

## Message from the Department Chair



Welcome to the inaugural issue of the Geological Sciences Department newsletter. First, I would like to congratulate all of our students, faculty, and staff for successful perseverance in handling the abrupt and difficult situation of the COVID-19 outbreak. We especially want to recognize our graduating classes of Fall 2019, and Spring and Summer 2020! Although this year did not end quite the way we all had anticipated, the diligence and flexibility shown by all of you has been remarkable. While the campus closure has disrupted normal operations, the move to an online format has provided us with unprecedented opportunities to improve the availability of resources for students off-campus and strengthened our faculty's capability to offer courses online, whether synchronous, asynchronous, or hybrid. This unexpected disruption also accelerated the department's plan to offer our [GIS related programs](#) (undergraduate GIS certificate, graduate GIS certificate, and geoinformatics MS degree) online, so students from all over the world can attend our programs in a remote capacity.

In this newsletter, I invite you to read about the various successes and achievements that our faculty and [students](#) have recently accomplished. For example, Dr. Alexis Godet became the second NSF CAREER Award faculty recipient in our department. We also established the NASA Center for Advanced Measurements in Extreme Environments ([CAMEE](#)) through the first big NASA grant, and recently launched the Institute for Water Research, Sustainability and Policy ([IWRSP](#)).

We were privileged to welcome two outstanding senior faculty: Drs. [Saugata Datta](#) and [Alan Whittington](#). We will welcome a new faculty member with expertise in remote sensing/climate this fall ([Social and Environmental Challenges in Latin America](#) cluster hire) as part of UTSA's Cluster Hire Initiative.

Moreover, our department has been awarded [over \\$5 million in federal funding](#) for the first time in its history, mostly from NASA and NSF, indicating our department's significant contributions towards advancing UTSA to R1 research status and improving overall student success. This year alone, the department has published [60+ peer-reviewed](#) journal papers authored by our faculty, students and collaborators.

In terms of enrollment, our undergraduate population has remained constant (~100), the population of our graduate students, however, shows a significant increase (~40%), with 30+ Geology MS, 15+ Geoinformatics MS, and 10+ Environmental Science and Engineering (ESE) PhD students.

Last but certainly not least, we are so proud to share that many of our [students received awards](#) and/or were recognized by agencies/organizations.

– Hongjie Xie, PhD  
Chair, Department of Geological Sciences

# Good News

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- **New Faculty Join the Department**



[Dr. Saugata Datta](#), Weldon W. Hammond Distinguished Professor, joins us from Kansas State University, where he was a faculty member since 2008. His research interests include water resource issues, water availability and understanding the cycling of different natural elements and organic compounds in our groundwaters, surface waters, and soils as well as how land use pattern changes affect the distribution of such nutrients and pollutants in our environments. Dr. Datta's research projects have links to health impact assessments—targeting both human and ecosystem health. Dr. Datta and his colleagues have extended their work in Bangladesh, India, Mexico, and Argentina. From a Wildcat in the Flint Hills of Kansas to a Roadrunner in the Hill Country, Dr. Datta has just started to build an inclusive institute focusing on water—the Institute for Water Research, Sustainability and Policy. With multiple hydrological and geochemical instruments in his Chemical Hydrology and Mass Spectrometry lab, Dr. Datta is bringing together other faculties, laboratories, facilities, knowledge on campus that can build and support one-of-a-kind Institute for Water Research, Sustainability and Policy in South Texas.



[Dr. Alan Whittington](#) joins us from the University of Missouri, where he was on the faculty since 2002, including a term as department chair from 2014 to 2019. He is originally from the UK, where he earned his BA and PhD, followed by two years of postdoc at the Institut de Physique du Globe in Paris, France, and three years at the University of Illinois. Describing himself as a “miscellaneous petrologist,” he started out studying metamorphism and melting in mountain belts formed by collisional orogeny, including the Himalaya and Brazil, but he now mostly studies volcanic processes. During his first year at UTSA he has enjoyed working with students, especially during fieldwork in Hawaii while studying the 2018 eruption of Kilauea. The experimental petrology lab is still being put together, but in a few months the Multidisciplinary Studies Building will boast a comprehensive set of equipment for measuring the rheology and thermal properties of rocks to high temperatures, supporting ongoing projects on a range of volcanoes on Earth and elsewhere in the solar system. He thinks one big difference between being a Tiger and a Roadrunner is that he has seen roadrunners in the HEB parking lot.

