

INSIDE EAPS

Earth, Atmospheric, and Planetary Sciences at Purdue University - Summer 2016



Earth
Atmospheric
Planetary
Sciences



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A Note From the Department Head

Greetings. In my everyday interactions with our stakeholders, I am reminded about the importance of the comprehensive program we have in our department. Having various sub-fields of earth, atmospheric, and planetary sciences in one department provides unique opportunities for our faculty and students to interact on a daily basis in a truly interdisciplinary manner. One such example is the field trip taken by our students this past March to Death Valley. The field trip was organized by four faculty members (Drs. Frisbee – Env. Geoscience; Horgan – Planetary Science; Michalski – Env. Geoscience, Ridgway – Geology and Geophysics). Participating students got an opportunity to interact with faculty members and students working in different disciplinary fields. The positive response I received from the students about the quality of the experience was amazing. Many of our atmospheric science students participated in the VORTEX-SE project and went on a Maymester field trip to collect data related to severe weather. These field experiences are further enriched by external speakers, who come from diverse backgrounds, which we bring to the department a regular basis.

Our student majors are increasing, especially in geology and geophysics, and planetary science. Student and faculty recruitments have been one of the highlights in the last few years bringing new energy, ideas, and opportunities to the department. In this latest edition of the newsletter, I hope you enjoy reading about just a few of the many impressive accomplishments from the EAPS faculty and students.

Hail Purdue!

Indrajit Chaudhary
Professor and Head



2016 EAPS Distinguished Science Alumni Awardee - Mark Longacre

Purdue's College of Science Distinguished Alumni Award honors scholars, scientists, and professionals who are an alumnus from one of the departments within the college. This year Mr. Mark Longacre (MS 1982) was the recipient from EAPS for recognition of his outstanding professional achievements since graduating from Purdue.

Mr. Longacre graduated from the University of Wisconsin, Milwaukee in 1978 with Bachelor of Science degree in Geology. He then attended Purdue to pursue a Master of Science degree in Geophysics.

Mr. Longacre has been a professional geophysicist for the past 35 years, working exclusively as a gravity and magnetic specialist for the oil and gas exploration industry. Even with his busy schedule, he has kept close ties to Purdue and EAPS. He has co-taught the Applied Gravity and Magnetics in Exploration course, and has served on the EAPS Department Advisory Board since 2011. In 2009, Mr. Longacre received the Outstanding Alumni Award from the EAPS department.

Mr. Longacre was recognized at a reception and ceremony sponsored by the college. He spoke about his career and the role that his EAPS experiences have played in his life. Mr. Longacre was also able to visit with EAPS faculty members and students. The College of Science and EAPS were pleased to present him with this significant honor.



Pictured from L-R, Dr. Jeff Roberts, Dean of the College of Science, Mr. Mark Longacre (M.S. 1982), and Dr. Indrajeet Chaubey, Department Head of Earth, Atmospheric, and Planetary Sciences. (Photo courtesy of John Underwood)



Mariah Romero Awarded a 2016 NSF Fellowship

EAPS would like to congratulate Ms. Mariah Romero on her 2016 National Science Foundation Graduate Research Fellowship award. She is one of 2,000 individuals receiving these prestigious awards from the almost 17,000 applicants who competed this year.

Ms. Romero is a first-year master's student at Purdue studying geology with her advisor, Prof. Ken Ridgway. She received her B.S. in geosciences (2015) with an emphasis in geophysics from the University of Arizona in Tucson, Arizona.

Ms. Romero is interested in understanding the tectonic processes that formed Alaskan mountain ranges by studying the growth of continents along the Mesozoic collisional zone in the Alaska Range and the northern Tallektna Mountains. She will perform field work transecting this area, followed by detrital zircon geochronology and Hafnium isotope analysis in the laboratory.

She plans to work with the USGS and the University of Alaska building her group of collaborators while in the field. With her NSF Graduate Fellowship, she will build relationships to help her become one of the next generation of faculty members and researchers.

