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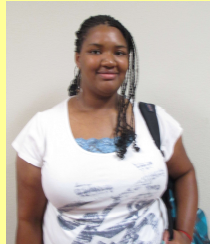
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Program News

Four Geology Majors Graduated in the Fall Semester



Felipe



Morgan



Aaron



Brian

Please help us congratulate **Felipe Alarcon-Canto, Morgan Pope, Aaron Riddle and Brian Wilkinson** for completing all requirements and graduating in the Winter (December) Commencement.

Brian Wilkinson graduated with a Baccalaureate of Sciences degree in Geology. He was a transfer student from Tyler Junior College. He completed his field courses at TAMUK in the 2017 field camps and earned a Javelina Field Geologist – With Distinction award for his excellent work at camp. Brian continued to develop and get stronger during his tenure at TAMUK and was a teaching assistant in the Sedimentology and Stratigraphy Lab.

Felipe Alarcon-Canto graduated with a Baccalaureate of Sciences degree in Geology. He was a post-baccalaureate student that had earned a BS in Physics from University of Pennsylvania at Bloomsburg. He completed his field courses at TAMUK in the 2017 field camps. In October 2016, under the guidance of Dr. Ford,

Felipe won a \$1,000 scholarship to travel to Las Vegas, Nevada for the Extreme Crystals Weekend Workshop at the University of Nevada Las Vegas (UNLV). He also worked with Dr. Sanchez on multiple research projects.

Morgan Pope graduated with a Baccalaureate of Sciences degree in Geology. She completed her field courses at TAMUK in the 2017 field camps. She was a transfer student from Wharton Community College. Morgan was a fixture in the Geosciences Club and was the club historian.

Aaron Riddle graduated with a Baccalaureate of Sciences degree in Geology. He was a transfer student from Blinn College. He completed his field courses at TAMUK in the 2017 field camps.

Geosciences has Six New Majors

Abby Bennett is a transfer student from Palo Alto College. She is from Van Ormy Texas (near San Antonio).

Edward Balagia is a freshman geology major from San Antonio.

Shae Diehl is a freshman major that completed her service in the Navy last year.

Olvein Ortiz is a freshman transfer student from Navarro College.

Tatum Trevino is an internal transfer student from engineering. She is from Corpus Christi, Texas.

Kendra Tyler is a transfer geology major from Del Mar College. She recently completed her associates degree at Del Mar College.



Abby



Edward



Shae



Olvein



Tatum



Kendra

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TAMUK Geosciences Students Attended Five Fieldtrips in the Fall, 2017



On Oct 5th – 7th, Drs. McGehee, Schneider, and 12 students from the Sedimentology and Stratigraphy class traveled to Central Texas to study Paleozoic and Mesozoic sedimentary rocks. We were invited to Tim Cockshutt's property to look at the Cambrian sedimentation history of the area. We measured a stratigraphic section across the property and looked at the sedimentation and diagenetic histories of his property. We also examined the sedimentary rock record at Fitzhugh Road to understand how geologist determined the stratigraphy of the Cretaceous Trinity Group.

On October 26-28 (Thursday-Saturday) sixteen students joined Drs. Ford and Hedquist on a trip to the Badu Hill pegmatite near Lake Buchanan in central Texas. We were joined by quite an assortment of interested parties including Dr. Cathy Downs (TAMUK English professor), Michael Hess (Historian), John Buckley (retired TAMUK geoscience professor), Jim Chude (retired Geologist), Ron Fieseler and alumnus Matt Dabney (2015) (Blanco - Pedernales Groundwater Conservation District), alumnus Katelyn Wallace (2014) (former academic advisor at TAMUK) along with our host, Frank Roberts. In addition to examining the mineralogy and petrogenesis of the pegmatite, students participated in a pace and compass exercise, measured the thickness of some Cretaceous units at the John S. Buckley Geosciences Field Station, and learned how to stay warm on a chilly night. Students recorded field notes, produced a finished mineralogical maps of the pit walls of the old mine and wrote a report on their findings.