- NSF CAREER Award and NASA Center Award

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### Alexis Godet receives NSF CAREER Award to research the resiliency of the ancestors of coral reefs

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(Aug. 6, 2019) – UTSA geology assistant professor **Alexis Godet** has received more than half a million dollars to study the resiliency of ancient reef systems to contribute to the understanding of the threats on modern reefs. Experts predict that 100% of coral reefs, the world’s most diverse marine ecosystems, will be threatened by 2050. Godet hopes to help reverse this trend.

Godet has been awarded a National Science Foundation (NSF) Faculty Early Career Development (CAREER) Award of \$550,462 to support his five-year project, “CAREER: Environmental forcing on the resilience of carbonate platforms during the Early Cretaceous super greenhouse period”. The funding will allow him to expand on his research into the impact of ancient environmental conditions on shallow marine ecosystems.



Alexis Godet receives NSF Career Award to study the resiliency of ancient reef systems.

**UTSA Today** Search

Tuesday, March 3, 2020

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### UTSA wins \$3M NASA award to launch extreme environments center

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(July 31, 2019) – UTSA, a public university that is nationally recognized for research excellence, will receive \$3 million dollars from NASA to develop a new interdisciplinary Center for Advanced Measurements in Extreme Environments (CAMEE).

Climate change has created extreme environmental conditions such as ocean and polar warming, and sea ice reduction. Severe weather including stronger hurricanes, sweeping forest fires, destructive tommatoes, heat waves and droughts are now more common place. Recently, soaring temperature advisories were in effect for nearly 200 million people in some of the most densely populated parts of the country, including many areas not familiar with extreme heat.

To investigate these extreme conditions, NASA and UTSA will collaborate to push the boundaries of current measurement and modeling technology by conducting research in harsh and extreme environments. They will also study the challenging conditions produced when travelling at hypersonic speeds.



- New Institute for Water Research, Sustainability and Policy

# Institute for Water Research, Sustainability and Policy

Founding Director  
Dr. Saugata Datta


















- **Faculty Promotion**

- Dr. Alexis Godet to associate professor with tenure (from assistant professor)
- Dr. Alberto Mestas to associate professor in practice (from associate professor of research)
- Dr. Blake Weissling to assistant professor in practice (from senior lecturer)
- Mrs. Janet Vote to lecturer II (from lecturer I)

- **New Instruments Strengthen Department's Education/Research Capacity**



Scanning Electronic Microscope

- The department is now hosting a scanning electronic microscope (SEM, JEOL JSM-6510LV) in the Sedimentary Geology and Mineralogy laboratory located in FLN 3.01.45 and managed by Dr. Godet. This new instrument, transferred from the Department of Chemistry in April 2019, permits researchers to inform on the texture and structure of samples (rock chips, fossils, thin sections) at the micrometer scale.



Resonon Hyperspectral Imaging System (Pika L)

- NASA CAMEE just recently acquired a Resonon hyperspectral imaging system. This system can be used on platforms ranging from airplane, *in situ*, to laboratory, solving a wide range of problems and applications:
  - Remote Sensing
  - Precision Agriculture
  - Environmental Monitoring
  - Biotechnology
  - Food Analysis
  - Machine Vision