We are proud of how Ms. Romero exemplifies the characteristics the NSF expects from its applicants and have confidence she will continue to excel throughout her years at Purdue and in her career.

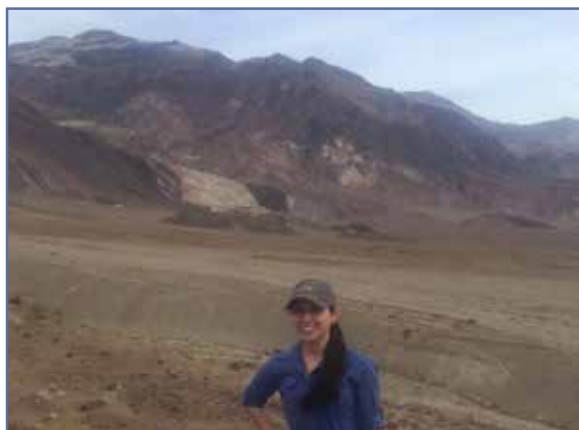


Photo courtesy of Mariah Romero



Alumni Profile: Pat Sheetz

Ms. Sheetz received her BS (1975) in Geological and Earth Science/Geosciences. Shortly afterwards, she began her 25 year career with Mobil Oil as a Geologist. Since beginning her career in the oil industry, she has held many management positions, whereby her last position was the General Manager of Italian Operations.

Since her retirement, Ms. Sheetz has embarked on a new career that follows her love of horses. She is now an owner and breeder of thoroughbred horses with her operations located in Oklahoma. She races her horses in OK, AL, AR, and TX.

Ms. Sheetz has received honors from the department on two separate occasions. In April of 1991, she received the EAPS Outstanding Alumnus Award, and in 1994, the College of Science Distinguished Alumni Award. She continues to give back to the department serving as a member of the Alumni Advisory Board and as the Alumni Chair of Black and Golden Jubilee Committee.



Lord Toccet's First Win (Photo courtesy of Pat Sheetz)

Save the Date

EAPS 50th BLACK & GOLDEN JUBILEE

September 21 - 23, 2017

Mark your calendars and keep checking the website for the latest event information.

EAPS will host the following activities:

- Gala Dinner
- Tailgate event
- Purdue Vs. Michigan Homecoming game

Additional details will come later this year.

To sponsor the event:

www.eaps.purdue.edu/alumni/jubilee

Event registration opens in September 2016!

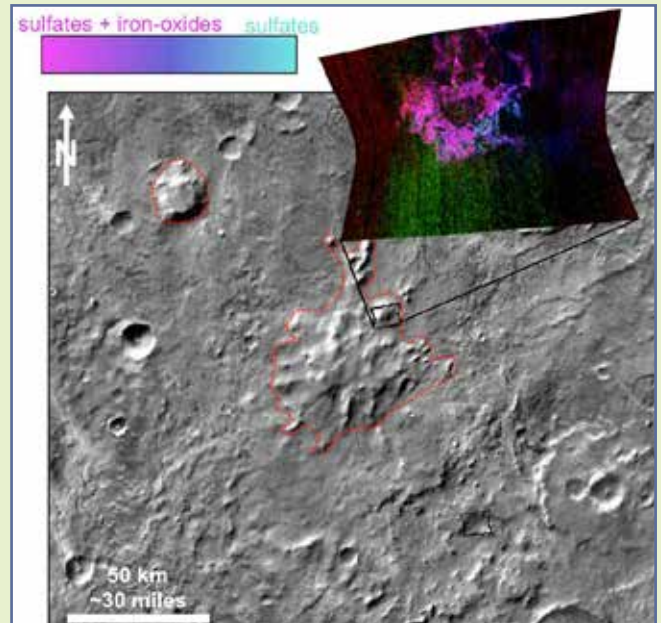
New Data on Mars' Ancient Volcanos Revealed

EAPS Ph.D. candidate, Ms. Sheridan Ackiss, along with other collaborators, are using data gathered from NASA's Mars Reconnaissance Orbiter to learn about the Red Planet's glacial volcanoes. Ms. Ackiss, studying under Prof. Briony Horgan, was recently contacted by NASA's Jet Propulsion Laboratory to discuss the research.

