Welcome New Faculty
Department Accomplishments
Microscopy Visualization Space
Student Organization Activities
Sign Up for a Bahama Adventure

Inside:
# 2016 GGPE Newsletter

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**GGPE by the Numbers**

- Spring semester 2016 total enrollment: 658 students
  Comprising 344 undergraduates, 181 on-campus & 133 distance graduate students
- 376 male and 149 female students on campus
- 204 international students on campus
- 23 ranked faculty
- Average starting salaries for GGPE B.S. graduates: G&G $48,500; GE $54,949; PE $63,000
- Available degree programs:
  - G&G - BS, MS, PhD
  - GE - BS, MS, PhD, DE (also GE graduate certificate) & Geotechnics – ME and graduate certificate
  - PE - BS, MS, PhD, DE

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Cover Photo: Sarah Klass (BS G&G ’16) clutching her freshly collected sample of world famous Mississippi Valley Type mineralization from deep underground. We appreciate the support the Doe Run Company has shown the Geology Field Camp and the GGPE department through the years.

Photo Credit: John Hogan
Everyone experiences change and this department is no exception. We experienced change in operational structure, personnel, and resources while maintaining high standards for our students. The national search for a permanent department chair is officially underway with the expectation that the position will be filled by summer 2017. On August 1 the department leadership was restructured to comprise the chair, associate chair (Dave Rogers), and assistant chairs for Geology and Geophysics (Dave Wronkiewicz; until December 2016), Geological Engineering (Katherine Grote), and Petroleum Engineering (Ralph Flori). The graduate coordinators for the three programs also sit on the Missouri S&T Graduate Council. Patty Robertson and our new staff Sharon Lauck and Wendy Albers provided excellent administrative support as we continued our push for a fourth staff position to strengthen our service to the department’s over 600 students.

So, how did things shape up in 2015-2016? This newsletter highlights the achievements, awards, and honors of faculty and students in scholarship, teaching and service (university, profession, society at large); the departure and arrival of faculty; and the profiles of two new faculty members.

Baojun Bai (Petroleum Engineering) and Norbert Maerz (Geological Engineering) were promoted to the rank of full professor effective September 1, 2015. Curt Elmore (Geological Engineering) has moved on after 15 years of dedicated service to the university, and Runar Nygaard (Petroleum Engineering) has joined the faculty at Oklahoma State University. I am personally indebted to Runar for his dual role as associate chair and undergraduate coordinator for Petroleum Engineering during the 2015-2016 academic year. The search process for his replacement is ongoing. We are happy to welcome two new faculty members to the department. Jonathan Obrist-Farner, a 2015 Geology and Geophysics graduate, hired to replace the position vacated by Alan Chapman. The department competed for and was successful in getting approval for a new strategic hire in “Strategic Natural Mineral Resource/Economic Geology” last fall. Marek Locmelis has been hired into this position. He comes to us from NASA Goddard Space Flight Center following several years of study and employment in Australia.

Student enrollment, while still healthy, has undergone a slight drop mainly as a result of the downturn in the energy industry. The overall spring semester numbers held steady, but on-campus enrollment underwent a 4.5% drop from spring 2015. On the up side, our students have the opportunity to expand their portfolios to seek employment in the consulting side of business. For example, Deloitte is partnering with Missouri S&T and the University of Missouri System to hire students majoring in Petroleum Engineering, Geology and Geophysics, Business, Engineering Management, and Information Science and Technology for internships and long-term employment (see story on http://casb.mst.edu/news/deloittevisit4_16/). One of the options open to our students is the selection of elective courses in Enterprise Resource Planning (ERP) offered by the Business and Information Technology Department. Deloitte personnel will be on campus in September to meet with faculty and screen students for interviews.

Phonathon calls will begin in mid-September so please expect to hear from us this fall. We are very grateful to our dedicated alumni that continue with their generous support of the department even in difficult times. An announcement about a new initiative from the university to encourage more giving opportunities is noted on page 13. We also gratefully acknowledge the university’s support in trying to meet our needs during this past year.
Students, Faculty and Staff extend their best wishes to Drs. Runar Nygaard (Petroleum Engineering) and Curt Elmore (Geological Engineering) in their future endeavors.

Franca Oboh-Ikuenobe presenting a gift to Runar Nygaard during a send-off celebration in April.

Dr. Curt Elmore, Professor, Geological Engineering
Jonathan Obrist-Farner

We are excited to welcome back one of our outstanding Missouri S&T Geology and Geophysics alums Jonathan Obrist-Farner. While at Missouri S&T he won the Jeffrey Spooner Outstanding Graduate Scholar and Thomas Beveridge Outstanding Graduate Teaching Assistant awards in 2012, and a Publication Award in 2015. Jonathan researches stratigraphic systems with an additional focus on Petroleum Geology. He is an up and coming expert on the origin of loess and its implications for investigating climate change.

