

The University of Texas at San Antonio

# UTSA Earth and Planetary Sciences

College of Sciences

## Newsletter 2021-2022

### Message from the Department Chair



It is my pleasure to welcome you to the Department of Earth and Planetary Sciences (EPS) at UTSA and circulating this Newsletter of ours. The goal of our department is to promote a comprehensive learning and research environment at UTSA, one of the fastest growing higher educational institutes in the nation and South Texas. Our departments' outstanding faculty teach, carry out research, and mentor young scientists in a variety of fields including sedimentology and stratigraphy, structural geology, volcanology, geomorphology, hydrology and environment, oceanography, biogeochemistry, polar and climate science, geomicrobiology, as well

as growing our new emphasis in planetary geology. Our students actively engage in investigating geological, geomorphological, and biogeochemical processes in a variety of natural systems that stretch from the poles to the tropics, including understanding volcanic processes from the past and present on Earth or other planets, reconstructing paleo-environments and studying fossil records, studying natural disasters and monitoring environmental changes, and other exciting research opportunities. In EPS, we promote outreach and networking among our peer colleges, schools, and institutions in and around San Antonio. At UTSA, we are committed to propagating science through a blend of interdisciplinary research, state of the art research, and instrumentation resources in a collaborative and inclusive learning environment. Recently, the EPS department chair search was completed in full spirit. In the last year, our department exercised Academic Program Review and received very positive feedback from the external and internal review committees, which outlines future directions of the department for the growth in terms of new faculty hires, expansion of majors and a new EPS PhD program. We welcome you to our department and will strive to provide the best experience and a bright future in earth and planetary sciences. In this newsletter, I invite you to read about the various successes and achievements that our faculty and students have recently accomplished.

**Saugata Datta, Ph.D. and Professor  
Interim Chair, Department of Earth and Planetary  
Sciences**

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# Faculty Highlights



❖ **Dr. Alberto Mestas-Nuñez** a University Excellence Award Winner, Dr. Mestas-Nuñez was part of the Explore STEM @ UTSA team that received the Innovation & Impact Award. ([UTSA Today](#))

❖ **Dr. Hongjie Xie** is the recipient of SCAR (Scientific Committee on Antarctic Research) Visiting Scholarship. ([SCAR](#))



❖ **Dr. Alan Whittington** is leading a team of UTSA researchers to design an induction furnace-nozzle for forming and placing lunar regolith bricks for landing pad construction. This research could help develop the Moon's first construction site. ([UTSA Today](#))

❖ Texas Scientists: Power Outages Show Why Texas Must Prepare for Climate Change, **Stephen Ackley, Dr. Alberto Mestas-Nunez, and Dr. Hongjie Xie** among those who signed the open letter from Texas climate scientists. ([Dallas Morning News](#))



❖ Constant Changes to Environmental Laws Can Have a Negative Impact on Environment, **Dr. Saugata Datta** talks about environmental regulation changes and studying the impacts to our ecosystem. ([KSAT](#))

❖ New collaborative program aims to increase student diversity in research, Dr. Saugata Datta is the faculty lead for STIR-UP ([UTSA Today](#))

# Students Highlights

- ❑ **PhD Student Kuzipa Kapayi Received an NSF/GSA Graduate Student Geoscience Research Grant**  
The primary role of the GSA research grants program is to provide partial support of master's and doctoral thesis research in the geological sciences for graduate students enrolled in universities in the United States, Canada, Mexico and Central America.
- ❑ **PhD Student Tom Varner to Travel Abroad, Access Academic Opportunities as Fulbright Scholar**  
Tom is one of three UTSA students awarded prestigious Fulbright scholarships for the 2022-2023 school year. In India, Tom will conduct field work on arsenic poisoning in drinking water. ([UTSA Today](#))
- ❑ **PhD Student Protik Banerjee Received a Geological Society of America (GSA) Research Grant** The primary role of the GSA research grants program is to provide partial support of master's and doctoral thesis research in the geological sciences for graduate students enrolled in universities in the United States, Canada, Mexico and Central America.
- ❑ **PhD Student Mansi Joshi's Future Investigator in NASA Earth and Space Science Technology (FINESST) Proposal Accepted.** FINESST solicits graduate student-designed and performed research projects that contribute to NASA's Science Mission Directorate (SMD) science, technology, and exploration goals. Mansi's proposal was one of 62 out of 394 selected in the field of earth science.
- ❑ **PhD Student Karen Mendiondo Featured in San Antonio Woman's STEM Showcase** The May/June 2022 edition of San Antonio Woman included a Women in STEM special section. ([San Antonio Woman](#))
- ❑ **MS Student Jordan Arnold Received the Graduate School Award for Outstanding Thesis in the College of Sciences** The Outstanding Thesis Award recognizes outstanding and innovative work by Master's students. Jordan's thesis project on the significance of tributary sediment input in controlling main stem river morphology was supervised by Dr. Judy Haschenburger. ([Graduate School Awards](#))
- ❑ **MS Student Angie De La Cruz Awarded STGS Jones-Amsbury Research Grant** This research grant is awarded on a competitive basis to candidates currently enrolled in graduate school at a Texas University who are conducting research toward a Master's Degree in Geology or Earth Science.
- ❑ MS Student Ashley Aguilar featured in [#ThisIsWhatAScientistLooksLike](#)
- ❑ **PhD Student Tom Varner Part of First Place Team in Transdisciplinary Team Grand Challenge: Water**  
Title: Developing an integrative machine learning algorithm to accurately predict future water main failures  
Team: Savannah Heath, BME PhD student; Iyare Osaghae, Geoinformatics MS student; Caden Povlish, Data Analytics MS student; and Tom Varner, ESE PhD student
- ❑ **PhD Student Mansi Joshi Part of Second Place Team in Transdisciplinary Team Grand Challenge: Water**  
Title: A method to improve water quality using graphitic structures  
Team: Hebin Cherian, EE PhD student; Pratheek Gopalakrishnan, EE PhD student; Mansi Joshi, ESE PhD student; Veena Prasad, CMB PhD student; and China Whitby, Art History and Criticism MA student
- ❑ **Congratulations to Justin Sharpe on Receiving the STGS UTSA Chair Award**  
This South Texas Geological Society award goes to a "meritorious, needy, or otherwise qualified student" as recommended to the chair by the Department Scholarship Committee.
- ❑ **Geology MS Graduate Rebecca Nunu Received UTSA's Graduate School's Outstanding Thesis Award**  
The award recognizes outstanding and innovative work by Master's students. Rebecca was mentored by Dr. Yongli Gao.