On November 11 (Saturday) forty-nine students from Physical Geology, Earth Science, and Mineralogy classes met Drs. McGehee, Schneider, Ford and Prof. Parker at the world-class Houston Museum of Natural Sciences (HMNS). Students spent most of their time in the Cullen Hall of Gems and Minerals and the Morian Hall of Paleontology. We also traveled to the 64th Annual HGMS Houston Gem and Mineral Societies Gem, Jewelry, Mineral, and Fossil show in Humble Texas that afternoon so that Mineralogy student could observe key minerals and localities where specimens are mined.

On November 17 (Friday) 10 students and Dr. Sanchez traveled to the Slaughter Gap Ranch in Marble Falls and Enchanted Rock to study the geomorphology of each area. Students gathered elevation data and learned to test rock properties in the field with a Schmidt hammer. Students developed a hypsometric model in lab the following week. They also used their field observations and geologic history to develop a landscape evolution model at the conclusion of the trip.

Writing Intensive Winter Intersession Field Camp 2017



December 15 – Friday: 8:00 am – The writing intensive winter intersession field camp officially opened at Texas A&M University-Kingsville. Dennis Moore presented the science of detailed “Well Log Analysis”. After the presentation, the students completed an exercise involving well log analysis that was turned in and graded. Randy Bissell presented the basic science of “Seismic Stratigraphy”. Students completed 8 exercises that was graded in class. That evening we met in the GIS lab and begin the preparation of the day's report. We also presented a lesson on writing an introduction and outlined details about today's lessons and exercises using their observational materials, including your field book).

December 16 – Saturday: 8:00 am – Richard Parker presented an “Introduction to Petroleum Prospecting”. This included picking data and fault cuts from well logs and creating contour maps of a fault plane and a “Frio” sand horizon. There was also a lesson on using the computer for accessing well data from the Texas RRC agency. At 12:00-5:00 we met in the GIS computer lab to work on the writing intensive report.

December 18 – Monday: 8:00 am – Vernon Kramer presented a lesson on the geology of “uranium roll front deposits” found in South Texas. Kramer and McGehee supervised an exercise in interpreting radiometric well logs and mapping a uranium “roll front” orebody using these logs. At 1:00, we met with Lonnie Blake of EOG to review the role of “3D Seismic” in petroleum exploration and completed an exercise in petrophysics.

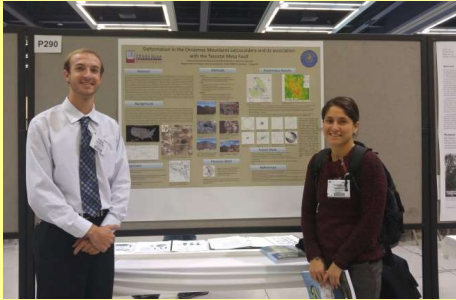
December 19 – Tuesday: 6:45 am – Students and faculty traveled to Runge, Texas to learn about the science of mudlogging. The Gisler Brothers staff gave a detailed presentation of their training methods that would be used by interns or employees on the job. At 2:30, we traveled to the San Miguel Lignite mine near Christine Texas.

December 20 – Wednesday: 7:30 am. Students and faculty met and traveled to a marina near Ingleside, Texas to study offshore rigs. Fishing boats motored us to the \$5.2 billion Big Foot offshore platform and a second billion dollar rig under construction. At approximately 10:00 am, we drove one mile to an Ingleside-On-The-Bay granite breakwater. We completed an exercise identifying numerous igneous textures and dikes found in these granite blocks. At noon, we traveled to the UEC uranium facility at their Palangana Dome Project, located north of Benavides. Bob Underdown and Neal Kunkel provided a geological presentation of uranium deposits discovered at the site and provided a tour of an active “in-situ leaching” uranium mining site.



December 21 – Thursday: 7:30 am. Students and faculty met at 7:30 AM and travel to the Corpus Christi Log Library. Richard Parker led the groups through an example exercise to learn how to use this research facility. The goal was to show students how to “work up” a petroleum prospect that they would try to sell to investors.

