



Inside This Issue:

Program News ... 1

Photo Gallery ... 6

Contact us / Editors
..... 1

Program News

Seven Students Graduate in Summer Commencement



Please help us congratulate **Noelia Arredondo, Aaron Barron, Kathleen Diaz, Michael Garcia, Daniel Morales, Dakota Stinson, and Jonathan Thomas** for completing all requirements and graduating in the summer commencement.

Noelia Arredondo graduated with a Baccalaureate of Sciences degree in Geology in the Summer Commencement. She was active in the Geoscience Club for many years and was on the executive board for two years. She completed her field courses at TAMUK in the 2017 field camps.

Aaron Barron graduated with a Baccalaureate of Sciences degree in Geology Cum Laude in the Summer Commencement. Aaron Barron and Dr. Sanchez completed a research project entitled "Observations of Potential Mass Movements in the Rural Areas of Oaxaca, Mexico" that was published as an abstract in the Geological Society of America and presented as a poster at the annual meeting. He was also awarded the 2015-2016 TCUR Award and presented at the Javelina Research Symposium. Aaron served as teaching assistant for GIS labs and was a recipient of the GEOINT assistantship. He completed his field courses at TAMUK in the 2017 field camps.

Kathleen Diaz graduated with a Baccalaureate of Sciences degree in Geology in the Summer Commencement. She completed her field courses at TAMUK in the 2017 field camps.

Michael Garcia graduated with a Baccalaureate of Sciences degree in Geology in the Summer Commencement. 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.

Daniel Morales graduated with a Baccalaureate of Sciences degree in Geology in the Summer Commencement. He completed his field courses at South Dakota School of Mines this summer.

Dakota Stinson graduated with a Baccalaureate of Sciences degree in Geology in the Summer Commencement. He completed his field courses at TAMUK in the 2017 field camps.

Jonathan Thomas graduated with a Baccalaureate of Sciences degree in Geology in the Summer Commencement. He was the president of the geology club in 2016 – 2017. He was a lab teaching assistant for Earth Sciences and Nature of the Earth and Universe and Earth Science in Calallen. He completed his field courses at TAMUK in the 2016 field camps.

Continued GEOINT Support for Student Assistantships and GIS Teacher Training

Drs. Su and Hedquist's National Geospatial-Intelligence Agency grant, which was received in 2015, has been renewed for the first option year. The project aims to build the pathways to train, educate and produce a workforce, particularly from underrepresented Hispanic graduates, with necessary geospatial knowledge, skills and expertise in South Texas through research and the development of relevant curriculum and the establishment of GEOINT (GEOspatial INTelligence) academic programs. A two-week long intensive GIS training workshop has been offered twice in the past two years during the summer to instructors from local high schools. Six high schools (Alice, Tuloso-Midway, Bishop, H.M. King, Flour Bluff, and London) have launched GIS classes at their campuses with the course material, lab equipment, GIS software licenses and teaching support provided by this grant. Eighteen GEOINT assistantships (\$2000.00 per student) have been awarded to TAMUK undergraduate students that are committed to earning a Minor in GIS. The renewal of this grant will help us to continue to increase on-campus student interest in geospatial technologies and attract more highly-qualified students to enroll in the GIS certificate/minor program.

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Please Help Us Welcome Our New Majors

Alex Jaime is a transfer student from the Harlingen area.

Marcos Lara is a freshman from the Falfurrias area.

Francisco Rios III is a freshman from the Premont area.

Drake Thomas is an internal transfer from Agriculture, Natural Resources, and Human Sciences.

Ben Benedict is a transfer student from Farmington, Connecticut.

Andrew Edlin is an internal transfer student from Kinesiology.

Seth Escobar is a transfer student from TAMU College Station.

Ernesto Anciso Jr. is a transfer student from TAMU College Station.

Joel Arreola (an internal transfer from Criminology) is from the Eagle Pass area.

Taylor Palmer is an internal transfer student from Mathematics.

Rolando Vasquez is a transfer student from UTRGV.

Diego Flores is a transfer student from Wharton County Junior College.