## New Grants

- ❑ A. Speck (PI), A. Ponce-Pedraza (co-PI), **A. Whittington (co-PI)** receive Collaborative Research: Laboratory and Observational Investigations of Aluminum Oxide Analogs of Stardust, NSF, 2022-2024, \$400,179.
- ❑ A. Speck (PI), A. Ponce-Pedraza (co-PI), **A. Whittington (co-PI)** receive Laboratory and Observational Investigations of Aluminum Oxide Analogs of Stardust, NASA APRA20-0165, 2021-2024, \$377,194.
- ❑ **J. Haschenburger (PI), A. Godet (co-PI), and J. Vote (co-PI)** receive GP-UP: Geoscience Engagement: Growing Interest at Hispanic-Serving Institutions by Scaffolding Classroom Intervention to Service-Learning Projects, NSF, 2022 - 2025, \$347,072.
- ❑ A. Veach (PI), B. Laub (co-PI), **H. Kulkarni (co-PI)** receive Examining respiration and carbon flow in intermittent, urban rivers using novel chamber methodologies, US DOE, 2022-2024, \$149,144.
- ❑ **S. Datta (PI), H. Kulkarni (co-PI), D. Northup (co-PI)** receive RAPID Impacts of High Magnitude Wildfire on Volcanic (Lava Tube) Cave Water Chemistry, Nutrient Transport, Activity and Diversity of Cave Microbiome, NSF, 2021-2022, \$99,394.
- ❑ **A. Whittington (PI)** receives Efficient Orbital Structures Manufactured using Solar-Melted Regolith, Astroport Inc., 2021-2026, \$83,496.
- ❑ **H. Xie (PI) and A. Mestas-Nuñez (Co-PI)** receive Supplement fund for research experience for undergraduate student (REU) to the existing NSF project titled Collaborative Research: Developing an On-Demand Service Module for Mining Geophysical Properties of Sea Ice from High Spatial Resolution” NSF, 2021-2022, \$24,000.

## New Instruments Strengthen Department's Education and Research Capacity



A new *MiniWave Microwave Digester* in Dr. Saugata Datta's **Chemical Hydrology and Mass Spectrometry Laboratory**. This microwave digester will be used to digest a wide range of environmental samples including rocks, soils, and sediments using a variety of digestion methods.

- ❑ Koo, Y., Lei, R., Cheng, Y., Cheng, B., **Xie, H.**, Hoppmann, M., Kurtz, N.T., **Ackley, S.F.** and **Mestas-Nuñez, A.M.**, 2021. Estimation of thermodynamic and dynamic contributions to sea ice growth in the Central Arctic using ICESat-2 and MOSAiC SIMBA buoy data. *Remote Sensing of Environment*, 267, p.112730. <https://doi.org/10.1016/j.rse.2021.112730>
- ❑ Sha, D., Koo, Y., Miao, X., Srirenganathan, A., Lan, H., Biswas, S., Liu, Q., **Mestas-Nuñez, A.M.**, **Xie, H.** and Yang, C., 2021. Spatiotemporal Analysis of Sea Ice Leads in the Arctic Ocean Retrieved from IceBridge Laxon Line Data 2012–2018. *Remote Sensing*, 13(20), p.4177. <https://doi.org/10.3390/rs13204177>
- ❑ Xu, Y., Li, H., Liu, B., **Xie, H.** and Ozsoy-Cicek, B., 2021. Deriving Antarctic Sea-Ice Thickness From Satellite Altimetry and Estimating Consistency for NASA's ICESat/ICESat-2 Missions. *Geophysical Research Letters*, 48(20), p.e2021GL093425. <https://doi.org/10.1029/2021GL093425>
- ❑ Koo, Y., **Xie, H.**, Kurtz, N.T., **Ackley, S.F.** and **Mestas-Nuñez, A.M.**, 2021. Weekly Mapping of Sea Ice Freeboard in the Ross Sea from ICESat-2. *Remote Sensing*, 13(16), p.3277. <https://doi.org/10.3390/rs13163277>
- ❑ Koo, Y., **Xie, H.**, **Ackley, S.F.**, **Mestas-Nuñez, A.M.**, Macdonald, G.J. and Hyun, C.U., 2021. Semi-automated tracking of iceberg B43 using Sentinel-1 SAR images via Google Earth Engine. *The Cryosphere*, 15(10), pp.4727-4744. <https://doi.org/10.5194/tc-15-4727-2021>
- ❑ Shen, S.Z., Yuan, D.X., Henderson, C.M., **Lambert, L.L.**, Zhang, Y.C., Erwin, D.H., Ramezani, J., Wang, X.D., Zhang, H., Wu, Q. and Wang, W.Q., The Global Stratotype Section and Point (GSSP) for the base of the Capitanian Stage (Guadalupian, Middle Permian). *Episodes--Journal of International Geoscience*. <https://doi.org/10.18814/epiugs/2022/022004>
- ❑ **Whittington, A.** and **Parsapoor, A.**, 2022. Lower Cost Lunar Bricks: Energetics of Melting and Sintering Lunar Regolith Simulants. *New Space*, 10(2), pp.193-204. <https://doi.org/10.1089/space.2021.0055>
- ❑ Pistone, M., Formo, E., **Whittington, A.G.**, Herbst, T. and Cottrell, E., 2022. Direct nanoscale observations of degassing-induced crystallisation in felsic magmas. *Contributions to Mineralogy and Petrology*, 177(3), pp.1-21. <https://doi.org/10.1007/s00410-022-01900-1>
- ❑ **Whittington, A.G.** and Sehlke, A., 2021. Spontaneous reheating of crystallizing lava. *Geology*, 49(12), pp.1457-1461. <https://doi.org/10.1130/G49148.1>
- ❑ Wang, T.,... **Gao, Y.**, and Zang, J., 2022. Hydroclimatic changes in south-central China during the 4.2 ka event and their potential impacts on the development of Neolithic culture. *Quaternary Research*, pp.1-14. <https://doi.org/10.1017/qua.2022.11>
- ❑ Xia, X. and **Gao, Y.**, 2022. Validity of geochemical signatures of abiotic hydrocarbon gases on Earth. *Journal of the Geological Society*, 179(3). <https://doi.org/10.1144/jgs2021-077>
- ❑ Sun, C., Tian, L., Shanahan, T.M., Partin, J.W., **Gao, Y.**, Piatrunia, N. and Banner, J., 2022. Isotopic variability in tropical cyclone precipitation is controlled by Rayleigh distillation and cloud microphysics. *Communications Earth & Environment*, 3(1), pp.1-10. <https://doi.org/10.1038/s43247-022-00381-1>
- ❑ Zhi, X., Anfuding, G., Yang, G., Gong, P., Wang, C., Li, Y., Li, X., Li, P., Liu, C., Qiao, C. and **Gao, Y.**, 2022. Evaluation of the Water Resource Carrying Capacity on the North Slope of the Tianshan Mountains, Northwest China. *Sustainability*, 14(3), p.1905. <https://doi.org/10.3390/su14031905>
- ❑ Tian, L., **Gao, Y.**, Yang, G., Schwartz, B., Cai, B., Lei, G., Shi, G., Ray, C., Sok, S., Martinez, E. and Li, Y., 2021. The evolution of hydrochemical and isotopic signatures from precipitation, surface water to groundwater in a typical karst watershed, Central Texas, USA. *Isotopes in Environmental and Health Studies*, 57(5), pp.492-515. <https://doi.org/10.1080/10256016.2021.1948410>
- ❑ Xia, X. and **Gao, Y.**, 2021. Methane from microbial hydrogenolysis of sediment organic matter before the great oxidation event. *Nature communications*, 12(1), pp.1-9. <https://doi.org/10.1038/s41467-021-25336-6>
- ❑ **Kulkarni, H.V.**, Ford, J., Blank, J.G., Park, M. and **Datta, S.**, 2022. Geochemical interactions among water, minerals, microbes, and organic matter in formation of speleothems in volcanic (lava tube) caves. *Chemical Geology*, 594, p.120759. <https://doi.org/10.1016/j.chemgeo.2022.120759>