# New Grants

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- Datta, Saugata (PI) – “Microbial Sulfate Reduction: Implication for Brackish Groundwater Desalination”, UTSA GREAT, \$20,000 (2020 -2021)
- Datta, Saugata (PI) – “Signals in the Soil (SitS): Real-Time and Continuous Monitoring of Phosphates in the Soil with Graphene-Based Printed Sensor Arrays”, NSF BIOSENS, NSF CBET Award # 1935676, \$799,998 (2020–2023)
- Datta, Saugata (PI) – “The Dynamic Iron Curtain Surrounding Fluctuating Rivers and Its Impacts on Arsenic Fate and Transport”, NSF Hydrologic Sciences, NSF EAR Award # 1940772, \$313,596 (2019–2022)
- Datta, Saugata (PI) – “NASA PSTAR [Planetary Science and Technology through Analog Research] 16-PSTAR16\_2\_0015: Biologic and Resource Analog Investigations in Low Light Environments (BRAILLE)”, NSF NNH16ZDA001N, \$499,782 (2019-2021)
- Gao, Yongli (PI) – “Assessment of surface water and groundwater interactions along Cibolo Creek”, Edwards Aquifer Authority, \$90,000 (2019-2020)
- Gao, Yongli (PI) – “Assessment of water quality responses to recharge at Comal springs”, Edwards Aquifer Authority, \$60,000 (2020-2022)
- Godet, Alexis (PI) – “CAREER: Environmental forcing on the resilience of carbonate platforms during the Early Cretaceous super greenhouse period”, NSF SGP program, # 1847885, \$550,462 (2019-2024)
- Godet, Alexis (PI) – “RAPID/Collaborative Research: Digitizing Early Cretaceous dinosaur trackways to preserve the geological heritage of central Texas”, NSF SGP program, # 2035529, \$ 145,232 (2020 – 2021; with Adams, Thomas (co-PI, Witte Museum), Lehrmann, Daniel (co-PI, Trinity University), and Suarez, Marina (co- PI, University of Kansas)
- Lambert, Lance (PI) - “Process Rock Samples from Guadalupe Mountains National Park to Describe and Identify Fossils”. U.S. Department of Interior, National Park Service, \$24,285 (2020-2021).
- Whittington, Alan (PI): NSF GEO-NERC: Collaborative Research: Multi-scale investigation of rheology and emplacement of multi-phase lava. NSF-EAR 1929008, \$349,243 (2019-2022). PI: Einat Lev (Columbia), co-PI’s: Julia Hammer (Hawaii), Ed Llewellyn (Durham).
- Whittington, Alan (PI): Fast and/or Furious? Nature and Emplacement History of Lavas Erupted on Mars. NASA SSW 80NSSC19K1010, subcontract via BAERI, \$204,551 (UTSA) (2019-2022). PI: Alex Sehlke (BAERI / NASA Ames).
- Whittington, Alan (PI): Rheological investigation of cryovolcanic lavas. NASA SSW NH16ZDA001N, \$364,683 (MU/UTSA) (2019-2021). co-PI’s: Fang Zhong, Karl Mitchell, Elizabeth Carey (JPL, Caltech)
- Xie, Hongjie (PI), Steve Ackley (Co-PI), Kiran Bhaganagar (Co-PI), Chris Combs (Co-PI), and Alberto Mestas (Co-PI) - NASA MIRO Center for Advancement Measurements in Extreme Environments; NASA; \$3,000,000; (2019-2022).
- Xie, Hongjie (PI) and Alberto Mestas (Co-PI). Collaborative Research: Developing an On-Demand Service Module for Mining Geophysical Properties of Sea Ice from High Spatial Resolution; NSF, \$597,000 (2019-2022), collaboration with George Mason U. and Missouri State U.

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# Student Awards and Achievements

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- Karen Mendiondo (Geology MS) received 2019 AGU outstanding student presentation award
- YoungHyun Koo (ESE PhD) and Jullian Williams (ESE PhD) were selected to participant in the 2020 CUAHSI Snow Measurement Field School
- Ethan Fagan (Geology BS) received the 2020 South Texas Geological Society UTSA Chairman Award
- Maria Solis (Geology BS) received the 2020 GSA J. David Lowell Field Camp Scholarship
- Tom Varner (ESE PhD student) received the 2020 GSA Graduate Student Research Grant