Undergraduates Lauren Hall, Felipe Alarcon, Joshua Krnavek and Dr. Sanchez Presented Research at the GSA Conference in Seattle, Washington – Oct. 22-25, 2017



Lauren Hall and **Joshua Krnavek** traveled to Seattle, Washington to present research supervised by Dr. Veronica Sanchez. Lauren presented her latest results regarding a comparison of a phone app for taking attitude measurements and bearings compared with traditional Brunton compass measurements. Her project was part of an Honors Field Methods project. Joshua Krnavek presented his ongoing work on field mapping and structural analyses in the Christmas Mountains, west Texas. Dr. Sanchez gave a presentation in a session she co-authored with students **Felipe Alarcon** and **Joshua Krnavek** and recent graduate **Jim Quisenberry** (2017). She also co-chaired the presentations session. These students attended discussed their posters with many of the attending professionals and received valuable feedback on the results of their

studies. As always they were impressed by the turnout of undergraduates presenting at the GSA. Great job GSA presenters!

Hall, L. and Sanchez, V., 2017, Compass Comparison in the Field: Geological Society of America Abstracts with Programs. Vol. 49, No. 6 doi: 10.1130/abs/2017AM-294733

Krnavek, J. and Sanchez, V., 2017, Deformation in the Christmas Mountain laccocaldera and its association with the Tascotal Mesa Fault: Geological Society of America Abstracts with Programs. Vol. 49, No. 6 doi: 10.1130/abs/2017AM-303708

Sanchez, V., **Quisenberry, J.**, **Alarcon-Canto, F.**, and **Krnavek, J.**, 2017, Structural Analyses of the Tascotal Mesa Fault, Christmas Mts., West Texas: Geological Society of America Abstracts with Programs. Vol. 49, No. 6, doi: 10.1130/abs/2017AM-303868

Students Earn Three Desk and Derrick Club of Corpus Christi Scholarships



The Desk and Derrick Club of Corpus Christi awarded scholarships to **Tomisin Alagbe**, **Joshua Krnavek**, and **Adolfo Enciso** for being outstanding geology students. All three received a check from the society for \$500. It was presented on February 20, 2018, at the Desk and Derrick Club of Corpus Christi monthly meeting. Way to go Geoscience students!

Adolfo Enciso Attends Extreme Crystals Weekend

From October 20 – 22, **Adolfo Enciso** traveled to the University of Nevada Las Vegas (UNLV) Extreme Crystals Weekend Workshop. While there, Adolfo learned about high pressure experiments to simulate deep Earth pressure using a diamond-anvil cell and “large volume” multi-anvil press and saw how bolide impacts are simulated in the lab. The workshop was limited to only 20 students from around the country and Adolfo won a competitive \$1,000 stipend to attend the workshop. Way to go Adolfo!

Undergraduate Research Presented at the 10th Annual Javelina Symposium, Sept. 26, 2017



Lenora Perkins, **Ivan Villarreal**, **Alicia Molina**, and **Joshua Krnavek** presented ongoing research at the Javelina Research Symposium. This event hosts undergraduates in a formal event to present their latest results, network with peers and faculty. The best poster presentations move on to the A&M system Pathways conference. This year, Lenora Perkins was selected to participate at the Pathways 2017 conference. Congratulations!

Joshua Krnavek – “Geologic Field Analysis in the Christmas Mountain Complex”

Alicia Molina – “Cascadia Subduction Zone: Mapping the Megathrust fault”

Lenora Perkins - “Calculating Rates of Dune Migration Laguna Madre, Southeast Texas.”

Ivan Villarreal - “Geomorphology of salt tectonic driven structures.”



Lenora Perkins Presents at the 2017 Gulf Coast Undergraduate Research Symposium

Rice University hosted a symposium geared towards creating a multidisciplinary networking environment for undergraduates to showcase their research. This year, **Lenora Perkins** was accepted to present her work entitled "Migration Rates of Dunes in Southeast Texas, Landward Side of the Laguna Madre." Lenora worked on this project under the supervision of Dr. Sanchez for a geomorphology honors project. She continues her research on this aspect and is looking forward to presenting final results at the southcentral section meeting of the Geological Society of America (GSA) in Little Rock, Arkansas, in March 2018.