- ❑ Becker, F., Marcantonio, F., **Datta, S.**, Wichterich, C., Cizmas, L., Surber, J., Kennedy, K. and Bowles, E., 2022. Tracking the source of contaminant lead in children's blood. *Environmental Research*, 212, p.113307. <https://doi.org/10.1016/j.envres.2022.113307>
- ❑ Phillips-Lander, C.M.,...**Datta, S.**, and Boston, P., 2021. Mars astrobiological cave and internal habitability explorer (MACIE): A new frontiers mission concept. arXiv preprint arXiv:2105.05281. <https://doi.org/10.48550/arXiv.2105.05281>
- ❑ Sieron, K., **Weissling, B.P.**, Morales-Martínez, M.A. and Teran, S., 2021. Reconstruction of the upper slope conditions of an extraordinary hydro-meteorological event along the Jamapa glacier drainage system, Citlaltépet (Pico de Orizaba) volcano, Mexico. *Frontiers in Earth Science*, p.637. <https://doi.org/10.3389/feart.2021.668266>
- ❑ Marta, S.,... **Weissling, B.P.**, and Bhambri, R., 2021. The Retreat of Mountain Glaciers since the Little Ice Age: A Spatially Explicit Database. *Data*, 6(10), p.107. <https://doi.org/10.3390/data6100107>
- ❑ **Haschenburger, J.K.**, Gray, W., **Godet, A.**, Suarez, M.B. and Núñez, A.M., 2022. Recruiting all the talent into undergraduate STEM student success programs using an invitational approach. *Journal of Geoscience Education*, 70(3), pp.306-322. <https://doi.org/10.1080/10899995.2021.1918971>
- ❑ Macdonald, G.J., **Ackley, S.F.** and **Mestas-Nuñez, A.M.**, 2022. Evolution of the dynamics, area and ice production of the Amundsen Sea Polynya, Antarctica, 2016–2021. *The Cryosphere Discussions*, pp.1-32. <https://doi.org/10.5194/tc-2022-51>
- ❑ Macdonald, G.J., **Ackley, S.F.** and **Mestas-Nuñez, A.M.**, 2021. Evolution of the Amundsen Sea Polynya, Antarctica, 2016–2021. *The Cryosphere Discussions*, pp.1-33. <https://doi.org/10.5194/tc-2021-250>

## Conference Sessions Convened

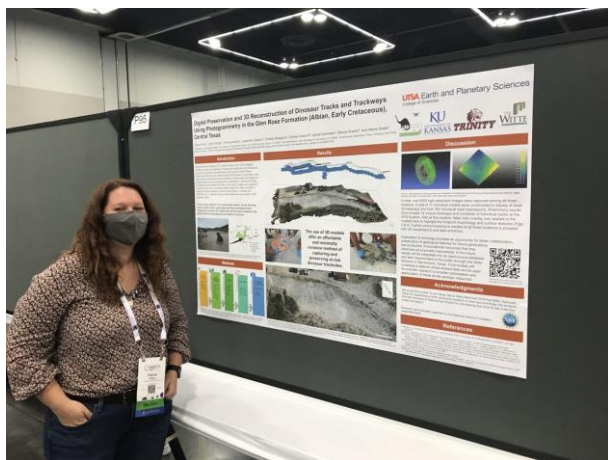
- ❑ Gao, Y. (2022) T10. Tracer Tests in the Hydrological Cycle, 56th Annual Meeting of the South-Central Section, Geological Society of America
- ❑ Godet, A., Adams, T., Suarez, M., and Lehrmann (2022) Environmental Significance and Preservation Mechanisms of Cretaceous Marginal-Marine and Terrestrial Ecosystems, South-Central GSA Meeting
- ❑ Minejima, C., Johannesson, K.H., Datta, S. (2022). Theme 13: Environmental Geochemistry: Contaminants, Geo-engineering, and Human Health. Goldschmidt Conference, Honolulu, Hawaii
- ❑ Kulkarni, H.V., Johnson, D., Ikehata, K., Alauddin, M., Datta, S. (2022). Bridging geochemistry and geobiology with advanced water purification, desalination and water reuse. Topical Session Proposed at Geological Society of America Connects, 9-12 October 2022.
- ❑ Kulkarni, H.V., Varner, T., Malina, N., Ojeda, A., Alauddin, M., Finkelman, R., Johannesson, K., Datta, S. (2022). Characteristics, reactivity and role of natural organic matter (NOM) in mobilizing trace elements of health concern in the environment. Topical Session Proposed at Geological Society of America Connects, 9-12 October 2022.
- ❑ Kulkarni, H.V. and Datta, S. (2021). Session Theme 1.4-II. Arsenic mobility and fate in soils, sediments, and mining wastes. The 8th Arsenic Congress, 7th – 9th June 2021, The Netherlands.
- ❑ Kulkarni, H.V., Varner, T., Alauddin, M., Finkelman, R., Johannesson, K., Datta, S. (2021) T126. Source, Fate, and Roles of Natural Organic Matter in Geochemical Cycling of Metals and Metalloids in Surface and Groundwater Systems. Topical Session at Geological Society of America Connects 2021, 10-13 October 2021.