Using a device on the orbiter called the Compact Reconnaissance Imaging Spectrometer for Mars (CRISM), the team is studying the surface composition, which led to the detection of flat-topped mountains in the Sisyphi Montes region of southern Mars. Similar findings on Earth were volcanoes that erupted underneath ice.

"We wouldn't have been able to do this without the high resolution of CRISM," Ackiss said.

Ms. Ackiss presented her findings in March of this year at the 47th Lunar Planetary Science Conference in the Woodlands, TX. Please follow QR link to read the full story.



Credit: NASA/JPL-Caltech/JHUAPL/ASU

New Endowments Created to Help EAPS Students



Pictured from L-R, Dr. Indrajeet Chaubey, Department Head of Earth, Atmospheric, and Planetary Sciences., Feng Yu, and Myra Leap. (Photo courtesy of Purdue University)

EAPS is excited to announce the creation of four new endowments.

Two new scholarships were established in memory of Dr. Darrell Leap, an emeritus EAPS faculty member who recently passed away. Mrs. Myra Leap established the **Darrell I. Leap Hydrogeology Graduate Research Fund** to help fund graduate students doing research in the field of hydrogeology. The first recipient of this award is Mr. Noah Stewart-Maddow; he is a current EAPS graduate student, and is studying under Prof. Marty Frisbee. He plans to use the award to support his travel to conduct research into groundwater/surface-water interactions in the El Rito watershed located in the Tusas Mountains of northern New Mexico. Mrs. Leap's stewardship has seen that Dr. Leap's legacy will continue to have a positive impact to future hydrogeology students and their research.

The **Hydrogeology Graduate Research Fund in Honor of Darrell Leap** was established by his former graduate students.

This award is also in the area of hydrogeology, and is to be used by students to assist with travel expenses related to fieldwork or with the

presentations of research at professional meetings and conferences. Mr. Feng Yu, was the first awardee and presented his Ph.D. research at the Association of American Geographers (AAG) 2016 Annual Conference.

Ms. Pat Sheetz (BS 1975), established the **Pat Sheetz Field Study Award** to be given to undergraduate or graduate students studying geology and geophysics in EAPS in order to assist them with travel for field camps/experiences, study abroad, or other field study. This year's awardee, Mr. Michael McCann, is an EAPS undergraduate who is attending field camp this summer.

EAPS alumnus Gary Beck (MS 1982) and his wife established the **Gary and Lois Beck Scholarship**, which will provide funding for a female student with a major in the Department of Earth, Atmospheric, and Planetary Sciences.

If you would like to contribute to future endowments for the department, please contact Mr. Jimmy Parker, Director of Development, at japarker@prf.org or (765) 496-7502.

EAPS Team Involved in National Tornado Study, Vortex-SE

A team of EAPS researchers was selected to be a part of the Verification of the Origins of Rotation in Tornadoes Experiment Southeast, or VORTEX-SE. The Purdue team, led by Associate Professor Michael Baldwin, will study severe weather in the field to better understand the processes that lead to tornado development and the societal impacts cause by these natural hazards. Other faculty from EAPS include: Professor Ernie Agee, Assistant Professors Daniel Chavas, Daniel Dawson, and Robin Tanamachi; and Stephen Frasier of the Microwave Remote Sensing Laboratory at the University of Massachusetts. Seven students have contributed to the field project thus far, six undergraduates and one graduate student.

The project, supported by a \$5 million special Congressional allocation to the National Oceanic and Atmospheric Administration (NOAA) began March 1, 2016 due to the increase in devastating tornadoes to the region. The goal of this research is to better predict how tornadoes travel in order to saves lives.