Adolfo Enciso & Dr. Sanchez Attend the Undergraduate Research Presentations Luncheon

Adolfo Enciso was the 2017 TCUR Grant recipient. The TAMUK Council for Undergraduate Research (TCUR) awards grants to develop research projects during the academic year. Adolfo worked with Dr. Sanchez on a project entitled "Using Drainage basin morphometrics to assess active tectonics in south central Tibet." He previously presented this work at the Javelina Symposium in April 2017 and at the 2017 section meeting of the Geological Society of America in San Antonio, TX. At the luncheon on October 16, 2017, students from various research groups including the McNair Scholars Program and the Presidents Undergraduate Research Program gathered to give brief presentations of their work. The event is sponsored by the Division of Academic Affairs – Office of Student Access at TAMUK.

Lenora Perkins, Felipe Alarcon-Canto and Dr. Yelisetti Presented at International Conference

The 11th International Workshop on Methane Hydrate Research and Development conference was held in Corpus Christi, Texas in December of 2017. Two of our undergraduate students, **Lenora Perkins** and **Felipe Alarcon-Cantu**, under the guidance of Dr. Yelisetti, presented their work on gas hydrates off the coast of Oregon. Dr. Yelisetti also gave an invited talk at the conference. December proved to be a busy month for Dr. Yelisetti as he also had two abstracts at the fall American Geophysical Union (AGU) meeting in New Orleans (see "The Year in Review" below.)

Lenora Perkins, Subbarao Yelisetti, **Felipe Alarcon-Canto***, and RR1718 Science Party, 2017, Distribution of hydrate BSRs and fluid flow off Oregon, Abstract presented at the 11th International Methane Hydrate Research and Development Workshop, Corpus Christi, TX, Dec. 5-8.

Subbarao Yelisetti*, Tao He and George Spence, 2017, Role of gas hydrates in slope failure of northern Cascadia margin, Abstract presented (*Invited talk*) at the 11th International Methane Hydrate Research and Development Workshop, Corpus Christi, TX, Dec. 5-8.

Alicia Molina, Diego Flores & Margarita Willhelm Assist Dr. Hedquist in Outreach STEM Event at Memorial Middle School, Kingsville, TX

The Science-Technology-Engineering-Art-Math (STEAM) event sponsored by the Frank H. Dotterweich College of Engineering took place on February 20, 2018. Dr. Hedquist was assisted by undergraduates Alicia Molina, Diego Flores and Margarita Willhelm to engage students in geology activities.

National Earth Sciences Week Celebrated at TAMUK



The Geosciences Program hosted our annual Earth Sciences Week activities from October 9-13. Activities were well attended, supported, and led by our student majors. On Monday evening, Dr. Ford led nine boy scouts to earning their geology merit badges. On Tuesday, Dr. McGehee was going to lead a campus walk-and-talk but inclement weather required a change of plans and participants were introduced to soil maps and the formation and migration of deltas in the south Texas area. On Wednesday evening, the program held an open house where visitors could learn about field work, see how polarized microscopes work, see how to use UV light to identify minerals, take a virtual tour using Google Earth flythrough in the GIS lab, look at drill core and learn about geophysics, get a demonstration on thermohaline ocean circulation and get a discussion on Earth's history, complete with fossils from across the different eras. Nearly all faculty participated in Wednesday's open house. Thursday was Earth and Space Science evening (see below). On Friday, Dr. Ford led a campus clean-up activity and volunteers, including Dr. Hedquist, helped beautify the campus. The Geoscience Program would like to thank all of the geosciences students and the Geosciences and AAPG Clubs for their help in producing another great Earth Sciences week at TAMUK. For more information, and additional pictures, see the write-up in the South Texan newspaper at: https://issuu.com/thesouthtexan/docs/issue_10_19.