Bringing a new Stratigraphic Perspective

Dr. Jonathan Obrist Farner joined the Geology and Geophysics program in August 2016 after receiving a Ph.D. degree from Missouri University of Science and Technology in 2015 and working over a year with ConocoPhillips in Houston, Texas. His expertise are in sedimentology, stratigraphy, and petroleum geology. Dr. Obrist Farner will be teaching petroleum geology in the upcoming fall semester. In addition to teaching students about the exploration part of petroleum geology, Dr. Obrist Farner will focus on additional aspects of petroleum geology, such as appraisal and development of a petroleum asset. Dr. Obrist Farner is looking forward to collaborating with faculty members in all three GGPE programs to develop new interdisciplinary classes and research opportunities for graduate and undergraduate students.
Dr. Marek Locmelis is an economic geologist with expertise in geochemistry, petrology, planetary evolution, and analytical chemistry. Dr. Locmelis received a Ph.D. in Earth and Planetary Sciences from Macquarie University in Sydney, Australia, in 2011 and subsequently worked as a postdoctoral fellow at the University of Western Australia (Perth, Australia) and at the NASA Goddard Space Center (Maryland).

His research investigates the fundamental processes that underlie the formation of metal deposits in Earth’s interior and on Mars. Most known world-class metal deposits formed relatively close to the Earth’s surface. However, a recent decline in major discoveries suggests that most of the easily accessible, near-surface deposits have already been found. Dr. Locmelis looks at deeper levels in the Earth and at Mars to identify new areas that may contain ore deposits in order to guarantee a steady metal supply in the future. Another focus of Dr. Locmelis’ research is the geochemical evolution of the deep interiors of planets and protoplanets. In particular, his research investigates if (and how) oxygen bound in minerals and magmas in the interiors of planetary bodies can affect the composition of oceans and atmospheres – and therefore contribute to whether a planet is habitable or not.
Scenes from this past year....

Cape Point, South Africa

Geomechanics research group after GSA meeting exploring the Baltimore harbor

Strat Lab Field Trip

Meramec Springs, MO

Intense discussions about stress distributions in periclinal.

International Engineering and Design

Dr. Evgeniy Torgashov

Drs. Katherine Grote and David Wronkiewicz explaining the basics of Ground-Penetrating Radar (GPR) to high school students during the Jackling camp in June, 2016

Meramec Springs, MO

Geomechanics research group students presenting their posters during the “Folding” session at GSA

International Engineering and Design

International Engineering and Design

International Engineering and Design
I received early promotion to full professor of Petroleum Engineering on September 1, 2015 in recognition of my scholarship and research expertise, teaching, contributions to the GGPE department and university, and professional service since being hired by Missouri S&T in 2006. My research areas include enhanced oil recovery methods, conformance control, unconventional reservoir characterization, multiple phase flow in nano-scale pores and cracks, and geological sequestration of carbon dioxide. My research approach encompasses laboratory experiments, numerical modeling, and practical field applications. I have been funded as PI or Co-PI on 10 external research projects with a total budget of ~$10 million by the Department of Energy (DOE), Research Partnership to Secure Energy for America (RPSEA), ACS Petroleum Research Fund, and the industry. Recently, I established a joint industry project (JIP or consortium) – Particle Gel for Conformance Control – with three companies as foundation members. We have developed a series of novel re-crosslinked particle gels, and all three companies are planning to conduct pilot tests in their fields to control water or CO2 conformance. Sixteen PhD students and 10 MS students have completed their dissertations/theses under my supervision. I have taught nearly eight courses and two wet labs at Missouri S&T, and my most recent focus has been on reservoir related courses, including Enhanced Oil Recovery (EOR), Secondary Oil Recovery, Advanced Reservoir Engineering I and Advanced Reservoir Engineering II. I received the Missouri S&T Outstanding Teaching Award in 2014 and 2015. I have been very active in the professional community as well, and was the committee member responsible for EOR features from 2007 to 2013 for the flagship journal of the Society of Petroleum Engineers (SPE, Journal of Petroleum Technology). I am currently serving as Committee Member and Technical Program Chair for the SPE Annual Technical Conference and Exhibition (ATCE 2016), and was Technical Program Chair of SPE Asia Pacific Oil & Gas Conference and Exhibition (2015, 2016), and Petrobowl judge for SPE Asia Pacific Oil & Gas Conference and Exhibition (2015).