**CONGRATULATIONS**  
*Geology and Geoinformatics* 2020-2021  
*Master's and Undergraduate Students*

**Amy Shelton & V.H. McNutt Endowed Presidential Scholarship Award**



Faruk Agoro

Angie De La Cruz

Samantha Hensely

Justice Lira

Karen Mendiondo

Karsen Moeller

Thomas Nordstrand

**UTSA**  
Geological Sciences

## CONGRATULATIONS

2020

### **\$1,000 GRADUATE SCHOLARSHIP AWARD RECIPIENTS**

*Geology Master's  
Students*

Miguel Bernardo

Karen Mendiondo

Robert Salinas



*Environmental  
Science & Engineering  
PhD Students*

Younghyun Koo

Salman Sakib

Liuxi Tian

**UTSA**  
Geological  
Sciences  
College of Sciences

- **Undergraduate degree confirmed:**

Aman Gupte, Amber B. Poujardieu, Armando J. Lopez, Ashley Aguilar, Brandon C. Womack, Brennan P. Romero, Bryan Aguirre, Christian Guzman, Cynthia Perez, Dalton G. Pearis, Daniel A. Mathura, Erick D. Jackson, Faith Goddard, Garrett C. Velko, Hunter Franks, Jake A. Peterson, Jennifer Nguyen, Jeremy C. Rangel, John D. Dye, Jose R. Silvestre, Joey Kortan, Justice J. Lira, Juan Rodarte, Karson N. Moeller, Manuel J. Macias, Marco A. Ramirez, Matthew B. Norwood, Robert I. Beumer, Ryan D. Hastings, Sergio Teran, Shelby L. Sckittone, and William E. Davis

- **MS degree confirmed:**

- Adetunji Adeleye (2020), Geoinformatics, non-thesis;
- Alyssa Kirkendall (2019), Geology, “Investigation of methods in fluorescent dye extraction from activated charcoal for use in dye tracing”. Supervising professors, Y. Gao (chair), W. Gray, A. Godet, and G. Schindel;
- Andrew Hancock (2019), Geology, “Evaluation of subsurface porosity in the Austin Chalk Group, South Texas”. Supervising professors: A. Godet (Chair), Yongli Gao, and Jaime Hincapie;
- Caleb McBride (2019), Geology, “Carbon isotope chemostratigraphy of the mid-Cretaceous Escucha Formation in Spain”. Supervising professors: M. Suarez (co-chair), A. Godet (co-chair), Y. Gao, and J. Haschenburger;
- David Dudics (2019), Geology, non-thesis;
- Donavan Lewis (2020), Geology, “A new Genus of Kufengoceratinae from the Pipeline Shale Member, Brushy Canyon Formation (Upper Roadian Stage), Guadalupe Mountains, West Texas”. Supervising professors: L. Lambert (Chair), J. Vote (co-chair), and A. Godet;
- Doug Schoenenberger (2019), Geology, “Summer melt of McMurdo Ice Shelf from satellite data: 2013-2019”. Supervising professors: H. Xie (Chair), B. Weissling, and Y. Gao;
- Jerry Chavez (2020), Geoinformatics, non-thesis;
- Juan Campos (2020), Geology, “Petrology and chemistry of the younger intrusives from the Liano Uplift, Central Texas”. Supervising professors: J. Haschenburger (co-chair), W. Gray (co-chair), and A. Godet;
- Ken Walsh (2020), Geology, “Depositional environment of Texas Cretaceous carbonate platforms inferred from the statistical analysis of geochemical data”. Supervising professors: A. Godet (Chair), L. Lambert, and C. Keairns;
- Philip Webster (2019), Geology. “A phreeqc model of the geochemical variation across a freshwater and saline water interface, Edwards balcones fault-zone aquifer, south-central Texas”. Supervising professors: Y. Gao (chair), A. Dutton, A. Godet, and W. Gray;

- **ESE PhD degree confirmed:**

- Kevin Eddy (2019), ESE, “How does increased atmospheric carbon dioxide concentration affect plant competition?”. Supervising professors: O. Van Auken (co-chair), H. Xie (co-chair), J. Keating, H. Shipley, and H. Sharif
- Lijun Tian (2019), ESE, “Stable isotope evidence for moisture sources in central Texas and polar regions”. Supervising professors, Y. Gao (chair), H. Xie, M. Suarez, A. Mestas, and H. Shipley.
- Liuxi Tian (2020), ESE, “Ross Sea ice thickness and change from airborne and satellite remote sensing”. Supervising professors: H. Xie (co-chair), S. Ackley (co-chair), A. Mestas, B. Weissling, Y. Gao, and H. Sharif.

