

## September 2016 News Notes

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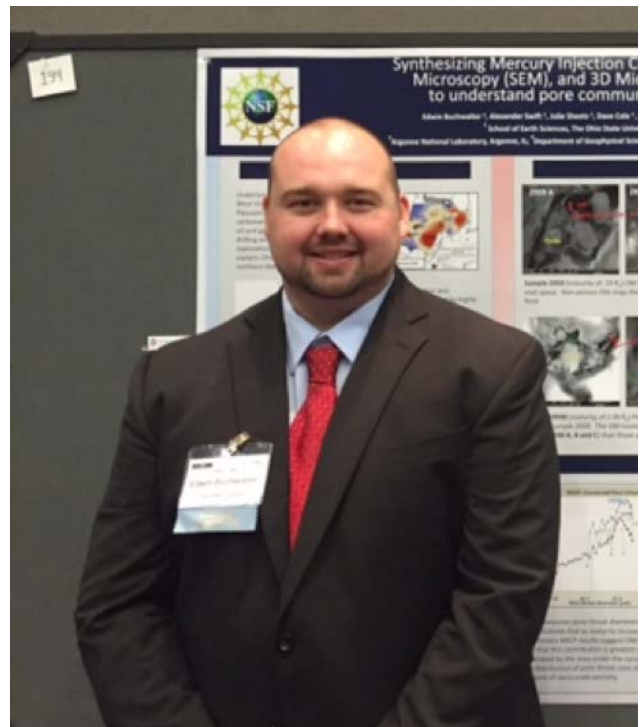
### Alumni Change Lives

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*Edwin Buchwalter (B.S. expected 2016) has been doing undergraduate research with Prof Dave Cole. Here he describes how Friends of Orton Hall helped to further his studies. If you are interested in giving to support the Friends of Orton Hall or other funds, please visit our giving page ([link](#)).*

As a second year graduate student in the School of Earth Sciences at the Ohio State University. The Friends of Orton Hall award was greatly appreciated in support of my recent trip to the AAPG/SEG student exhibition in Houston, Texas this past September. My poster, entitled “Synthesizing Mercury Injection Capillary Pressure (MICP), Scanning Electron Microscopy (SEM), and 3D Micro X-Ray Computed Tomography ( $\mu$ XCT) to Understand Pore Communication in an Organic Rich Black Shale”, combined imaging and petrophysical techniques in an effort to understand pores and pore accessibility and how the process of maturation affects porosity and permeability. This research is in support of my NSF-funded research which focuses on

identifying zones where microbes could have survived diagnosis, or where they could inhabit an organic-rich black shale if introduced anthropogenically. This event allowed me to present my research and network with people from Marathon, Occidental, Southwestern Energy, Hess, BHP and other graduate students from around the country. This interaction has resulted in two interviews and a continued dialog relating to opportunities after graduate school. I have been involved with the Ohio State chapter of the AAPG and have presented research at the 2013 AAPG ACE in Pittsburgh Pennsylvania, the 2015 URTEC in San Antonio Texas and have gone to numerous Oil and Gas industry conferences. In the future I look forward to developing my career in the oil and gas industry, hopefully while maintaining involvement with the Ohio State University School of Earth Sciences.



## Earth Science Undergraduate Wins Prize

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James White, second year Honors student majoring in Earth Science and Atmospheric Science, was part of an all first-year student team from Lincoln Tower dorm. The team include four other Arts and Sciences students—Mae Hutchison, majoring in Data Analytics, Kathleen Fillingim, majoring in French and ENR, and Mohamed Taha Meziane-Tani, majoring in International Studies. James' team won only one of three prizes awarded at the 2016 Ohio State Datafest™ held in April 2016 for 22 teams of two to five students. James and his team won for the prize for the “Best Use of Outside Data” in their use of TicketMaster concert ticket sales data, the 1.8Gbyte surprise dataset supplied to the students at the beginning of the two-day weekend event. James and his team found a slight negative correlation between severe tropical storm events and concerts in the Gulf Coast region of the United States. Their team also predicted that Ticketmaster could develop a model for concert planning and ticket sales based on extreme weather. Read more about James here ([link](#)).