Our Department Hosted Two Earth and Space Science Evenings



On October 12th and November 9th, Department of Physics and Geosciences hosted “An Earth and Space Science Evening. There were geoscience-themed movies on topics such as the geology of New York City and the Geology of Yellowstone National Park as well as access to telescopes, physics displays and rock gem, mineral and meteorite displays. Over 40 students and members of the community attended the events. Special thanks to Drs. Ford, Schneider and McGehee and Profs. Parker and Nelson (Physics) and the Geoscience, AAPG and Physics Clubs for helping in these events, which are open to the public.

Carl Tape, University of Alaska, Visits and Presents at TAMUK



On Oct 2nd, Dr. Carl Tape, an EarthScope distinguished speaker, gave a talk titled “Seismology in Alaska: earthquakes, bears and high-performance computing.” in the Little Theater where over 80 students, faculty and members of the community enjoyed his talk, with questions and answers lasting 15 minutes after his talk. Dr. Tape also met informally with 20 students and faculty to discuss graduate school and seismology and lectured in the Geophysics class. In addition to his interaction with TAMUK students and faculty, Dr. Tape also gave a well-received talk in the evening to more than 45 people at a Corpus Christi Geological Society (CCGS) meeting titled “The influence of sedimentary basins on the seismic wavefield in Alaska” and thoroughly enjoyed some south Texas barbeque! We would like to thank

EarthScope, CCGS and Dawn and Randy Bissell for helping bring this world-class researcher to TAMUK and the Coastal Bend.

Geosciences Club Participates in College Night Out

On September 26th, students from the TAMUK Geosciences and AAPG Clubs set up a booth at the annual Arts & Sciences College Night Out event. Drs. Ford, Hedquist, McGehee and Schneider also participated in the fun event that is designed to introduce new students to different opportunities and clubs within the college. Drs. Hedquist and McGehee were volunteers for the college “Dunk a Professor” booth!

The Year in Review: Geosciences Publications in 2017

Names in **bold** indicate undergraduate authors, underline indicate alumni.

Refereed journal articles:

Beck, R.; Xu, M.; Zhan, S.; Liu, H.; Johansen, R.A.; Tong, S.; Yang, B.; Shu, S.; Wu, Q.; Wang, S.; Berling, K.; Murray, A.; Emery, E.; Reif, M.; Harwood, J.; Young, J.; Martin, M.; Stillings, G.; Stumpf, R.; Su, H.; Ye, Z.; Huang, Y. Comparison of Satellite Reflectance Algorithms for Estimating Phycocyanin Values and Cyanobacterial Total Biovolume in a Temperate Reservoir Using Coincident Hyperspectral Aircraft Imagery and Dense Coincident Surface Observations. *Remote Sensing*, doi: 10.3390/rs9060538 .

Smith, L.M., T.J. Cowles, R.D. Vaillancourt, and S. Yelisetti; 2018, Introduction to the special issue on the Ocean Observatories Initiative, *Oceanography*, 31(1):12–15, doi.org/10.5670/oceanog.2018.104.

Yanchilina, A.G., Yelisetti, S., Wolfson-Schwehr, M., Voss, N., Kelly, T. B., Brizzolara, J., Brown, K.L., Fung, M., Guerra, M., Zayac, J.M., Coakley, B., and R. Pockalny; 2017, Exploring methane gas seepage in the California Borderlands, *Eos*, 98, doi: 10.1029/2017EO087843.

Yelisetti, S., Spence, G.D., Scherwath, M., Riedel, M., and Klaeschen, D.; 2017, Dual-vergence structure from multiple migration of widely spaced OBSs from northern Cascadia margin. *Tectonophysics*, doi: 10.1016/j.tecto.2017.04.005.

Meeting and conference abstracts:

Davenport, J., Hedquist, B., Bruner, M., Preda, M., Ketcham, A., Norwine, J., 21st Century Environmentalism: Solution to Postmodernity’s Crisis of Meaning?, Annual meeting of the Institute of British Geographers/Royal Geographical Society, London, UK, August 31, 2017.