## Photos and Field Trips

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- January 2020, Dr. Whittington and students conducted field work in Hawaii, funded by NSF and NASA grants:



Brenna Halverson (PhD in progress), John Dye (BS 2019, MS in progress), Rebecca de Graffenried (San Antonio native, now doing a PhD at the University of Hawaii - Manoa), and Justice Lira (BS 2019, MS in progress) on 2018 lava flows of Kilauea's Lower East Rift Zone, Hawaii. This is in the middle of a residential subdivision, and in Spring 2018 the view would have been a street with houses.



John Dye (BS 2019, MS in progress), Alan Whittington, Brenna Halverson (PhD in progress) and Justice Lira (BS 2019, MS in progress) on the edge of the Halema'uma'u crater at the summit of Kilauea, Hawaii.

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- January 2020, CUAHSI snow measurement field school.

Dr. Xie's Ph.D. students YoungHyun Koo and Jullian Williams attended Snow Measurement Field School at the Appalachian Mountain Club (AMC) Highland Center in Bretton Woods, NH, January 6-9 2020. Topics of study included snow pits and snow layering, tools for measuring depth and snow water equivalent, and ground-based remote sensing systems.



Jullian digs the 1m deep snow pit



Spectroradiometer measures snow reflectance



Snow fork measures electrical parameters



Radar measures snow depth



Field team takes a break!

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- Dr. Datta and his graduate students (Katrina Poling, Thomas Varner, Thomas Nordstrand, Joshua Ford) and postdoc (Harshad Kulkarni) conducted field data collection in Bangladesh, Lava Bed National Monument, and San Antonio, funded by NSF and NASA grants.



Left and Middle: Thomas collecting sediment samples and Harshad measuring chemical composition of sediments at a field site on the Meghna riverbank in Bangladesh.  
 Right: Joshua and Harshad observing cave speleothems at Lava Bed National Monument (N. CA) with Diana Northup.



Left: Katrina measuring groundwater quality in the field. Saugata and Thomas discussing with City staff.  
 Right: Katrina, Thomas and Harshad sampling brackish groundwater near San Antonio, TX.

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# Publications

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(Faculty, students, and alumni in **bold**; <sup>1</sup>B.S. student; <sup>2</sup>M.S. student; <sup>3</sup>Ph.D. student; <sup>4</sup>Postdoctoral fellow/Visiting scholar, <sup>5</sup>retired from or affiliated with the Dept. of Geological Sciences)