Alex



Marcos



Francisco



Drake



Ben



Andrew



Seth



Ernesto



Joel



Taylor



Rolando



Diego

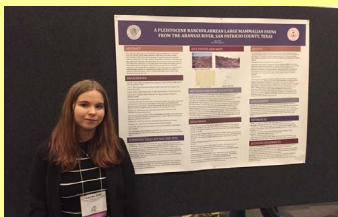
John S. Buckley Field Station Improved



Our showering facilities were inadequate for field camp participants. The netting liner and flooring in our work tents were damaged and needed replacing. The number of tables, chairs, and lighting for late-night work was inadequate. We looked into what it might cost to upgrade our shower facilities and found that we didn't have the money.

Our lecturer Richard Parker saw our estimations for upgrade and mentioned he could build better facilities at a much cheaper cost. By buying raw materials such as a prefabricated shower-base, wood to build the shower/changing room unit frames, purchased plumbing fittings, corrugated sheet metal, and fencing to house the new showers, we were able to build the showers below our original budget. He also refurbished a picnic table that has been used by our Program for 14 years. This reduction in costs helped us buy the new tent liner, a new picnic table, and lighting for each table. Richard Parker provided his tools and did most of the planning and work. The rest of the staff contributed knowledge and assistance for ten days to complete the showers and tables. We were treated to our new showers the final three days of the camp. On the final two days students pitched in to help build the security fence and dig a "French drain" for the showers.

Lauren Hall Presented at the Society of Vertebrate Paleontology 77th Annual Meeting



August 23 – 26th, 2017, was an exciting time for Lauren Hall. She presented her research on mammalian fossils from the Aransas River, San Patricio County, Texas at the Society of Vertebrate Paleontology 77th Annual Meeting, Calgary, Canada. She studied 28 species from the Texas Memorial Museum collections. Her poster was titled: "A Pleistocene Rancholabrean Large mammalian fauna from the Aransas River, San Patricio County, Texas." Way to go, Lauren!



5th Consecutive Summer Field Camp Completed



The Geosciences Program at Texas A&M University-Kingsville advertised our 5th consecutive summer field camp entitled *Texas A&M University-Kingsville Geology Field Camp to Big Bend National Park, Christmas Mountains, and Central Texas* to Universities in Texas that offer a Baccalaureate Degree in Geology. We received a good response from interested students with more than 20 applications from internal and external Universities and had 16 students that were accepted and reserved a spot and 14 students were able to attend. The accepted students are required to pass five core classes (core classes: mineralogy,

petrology, structural geology, field techniques, and sedimentology and stratigraphy), provide letters of support from faculty, and provide a written essay on why they chose our field camp. **Tomisin Alagbe, Felipe Alarcon-Cantu, Austin Alford, Noelia Arredondo, Aaron Barron, Kathleen Diaz, Adolfo Enciso, Michael Garcia, Audrey Lucio, David Luna (UTSA), Ryan Phillips (UTSA), Morgan Pope, Dakota Stinson, and Brian Wilkinson** joined us as 2017 participants in our Big Bend Summer Field Camp.

To prepare for field work, students review literature and produce a geologic timeline and historical geology introduction from these readings. These are submitted to the faculty for review and edit before May 15th. They arrived at TAMUK on May 15th to attend safety training classes, learn about the requirements of each project, and receive comments on their introduction so they could make corrections.

The camp involving the geologic studies in and around the Big Bend National Park and the Christmas Mountains uses the Terlingua Ranch Lodge in the Christmas Mountains as a base for all activities. We started our trip to Big Bend on May 17th with our staff (including Dr. Mark Ford, Dr. Thomas McGehee, Richard Parker and Matt Dabney – class of 2015) and 14 students. On the way to the Big Bend region, students examine outcrops near Freer, Comstock, and Marathon and completed projects in each of these areas. Six days of the camp is devoted to studying classic outcrops that reveal the dynamics of tectonics, sedimentation, volcanism, and structural deformation within the boundaries of the park. On May 24th, we provide one half-day for students to study the Mariposa Mercury Mine and in the afternoon they attend the Christmas Mountains Symposium. For the next two days, our students individually map an area of the Christmas Mountains to demonstrate their abilities as field geologists. After arriving back in Kingsville we provide a workroom and four days for students to prepare their reports which faculty then edit. After receiving their edited reports, students are given several days to complete a final, edited report. The student preparation for their second field camp follows an identical format. The preparation of their report introduction and submission for review is given the same amount of time as we gave in the previous camp. The same 14 students participated in this central Texas Field Camp.