In 2015-2016, I served as a graduate coordinator for the department, and worked with assistant research professor Dr. Lizhu Wang and Postdoc Dr. Abdulmohsin Imqam. My research group published 15 journal papers and 11 conference papers last year, resulting in a total of more than 150 publications during my career. Thanks to the excellent recommendations of our excellent alumnus, Baker Hughes Fellow Mr. Dan Scott and my colleague, SPE distinguished member Dr. Shari Dun-Norman, I received the 2016 Mid-Continent North America Regional Distinguished Achievement Award for Petroleum Engineering Faculty from the Society of Petroleum Engineers. Finally I would like to appreciate the help and patience of all of my graduate students who work pretty hard for on-time research project delivery.
Having served in the Navy and Marine Corps, I was surprised to find the Army’s Combat Engineering School at nearby Fort Leonard Wood. This allowed me to share many of the practical lessons learned from work I have done on the West Coast and Pacific Basin. In August 2014 I took over the reins of the Fort Wood Master of Science program. I have also enjoyed teaching and mentoring students here on campus, as well as the working professionals enrolled in our distance Masters in Geotechnics program.

During 2015 I taught 14 course sections with 1,472 student credit hours, while also leading seven field trips. In the summer of 2015 we conjoined Physical Geology for Engineers (GE 1150) with Physical and Environmental Geology (GEO 1110), which I team taught with Professors Gertsch and Grote. My favorite course has been the Senior Capstone Design Course, which I have been teaching since 2009.

I have worked hard to improve Engineering Geology Geotechnics GE 5441, and the Video Communications Center began taping all of my lectures in 2011, for live streaming and 24/7 download capability for our military and distance students. The VCC has also posted the entire 15 weeks of lectures on YouTube, making it the only free online course at Missouri S&T. These lectures have been approved for continuing educational credit by the GeoInstitute of ASCE, by the British Geotechnical Society, and the Association of Environmental & Engineering Geologists.

My greatest efforts have gone into developing my graduate course in Geotechnical Construction Practice GE 6441. This was originally constructed for the Army Corps of Engineers officers in our Ft. Wood program, but I began teaching it on campus in the spring of 2002. I have taught 43 sections of this course since 2002, year-round.

I have been most fortunate to receive Outstanding Teaching Awards, for both my on campus and distance courses, and in 2015 was honored to be singled out by the Missouri S&T Student Council for their annual Extraordinary Faculty/Staff Award, for support of students’ development of personal and leadership skills. I began doing guest lectures at other universities over the internet using Zoom technology, which allows student interaction after each lecture. In February, I gave a series of lectures on the St. Francis Dam to a case studies course at Montana Tech, and the VCC posted the lecture on YouTube for anyone to view, free of charge.
Last year was a busy one. I taught seismic interpretation and data processing courses to students who are interested in oil and gas exploration. Many leading industry software packages such as IHS Kingdom, Seismic Unix, and Hampson Russell have been utilized in the labs. The students have acquired valuable hands-on experiences from these courses.

My research has been aimed at understanding the internal structure of the Earth, how it evolves, and what causes geohazards such as earthquakes and volcanoes. I use computer-intensive techniques to explore the Earth’s layered structures in the crust and mantle by utilizing seismic waves from artificial sources and natural earthquakes. Recently many thousands of high-quality broadband and three component seismograms were collected as a result of the expansion of global seismic networks and the ongoing US Seismic Array (USArray) project. Funded by the National Science Foundation, together with Dr. Steve Gao and students, I use those new datasets to map crustal and mantle discontinuities and seismic anisotropy in an unprecedented high resolution. An upgraded seismic anisotropy database beneath North America is established and is openly accessible (http://www.iris.edu/dms/products/sws-db-mst/). We plan to expand the database to include many areas around the world.

Another focus of my research is to study formation mechanisms of intracratonic basins such as the Williston and Michigan basins. An improved understanding of the mechanisms is essential for future efforts for the exploration and extraction of the world’s oil and gas supplies. The project is funded by the Petroleum Research Fund via the American Chemical Society.

In the spring, I received the senior faculty award of the Mines and Metallurgy Academy.
Faculty Awards

Outstanding Teaching Awards
- Neil Anderson
- Baojun Bai
- Steve Gao
- J. David Rogers

Outstanding Teaching Award of Excellence in Global Learning
- Neil Anderson

Faculty Teaching Award
- David Wronkiewicz

Faculty External Recognition Award
- Shari Dunn-Norman

Service Learning Award
- Curt Elmore

Mines and Metallurgy Academy Senior Faculty Award
- Kelly Liu

American Society of Civil Engineers (ASCE) Fellow
- J. David Rogers

ASCE Environmental and Water Resources Institute) Fellow
- Curt Elmore

Association of Engineering and Environmental Engineers (AEG) Karl and Ruth Terzaghi Outstanding Mentor Award
- J. David Rogers

Missouri Project Lead The Way (PLTW) Outstanding Dedication and Service Award
- Ralph Flori

Society of Petroleum Engineers (SPE) Mid-Continent Regional Distinguished Achievement Award
- Baojun Bai

SPE Faculty Innovative Teaching Award
- Mingzhen Wei

Research Grants and Expenditures
GGPE faculty expenditures for 2015-2016 totaled $2,356,046.65. Summaries of funded research grants and contracts can be found on http://sponsored-programs.mst.edu/funding/awarded/awardedandsubmittedlist/

Research Publications
Faculty, graduate students, undergraduates and their research collaborators published more than 60 peer reviewed articles, several in high-impact journals and numerous peer reviewed conference proceedings during the 2015-2016 academic year. Information about some of these publications can be found in the university library’s Scholar’s Mine (http://scholarsmine.mst.edu/faculty_work/). Faculty and students also presented their research at national and international conferences.