## 2020:

- Arnaud-Vanneau, A., Arnaud, H., Adatte, T., **Godet, A.**, 2020. Depositional geometries in Barremian platform carbonates from the southeastern France. In: V.P. Wright, G. Della Porta, E. Samankassou (Eds.), IAS Field Guide 3 "Exceptionally exposed carbonate outcrops". SEPM, accepted.
- Ackley S.F.**, S. Stammerjohn, T. Maksym, M. Smith, J. Cassano, P. Guest, J-L. Tison, B. Delille, B. Loose, P. Sedwick, L. DePace, L. Roach, J. Parno, 2020. Sea ice production and air-ocean-ice-biogeochemistry interactions in the Ross Sea during the PIPERS, 2017 autumn field campaign, *Annals of Glaciology*. doi:10.1017/aog.2020.31
- Ackley, S.F.**, D.K. Perovich, T. Maksym, **B. Weissling, H. Xie**, 2020. Surface flooding of Antarctic summer sea ice, *Annals of Glaciology*. doi:10.1017/aog.2020.22
- Cooper, J.R.**<sup>2</sup>, **Godet, A.**, Pope, M.C., 2020. Tectonic and eustatic impact on depositional features in the upper Cretaceous Austin Chalk Group of south-central Texas, USA. *Sedimentary Geology* 401, 105632.
- Cui, Minming; T. Jade Mohajerin; Segun Adebayo; **Saugata Datta**; Karen H Johannesson (2020). Investigation of tungstate thiolation reaction kinetics and sedimentary molybdenum/tungsten enrichments: Implication for tungsten speciation in sulfidic waters and possible applications for paleoredox studies. *Geochimica et Cosmochimica Acta*. doi:10.1016/j.gca.2020.04.004
- Dai, L.**<sup>4</sup>, **H. Xie, S.F. Ackley, A.M. Mestas-Nuñez**, 2020. Ice Production in Ross Ice Shelf Polynyas during 2017-2018 from Sentinel-1 SAR Images. *Remote Sens.* 12, 1484. doi:10.3390/rs12091484
- Godet, A.**, Föllmi, K.B., 2020. Phosphorites: a window into the dynamics and chemistry of past oceans. *Encyclopedia of Geology* in press.
- Harper, D., **Suarez, M.B.**<sup>5</sup>, **Uglesich, J.**<sup>2</sup>, **Godet, A.**, Li, D.-Q., You, H.-L., Dodson, P., 2019. Aptian-Albian clumped isotopes from the Xiagou and Zhonggou Formations, northwest China: Cool summer temperatures and regional shifts in hydrological cycle. AGU Fall Meeting. pp. PP13C-1471.
- Hart, B.S., **Godet, A.**, Griffith, C., Pope, M.C., 2020. Geologic controls on production: Eagle Ford and Austin Chalk, South Texas. *SEPM Field Trip Guidebook* 16, 148 pp.
- Hobson, C.<sup>3</sup>, **Kulkarni, H.V.**<sup>4</sup>, Johannesson, K., Bednar, A., Tappero, R., Mohajerin, T.J.<sup>3</sup>, Sheppard, P., Witten, M., Hettiarachchi, G., and **Datta, S.** (2020). Origin of tungsten and geochemical controls on its occurrence and mobilization in shallow sediments from Fallon, Nevada, USA. *Chemosphere*. doi:10.1016/j.chemosphere.2020.127577
- Hu, K., N. J. Hogancamp, **L. L. Lambert**, Y. Qi, and J. Chen. 2020. Evolution of the conodont *Diplognathodus ellesmerensis* from *D. benderi* sp.nov. at the Bashkirian-Moscovian (Lower-Middle Pennsylvanian) boundary in South China. *Papers in Palaeontology*. doi.org/10.1002/spp2.1309
- Jeong, H. Y.**<sup>4</sup>, Gbemudu, N., Choi, H., Kim, S., Jeon, S.-W., **Gao, Y.**, Sun, K., & Hayes, K. F., 2020. Preparation and characterization of granular FeS from its nanoparticulate precursor using a freeze and thaw method. *Geosciences Journal*. http://dx.doi.org/10.1007/s12303-020-0003-1
- Li, M., C. Ke, **H. Xie**, X. Miao, X. Shen, **W. Xia**, 2020. Arctic sea ice thickness retrievals from CryoSat-2: seasonal and interannual comparisons of three different products. *International Journal of Remote Sensing* 41(1), 152-170. doi:10.1080/01431161.2019.1637961