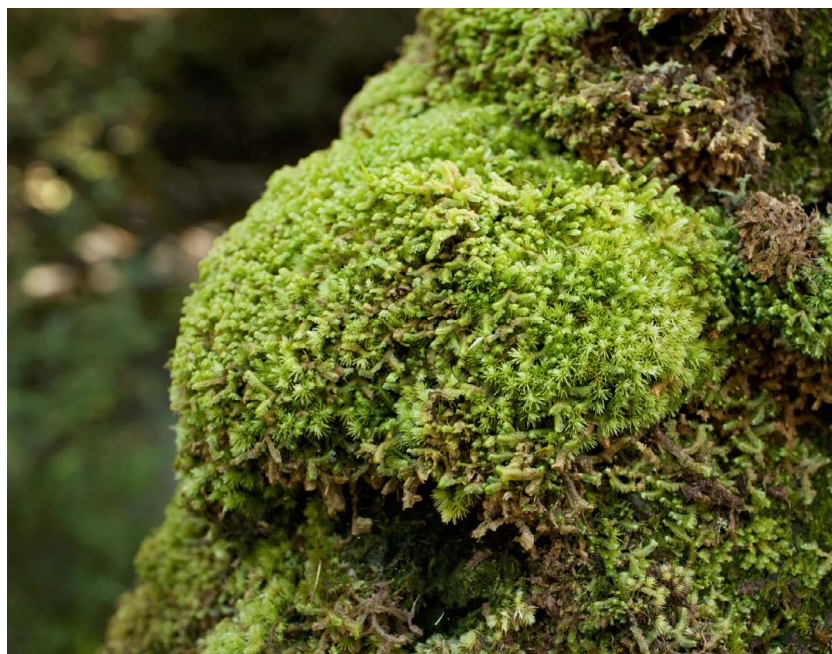
DataFest™ was sponsored by the Department of Statistics and the Data Analytics major at Ohio State. This was the first year Ohio State sponsored a DataFest™ which was founded at UCLA in 2011 and now sponsored by the American Statistical Association. Congratulations to James!

## New Study on Rise of Oxygen

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Prof Matthew Saltzman contributed to a study that appeared in Proceedings of the National Academy of Sciences in August entitled “Earliest land plants created modern levels of atmospheric oxygen” ([link](#)). Led by Prof Tim Lenton (Univ of Exeter), the study utilizes a stable carbon isotope data set from ancient marine carbonates developed by Saltzman and colleagues.

The study examines the role of early mosses in contributing to the burial of organic matter during the Ordovician period (about 450 million years ago), which ultimately produced modern oxygen levels in Earth's atmosphere.