The camp involving the hydrogeology studies of Central Texas uses the John S. Buckley Field Station as our base for all activities. We arrived at the John S. Buckley Field Station June 10th. The first project is to produce a profile and measured section of the Cretaceous geology on the John S. Buckley Field Station and be able to determine the water-bearing characteristics of the rock types. On the second day our students produce a profile of the measured section along Fitzhugh Road and determined the water-bearing characteristics of those rock types. This set of projects is used to see if students can pick out the lateral lithologic variations in the Trinity Group.

The next project is at Enchanted Rock to see if there is aquifer potential in the Precambrian igneous and metamorphic rocks in the Hill Country. This is a major project that requires knowledge in petrology and structural geology. We are fortunate to have Ron Fieseler along on part of our camp. He provides educational support and additional hydrogeology projects that are part of his job routine as the General Manager at **Blanco-Pedernales** Groundwater Conservation District. This year students produced a geophysical log of a well and correlated the geophysical well log to others in the vicinity. Paul Tybor, the manager of the Hill Country Underground Water Conservation District in Fredericksburg Texas, tested our students' new skills in well log correlation with an excellent stratigraphic correlation problem in the Hye, Texas area. We also measured the discharge of the Pedernales River at three locations and evaluated the surface-water/groundwater interactions in one reach of the river. We also were able to see a local water well drilling company drill through the Edwards Formation. We have built in two major projects that are individual mapping projects that help us assess each student's field skills and geologic knowledge. Student geologist are "shadowed" by our professional staff. In total, students spend at least 23 days in the field at our field camps.

Dr. Yelisetti Received Summer Research Award

Dr. Yelisetti received 2017 summer support award of \$3,000 from TAMUK to develop a research proposal that will be submitted to secure external funding.



Four TAMUK Field Participants Earn Field Camp Award

There are three different certificates of award that can be earned by TAMUK Field Camp students:

- 1) Javelina Field Camp Excellence – this award is only available to non-TAMUK students that have shown outstanding to exemplary field skills in all aspects of Field Camp (Also known as the 23-day award).
 - 2) Javelina Field Geologist – this award is given to TAMUK students that have shown very strong to exemplary performance in all field aspects including field book, projects and maps, papers, and expedition-style behavior. Furthermore, the student must have at least 40 days of field experience consisting of the TAMUK Field Camps and class field trips.
 - 3) Javelina Field Geologist with Distinction – this award is given to TAMUK students that have shown outstanding to exemplary performance in all field aspects including field book, projects and maps, papers, and expedition-style behavior. Furthermore, the student must have at least 45 days of field experience consisting of the TAMUK Field Camps and class field trips.
- Dating to 2013, we have only given 2 Javelina Field Camp Excellence Awards, 4 Javelina Field Geologist Certifications and 4 Javelina Field Geologist with Distinction Certifications. Up until this year, only 20% of all Field Camp students have won one of these awards and an “A” does not necessarily get you an award. The quality of performance must persist through all class field trips and all aspects of Field Camp.

Drs. McGehee and Ford are proud to announce this year’s winners:

Audrey Lucio - Javelina Field Geologist

Adolfo Enciso - Javelina Field Geologist with Distinction – exemplary field books

Michael Garcia - Javelina Field Geologist with Distinction – exemplary projects and maps

Brian Wilkinson - Javelina Field Geologist with Distinction – exemplary final papers

Congratulations on your outstanding achievement!