GGPE faculty attending a departmental meeting
Changes coming to Phonathon Giving

This year Phonathon will be incorporating a 1:1 match to all alumni non-donors that make their first gift to the department via Credit Card. Each department will receive a percentage of matching money to utilize for the 1:1 matching opportunity. Once matching funds for the department have been depleted the match will no longer be offered via phone. The Phonathon office is currently working on scripting with student callers for this task – and their hope is to see more non-donors giving to each department this fall. The 1:1 match will ultimately be provided by some of the most loyal Leadership Annual Donors encouraging new donors to give to their departments.

“Active Student Centered Collaborative Microscopy Visualization Space

The Collaborative Microscopy Visualization Space will enable more than half of the Geoscience faculty to completely redesign multiple existing courses from passive to active student-centered learning. Petrographic microscopes, digital cameras, computers, student and instructor microphones, large flat panel screens, specialized furniture, and a visualization wall will be integrated into a space specifically designed to promote collaborative learning. The redesign will dramatically facilitate the ability of faculty to incorporate new pedagogical methods into their instruction for individuals, small groups, or the entire class as they explore the world of geology with the microscope. We appreciate the financial support from G&G alum John Miller, and are actively seeking additional funds to create this space. If you would like to contribute to this transformation, please contact Drs. Hogan or Oboh-Ikuenobe. (jhogan@mst.edu; ikuenobe@mst.edu)

“The Microscope Visualization Space will be a world-class teaching facility. It will entirely change the way ore microscopy is taught – not only in the US, but internationally. This unique laboratory will attract new students and will be the basis for innovative teaching workshops – for academic researchers, mining industry personnel, and geological surveys alike.”

Dr. Marek Locmelis, Assistant Professor / Economic Geology

65 inch commercial grade LCD display with native 4K resolution

Microscope and assigned laptop - one per pair of students. become full matrix sources to display throughout classroom

Secondary 7 in. control panel located at each workbench for local source selection and routing. (not shown)

24 in. interactive annotation monitors for allowing digital annotation over selected sources.
Our Geological Field Studies (GEOL 4841) field trip this year visited the geologic terranes and features exposed in the Lake Superior region. This field excursion was the culmination to our spring semester course activities. During the semester, our students read various journal papers about the regional geology and then held open round table discussions about the various geologic topics of the papers.

In mid-May, 11 students embarked upon a 10-day trip through portions of Iowa, Minnesota, Wisconsin, Illinois, and the Upper Peninsula of Michigan. Two Missouri S&T graduates, postdoc Dr. Mohamed Zobaa and adjunct faculty Dr. Varun Paul, also accompanied us on the trip. We were a rather nomadic crew, with tents and camping stoves being pulled up and moved from one campground to another on a daily basis. Students and faculty took turns preparing our campground meals each evening. Our group was able to view features relating to the complex tectonic history of the region, which in several locations had been deformed by, at a minimum, four different compressional events since the Archean. We were also able to view exposures of the middle-Proterozoic aged sedimentary and volcanic deposits associated with the Midcontinent Rift basin-forming episode. Some of the more prominent geologic stops that we visited included: The Morton Gneisses of the Minnesota River Valley Province (at 3620 ± 10 million years this is among the oldest of known rocks in North America), Archean greenstone pillow basalts exposed at Ely and Gilbert Minnesota, Paleoproterozoic diamictite and glacial dropstones at Fern Creek (Huronian sequence), the Penokean-aged Niagara Suture Zone, folding of the Baraboo sediments (Yavapai-Mazatzal age), and the Duluth Igneous Complex. We also hiked the Gunflint Trail in Minnesota where early Proterozoic Animikien sedimentation was first disrupted by brecciation and soft-sediment folding before being covered by lapilli deposits. All these features were related to the 1850 million-year old Sudbury meteorite impact event located approximately 950 kilometers (590 miles) to the east. Standing on these rocks tends to reverse the stoic learnings of a geologist. After spending a career assimilating the concept of the near infinite extent of geologic time, I can still stand in amazement and think what it would have been like to have observed this catastrophic process that represents only hours of time in the history of our Earth.