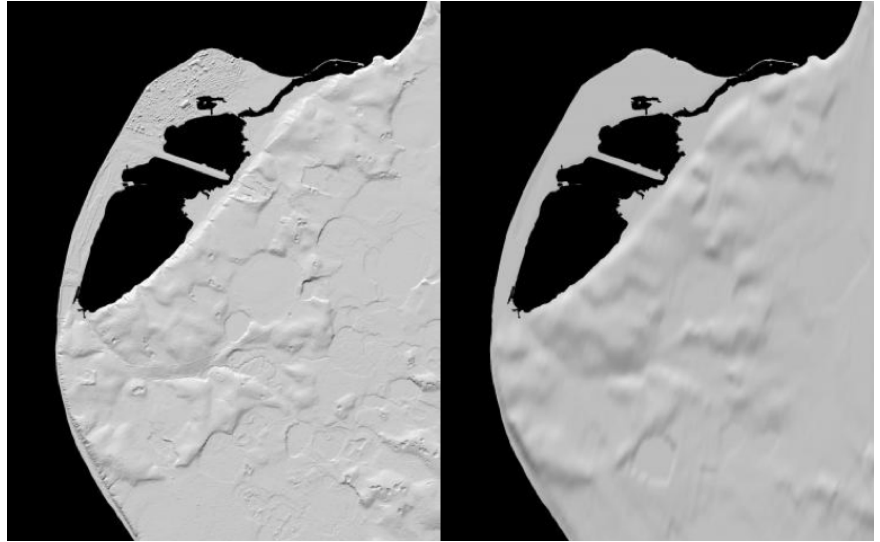


The article was featured in The Guardian ([link](#)) and includes the image of moss shown above.



# High Resolution 3D Topographic Alaska Maps Released

The first ever high-resolution, three-dimensional topographic maps of Alaska have been released to the public less than a year after the announcement of a White House Arctic initiative in direct response to President Obama's Executive Order calling for enhanced coordination of national efforts in the Arctic. Arctic Digital Elevation Models (Arctic DEMs) show Alaska's terrain in detail never before seen in the Arctic region. High-resolution (2-meter) images were captured by Digital Globe commercial satellites and processed using software developed by the Glacier



Dynamics Group at the Byrd Polar and Climate Research Center (BPCRC) under the direction of Principal Investigator (PI) and Professor Dr. Ian Howat, with algorithms crafted by senior research associate Dr. Myoung-Jong Noh. This project, an upscaling of a proof-of-concept deployed a few years ago, included working with the University of Illinois Blue Waters and Ohio Supercomputing Center to optimize code for high performance computing. The elevation maps and explorative aids are available to the public with an example provided below (new high-resolution product shown on the left for comparison with older low-resolution product on the right). You can read more here ([link](#)). Images and text via the Byrd Polar and Climate Research Center.

# Greenland ice sheet losing ice faster than thought

According to a new study co-authored by Earth Sciences Professor Michael Bevis, the Greenland ice sheet did not lose approximately 2,500 gigatons of ice from 2003–2013 as previously thought -- the number is actually around 2,700 gigatons of ice. “We’ve underestimated the rate of ice loss by about 7.6 per cent,” said Bevis. Teams of scientists spent years installing GPS stations along the perimeter of the Greenland ice sheet, and this on-site data helped scientists be able to discern between movement caused by recent ice loss and movement caused by ice loss thousands of years ago. These measurements help scientists figure out just how much ice was lost since the last glaciation period, and what that means for the future.



For more information about this study, check out the article by CBC News's Sima Zeheri here ([link](#)).

You can view the full study published in Science Advances here ([link](#)).

# GEOS Chapter Update

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The GEOS chapter held its first meeting of the semester on Wednesday, September 7. Upcoming events were discussed, including a geophysics short course, a resume and interview workshop, and a potential field trip. Annual dues for the chapter are \$10 and should be paid by October 1st to treasurer Brent Lary (lary.6). The chapter is currently putting together a workshop for October which will give students an opportunity to review and enhance their resumes. More details to be announced!

The GEOS, SGE, and AIPG chapters also co-hosted a cookout on September 23rd to welcome our new and returning SES students. The event had a great turnout and gave new students an opportunity to learn about our Earth Science chapters. Thanks to all that attended!

For questions on the chapter, please contact Katie Treiber at [treiber.15@osu.edu](mailto:treiber.15@osu.edu).



## Brevium

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Drs. Bill Ausich, Stig M. Bergstrom, and David Elliot of the School of Earth Sciences have recently been awarded the title Academy Professor by The Ohio State University. These former SES faculty members have previously been elected to the OSU Emeritus Academy, a group of approximately 70 retired professors who are still highly active in academic research. The three Academy members from our School have authored or co-authored a total of more than 1,000 geology publications and are widely known nationally and internationally.