Audrey Lucio



Adolfo Enciso



Michael Garcia



Brian Wilkinson

Monica Estrada Completed a Summer Internship at the USGS in Menlo Park



Monica Estrada visited the offices of the USGS in Menlo Park, CA, to learn research methods and participate in the ongoing analysis of the eastern North American margin. She created geologic maps and structural cross sections as she studied the tectonic evolution of the southern Appalachians. Most importantly, she gained lots of experience and built an international network.

Dr. Veronica Sanchez, Summer Visiting Scholar at the USGS in Menlo Park

Dr. Veronica Sanchez visited the USGS this summer in Menlo Park to collaborate in multiple projects with students from diverse fields in the geosciences. There were over 20 students including recent graduates (like Monica Estrada), undergraduates and post-doctoral researchers doing various projects in seismology and earthquake hazards in areas ranging from the Appalachians to the Red Sea.

Undergraduate Seismic Research near Rio Grande City



In late May, Dr. Schneider, **Leonora Perkins**, **Margarita Wilhelm**, and **Ivan Villarreal** traveled to Rio Grande City, TX, to acquire seismic data in the Catahoula formation. We are looking at the acoustical structure of a ~20m deposit of massive ash. The goal is to try to determine depth to the base of ash using seismic refraction methods. A secondary goal is to see if acoustic impedance boundaries exist within this ash. We wish to seek evidence of a single depositional event vs. multiple depositional pulses. This region of the Catahoula seems to be stratigraphically distinct from other sections described in literature. We are working with Dr. Juan Gonzalez at UT – Rio Grande Valley in this effort.



Seismic Research on TAMUK Campus

A secondary seismic acquisition was taken with our team (Dr. Schneider, Leonora Perkins, Margarita Wilhelm, and Ivan Villarreal) on the TAMUK campus after we returned to Kingsville. Here we were looking to see the seismic refraction profile as it exists under the campus as an exercise for determining engineering requirements for new construction.

Work on Donation to South Texas Archives

Dr. Schneider and students are working on a project to index documents from a large donation to the South Texas Archives. They consist of old geologic maps, seismic data and well logs from exploration projects up to 50 years old. This not only is valuable from a petroleum geology perspective, but has also attracted interested members of the art community (many maps are hand-drawn) and history. Once these are indexed, we will turn them over to the Archives for digitization and archival. Many will then be available for public review.

Seismic Studies of the Himalayas by Dr. Yelisetti



During the Summer of 2017, Dr. Yelisetti along with his collaborators from the Indian Institute of Technology Kanpur, India conducted seismic acquisition field trip in the foothills of Himalaya near the India-Nepal border to study the shallow morphotectonics beneath the central seismic gap. The project was funded by the Indian Government (~\$77,000). They deployed 18 sophisticated cableless seismometers (remote acquisition units) that were acquired from Sercel to record ambient noise.

Dr. Yelisetti's Marine Geophysics Cruise

Dr. Yelisetti's proposal to participate in the NSF sponsored marine multichannel seismic acquisition cruise off Oregon and Washington was accepted. He is one of the 19 scientists selected across the nation to participate in the research expedition from September 24th – October 5th, 2017 to study the Cascadia subduction zone earthquakes, submarine landslides, and undersea volcanoes.

Fun in the Sun – Geoscience Has an End of the Semester Picnic



During finals week in May, the faculty, staff and students of the Geosciences Program gathered at Dick Kleberg Park for some rest, relaxation and fun. We feasted on nilgai burgers supplied by Erik Hanson (ABACO Operating, San Antonio) and generally just spent the afternoon playing catch or relaxing after a long semester and before the start of Field Camp.

Upcoming Events - Fall 2017 Fieldtrips

The Sedimentology and Stratigraphy class will be traveling to Central Texas to study Paleozoic and Mesozoic rocks on Oct 5th – 7th. We have been invited back to Tim Cockshutt's property to look at the Cambrian sedimentation history of the area. We will be measuring a stratigraphic section across the property and look at the sedimentation and diagenetic histories of his property. We are going to examine the sedimentary rock record at Fitzhugh Road to understand how geologist determined the stratigraphy of Cretaceous Trinity Group.