We were blessed with wonderful spring weather during our travels. Although the nights were cool, every day featured a bright blue sky, abundant sunshine, and light jacket temperatures. Even Lake Superior displayed such placid calmness that it would have been difficult to envision her tumultuous “gales of November” reputation if we had not also observed the piles of sediments and driftwood piled upon her shores by recent storms. Additionally, students were able to dine on the local Cornish pasties, hunt for agates along the Lake Superior shores, and learn to converse in some of the local “Yooper” dialect. Expenses associated with this field trip were partially subsidized by your alumni donations. The students and I thank you once again for your generous support!
Field Camp ~
In Their Own Words

A sampling of comments taken from students’ field notebooks provides, in their own words, insight into the field camp experience. Thank you alumni and industry for your continued financial support of Missouri S&T field camp.

I feel that I learned a lot about using the scientific method to make observations and come to an educated conclusion. I feel that if I were asked to map an area myself in a professional capacity that I would have the right tools and background to be successful. The TA’s and professors did a wonderful job and really made this a great learning experience for everyone. Thank you for teaching us to make careful and thorough observations and to be constantly thinking about what we are seeing.

*Molly Moran*

I think that going on this trip will prove to be beneficial in the future because I actually got great field experience. I learned to identify structures and rock types. I can use a scientific approach to ask questions and get answers.

*Molly Moran*

I definitely learned a lot in this field geology course. I am grateful for all the experiences I had … … It is exciting to think what I can do, or at least attempt to do, with the basics of mapping that we learned. I learned so much even just being around the professors, TA’s and other students. For this, I am extremely grateful and I hope to continue using what I have learned.

*Paige Blasberg*

… I also learned a lot about various aspects of geology and the art of mapping. As field camp progressed I felt like I was learning a lot, and there is so much to learn. I am fairly confident in my ability to take strike and dip of bedding planes. I am happy I went on this course... Geology rocks!" *Elliot France*

This camp has been a great experience to understand the different fields that geology has to offer…

*Alex Hilke*

Field camp was very helpful in showing me real world applications of the things I have learned in my geology classes. I really enjoyed seeing what responsibilities each kind of geologist has, whether it is hydrogeologist, mining geologist, sedimentologist, petrologist, or structural geologist.

*Kaylin Clark*

I thoroughly enjoyed this trip. I learned so much and I love to learn. I mastered the Brunton, taking strike and dip with it, and also learned to use the godforsaken Sylva. More important than using the devices I learned to map and record my data. Putting this on the map helped me actually envision what was going on in the area around me. Knowing how to record the data allowed me to interpret what was going on and allowed me to create my own hypothesis. I felt like I was scratching the surface of what true geologist do… … I have learned so much in this trip I don’t believe I could write it all down.

*Trey Anglim*
STUDENT ORGANIZATIONS

AEG

The Missouri University of Science and Technology chapter of AEG has had a great year. The chapter is growing in numbers and in participation and attendance. The student chapter hosted over ten speakers this semester to help prepare us for entering the work force. In addition, students attended monthly AEG sectional meetings in St. Louis where they were able to network with professionals and hear talks about important items in the environmental and engineering geology fields. The students also participated in two highway cleanups, a nature hike to Clifty Creek, a sinkhole cleanup, selling rock kits to GE1150 students, and a bowling social. Altogether, the AEG Missouri S&T chapter had a great year and cannot wait for another one next year.

ARMA student chapter is a scientific organization that promotes interaction between rock mechanics and geomechanics specialists on the Missouri S&T campus, which includes both faculty and students. We believe a strong student membership ensures future continuity. ARMA advocates for firms and individuals in all aspects of rock mechanics, rock engineering, and geomechanics. ARMA student chapter provides a communications link, a forum, and an information resource for members, related organizations, and the public. In the past two years we focused on graduate student activities, such as hosting a bi-weekly graduate student gathering at the Rock Mechanics and Explosives Research Center. At the gathering graduate students and faculty presented their rock mechanics related research and share ideas with fellows. We are planning to involve undergraduate students in our activities which will allow for the potential to discover their interest in rock mechanics research for graduate study, or discover job opportunities in this area. Likewise, an active undergraduate student group in a graduate dominated student organization could be a helpful platform to enhance interaction between undergraduate and graduate students. Also, we are planning to create an alumni group within our organization to serve as a mentoring program for students and establish a sustainable resource for our future events. We are excited about our plans for the upcoming academic year. Please contact us if you would like to enjoy this adventure with us by joining the ARMA student chapter.
Pi Epsilon Tau is the National Petroleum Engineering Honor Society. Pi Epsilon Tau allows students the opportunity to network, socialize and volunteer in the Rolla community. Every semester Pi Epsilon Tau members mentor freshman students studying petroleum engineering by helping them create their schedules. This semester members helped out the Rolla community by cleaning up trash and pulling weeds at the Lions Club Park. Officers initiated six new members into Pi Epsilon Tau this spring and celebrated with a banquet at Colton’s Steakhouse.

