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## Program News

### December Graduation



**Blanca Garza** graduated in December with a Baccalaureate in Geosciences with an emphasis in Geology. Blanca was a good student that worked tirelessly to complete her work while keeping her life balanced with her home life. She did a fine job teaching the mineralogy lab last Fall and undergraduate service level classes. Blanca received her GIS Certification in Spring 2015 and did her field camp in Montana in the Summer 2016. Blanca was a great friend to all of us and will be missed.

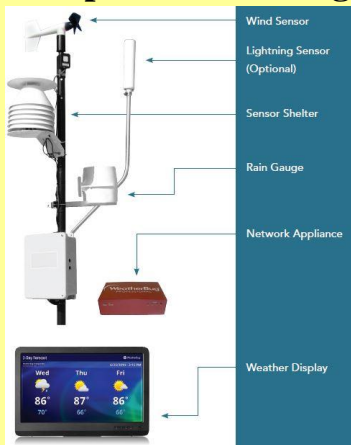
### New Sciences Advisor



**Katelyn Wallace** is our science advisor who replaced Pamela Rauch. The majors she advises are chemistry, geology, mathematics and physics. As the academic advisor for the sciences, she is responsible for helping the students define and develop realistic educational career plans and aid students in planning for each semester. She assists students in planning a program consistent with their abilities and interests, and review/revise long-range academic program schedules. She informs and discusses with students the course prerequisites and clarifies any graduation requirements that students must

meet. She follows up with any advisee on any report of unsatisfactory work and works with students in an academic recovery plan. She discusses and approves all educational transactions, i.e. registration, add/drop courses, withdrawals, change of major, etc. Informs and refers students to appropriate institutional resources. Katelyn consults regularly with faculty colleagues in order to have up-to-date information. She is located in the library room 210, her email is [katelyn.wallace@tamuk.edu](mailto:katelyn.wallace@tamuk.edu) and her phone number is (361)593-2789. Katelyn Wallace's qualifications include a Bachelor of Science in Geology with Minors in Mathematics and Chemistry (December of 2014) from Texas A&M University – Kingsville. During her undergraduate career, she was a teaching assistant for many geology labs and summer field camp; she also attended and assisted on many of the field trips through the geology program. She attended University of Oklahoma's field camp during the summer of 2014, in which she participated in many geophysics activities.

### Campus WeatherBug Weather Station Funded



The campus community will now have a fully-automated weather station from WeatherBug! Thanks to generous contributions from various departments and colleges across campus, students will have access to live streams of weather data on their phones and in the classroom from a weather station that will be installed on campus later this spring. Drs. Brent Hedquist and Shane Creel, Director of Enterprise Risk Management, spear-headed the idea of installing a weather station as part of way to ensure the campus and local community are “storm ready” and prepared for any severe weather event. The WeatherBug system will also benefit nearby K-12 schools with STEM classroom initiatives, as well as undergraduate students enrolled in Meteorology, Climate, and other earth science type fields on campus.

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Department of Physics and Geosciences  
Texas A&M University - Kingsville

### Three Spring Fieldtrips Underway



The field season is off to a great start with an amazing fieldtrip to ABACO Operating Inc. in San Antonio Texas. We have two additional fieldtrips planned for this spring.

Petroleum Exploration in the Oligocene Frio and Vicksburg Formations - March 3-5 2016. This 2.5-day field trip exercise (Th-Sat) is a supplemental field experience for the Applied Geology class that included a visit to ABACO Operating Inc. owned by Mr. Erik Hanson. Mr. Hanson talked about the oil business and strategies he was using to maintain his business in this cyclic downturn in the industry. We broke into groups to look at the use of 3D seismic to find subtle, but major oil and gas traps that others had missed. Mr. Hanson led one workshop on “Kingdom Software: Multiple ways to analyze 3D seismic data” with this powerful tool. Elizabeth led a workshop on the “analysis of production data and generation of correlated cross-sections using PETRA.” Bill led the third

workshop on the steps required to load 3D seismic data into Kingdom software, the science behind generating a prospect, and some insights into the final decisions on drilling prospects. At the end of each workshop students were permitted to perform similar tasks. Drs. Ford, McGehee, Sanchez, Yelisetti and Mr. Jackson were joined by 12 students on this trip.