## UTSA EPS Booth at GSA 2021 Conference in Portland, Oregon

# Conference Presentations

- ❑ Halverson, B.A., Whittington, A., 2022. Insights into Vesicle Evolution from the Ahu'aila<sup>7</sup>au (fissure 8) flow of the 2018 Kilauea Lower East Rift Zone Eruption. Cities on Volcanoes 11, Heraklion, Greece.
- ❑ Morrison A.A., Whittington A.G., Zhong, F., Mitchell, K.L., and Carey, E.M., 2022. Modeling the viscosity of potential cryovolcanic liquids. 53<sup>rd</sup> Lunar and Planetary Science Conference, The Woodlands, TX [virtual poster], abstract #1555
- ❑ Morrison A.A., Whittington A.G., and Mitchell, K.L., 2022. 53<sup>rd</sup> Modeling emplacement of turbulent cryolava flows. 53<sup>rd</sup> Lunar and Planetary Science Conference, The Woodlands, TX [virtual talk], abstract #1553
- ❑ Parsapoor, A., and Whittington, A., 2022. Thermal Properties and Microstructure of remelted lunar regolith Simulant (OPRL2NT). Lunar Surface Innovation Consortium Spring Meeting [online]
- ❑ Parsapoor, A., and Whittington, A., 2022. Thermal properties and microstructure of remelted lunar regolith simulant (OPRL2NT). 10<sup>th</sup> European Lunar Symposium (virtual poster)
- ❑ Parsapoor, A., Whittington, A., Majilesi, A., Giberga, O., Wells, R., and Ximenes, X., 2022. Effect of cooling rate on the microstructure of crystallizing LCATS-1 lunar regolith simulant. 53<sup>rd</sup> Lunar and Planetary Science Conference, The Woodlands, TX [virtual poster] abstract #2824
- ❑ Schwartz, L.S., Halverson, B.H., and Whittington, A.G., 2022. Relating Small-Scale Texture of Basaltic Lava Flows to Thermal Inertia. 53<sup>rd</sup> Lunar and Planetary Science Conference, The Woodlands, TX [virtual poster] abstract #2942
- ❑ Whittington, A., and Parsapoor, A., 2022. Lower cost lunar bricks: Energy requirements to achieve melting and sintering in lunar regolith simulants. 10<sup>th</sup> European Lunar Symposium (virtual poster)
- ❑ Whittington, A., and Parsapoor, A., 2022. To reduce energy requirements for lunar bricks, sort the regolith to increase amorphous con-tent. Lunar Surface Innovation Consortium Spring Meeting (virtual poster)
- ❑ Halverson, B.A., Whittington, A.G., Kenderes, S.M., Hammer, J.E., Dieterich, H.R., Lev, E., Llewellyn, E.W., Patrick, M.R., Carr, B.B., Zoeller, M., Parcheta, C.E., Birnbaum, J., and Baur, J., 2021. Correlation of Calculated Cooling Rates with Textural Variations of the Fissure 8 Flow Field, Kilauea 2018: A method for determination of primary and secondary textures. AGU Fall meeting, V35F-07.
- ❑ Lira, J., Halverson, B., and Whittington, A., 2021. Rheology of the andesite erupted from Fissure 17 of the 2018 Kilauea Lower East Rift Zone eruption. Geological Society of America, joint North-Central / South-Central section meeting (Online)
- ❑ Morrison A.A., Whittington A.G., and Mitchell K.L., 2021. Modeling effusive cryolava flows: Reevaluating flow emplacement. 52<sup>nd</sup> Lunar and Planetary Science Conference (Online) abstract #2123
- ❑ Morrison A.A., Whittington A.G., Zhong F., Mitchell K.L., and Carey E. M., 2021. Rheological evolution of brine liquids and suspensions: Chloride and sulfate brine as analogs to cryoflows on Europa. 52<sup>nd</sup> Lunar and Planetary Science Conference (Online) abstract #2137
- ❑ Morrison, A.A., Whittington, A.G., and Mitchell, K.L., 2021. Modeling Effusive Cryolava Flows: Reevaluating Emplacement & Feasibility of Tubes. AGU Fall meeting, EP25H-1415.
- ❑ Morrison A.A., Whittington A.G., Zhong F., Mitchell K.L., and Carey E. M., 2021. Rheological Investigation of Cryolavas: Viscosity of Liquid Brines. AGU Fall meeting, P54B-06.

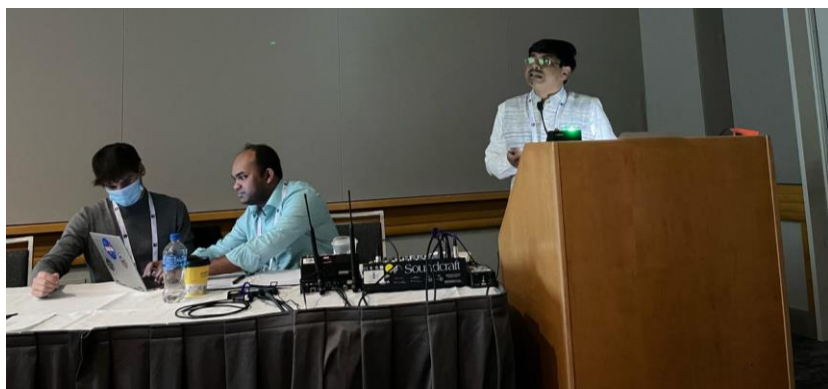


Dianna Price in front of her poster at the GSA Annual Conference in Portland, Oregon, in October 2021.

- ❑ Parsapoor, A., and Whittington, A., 2021. Thermal properties of lunar regolith simulants. Lunar Surface Science Workshop (Online) abstract #4098
- ❑ Schwartz, L., Halverson, B., and Whittington, A.G., 2021. Relating Small-Scale Texture Of Basaltic Lava Flows To Thermal Inertia. AGU Fall meeting, EP25H-1404 [poster]
- ❑ Whittington A.G., and Kenderes, S.K., 2021. Faster relaxation geospeedometry using a Monte Carlo approach for determining the cooling rates of volcanic glasses. Frontiers in Glass II: At the Interface of Earth Science & Synthetic Materials, 30th June 2021 (Online).

# Conference Presentations

- ❑ Whittington A.G., and Parsapoor, A., 2021. Lower cost lunar bricks: Energetics of melting and sintering lunar regolith Simulants. Lunar Surface Science Workshop (Online) abstract #4100
- ❑ Whittington A.G., Sehlke A., and Speck A.K., 2021. Recalescence in silicate melts: Applications to circumstellar dust grains, lava fountains, and lava flows. 52<sup>nd</sup> Lunar and Planetary Science Conference (Online) abstract #1776
- ❑ Whittington, A.G., Lira, J.J., Halverson, B.A., Hammer, J.E., and Parcheta, C.E., 2021. Magmatic Plumbing Samples a Smorgasbord: At Least Four Components in Lava Erupted From Fissure 17, Kilauea 2018. AGU Fall meeting, V35D-0157 [poster]
- ❑ Koo, Y., H. Xie, N. Kurtz, S.F. Ackley, and A.M. Mestas, Surface classification of ICESat-2 ATL07 sea ice surface height data in the Ross Sea using machine learning, AGU Fall Meeting 2021
- ❑ Mahmound, H., A. Fernandez, H. Xie, M. Somos-Valenzuela, and J. McPhee, Renanalysis of geodetic glacier mass balance in Central Chile from satellite imagery and aerial photos. AGU Fall Meeting 2021.
- ❑ Godet, Alexis, Price, Dianna, Sarpe, Justin, Davis III, Charles, Sheppard, Charles, Tesauro, Josephine, Adams, Thomas, Lehrmann, Daniel and Suarez, Marina B. (2021) Dinosaur track and subaerial exposure surfaces in the Albian Glen Rose Formation of Central Texas. South-Central GSA Meeting 2021.
- ❑ Tesauro, Josephine, Sheppard, Charles, Davis III, Charles, Adams, Thomas, Price, Dianna, Sharpe, Justin, Godet, Alexis, Suarez, Marina B., Altiner, Demir and Lehrmann, Daniel (2021) Sedimentologic and geochemical analysis of a dinosaur track site, the davenport ranch, bandera county and comparison with other track sites in the lower cretaceous glen rose formation of central texas. South-Central GSA Meeting 2021.
- ❑ Bourdon Matthew, Byerly Jacob, Arnaud-Vanneau Annie, Suarez Marina, Adatte Thierry, and Godet Alexis (2021) The impact of Aptian super greenhouse conditions on the Urgonian subtropical carbonate platforms. GSA Connects 2021, 10-13 October, Portland, Oregon, USA.
- ❑ Price Dianna, Sharpe Justin, Adams Thomas, Tesauro Josephine, Sheppard Charles, Davis III Charles, Lehrmann Daniel, Suarez Marina, and Godet Alexis (2021) Digital preservation and 3d reconstruction of dinosaur tracks and trackways using photogrammetry in the glen rose formation (albian, early cretaceous), central Texas. GSA Connects 2021, 10-13 October, Portland, Oregon, USA.
- ❑ Sharpe Justin, Price Dianna, Davis III Charles, Sheppard Charles, Tesauro Josephine, Adams Thomas, Altiner Demir, Lehrmann Daniel, Lehrmann Asmara, Suarez Marina, Lacroix Brice, and Godet Alexis (2021) Paleoenvironmental reconstruction of lower Cretaceous dinosaur trackways in central Texas. GSA Connects 2021, 10-13 October, Portland, Oregon, USA.
- ❑ Tesauro Josephine, Sheppard Charles, Davis III Charles, Adams Thomas, Price Dianna, Sharpe Justin, Godet Alexis, Suarez, Marina, Altiner Demir, and Lehrmann Daniel (2021) Sedimentologic and geochemical analysis of a dinosaur track site, the davenport ranch, bandera county and comparison with other track sites in the lower cretaceous glen rose formation of central Texas. GSA Connects 2021, 10-13 October, Portland, Oregon, USA.
- ❑ Harshad V Kulkarni, Joshua A. Ford, Jennifer G. Blank, Saugata Datta. (2022) Physical controls on speleothem formation and growth in volcanic (lava tube) caves. Goldschmidt 2022, 10-15 July, Honolulu, Hawaii, USA.
- ❑ Saugata Datta, Harshad V. Kulkarni, Joseph Medley, Jennifer Hathaway, Charity M. Phillips-Lander, Diana E. Northup. (2022) Impacts of wildfire on volcanic (lava tube) cave water chemistry. Goldschmidt 2022, 10-15 July, Honolulu, Hawaii, USA.