This past spring while in northern Alabama, the team was able to observe two tornadoes. They deployed mobile radars, weather balloons, and disdrometer probes into the storms' path to measure pressure, humidity, wind speed and direction, and rain drop and hail stone sizes. Analysis of the data is underway and the team expects to see preliminary results in the fall in the form of tornadic convection simulations, and a sophisticated weather prediction and tornado risk assessment model.



Photo Courtesy of Vortex-SE

Alumni Profile: Derrick Schimming

Mr. Derrick Schimming graduated in 2007 with bachelor's degree in earth sciences. An engineer at Michigan Gas Utilities, he designs and manages pipelines, transmission and distribution, transfer station, and storage field projects. He also assists a local office design group and system management.

During a visit to campus in February, Mr. Schimming had the opportunity to meet with the PUGS Club and share some of his experiences from his career path. He told them to always be as thorough as possible in their work, especially while performing fieldwork, and the more information you collect, the results will be better in the end.

His fondest Purdue memory and best learning experience was during his junior year doing field work in the southeast and Pennsylvania.

"Continued hard work will get you to where you want to be... eventually. It may take a little longer than you may think, but you will be rewarded."



Credit Jill Wable

Happy Retirement

After more than 23 years of service, Nancy Stewart, Undergraduate Counselor for EAPS, retired on May 31, 2016. She made a tremendous impact on the department, its programs, and the lives of our students.

While Ms. Stewart was an undergraduate at Purdue, she was interested in following the career path to become an academic counselor because the job looked like so much fun. The rest, of course, is history!

She has shown a true dedication to EAPS and its students, and has touched many lives. Prof. Dan Dawson (BS 2002), who recently returned to Purdue as an EAPS faculty member, fondly recalls Ms. Stewart as one of the first people he met on campus.

"She took me under her wing. Nancy was there to help me well beyond just finding the classes that I should take and how to structure my path through college. She was always there to talk with and was that calm center during a rocky time for me. I owe her a debt of gratitude," said Dawson.

He continued to say, "I was really happy to see her when I had come back here after all this time. It is kind of sad that she is retiring." EAPS thanks her for everything that has done for the department and all the students throughout the years. We wish her well in her future endeavors!



Thank You!

The annual **Purdue Day of Giving** raised over \$18,000,000 campus wide on April 27, 2016. Students, alumni, faculty, staff, parents, and friends came together during the 24 hour online fundraising event. EAPS raised \$58,000 through individual contributions to grant opportunities and transform lives within the department. Thank you for your continued generosity and support!

Scholarship and Graduate Highlights

EAPS holds an annual awards banquet where many graduate and undergraduate students receive recognition and scholarships for their accomplishments throughout the year. At the 2016 program, 30 scholarships were awarded to 82 deserving students.

The EAPS department is growing each year and graduating more students from its programs. The department is proud to share these following statistics for students graduating from the 2015-16 academic year.

December of 2015

Undergraduate: BS-6,
Graduate: MS-3 and PhD-3

May 2016

Undergraduate: BS-17
Graduate: MS-2 and PhD-3

Congratulations and we wish them well as they start the next phase in their lives!

Upcoming Events - Mark Your Calendars!

GSA 2016: Denver, CO
September 25-28, 2016

SEG 2016: Dallas, TX
October 16-21, 2016



AGU 2016
December 12-16, 2016
Alumni & Friends Reception at the ThirstyBear
December 15, 2016 from 7:00 p.m. - 9:00 p.m.

AMS 2017: Seattle, WA
January 22-26, 2017

EAPS Black and Golden Jubilee 50th Anniversary
West Lafayette, Indiana
September 21-23, 2017

EAPS will hold a reception at some of the meetings listed above.
The time and location is TBD. Please check for updates at
www.eaps.purdue.edu/alumni.

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