Dr. Mark Ford will lead his petrology class on a fieldtrip to Central Texas to study the Precambrian Geology of Central Texas on April 7-9, 2016. We will be joined by Jim Chude, Frank Roberts and Vernon Kramer (Del Mar). The participants on this fieldtrip will look at a variety of igneous rocks and metamorphic rocks. The highlights include a study of Enchanted Rock and a look at a 1.1 billion year old obducted ophiolite sequence. At Enchanted Rock, the class will measure attitudes of zonation, intrusion, preferred orientation of crystals, dikes, veins, schlieren, and other lineations or fabric to see if we can get an understanding of the overall stress field related to the batholith. At the Coal Creek ophiolite, we will get to see a piece of oceanic crust that was thrust on to North America and then metamorphosed. Some of the more unusual minerals found here include chromite, chlorite, talc, lizardite, fuchsite, and tremolite. Students will traverse and measure the section, noting changes in mineralogy and the style of faulting in the surrounding country rocks (the Packsaddle Schist and the Big Branch Gneiss).

Drs. Veronica Sanchez and Brent Hedquist will lead the Field Geology, Structural Geology, and Field Methods classes to Mike Maples' property to map an unconformity on April 14-16, 2016. They will be joined by Dr. Tom McGehee, Dr. Mark Ford, Dr. John Buckley and Mr. Herman Jackson. The highlights include our students' first mapping exercise.

### Undergraduate and Alumnus GCAGS 2016 Accepted Poster Presentations



As many of you know, the Gulf Coast Association of Geological Societies (GCAGS) will be held in Corpus Christi in September. This regional conference has had over 230 papers/posters submitted and will likely have 2000 – 2500 people attend. Some of your classmates are working on research projects and submitted abstracts to this conference. Please pass along congratulations to your friends and colleagues that are now published authors!! This is a huge accomplishment and not that common for undergraduates except at a few private liberal arts colleges. All of the student lead authorships are particularly impressive!

**Byerly, J.**, Hedquist, B. C., Su, H., and Herrera, D., 2016, Utilizing satellite imagery to analyze the relationship between surface temperature and recent land use/cover change in San Antonio, Texas

**Dillon, S. M., Enciso, A.**, and Ford, M. T., 2016, PXRF Analysis of Heterogeneous Rocks with Respect to Sample Preparation: Applications to Mafic Igneous Rocks

**Estrada, M. M., Fenner, S. S.**, and Ford, M. T., 2016, Using pXRF to Assess Heterogeneous Sample Preparation Methods: Applications to Coarse-grained Felsic Rocks

**Hager-Hahn, E. D.** and Ford, M. T., 2016, Crystal Size Distribution Analyses to Constrain Petrologic Parameters of Basalt Flows in the Blackfoot Volcanic Field, Idaho

**Tuck, J. J., Kponi, B.**, McGehee, T. L., and Ford, M. T., 2016, Optimization of pXRF Sampling Methods in Analyzing Hydrocarbon-rich Zones in the Eagle Ford Shale

Additionally we had abstracts accepted written by the faculty, a number of alumni got published for their work here at TAMUK and still other alumni for work related to their MS or PhD – Way to go TAMUK Geosciences!

### Our Department Hosted an Earth and Space Sciences Evening

On Feb 11<sup>th</sup> the Department of Physics and Geosciences hosted “An Earth and Space Science Evening.” Our Geosciences Club membership showed two movies and had an interactive rock and mineral display that was staffed by 4 geosciences club students. The audience included more than 58 attendees for the movies that was mostly students but also included at least 4 faculty. Also, some members of the community looked at the hall rock and mineral displays in Manning Hall. We plan to expand and increase attendance interest for the March 10<sup>th</sup> and April 12<sup>th</sup> events held in tandem with Physics and the Astronomy Open House.