C.L. Dake is a student organization which serves as a Geology Club for the Missouri S&T student body. We have 133 members, many of which are active and participate in our weekly meetings in McNutt Hall, Room 124 at 5 p.m. on Tuesdays. During the meetings we discuss fun future activities such as our spring trip, which this semester was at Mammoth Cave in Kentucky, and our well known Mineral Auction every fall. We strive to stay active inside and out of our meetings with community trail making at Mound Ridge, trivia nights, guest speakers, and student mineral/fossil show and tell. Many of the activities we participate in are club funded, so students can enjoy them without large out-of-pocket expense. We enjoy having as many students join the club as possible and contribute to our weekly meetings. We are always looking for new members! Anyone interested can always find us on our brand new Facebook page, C.L. Dake Geological Society, or on OrgSync.
This year’s major activities of the Society of Exploration Geophysicists (SEG) Student Chapter of Missouri S&T were membership recruitment, fundraising activities, and hosting six SEG workshops in which a variety of topics were presented by graduate students from the Geology and Geophysics and the Petroleum Engineering programs. In October 2015, a group of ten graduate and undergraduate students from SEG chapter participated in the SEG Annual Meeting in New Orleans, Louisiana. During the meeting, the students were able to attend several workshops and technical presentation presented by top Oil and Gas companies as well as networking with students and professionals from around the world. The Geosciences and Geological and Petroleum Engineering department assisted with travel costs for this event. Lastly, in March 2016, the SEG organized a bowling night for our students, their friends and their families.

Sigma Gamma Epsilon (the National Earth Sciences Honor Society)-Eta Chapter is continuing to give back to Rolla and the surrounding community. In fall 2015, we hosted one of the geology workshop for the Expanding Your Horizons campus-wide event. The visiting eighth graders conducted experiments in “sandbox” tectonics and “trashcano” eruption. Each event exposed students to what it is like being in a STEM field. During spring 2016, Sigma Gamma Epsilon hosted a similar event for Boy Scouts during the Rolla Merit Badge University event. Each Scout is taken on a tour of the mineral museum and gets hands-on experience with identifying rock and mineral samples. Volunteers from SGE then talk about their career paths within the geosciences.
The Society of Petroleum Engineers has completed many great events this semester. We started the semester by inviting the 2016 SPE International President, Nathan Meehan, to speak. We also had the honor of hosting the SPE Regional Paper Contest. We hosted students from eleven universities located in the mid-continent section. These students competed in three different divisions for a chance to continue on to the international competition in Dubai, United Arab Emirates. Our Petrobowl team worked hard over the semester and during spring break they traveled to the regional competition where they competed against other universities from across the country. We also held the 2016 Annual Technical Symposium. This event included six professional speakers who gave technical presentations throughout the day. Some of the speakers were Missouri S&T alumni. At the conclusion of the event, we hosted the Petroleum Engineering department banquet where we honored our graduating seniors, and exceptional students in the program. Overall, the chapter has achieved some great things over the past few months and we are excited to work together again next semester!
Geology & Geophysics

Ray Morgan Award
• Osvaldino Contreiras

Cliff Bishop Memorial Scholarship
• Yuchen Yang

Jeffrey Spooner Outstanding Graduate Scholar
• Fansheng Kong
• Youqiang Yu

Dr. Thomas Beveridge Outstanding Teaching Assistant
• Lisa Arnold

Thomas Jerris Graduate Award for Service
• Cory Reed

Undergraduate Student Award for Service
• Katlyn Lonergan

Sheldon K. Grant Field Camp Award
• Michelle Mild
• Trey Anglim

Publication Award
• Fansheng Kong
• Awad Lemnifi
• Youqiang Yu
• Robert Haselwander
• Jonathan Obrist Farner

Dr. Alfred Spreng Graduate Research Award
• Xin Zhan
• Dongyu Zheng

Devon Energy Corporation Scholarships
• Jaimeson Fredericks
• Daniel Meehan
• William Chandonia
• Zachary Freeman
• Joseph Coons

Petroleum Engineering

Highest GPA Sophomore
• Dylan Crain

Highest GPA Junior
• Kyle Kentner

Highest GPA Senior
• Caitlin Darnall

Outstanding Service to the Program
• Melissa McArthur

SPE award presented by the SPE president
• Nancy Yegerlehner

Leadership of SPE student chapter
• Alyssa Snider

Outstanding PhD Student
• Reza Rahimi

Outstanding Publication Award
• Munqith Aldhaheri

Outstanding Graduate Service
• Chatetha Chumkratoke

Outstanding Master Student
• Pu Han

Outstanding Graduate Teaching Assistant
• Weicheng Zhang

Other Missouri S&T Awards

Chancellor’s Distinguished Fellowship
• Sherif Fakher
• Michelle Mild

Chancellor’s Fellows Research Poster Session
• Cory Reed, 1st Place Award

Mines and Metallurgy Academy Scholars
• Tyler Sundell (G&G)
• Angelo Encapera (PE)
Professional Awards

Society for Mining, Metallurgy and Exploration Ernest K Lehman Memorial scholarship
  • Caroline Dziak

Society of American Military Engineers ROTC Award of Merit
  • Cody Seckfort, Geological Engineering, one of only 20 students selected from 270 schools across the nation to receive the award.