The Mineralogy class will be traveling to Central Texas to study the mineralogy, pegmatite zonation, hydrothermal activity and the Precambrian host rock of the famous Badu Hill Pegmatite on Oct 26th – 28th. Please contact Dr. Mark Ford for more information.

Students from the Sedimentology and Stratigraphy class and Physical Geology class will be looking at modern sedimentary deposition processes to see how the Coastal Bend was formed. We will be specifically looking at fluvial processes, delta formation, barrier island processes and back barrier (lagoon) processes in the Nueces River Canyon and Padre Island areas on November 4th. We will also travel from Alice to Freer Texas to measure and sketch outcrops through ancient depositional environments. Students from the Mineralogy, Earth Sciences and Physical Geology classes will travel to Houston on November 11th to look at relevant displays to supplement their understanding of coursework with world class exhibits. The mineralogy class will focus on the mineral exhibit then travel to the 64th annual HGMS/SCFMS Gem, Mineral, Jewelry and Fossil Show and Convention to look at a



large variety of minerals from relict collections and recently mined. The Geomorphology class will be traveling to the Slaughter Ranch in Central Texas on November 17th to study the nonconformity between Precambrian igneous and Paleozoic sedimentary rocks. If time permits we would also try to visit outcrops at Crab Apple Creek and the areas in the vicinity of Enchanted Rock. Students interested in participating who are not in the Geomorphology class should contact Dr. Sanchez.

Upcoming Events - Earth Science Week October 9-13

The Geosciences Program is offering daily events at our 5th Annual Earth Sciences Week to our campus and local community. In our open house faculty will demonstrate an interesting earth science activity from their classroom to show how we study the earth. We will be providing materials for our community scouts to earn their merit badges in geology.

Monday, Oct 9th – Geology demonstrations for the general public and events including Boy Scout Badges.

Please RSVP to Veronica.Sanchez@tamuk.edu to participate in Geology demonstrations.

If your scout troop is interested in a merit badge please contact Mark.Ford@tamuk.edu

Early evening – Manning Hall room 140 or 142.

Tuesday, Oct 10th – Campus Walk and Geology Tour.

Take a walk around campus and discuss some local geology. Tour ends at the Connor Museum. Meet at Manning Hall room 144 at 3:30. Open to the public.

Wednesday, Oct 11th – Departmental Open House

Department Open House: GIS, Paleontology, Mineralogy & Petrology, Field Geology, and Geophysics demonstrations, faculty personal collections (meteorites, minerals, fossils) on display. Manning Hall rooms 126 – 142, Hill Hall and other locations, starting at 6:30. Open to the public.

Thursday, Oct 12th – Earth and Space Science Night (joint with Physics)

Public viewing with the 16” telescope (Hill Hall), gem, fossil, meteorite and mineral displays, and geology movie night.

Movies start at 6:00 in Hill Hall. Open to the public. Contact Dr. Ford or Prof. Nelson.