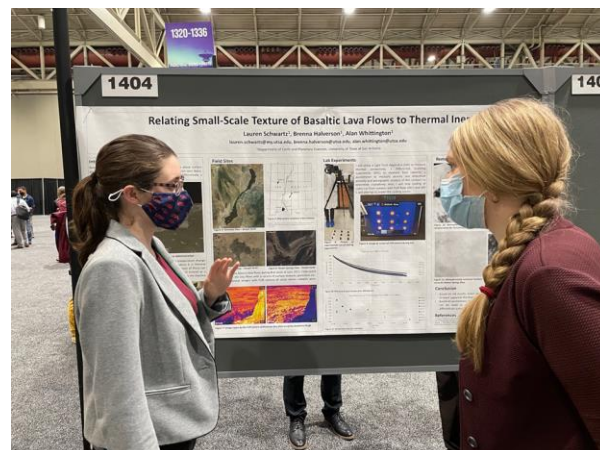
Dr. Saugata Datta, Dr. Harshad Kulkarni and Tom Varner (PhD Student) convened a session in GSA 2021 Conference, Portland, Oregon

- ❑ Kuzipa Kapayi, Saugata Datta, Franco Marcantonio, Harshad V. Kulkarni. (2022) Impacts of Land Use Practices on Groundwater Quality in Edwards Aquifer in South-Central Texas. Goldschmidt 2022, 10-15 July, Honolulu, Hawaii, USA.
- ❑ Datta, S., Kulkarni, H.V., Kapayi, K., Bertetti, P. (2022) Geochemical and hydrological investigations of land use impacts on the Edwards Aquifer. AGU 2022 Frontiers in Hydrology Meeting, 19-24 June, San Juan, Puerto Rico.



# Conference Presentations

- ❑ Varner, T., Kulkarni, H.V., Kwak, K., Knappett, P.S.K., Cardenas, M.B., Datta, S. (2021). Contrasting biogeochemical controls on arsenic mobilization in an arsenic contaminated aquifer and a potential natural reactive barrier in Bangladesh. Proceedings of the 8th International Congress and Exhibition on Arsenic in the Environment (AS 2021), June 7-9, 2021, The Netherlands, in press.
- ❑ Banerjee, P., Kulkarni, H., Datta, S., Das, S.R., Nagaraja, T., 2021. Effect of pH and organic matter on soil phosphate dynamics in a Tallgrass Prairie Ecosystem. American Geophysical Union 2021 Fall Meeting, 13-17 December 2021.
- ❑ Kulkarni, H., Ford, J., Blank, J.G., Datta, S., 2021. The influence of physical processes in the growth of speleothems in volcanic (lava tube) caves. American Geophysical Union 2021 Fall Meeting, 13-17 December 2021.
- ❑ Buskirk, R., Knappett, P.S.K., Cardenas, M.B., Datta, S., Kulkarni, H., 2021. Experimental investigation and modeling of Fe-oxide Permeable Natural Reactive Barrier formation through a novel reversing flow 1-D column experiment (R1D). American Geophysical Union 2021 Fall Meeting, 13-17 December 2021.



Lauren Schwartz and Brenna Halverson in front of Lauren's poster at AGU December 2021 in New Orleans, LA

- ❑ Reid Buskirk, Peter Knappett, Allison Prewitt, M. Bayani Cardenas, Saugata Datta, Harshad V. Kulkarni, Tom s Varner, Alexander Pappas. (2022) Hydrological and Biogeochemical Controls on the Formation of a Fe-oxide Permeable Natural Reactive Barrier (PNRB) along the Meghna River, Bangladesh. Goldschmidt 2022, 10-15 July, Honolulu, Hawaii, USA.
- ❑ Kyungwon Kwak, Tom Varner, William Nguyen, Harshad V. Kulkarni, Peter S. K. Knappett, Saugata Datta, M. Bayani Cardenas. (2022) Freshly-deposited overbank sediments create an arsenic release hotspot in riverbanks of a tidally and seasonally fluctuating river. Goldschmidt 2022, 10-15 July, Honolulu, Hawaii, USA.
- ❑ Palmer, J., Adams, J.H., Kulkarni, H.V., Datta, S., Ikehata, K. (2022). Freshwater Recovery From Brackish Groundwater RO Concentrate via Photobiological Treatment and Secondary RO. Membrane Technology Conference 2022.
- ❑ Phillips-Lander, C.M., Lakrout, C., Kulkarni, H.V., Datta, S. (2022). Searching for Life in All the Right Places: Quantifying Background Microbial Biosignatures in Lava Tubes. AbSciCon, 15-20 May 2022, Atlanta, GA.
- ❑ Kulkarni, H.V., Barua, S., Kibria, M.G., Bhattacharya, P., Datta, S. (2021). Understanding the interactions among dissolved organic matter, fecal contamination, and arsenic in the groundwaters of southeast Bangladesh. Proceedings of the 8th International Congress and Exhibition on Arsenic in the Environment (AS 2021), June 7-9, 2021, The Netherlands, in press.
- ❑ , Baylor Husted, S., Buskirk, R., Nguyen, W.D., Smith, A.P., Calabrese, S., Kulkarni, H., Datta, S., Knappett, P.S.K., Brumbelow, J.K., Moore, G.W., 2021. Inorganic and organic carbon fluxes from tropical andisols and andesitic saprolite in a pre-montane rainforest. American Geophysical Union 2021 Fall Meeting, 13-17 December 2021.
- ❑ Varner, T., Kulkarni, H., Nguyen, W.D., Kwak, K., Cardenas, M.B., Knappett, P.S.K., Datta, S., 2021. Geochemical characteristics of sediments from a potential natural reactive barrier and arsenic contaminated aquifer in Bangladesh. American Geophysical Union 2021 Fall Meeting, 13-17 December 2021.
- ❑ Kwak, K., Knappett, P.S.K., Varner, T., Kulkarni, H., Datta, S., Cardenas, M.B., 2021. Overbank sediments as a hotspot of arsenic release in riverbanks of a tidally and seasonally fluctuating river. American Geophysical Union 2021 Fall Meeting, 13-17 December 2021.
- ❑ Gao, H., Ikehata, K., Palmer, J., Rojas-Annicchiarico, C., Kulkarni, H., Datta, S., 2021. Dissolved silica, calcium, and nutrient removal from reverse osmosis concentrate by the diatom-based photobiological treatment. Membrane Technology Conference 2021, 19-22 July.
- ❑ Ikehata, K., Palmer, J A., Gao, H., Roden, S N., Roy, E., Gonzalez, S., Hunter, A., Kulkarni, H., Datta, S., 2021. Comparison of chemical and photobiological methods for the removal of dissolved silica and calcium hardness from brackish groundwater reverse osmosis concentrate. GSA Connects 2021, 10-13 October.
- ❑ Varner, T., Kulkarni, H., Cardenas, M.B., Knappett, P.S.K., Datta, S., 2021. Contrasting biogeochemical controls on arsenic mobilization in reducing aquifer and a potential natural reactive barrier (NRB). GSA Connects 2021, 10-13 October.
- ❑ Lakrout, C., Phillips-Lander, C.M., Kulkarni, H.V., Datta, S., 2021. Habitability influences biosignatures in Mars analog lava tubes. GSA Connects 2021, 10-13 October.