Davenport, J., Hedquist, B., Norwine, J., John Steinbeck’s Geographic Imagining of Early Environmentalism, Annual Meeting of the West Lakes American Association of Geographers, Missouri State University-West Plains, MO, October 19, 2017.

Dillon, S. M., Ford, M. T., and Liu, J. L., 2017, Testing the Geochemical Accuracy of Analytical Optical Mineralogy: Geological Society of America South-Central Meeting, San Antonio, TX, March 13 - 14, v. 49, no. 1, p. 20, Abstract 8-34.



- Ford, M. T., 2017, Geochemical Modeling of Trace Elements at the Badu Hill Pegmatite, Central Texas: Geological Society of America South-Central Meeting, San Antonio, TX, March 13 - 14, v. 49, no. 1, p. 18, Abstract 5-3.
- Hall, L.** and Sanchez, V., 2017, Compass Comparison in the Field: Geological Society of America Abstracts with Programs. Vol. 49, No. 6 doi: 10.1130/abs/2017AM-294733
- Hedquist, B., Subedi, M., Creating a GIS Database for Documentation and Preservation of Historical Structures at Rancho La Union, Zapata County, Texas, Annual Meeting of the American Association of Geographers (AAG), Boston, MA, April 6, 2017.
- Krnavek, J.** and Sanchez, V., 2017, Deformation in the Christmas Mountain laccolaldera and its association with the Tascotal Mesa Fault: Geological Society of America Abstracts with Programs. Vol. 49, No. 6 doi: 10.1130/abs/2017AM-303708
- Long, S., He, T., Lan, K., Spence, G., and Yelisetti, S., 2017, 3D Finite Element Modeling for Possible Creeping Behavior of Gas Hydrate-related Slipstream Submarine Slide, offshore Vancouver Island, Canada, Abstract OS51C-08 presented at 2017 Fall Meeting, AGU, New Orleans, LA, 11-15 Dec.
- Norwine, J., Alpert, P., Jennings, M., Hedquist, B., Southwest Asia's Ominous Climate Future: The End of an Ancient Heart(h)land?, 33rd Annual Conference of the Association for Israel Studies, Brandeis University, Waltham, MA, June 14, 2017.
- Perkins, L.**, Yelisetti, S., **Alarcon-Canto, F.**, and RR1718 Science Party, 2017, Distribution of hydrate BSRs and fluid flow off Oregon, Abstract presented at the 11th International Methane Hydrate Research and Development Workshop, Corpus Christi, TX, 5-8 Dec.
- Sanchez, V., Quisenberry, J., **Alarcon-Canto, F.**, and **Krnavek, J.**, 2017, Structural Analyses of the Tascotal Mesa Fault, Christmas Mts., West Texas: Geological Society of America Abstracts with Programs. Vol. 49, No. 6, doi: 10.1130/abs/2017AM-303868
- Su, H., Hedquist, B., Developing Pathways to Geospatial Intelligence for Underrepresented South Texas Students – an Ongoing Project, 2017 Annual Intelligence Community Academic Research Symposium (ICARS), Washington DC, September 26-28, 2017.
- Su, H., Bathymetry Mapping with Multispectral Imagery Comparison Between Collocated Cokriging and Regression Kriging methods. The 2017 Annual Meeting of The Association of American Geographers, Boston, MA, April 5 - April 9, 2017.
- Yelisetti, S., Ghosal, D., and Spence, G., 2017, Shallow subsurface imaging of northern Cascadia margin using downward continued short-streamer data, Abstract NS33A-0055 presented at 2017 Fall Meeting, AGU, New Orleans, LA, 11-15 Dec.
- Yelisetti, S., He, T., and Spence, G., 2017, Role of gas hydrates in slope failure of northern Cascadia margin, Abstract presented (*Invited talk*) at the 11th International Methane Hydrate Research and Development Workshop, Corpus Christi, TX, 5-8 Dec.

Galleries



