain can only take so much overload! At the rate of software upgrades every three years I figure I might have to struggle through one more. I am starting my twelfth year in the department, it sure doesn’t seem possible. Without the fantastic group of folks I work with it would not have gone by so smoothly I am certain.

Summer was great of course (no complaints from me about the heat) with several trips to the zoo and other day trip activities with my family. I took vacation fair week to watch my oldest granddaughter show her steer and pig. She did quite well for her first year taking first place in the first year showmanship with her steer. Part of a record crowd we spent another twelve hour day at the Point last fall for HallOweekends. It was so crowded the shortest coaster line was a two hour wait and they parked cars in the grassy areas along the causeway! It was a long somewhat painful at times fall for my beloved Buckeyes this year. I was super excited to fill a seat in the Shoe again this year and they even won! What a treat for the two oldest grandkids; from the Skull Session to the playing of the OSU Alma Mater after the final whistle they loved every moment. Hopefully a little “urban renewal” will turn things around.

The holidays were super of course, spending lots of time with the family. It’s been a crazy winter in BG, warm and rainy one day, cold and blowing the next. Not much snow to date, which is fine by me. Daytona is just around the corner (which means spring is following closely behind), we’ll see how our boy Kasey does driving for the Hendricks, talk about a dream team! A busy spring ahead with a First Communion, two graduating from Kindergarten and of course ball season begins mid-May with five of the seven grandchildren playing.

My hope is everyone’s year is off to a great start and you find all you’re searching for during 2012 and beyond.

BILL BUTCHER  
Staff Geologist

Thirty five years of geo-centric technical adventures have not dimmed my enthusiasm for the sport. Advances in hardware, software, technologies and techniques continue to make this job both interesting and challenging. From the constant activity of upgrading department desktop and lab computer systems to the thrill of participating in the setup of our NEW Rigaku XRD unit, I have been having some fun. That new XRD is a dandy too! The whole thing sits on a small desktop, but its capabilities for qualitative and quantitative mineralogical analyses loom large. In the world of XRD, the geology department has never had it so good! Our seismo station continues to meticulously log the movements of the earth’s crust. To see what’s up with that, go to http://bgso-1.bgsu.edu. All this joy AND the 2012 NASCAR season is finally underway! It’s gonna be a good year. Enjoy it everybody!

ABBY BRUMMÉ  
Student Worker
GEOLOGISTS AT WORK

GEOJOURNEY

Looking at the Berea Sandstone near Elyria, Ohio.

Sheep Mountain.

Mapping project at Sheep Mountain, Wyoming.

Stephen Hendricks at the Florissant Fossil Quarry.

Ahmed and Jessica check out the rocks at Coal Bank Pass.

Measuring the section at Coal Bank Pass.
GEOLOGISTS AT WORK

Great Smoky National Park

Looking at fossil corals in the Whitehouse

Water quality analysis in Silverbow Creek, Butte Montana.

Teagan Loew at a road cut in Durango,

Sed/strat students study an outcrop along Lake Erie.
GEOLOGISTS AT WORK
GEOJOURNEY

Trina Dennison checks out a rock.

Arisca Droog and Peter Gorsevski lost in the marsh at Ottawa Wildlife Refuge.

Bandolier tuff cliff dwellings

Glacier National Park, Logan’s Pass

Lunch time at Lime Creek.