# Conference Presentations

- ❑ Aguilar, A., Datta, S., Li, Y., Kulkarni, H., Rampe, E., 2021. Hydrothermal influence on arsenic and fluoride in groundwater of the Independence Basin Aquifer System in Central Mexico. GSA Connects 2021, 10-13 October.
- ❑ Poling, K., Kulkarni, H., Datta, S., Ikehata, K., Gao, Y., 2021. Investigating biological methods for improving reverse osmosis-based desalination of brackish groundwater in Bexar County, TX. GSA Connects 2021, 10-13 October.
- ❑ Kulkarni, H., Barua, S., Kibria, M.G., Bhattacharya, P., Datta, S., 2021. Role of dissolved organic matter in controlling growth of coliform bacteria in arsenic contaminated groundwater of southeast Bangladesh. GSA Connects 2021, 10-13 October.
- ❑ Banerjee, P., Kulkarni, H., Nagaraja, T., Das, S.R., Datta, S., 2021. Role of organic matter in mobilization of phosphorus in Tallgrass Prairie soil. GSA Connects 2021, 10-13 October.
- ❑ Datta, S., Kulkarni, H., Ford, J., Park, M., Blank, J.G., 2021. Using analysis of dissolved organic matter in waters from volcanic caves to identify prevailing microbial metabolisms. GSA Connects 2021, 10-13 October.
- ❑ Ong, C., Goddard, F., Gao, Y., & Fu, Q., 2022, Analysis of PFAS in the Edwards-Trinity Aquifer System, Fate of PFAS: From Groundwater to Tap Water, Westerville, OH, National Ground Water Association, <https://ngwa.confex.com/ngwa/fpfas2022/meetingapp.cgi/meeting.html>
- ❑ Nordstrand, T., Felton, A., Gao, Y., Ackley, S., & Hutchinson, J., 2022, Analysis of Microplastics in Hailstones from Two Supercell Thunderstorms, *Frontiers in Hydrology*, 322-01, <https://agu.confex.com/agu/hydrology22/meetingapp.cgi/Paper/1027639>
- ❑ Gao, Y., 2022, Paleoclimate and environmental reconstruction, hazards assessment and the management of water resources in Latin America, *Social and Environmental Challenges in Latin America Showcase*, UTSA
- ❑ Gao, Y., Sullivan, T., Li, X., & Ma, L., 2022, Tracing sources and fate of nitrate using environmental tracers and numerical models in karst watersheds and springs, central Texas, *Geological Society of America Abstracts with Programs*. Vol. 54, No. 1, <https://doi.org/10.1130/abs/2022SC-374392>
- ❑ Nordstrand, T., Gao, Y., Ackley, S., & Weissling, B., 2022, Characterization of Large Hailstone Growth Using Stable Isotopes, *Geological Society of America Abstracts with Programs*. Vol. 54, No. 1, <https://doi.org/10.1130/abs/2022SC-373829>
- ❑ Ong, C., Gao, Y., \*Goddard, F., & Fu, Q., 2022, Analysis of PFAs in the Edwards-Trinity aquifer system, *Geological Society of America Abstracts with Programs*. Vol. 54, No. 1, <https://doi.org/10.1130/abs/2022SC-373906>
- ❑ Gao, Y. & Sullivan, T., 2021, Integration of Water Quality, Groundwater Flow, and Contaminant Transport Models to Track Sources, Fate, and Transport of Nitrate in Karst Watersheds of the Edwards Aquifer, Central Texas, *AGU Fall Meet. Suppl.*, H21H-02. <https://agu.confex.com/agu/fm21/meetingapp.cgi/Paper/995022>
- ❑ Felton, A., De La Cruz, A., \*Nordstrand, T., Gao, Y., Ackley, S., & Hutchinson, J., Gao, Y. & Sullivan, T., 2021, Analysis of Microplastics in Hailstones from Two Supercell Thunderstorms, *AGU Fall Meet. Suppl.*, A44D-04 <https://agu.confex.com/agu/fm21/meetingapp.cgi/Paper/921488>
- ❑ Nordstrand, T., \*De La Cruz, A., Gao, Y., Ackley, S., & Weissling, B., 2021, Characterization of Large Hailstone Growth Using Stable Isotopes, *AGU Fall Meet. Suppl.*, A351-1737 <https://agu.confex.com/agu/fm21/meetingapp.cgi/Paper/921248>
- ❑ Jenson, A., Gao, Y., & Schwartz, B., 2021, Sinkhole morphology and distribution as indicators of hydrogeologic controls on karstification: Quintana Roo, Mexico, *Geological Society of America Abstracts with Programs*. Vol. 53, No. 6, <https://doi.org/10.1130/abs/2021AM-370583>
- ❑ Nunu, R., Bertetti, P., Green, R., & Gao, Y., 2021, Using geochemical and statistical analyses to identify local and regional flow to a multi-outlet spring system: San Solomon Springs, Texas, USA, *Geological Society of America Abstracts with Programs*. Vol. 53, No. 6, <https://doi.org/10.1130/abs/2021AM-364897>
- ❑ Quintanilla, J., \*Goddard, F., Bertetti, F.P., & Gao, Y., 2021, Identifying regional and local contributions to a large karst spring system, Comal Springs, Texas, USA, *Geological Society of America Abstracts with Programs*. Vol. 53, No. 6, <https://doi.org/10.1130/abs/2021AM-367876>
- ❑ Chadwick, J., Goddard, F., Bertetti, F. P., & Gao, Y., 2021, Contaminants as tracers: Utilizing environmental signals to characterize regional contributions to a karst spring system, *Geological Society of America Abstracts with Programs*. Vol. 53, No. 6, <https://doi.org/10.1130/abs/2021AM-367914>