Department of Physics and Geosciences  
Texas A&M University - Kingsville

## TAMUK Council for Undergraduate Research (TCUR) Award



**Aaron Barron** is this year's TAMUK Council for Undergraduate Research (TCUR) award recipient. Aaron is working on a project entitled "Detection of Mass Movements and Quantification of Triggering Factors in Oaxaca, Mexico, via Remote Sensing Methods" with Dr. Veronica Sanchez. He is working on a geodatabase that will house high resolution imagery that will be used to document evidence for recent landslides in the vicinity of rural Oaxaca. One of the goals is to expand the current mass movement risk assessment available for that region. This is an exciting area because it is located ~100 miles north of the Middle America Trench, an active subduction zone in southwest Mexico; although there are many factors that could trigger landslides, earthquakes are common and strong, and could potentially be one of the triggering factors, alongside slope and soil conditions, and precipitation patterns. Aaron is excited to take on this project and he will soon present results at the Javelina Research Symposium on April 19<sup>th</sup>.

## Writing Intensive Winter Intersession Field Camp 2015

We completed our fourth successful winter intersession field camp in December. We welcomed back Dennis Moore (Baker Hughes), Randy Bissell (Heddington Oil), Lonnie Blake (Senior geologist with Everest Resources Company), Neal Kunkle (alumnus) (geologist with UEC), Bob Underdown (engineer with UEC), Mike Gisler (Gisler Brothers Logging), Vernon Kramer (Del Mar), Dan Jackson (TAMUK), Thomas McGehee (TAMUK), **Monica Estrada** (Teaching Assistant), **Sarah Dillon** (Teaching Assistant) and Sylvia Gatewood (Administrative Assistant) are the faculty and support team for this camp. Dennis Moore gave a brief short course on geophysical log interpretation with a required student exercise. Dennis Moore gave a brief short course on geophysical log interpretation with a required student exercise. Randy Bissell gave a brief overview of sequence stratigraphy and how the interpretation of seismic data yields petroleum discoveries. Randy demonstrated how this is done, then has the students work through an exercise. Vernon Kramer gave an overview of Uranium Company exploration for roll fronts and had the students complete an exercise to find a uranium roll front. Bob Underdown and Neal Kunkle showed our majors a well field at the UEC Palangana Dome Project and discussed some of the problems with these discoveries. Mike Gisler gave an overview of the employee activities in the mud-logging business. We visited a site where they are fracking an unconventional well. We traveled out to an offshore drilling platform construction site. Lonnie Blake gave an introduction to geophysics and provided an overview of data-driven decision making in the life of a petroleum geologist. Vernon Kramer provided overviews of the fracking project and offshore drilling. Dan Jackson took our majors over to the Corpus Christi log library to learn how to gather data for prospects. After we received their first good draft our faculty and the TAMUK Writing Intensive Center recommended changes to complete the polished report.

## Announcing the New Summer 2016 Field Camp (6 hours)

TEXAS A&M UNIVERSITY-KINGSVILLE  
**Geology Field Camp**  
BIG BEND NATIONAL PARK - CHRISTMAS MOUNTAINS - CENTRAL TEXAS  
Writing Intensive - Capstone Course

Accepting Outside Students  
**6 SEMESTER CREDITS**  
**\$3200**  
INCLUDES IN-STATE TUITION, TRAVEL, FOOD

Upper Level Core classes required

- Mineralogy
- Petrology
- Structural Geology
- Sedimentology and Stratigraphy
- Field Techniques

Facilities

- Intelligent Bench/Tables
- Location: Christmas Mountains
- Swimming pool, laundry facilities, restaurant, shower facilities, air conditioned work room area for camping adjacent to these facilities.

John S. Buckley Geosciences Field Station

- Location: Central Texas site
- Full camp facility, electrical hookups, showers, outdoor kitchen with indoor refrigerator and freezer units.

Please contact us for more information:  
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Dr. Mark T. Ford mark.ford@tamuk.edu 361-593-2767  
Dr. Thomas McGehee thomas.mcgehee@tamuk.edu 361-593-3590

Join our Mailing List:  
We will forward additional information and an application as they become available.  
Anticipated application deadline: March 20th. Anticipated dates: May 18 - June 30.