AAPG M. Ray Thomasson Named Grant
  • Xin Zhan, G&G PhD student

Mineralogical Society of America Student Awards
  • Katherine Herris
  • Michelle Mild

May 2016 Graduation - Geology and Geophysics

Two presentations given at monthly workshops hosted by Missouri S&T’s SEG chapter to give GGPE students a chance to gain valuable networking and presentation skills. Above: PhD student Awad Lemnifi; below: PhD student Haider Dahm

December 2015 Graduation - Geological Engineering

December 2015 Graduation - Petroleum Engineering

Brennan Brunsvic, left (Southern Utah University undergraduate student) and William Chandonia (S&T graduate student) examining a fault propagation fold that is part of the leading edge of the Sevier Fold and Thrust Belt in Utah. William and Brennan are conducting geologic mapping in this region as part of William’s research.

International Engineering and Design
Alumni: Come join us in the tropical waters of The Bahamas in for the 2017 Geology and Geophysics alumni field trip. Our destination will be San Salvador Island, located along the eastern edge of the Bahamian carbonate platform. The island offers a wonderful vantage point to study interactive geologic and biologic processes that culminate in the deposition of carbonate rocks. Emphasizing James Hutton’s theme of “The Present is the Key to the Past”, we will examine terrestrial Pleistocene to Holocene rock deposits each morning, followed by afternoon snorkel dives in the warm-blue Caribbean waters to explore sedimentary deposits forming today. The alumni field trip will be held in conjunction with the Missouri S&T spring semester GEOL 4841 Bahamian Carbonate Geology field course from Missouri S&T, giving alumni the opportunity to interact with our Missouri S&T students and assist them with their field and research project activities. Alumni and guests will have a daily option of touring the island with the Missouri S&T group or staying at the Club Med and using their facilities.

San Sal is sparsely populated and thus offers visitors an opportunity to view the natural ecological resources of The Bahamas in a relatively undisturbed state. Historically, the island is recognized as the likely first landing point in North America for the Christopher Columbus expedition of 1492. San Sal also contains the homestead ruins of the alleged British pirate John Watling, and may have also been visited by the more notorious Blackbeard. The island also hosts decommissioned USA Navy (1954-1970) + Air Force (1955-1970) + Coast Guard stations (1955-1980), plus a working lighthouse, and numerous ship wrecks located off-shore.

Alumni would be housed at Club Med (Columbus Isle facility). Missouri S&T faculty and students will be staying at the Gerace Research Centre on the island. Alumni will depart from Miami for San Salvador Island on Saturday May 20th using the Club Med charter flight, and return to Miami on Saturday May 27th. A preliminary estimate on alumni travel costs are $1700 per person based on double room occupancy. This would include round trip air from Miami to San Salvador Island, room and board at the Club Med facility (7 nights), access to the club med facilities, ground transport on San Salvador Island, and a field guidebook to the geology of San Salvador Island. Alumni would also be responsible for booking their own domestic flight to and from Miami Airport. We expect to have more exact figures on pricing and collect deposits for the trip in early January 2017.

Alumni interested in attending the trip should contact Dr. David Wronkiewicz (wronk@mst.edu). Further information on Club Med and Gerace Research Center facilities can be found at: https://www.clubmed.us/r/Columbus-Isle/y http://www.geraceresearchcentre.com/
I continue to consult part-time for Weatherford Laboratories (as I have since I retired from Royal Dutch Shell in 2010). Despite the severe downturn in the E&P industry, the demand for support on reservoir geochemistry projects remains strong -- especially using oil fingerprinting technology to allocate commingled oil streams produced from shale reservoirs. I’m also a member of the Scientific Advisory Committee for a DOE-funded research group at LBNL studying nanoscale geological processes during CO2 sequestration projects.