# Invited Lectures

- ❑ Whittington, A., Halverson, B.H., and Sehlke, A., 2022. Crystallization, latent heat release, and thermal history of magmas. Goldschmidt Conference, Honolulu, HI
- ❑ L. Lambert “Intersections of Middle Permian Paleontology and Stratigraphy in the Guadalupe Mountains, West Texas” (November 12, 2021, Dept. of Geosciences, Baylor University)
- ❑ Gao, Y., 2021, Boundaries and scales of extreme karst features in the carbonate critical zone, Geological Society of America Abstracts with Programs. Vol. 53, No. 6, <https://doi.org/10.1130/abs/2021AM-371413> (invited)
- ❑ Datta, S. Geochemical and hydrological investigations of land use impacts on the Edwards Aquifer. AGU 2022 Frontiers in Hydrology Meeting, 19-24 June, San Juan, Puerto Rico.
- ❑ Datta, S. Organic matter - how it affects nutrients and contaminant migration within subsurface and groundwaters. Department of Geosciences, Baylor University, 22nd April 2022.
- ❑ Datta, S. Biogeochemical Interactions among Natural Organic Matter, Microbes, Iron and Arsenic in Reducing Aquifers, Texas A&M University, San Antonio, November 2021.
- ❑ Datta, S. Iron-Arsenic Microbiology, FEMS Microbiology Organization, September 2021.
- ❑ Datta, S. Geochemical characterization of sediments from an arsenic contaminated aquifer in proximity to a potential riverbank permeable natural reactive barrier in Bangladesh, Asia Oceanic Geosciences Society, August 2021
- ❑ Kulkarni, H. V. Lava tubes as planetary analog sites, Spaceonova, India, Mars Analogue Site Expedition 2022, YouTube Live, 30th May 2022. <https://www.youtube.com/watch?v=dvbGoapGz0&t=4s>

# Scholarships

## ❑ AMY SHELTON & V.H. MCNUTT PRESIDENTIAL ENDOWED SCHOLARSHIP (\$1,500 each)

- **Graduate Student Recipients:** Emmanuel Ekezie, Alexis Sansing, Emma L. Dorrell, Chinenye Agbim, and Maria Rodriguez
- **Undergraduate Student Recipients:** Elizabeth P. Heathman, Vanessa V. Costilla Bermea, Keerthi M. Gummidipundi, Malorie M. Dickey, Ethan W. Hayes, Angie De la Cruz, and Korie Patterson

## ❑ MRS. PARVATHAMMAL ENDOWED SCHOLARSHIP (\$400 each)

- **Undergraduate Student Recipients:** Dana Griggs and Elizabeth P. Heathman

## ❑ SOUTHWEST GEM & MINERAL SOCIETY SUMMER FIELD CAMP SCHOLARSHIP (\$3,084)

- **Undergraduate Student Recipients:** Kayla Bishop

## ❑ SOUTH TEXAS GEOPHYSICAL SOCIETY SCHOLARSHIPS

- **Edward C. Roy Jr. Scholarship at UTSA:** Kayla Bishop, George Pinkley
- **Jones-Amsbury Research Grant:** Angie De La Cruz
- **Field Camp Scholarship:** Noah Klitus, Mallory Wilkins



# Congratulations !

# Degrees Awarded

## BS Geosciences Fall 2021 Graduates

- Michael Molini
- Jesus Garza
- Ethan Fagan
- Salem Ashley

## BS Geosciences Spring 2022 Graduates

- Elijah B. Blackburn-Tanner (BA)
- Rebecka A. Damian
- Kiana L. Garcia
- Ruben Olivares

# *Congratulations !*



## Certificates Awarded

### Certificate in Geographical Information Systems (Undergraduate)

- Crystal Moreland
- Ethan Guyer

### Professional Certification in Geographical Information Science (Graduate)

- Patrick Bryan
- Samantha Hensley
- Juan Garcia
- Heidi Harwick
- Andrew Martinez
- Matthew Mockaitis
- Alesa Reindeau



# Degrees Awarded

## MS Geosciences (Fall 2021)

- ❑ Patrick Bryan “*The Use of Crossed Square-Array Resistivity Methods to Characterize a Karst Enhanced Jointed Environment*”. Supervising professors: Y. Gao, B. Weissling, A. Godet, and D. Schnoebelen
- ❑ Justice Lira “*Geochemistry, Petrology, and Thermal Properties of Lava from Fissure 17 in the 2018 Kilauea Eruption*”. Supervising professors: A. Whittington, A. Godet, and L. Lambert
- ❑ Michael McMahan “*Monitoring and Modeling Nitrogen Loading within Streams Crossing the Recharge Zone of the Edwards Aquifer, South-Central Texas*”. Supervising professors: Y. Gao, H. Xie, and B. Weissling
- ❑ Thomas Nordstrand “*Characterization of Large Hailstone Growth using Stable Isotopes*”. Supervising professors: Y. Gao, S. Datta, B. Weissling, S. Ackley,
- ❑ Jacob Byerly “*The Drowning of the Urgonian Platform as a Response to Early Aptian Greenhouse Conditions*”. Supervising professors: A. Godet, L. Lambert, and S. Datta.

## MS Geosciences (Spring 2022)

- ❑ Matthew Bourdon “*Paleoenvironmental reconstruction of the late Barremian-early Aptian Urgonian platform, southeast France*”. Supervising professors: A. Godet, L. Lambert, and S. Datta
- ❑ Kyle Gillespie “*Depositional environment of the lower Atco Formation, Austin Chalk Group, West Texas*”. Supervising professors: A. Godet, L. Lambert, and S. Datta
- ❑ Karson Moeller “*Ammonoids of the Middle Permian Reef Trail Member, Uppermost Bell Canyon Formation, Guadalupe Mountains National Park, west Texas*”. Supervising professors: L. Lambert, A. Godet, and J. Vote.

## MS Geosciences (Summer 2022)

- ❑ Heidi Harwick “*Geology and Structure of the UTSA Campus within the Balcones Fault Zone and Edwards Aquifer Recharge Zone in San Antonio, Texas*”. Supervising professors: Y. Gao, A. Godet and B. Weissling.
- ❑ Lauren Schwartz “*Relating Thermal Inertia of Basaltic Lava flows to their Texture*”. Supervising professors: A. Whittington, H. Xie, and B. Weissling.
- ❑ Ashley Aguilar “*Extent and Impact of Arsenic and Fluoride Leaching from Hydrothermally Impacted Sediments of the Independence Basin Aquifer System, Mexico*”. Supervising professors: S. Datta, A. Godet, H. Kulkarni, E. Rampe, and Y. Li.