- Morrison, A.A., **Whittington, A.**, Smets, B., Kervyn, M., and Sehlke, A., 2020. The rheology of crystallizing basaltic lavas from Nyiragongo and Nyamuragira volcanoes, D.R.C. *Volcanica*, 3: 1-28, doi: 10.30909/vol.03.01.0128
- Qu, Y.**<sup>4</sup>, Jin, Z., Wang, J., Wang, Y., Xiao, J., Gou, L., Zhang, F., Liu, C., **Gao, Y.**, **Suarez, M. B.**<sup>5</sup>, & Xu, X., 2020. The sources and seasonal fluxes of particulate organic carbon in the Yellow River. *Earth Surface Processes and Landforms*, 45(9), 2004-2019. <http://dx.doi.org/10.1002/esp.4861>
- Sehlke, A., and **Whittington, A.**, 2020. Rheology of a KREEP Analog Magma: Experimental Results Applied to Dike Ascent through the Lunar Crust. *Planetary and Space Science*, 187, 104941, doi: 10.1016/j.pss.2020.104941
- Sha, D., X. Miao, M. Xu, C. Yang, **H. Xie**, **A.M. Mestas-Nuñez**, Y. Li, Q. Liu, J. Yang, 2020. An On-Demand Service for Managing and Analyzing Arctic Sea Ice High Spatial Resolution Imagery. *Data*, 5, 39. doi:10.3390/data5020039
- Shen, X., C. Ke, **H. Xie**, M. Li, **W. Xia**, 2020. A comparison of Arctic sea ice freeboard products from Sentinels-3A and CryoSat-2 data. *International Journal of Remote Sensing* 41(7), 2789-2806. doi:10.1080/01431161.2019.1698078
- Suarez, M.B.**<sup>5</sup>, **Knight, J.A.**<sup>2</sup>, **Godet, A.**, Ludvigson, G.A., Snell, K.E., Murphy, L., Kirkland, J.I., 2020. Multi-proxy strategy for determining paleoclimate parameters in the Ruby Ranch Member of the Cedar Mountain Formation. In: A.-V. Bojar (Ed.), *Stable Isotope Studies of the Water Cycle and Terrestrial Environments*, accepted.
- Tian, L.**<sup>3</sup>, **H. Xie**, **S.F. Ackley**, K.J. Tinto, R.E. Bell, C.J. Zappa, **Y. Gao**, and **A.M. Mestas-Nuñez**, 2020. Sea ice freeboard in Ross Sea from airborne altimetry IcePod 2016-2017 and a comparison with IceBridge 2013 and ICESat 2003-2008, doi:10.3390/rs12142226.
- Tian, L.**<sup>3</sup>, **Y. Gao**, **B. Weissling**, **S.F. Ackley**, and **H. Xie**, 2020. Snow ice contribution to the structure of sea ice in the Amundsen Sea, Antarctica. *Annals of Glaciology*. doi:10.1017/aog.2020.55
- Tian L.**<sup>3</sup>, **H. Xie**, **S.F. Ackley**, **J. Tang**<sup>4</sup>, **A.M. Mestas-Nuñez**, and **X. Wang**, 2020. Sea-ice freeboard and thickness in the Ross Sea from airborne (IceBridge 2013) and satellite (ICESat 2003–2008) observations. *Annals of Glaciology* 1–16. doi:10.1017/aog.2019.49
- Tisom, J.L., T. Maksym, A.D. Fraser, M. Corkill, N. Kimura, Y. Nosaka, D. Nomura, M. Vancoppenolle, **S. Ackley**, S. Stammerjohn, S. Wauthy, F.V. Linden, G. Carnat, C. Sapart, J. de Jong, F. Fripiat and B. Delille, 2020. Physical and biological properties of early winter Antarctic sea ice in the Ross Sea. *Annals of Glaciology* 1–18. doi:10.1017/aog.2020.43
- Vega, M<sup>1</sup>., **Kulkarni, H.V.**<sup>4</sup>., Johannesson, K. H., Taylor, R.J., **Datta, S.** (2020) Mobilization of co-occurring trace elements (CTEs) in arsenic contaminated aquifers in the Bengal basin. *Applied Geochemistry*.
- Wang, X.**, Jiang, W., **Xie, H.**, **Ackley, S.**, and Li, H. (2020). Decadal variations of sea ice thickness in the Amundsen-Bellinghshausen and Weddell Seas retrieved from ICESat and IceBridge laser altimetry, 2003-2017. *Journal of Geophysical Research: Oceans*, 125, e2020JC016077. doi:10.1029/2020JC016077
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