I’ve endowed several awards -- non academic scholarships -- for Missouri S&T undergraduates and graduate students encouraging behaviors that will help them succeed as scientists. The Shell Oil Company Foundation generously has matched my contributions. I named those awards after professors who played an important role in my development as a geologist at UMR during the early 1970s. The Dr. Alfred Spreng research awards help students perform research in stratigraphy, sedimentology, or paleontology and then travel to a professional conference to present their results and improve their network. The Dr. Thomas Beveridge teaching award recognizes the efforts of an outstanding Teaching Assistant. I most recently established leadership awards that give the presidents of the CL Dake Geological Society and the student chapter of the SEG the opportunity to demonstrate leadership by using the funds they receive for the benefit of the members of those organizations. Another leadership award is presented to a student in the GGPE Department who has shown good leadership traits while studying for their degree.

I encourage other alumni to endow awards or scholarships that honor the memory of Missouri S&T faculty who helped shape their careers. Missouri S&T continues to change the life of students (as it did mine), and alumni can play an important role helping the next generation of geoscientists, geological engineers, and petroleum engineers achieve their goals.

The photo is of myself (on the right) and my friend Christopher Laughrey when we visited one of the Wolcott Quarries in the Burgess Shale on Mt. Stephen in Yoho National Park, British Columbia. We examined the trilobite fossils from the “Cambrian Explosion” that Wolcott collected there. Visiting that famous fossil site was on my geological “bucket list” now that I am semi-retired. Next year I plan to see the total solar eclipse on August 21st that will cross the USA. The path of totality will pass a few miles northeast of Rolla!
Gerald (Jerry) B. Rupert passed away on February 7, 2016 at the age of 85. He was born in Akron, OH on August 23, 1930 to the late Gerald and Mildred (Risher) Rupert. In April of 1954 he married Betty Lou Allen, who preceded him in death on December 2, 2012. Mr. Rupert was a veteran of the U.S. Air Force having served in the Korean War. He earned his Masters and Ph.D. degrees in Geophysics from the Missouri School of Mines, now Missouri S&T. He taught Geophysics at the university from 1965-1997 and served as Chair of the department for five years. He was a strong advocate for Boy Scouts of America and served in district and council positions for many years. He was a longtime member of Christ Episcopal Church in Rolla.

In addition to his parents and wife, he was also preceded in death by two brothers. He will be greatly missed by his surviving family which includes: one daughter, Kathie Wayne and husband Greg of Bucyrus, KS; one son, Bradley Rupert of Rolla; and two grandchildren, Anastasia Wayne Huggins of Kansas City, MO and Tyler Wayne of Boston, MA.
Jerry (we were always on a first-name basis) was my mentor and was instrumental in kickstarting my career in geophysics. I first met Jerry in his undergraduate Geophysical Prospecting course in 1964. After obtaining his Bachelor's from Indiana, doing a stint in military service, and some industry time with Texaco, Jerry had come to S&T (MSM/UMR at the time) to get his Doctorate.

Teaching was a learning experience for Jerry so the course was more like a group effort… and a lot of fun. On one occasion a lab exercise had us students collecting gravity meter data on the golf course to locate buried storm drain culverts. Every time Jerry peered into the instrument to check our work he got a different data value than we had just observed. Finally someone realized Jerry had a collection of metal pens in his shirt pocket, which affected his readings. Jerry laughed harder than any of us. His sense of humor was infectious.

After working and thoroughly enjoying a summer job with Geophysical Service Inc. in New Orleans, I returned to UMR for graduate work in geophysics with Jerry as my advisor. Over my subsequent career working at Chevron, Sohio/BP, and Chevron again, we always kept in touch. When Jerry began presenting some geophysics training short courses in the Bay Area for Chevron or Sohio, he always stayed at my house. And when I would have the occasion to return to S&T I would always visit with him and Betty. We would often wind up having a few cold ones on his front porch with his buddy Dr. Dave Summers from Dr. George Clark’s Rock Mechanics and Explosives Research Center with which Jerry was associated.

As I mentioned above, Jerry’s sense of humor was the stuff legends are made of: In the midst of a conversation on politics and economics, I remember he said he was all in favor of redistribution of wealth… starting with one dollar more than he made; He also said he didn't mind the financial shenanigans of politicians and corporations…. he just wanted them to let him in on it; About ten minutes after I delivered the draft of my dissertation to him for his review as a reader, he appeared at my office door holding a laboratory beam balance and weights and said, “Yup, I think you've written enough;” When the staff of the Rock Mechanics group were provided full length white lab coats, Jerry showed up one day with cut out paper letters on the back of his that spelled out “Clark's Meat Market.”

I’m forever thankful for Jerry’s guidance, mentoring and friendship. And I’m honored to be allowed the privilege of writing this remembrance. Rest in peace, friend.
Thank you to Alumni who donated this year!
Thank you to all of our GGPE Order of the Golden Shillelagh members!

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“At the Face Deep Underground” – student faces disappear into the rocks as they search for classic Mississippi Valley Type (MVT) ore mineral samples during the Geology Field Camp’s visit to the Doe Run Company.