# Congratulations !

# Degrees Awarded

## MS Geoinformatics (Fall 2021)

- ❑ Glenn Porritt “Assessing drought conditions of the Aransas National Wildlife Refuge using remotely sensed drought indices and the implications for Whooping Cranes”. Supervising professors: H. Xie, N. Dabbage, and J. Smith.

## MS Geoinformatics (Fall 2021) Non-Thesis

- ❑ Kevin Silcox
- ❑ Andrew Martinez
- ❑ Nathan Dorman

## MS Geoinformatics (Spring 2022) Non-Thesis

- ❑ Bruce Carlisle
- ❑ Matthew Mockaitis
- ❑ Sean Tover

*Congratulations !*



EPS Faculties and Students at UTSA Days



EPS graduate student conducting field research

# Department's Activities



## Summer Field Camp

Students practice their skills in geology in the field with EPS faculties



## Epsilon Omega Chapter of Sigma Gamma Epsilon



Epsilon Omega chapter of Sigma Gamma Epsilon advised by EPS Faculty Janet Vote held two induction ceremonies (Fall 2021 and Summer 2022). EPS student Ashley Aguilar along with others worked with San Antonio River Authority on the Beaver Dam project to reduce sediment influx into the river. Current officers of the organization include Izzy Heathman (President), Angie DeLaCruz (Vice President), Corrinne Gauntt (Treasurer) Daniela Olvera (Secretary).



**STIR-UP** South Texas Interdisciplinary Research For Undergraduate Programs  
 JUNE 1ST — AUGUST 13TH (10-WEEK PROGRAM)

New Collaborative Program Aims To Increase Student Diversity in Research. Dr. Saugata Datta leads STIR-UP, a 10-week residential program for undergraduates. ([UTSA Today](#))



PhD Students Tom Varner and Protik Banerjee with Dr. Alexis Godet at UTSA Days



## Earth Day 2022 Celebration



## UTSA EPS Socials

# Department's Activities



Social Event: EPS Faculty and Students along with Dean Silva and Associate Dean Lopez-Ribot



Ross Glore at an elementary school on the southside of SA



Janet Vote, Ross Glore, and Izzy Heathman at an elementary school on the southside of SA



Field Trip to Big Bend National Park for Structural Geology, and Sedimentology and Stratigraphy courses with Dr. Alexis Godet and Dr. Matt (John) Cannon.



EPS faculty and students along with students from Palo Alto, Northwest Vista and Northeast Lakeview participated in UTSA Day of Service

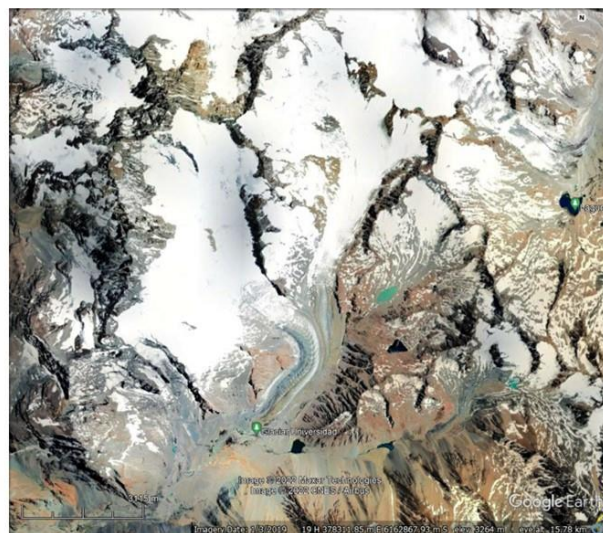


# Geo-Moments



Jaydne Blomfield and Eliana Carmona at Big Bend National Park Field Trip during Spring Break

GEO 4013/5013 Volcanology field trip to New Mexico at Spring Break. Bandelier National Monument, Jemez Mountains, New Mexico. From left to right: Alexis Sansing, Brenna Halverson, Daniela Bartels, Ashley Emerson, Lauren Schwartz, and John Dye.



Professor Hongjie Xie, ESE PhD student Hazem Mahmoud, and a group from the University of Concepcion, Chile studied Andes Glaciers (and glacier lakes) and their retreat due to the warming climate (March 12-24, 2022).

# Geo-Moments



Summer 2022 Field Camp in Montana



Natalie Torres and Justin Sharpe at BBNP



Summer field camp, 2022, at Grand Prismatic, Yellowstone NP. From left to right) Aaron Akhidenor, Alexis Godet (foreground), Steven Hollan, Nathan McDonald, David Garcia (background), Gustavo Jaramillo, Izzy Heathman (foreground), Noah Klitus, and Mohammad Mashal.



Petroleum Geology class and their instructors visited the core repository of the Bureau of Economic Geology in Austin. From left to right: Sandy Cannon and Alexis Godet (bottom), Izzy Heathman, Toti Larson (our host at the BEG), Justin Sharpe, Alexis Sansing, and Maria Rodriguez Rodriguez



Matt Cannon (left) and Justin Sharpe (right), joint Sed Strat and Structural Geology field trip to BBNP, Spring Break 2022.



Graduate student Heidi Harwick conducting geophysical prospecting of UTSA Main Campus for her master thesis.



Undergraduate student Steven Hollan collecting drip water samples from volcanic (lava tube) caves at Lava Beds National Monument for a NSF project.



Dr. Saugata Datta, Dr. Harshad Kulkarni, Protik Banerjee, Steven Hollan and Ronny Saunders from EPS working with Edwards Aquifer Authority at Field Research Park in San Antonio to monitor contaminants in the groundwater.



EPS students (L-R: Ross Glore, Ronny Saunders, Jaydne Blomfield, and Noah Klitus) observing samples in a course, get hands-on geology experiences



Sedimentology and Stratigraphy Lab in the field (Left to Right: Solomon Asmamaw, Zach Lofton, Phoenix Velasquez, and Wesley Arrizon)



Petrology class (Spring 2022) field trip (From Left to Right: Zach Lofton, Austin Patridge, Tiffany Barker-Edwards, Brenna Halverson, Thomas Nordstrand, and Anis Parsapoor)

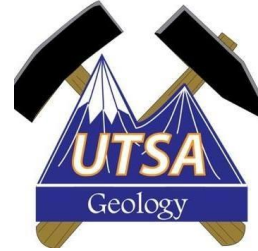


Graduate student (Alexis Sansing) conducting field research

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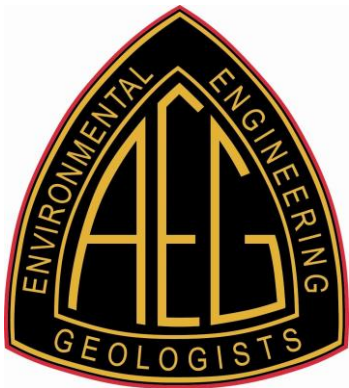
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Epsilon Omega Chapter of Sigma Gamma Epsilon

<https://rowdylink.utsa.edu/organization/sigmagammaepsilon>

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If you would like to make a donation to support our Department of Earth and Planetary Sciences students, faculty and research, please follow [this link](#) to the UTSA giving site.