The Geosciences Program announces our 6 credit-hour field camp that has been developed for summer 2016. We have had a number of new applicants from other Universities apply for our program. We are capping the class at 18 to ensure quality instruction. This field camp will start on May 15 and end on July 3. We will start the activities at TAMUK with an overview of scheduled activities, field safety training, and our expectations for a successful camp. We will be stopping at many locations to examine and document the geology on our way to the new base camp in the Christmas Mountains. We have ten days of field activities scheduled for students to observe, map and interpret the tectonic activities of the park area. We will travel back to the University to provide computing facilities for students writing their first draft report 1. The second half of the camp begins at TAMUK with an overview of scheduled activities, field safety training, and our expectations for a successful camp in Central Texas. We have ten days of field activities scheduled for students to observe, map and interpret the rocks and hydrogeology of Blanco County. We will travel back to the University to provide computing facilities for students writing their first draft of report 2. If you want to learn more about this camp please visit our website at [http://www.tamuk.edu/artsci/physics\\_geosci/geosci/academics/degrees.html](http://www.tamuk.edu/artsci/physics_geosci/geosci/academics/degrees.html). Go to field experience on the right side-bar menu and select the field camp button.



## Field Station Undergraduate Research Underway



**Alex Johnston** is working in deciphering the paleostress fields in the Christmas Mountains, west Texas, with Dr. Sanchez. **Felipe Alarcon-Canto**, who is currently enrolled in Field Methods, assisted in the field. Alex will be analyzing multiple sets of structural data alongside Dr. Sanchez to supplement interpretations of the stress fields in the Christmas Mountains, a site of a mesh of tectonic events. His contributions will include an updated geodatabase to supplement resources we will use at Summer Field Camp and a geologic map of a section of the Christmas Mountains to compliment structural analyses. Alex will present results at the Javelina Research Symposium on April 19<sup>th</sup>.

## TAMUK Geospatial Intelligence Fieldtrip to San Marcos



With the support of the grant from NGA, Drs. Su & Hedquist arrange a visit with a graduate program in GIS within Texas for our GIS Minor students that are receiving the Geospatial Intelligence (GEOINT) assistantships from the grant each year. For 2016, Department of Geography at Texas State University - San Marcos was visited on Fri., March 11<sup>th</sup>. Ten GIS Minor students met and interacted with GIS faculty and students in the department, as well as toured their facilities and program. We also participated in the 12<sup>th</sup> Annual Texas Geography Student Research Symposium that was hosted by Department of Geography at Texas State University on the day we visited the school. The meetings and discussions helped our students get more information about their GIS graduate program, such as financial support and admission criteria.

## TAMUK Geospatial Intelligence Assistantship Program Requesting Applications

With the support of the grant received from National Geospatial-Intelligence Agency, Department of Physics & Geosciences at TAMUK is accepting applications for ten Geospatial Intelligence (GEOINT) Assistantship positions for the 2016-2017 academic year. Selected students who are committed to earn a minor in GIS will receive \$1,000 per year for two years. Recipients must be undergraduate sophomores or juniors currently attending TAMUK. Applications are due April 30, 2016. For more information, please contact Dr. Haibin Su @ 361-593-4089 or kuhs2009@tamuk.edu. Application form can be downloaded from [http://www.tamuk.edu/artsci/physics\\_geosci/geosci/documents/ScholarshipApplication2016.pdf](http://www.tamuk.edu/artsci/physics_geosci/geosci/documents/ScholarshipApplication2016.pdf).

## TAMUK Geosciences Program at CCGS Collegiate Month

Nearly 20 students and 3 faculty attended the CCGS (Corpus Christi Geological Society) Collegiate Month meeting on Feb 17<sup>th</sup> in Corpus Christi. Events included a display of research by TAMUK Geoscience students (posters) which received a lot of attention from the industry members, a display table with information on our department, a short "What's new at TAMUK" talk by Dr. Mark Ford and professional talk on Methane Hydrates. The CCGS supports many of our students and it was nice to play a large role in their yearly Collegiate Month meeting.

## Phi Kappa Phi Honor Society at TAMUK

The installation ceremony of the Texas A&M University-Kingsville chapter of the Honor Society of Phi Kappa Phi was held on Monday, February 1<sup>st</sup> and our own Dr. Mark Ford was one of the Petitioners. Phi Kappa Phi is the oldest all-discipline honor society in the United States. The motto is "Let the love of learning rule humanity" and we are certain that some of our geosciences students will be eligible for induction in the future.