Friday, Oct 13th – Campus Clean-up Activity

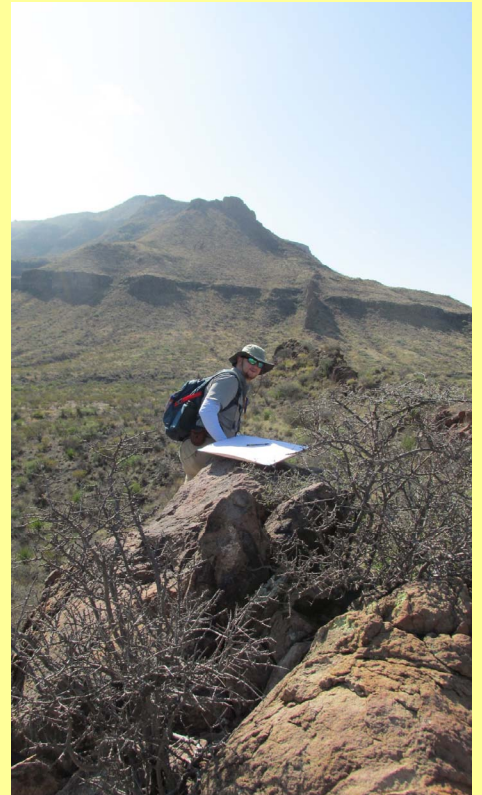
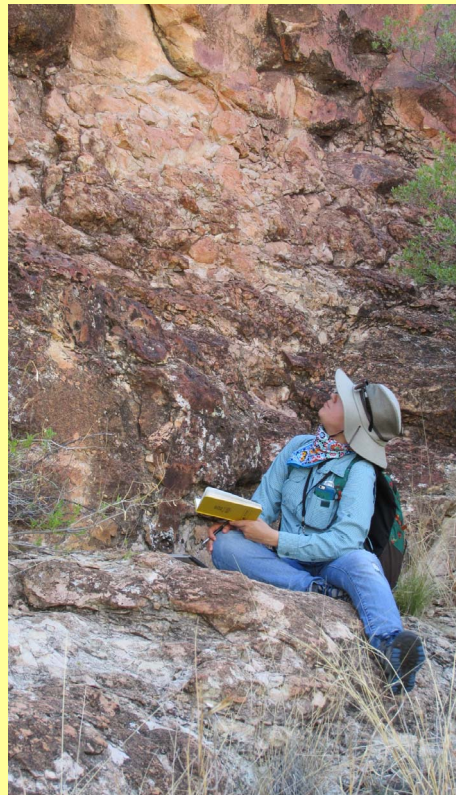
Meet in Manning Hall room 144 at 3:00 and then disperse in groups to help beautify the campus. There will cold water available and a group picture afterward.

Photo Gallery: Summer Field Camp





Photo Gallery: Summer Field Camp & Field Trips





Geosciences Calendar – Fall 2017

| Date | Event | Contact | Notes |
|--------------|---|--------------------------------------|---|
| Sept 24 – 28 | SEG Convention in Houston, TX | | Some faculty may attend |
| Sept 26 | College Night Out Geosciences Club and AAPG event | Dr. Ford or Schneider | Hosted by College of Arts and Sciences |
| Oct 2 | Visiting speaker – Carl Tape From the University of Alaska “Seismology in Alaska: earthquakes, bears and high-performance computing.” EarthScope national speaker | Dr. Ford | Open to the public |
| Oct 2 | Carl Tape (University of Alaska) talk at the CCGS welcome back BBQ – Hoegermeyer’s in Corpus Christi | | Hosted by the CCGS |
| Oct 5 – 7 | Stratigraphy and Sedimentology Field Trip Central Texas – overnight | Dr. McGehee | |
| Oct 9 – 13 | Earth Sciences Week events and Departmental Open House – Events all week long! | Dr. Ford, Hedquist, or Sanchez | Open to the public See Earth Week flyer for events |
| Oct 12 | Earth and Space Science Evening Joint with the Physics Program and part of Earth Sciences Week | Dr. Ford or Prof. Nelson | Open to the public Club event |
| Oct 22 – 25 | GSA meeting in Seattle, WA | | Some faculty may attend |
| Oct 26 – 28 | Mineralogy Field Trip (Badu Hill) Central Texas – overnight | Dr. Ford | |
| Nov 1 | GCAGS meeting in San Antonio, TX | | Some faculty may attend |
| Nov 4 | Modern Processes Field Trip One day, south Texas and the Coastal Bend | Dr. McGehee | |
| Nov 9 | Earth and Space Science Evening Joint with the Physics Program | Dr. Ford or Prof. Nelson | Open to the public Club event |
| Nov 11 | Houston Museum and Gem and Mineral show trip | Dr. Ford or McGehee | |
| Nov 17 | Geomorphology Field Trip (Slaughter Ranch) One day trip, central Texas | Dr. Sanchez | |
| Dec 7 | “Dead Day” – study day. Finals start Dec 8 th | | |

CCGS meetings are 11:30 – 1:00 on Wed, Oct 18th and Wed, Nov 15th – Corpus Christi.

Note: All events may not be listed.