## Dr. Jaehyung Yu Presents his Research at TAMUK



Dr. Jaehyung Yu from Department of Geology and Earth Environmental Sciences, Chungnam National University in South Korea visited us on Monday Feb 15<sup>th</sup> to present a talk and discuss collaborations between our Departments. Forty-five people including 8 geoscience faculty members attended Dr. Yu's talk titled, "Drone Remote Sensing and its Applications in Geology". It was great to see our former Department colleague present his research.



## Two Tutors Hired Through the PAAC for Geosciences



**Monica Estrada** and **Adolfo Enciso** are helping all students (majors and non-majors) get extra help in learning geosciences. They are working several hours per day for 3-4 days per week both in the PAAC (Pathways Academic Assistance Center) in the library and in the department. These students can provide excellent help for both majors and non-majors in a more relaxed but still structured environment.

## Teaching Assistants

**Mark Alaniz** is the teaching assistant for Structural Geology with Dr. Sanchez. He is also assisting John J. Nelson in the Intro GIS Lab.

**Jacob Byerly** is a lab teaching assistant for the Graduate Advanced GIS assisting Dr. Haibin Su.

**Payton Campbell** is the teaching assistant for two sections of Petrology lab assisting Dr. Mark Ford.

**Adolfo Enciso** is the lab teaching assistant in Physical Geology with Herman Jackson.

**Scott Fenner** is the lab teaching assistant for Historical Geology assisting Dr. John Buckley.

**Jim Quisenberry** is lab teaching assistant for Field Mapping and Cartography. He is also working as a lab teaching assistant for Applied (Petroleum) Geology.

**Kelsey Robinette** is a lab teaching assistant for the Earth Science I class with Richard Parker.

**Jonathan Thomas** is the teaching assistant for Field Methods with Dr. Sanchez. He is also the TA for Introduction to Oceanography, Atmosphere, and Astronomy class in Calallen.

**Ivan Villarreal** is the lab teaching assistant for Nature of the Earth and Universe assisting Richard Parker.

## Richard Parker is Glad to be an Instructor in Geosciences!



Mr. Parker writes, "Starting out at this campus 47 years ago prepared me for the long career I have enjoyed in the Oil & Gas Business. I received the motivation and encouragement and good solid Geology instruction (plus two degrees) that prepared me for the demands of a variety of positions within my chosen field. Who doesn't like Rocks and Minerals and Fossils and Field trips! Most of my long career in Oil & Gas has been spent as an analytical Development Geologist, working extensively with core samples, well cuttings and electrical logs, trying to and successfully figuring out environments of deposition and potential for hydrocarbon extraction and at the same time explaining the bigger picture of how all of that information fits into the basin and regional settings. I have been an instructor in Geology on many occasions in the past 20 years as a second career and have enjoyed giving back, encouraging,

and recruiting new geoscientists... hoping that my Students pick up on my passion for the Science. The downturn in O&G has provided me the opportunity once again to do what I secondly most like to do (besides playing with my Grandsons)... and that is to teach Geoscience and A&M Kingsville has offered me that chance. I really like explaining how the Earth actually works and all of the intricate parts that make up the Earth Systems, and how Geology involves everything. I Hope I can encourage a whole new group of students to become geoscientists."

## Our New Geographer Armin Diblin



We hired Mr. Armin Diblin this semester to teach our meteorology classes. Mr. Diblin is a seasoned professional that comes from New Orleans, Louisiana. During a recent interview Mr. Diblin said "It is very satisfying to be teaching at TAMUK. I was recently married to my childhood sweetheart, Loretta. It was easier for me to move to Corpus Christi, than my wife, so I made the move. I was surprised and happy to hear from TAMUK, and am enjoying teaching for the Geography Department. I currently teach Meteorology and Introduction to Geography, as well as a Meteorology Lab. My immediate plans would be to help the department develop the degree program in Geography. I believe it is essential for everyone to learn about the world, helping them to better understand their place in the world".

## Dr. Su Publishes his Research in a Top-ranked Peer-reviewed Journal

Dr. Su's research paper was accepted for publication in June 2016 issue of *Remote Sensing of Environment* (impact factor: 6.393) with the title of "Comparison of satellite reflectance algorithms for estimating chlorophyll-a in a temperate reservoir using coincident hyperspectral aircraft imagery and dense coincident surface observations". The paper can be found at <http://dx.doi.org/10.1016/j.rse.2016.03.002>.

Field Trip Galleries

