



Faculty News

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Dr. James Norwine has been on sabbatical leave to write a book and teach classes for 1 year at Western State College of Colorado. He will be back at TAMUK in the Fall, 2007.



Dr. Thomas McGehee is working with a team of undergraduate majors (Billy Hales, Joshua Dye, and Orlando Gonzalez) to prepare a basin analysis of the Yuma Area using GIS for the Engineering Research and Development Center in Vicksburg, MS. Drs. Thomas Lee McGehee and Todd Lucas (Art Department) and two undergraduate majors from our respective Departments are preparing a professional

brochure and posters discussing the science of the hall displays in Manning. With the help of Associate Vice President for Enrollment Management, Manual Lujan, the Geosciences Program printed 500 copies of our new brochure for distribution. Drs. Yu and McGehee developed a presentation on the use of GIS in our teaching and research activities. Drs. Yu and McGehee presented this information for prospective majors at Del Mar College and campuses (Alice and Beeville) of Coastal Bend College to choose our program. We also presented for students in GIS classes at Flour Bluff, Tuloso Midway, and Calallen High Schools.



Dr. John Buckley assisted by our majors Rick Garcia, Tina Rodriguez, Joe Martinez, and Alex Fuentes was instrumental in the establishment of the KVTX Seismograph for the Earth Scope National program. The station is the southern-most base station in the system. Recently Dr. Buckley and Orlando Gonzalez (Geosciences major) assisted in the reconnection of the GPS monument associated with the station. The GPS is a station that can

measure elevation changes to the millimeter level. It is designed to detect subsidence of the crust or conversely detect elevation of the crust. While subsidence here is more of a real possibility because of general subsidence of the whole Gulf region and ultimately sea level rises, a positive change in elevation would be more of a problem in the Yellowstone area where it could indicate a rise in the magma level beneath the caldera signaling a concern for possible volcanic activity.

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Faculty News

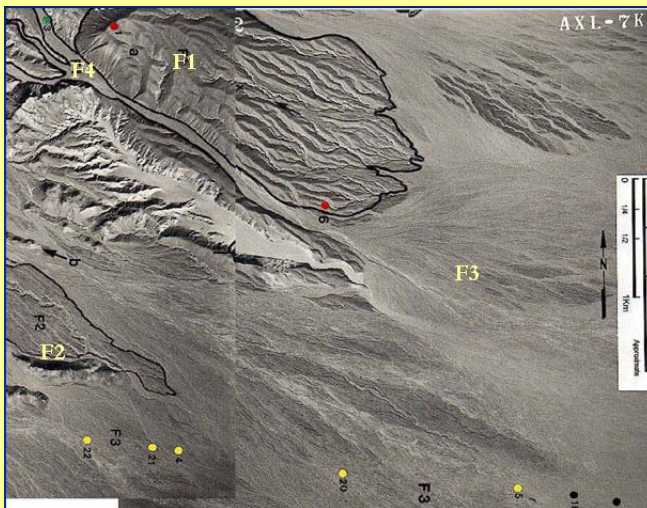


Dr. Jaehyung Yu has established the Geospatial Technology Laboratory at Geosciences department with the Research Development Fund awarded by Dr. Ron Hy, the Dean of the College of Arts and Sciences. Dr. Yu is working with a team of undergraduate majors (Samuel Cantu, Joshua Dye, and Marshal Saenz) for Geospatial Analysis. The newly developed Geospatial Technology Laboratory (900 square feet) is used for teaching upper level classes research purposes. The Geospatial Technology Laboratory has 12 workstations, 1 unix workstation, 1 large scale plotter, 1 black/white laser printer, 1 color laser printer and a projector being ready for high level GIS applications such as hydrological modeling, web-based GIS, 3-D GIS, and

GIS animations. In addition, Dr. Yu and Geosciences faculties have launched new certificate program in Geographic Information Systems for undergraduate students and graduate students. It is required to take four classes (Field mapping & GPS, GIS, Advanced GIS, and Remote Sensing) and pass with "C" or better grade for undergraduate students to be certified in GIS. The graduate certificate requires three courses (GIS, Advanced GIS, and Remote Sensing) passing with "B" or better grade.

Dr. Aiguo Bian finished his PhD from Texas A&M University – College Station. He and his advisor, Prof. Hongbin Zhan derived analytical solutions for groundwater flow and solute transport in aquifer-aquitard systems of various scenarios. Those solutions can be incorporated into numerical groundwater modelling packages.

Research and Publications

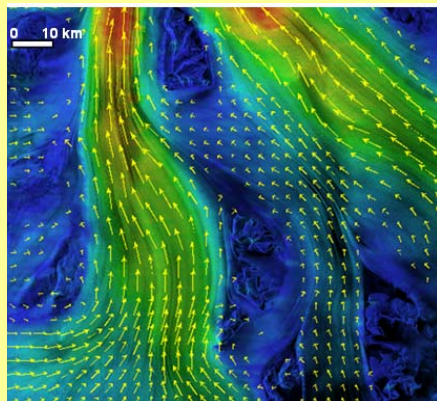


Dr. McGehee assisted by Billy Hales and Joshua Dye (Geosciences Majors) is working with the Army Corps of Engineers to develop new tools from airborne imagery to estimate ground state information such as soil moisture and soil physical property distributions within the resolution (centimeter) of infrared sensors placed on satellites. This project incorporates environmental data into "smart synthetic models" of the environment that will be used by satellites to spot disturbances in the natural environment from outer space. Dr. McGehee, Dr. Victor Medina, Rochelle Martino, Dr. Anthony Bednar, Dr. Charles Weiss, Jr., and David Abraham published an article in the Journal of Environmental Progress: American Institute of Chemical

Engineering (14 Feb 2007) entitled "Fixation of Heavy Contaminants of a Dirty Bomb Attack: Studies with Uranium and Metal Simulants"



Research and Publications



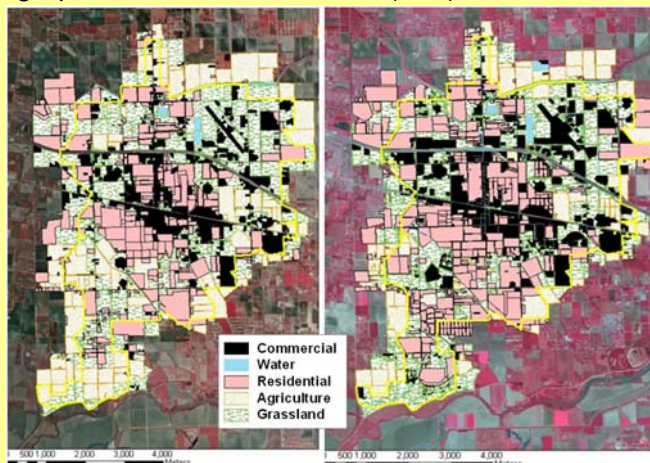
Dr. Yu has collaborated with Dr. Hongxing Liu at Texas A&M University – College Station on the issue of Antarctic Glacier movement using Radar Remote Sensing techniques. They have developed the new methods to calculate and calibrate glacial ice stream velocity using SAR interferometry as a part of research on the investigation of mass balance of the world's largest glacial basin. Two papers are accepted for publication in world's well known journals in Remote Sensing.

Hongxing Liu, **Jaehyung Yu**, Zhiyuan Zhao, and Kenneth Jezek, 2007, Least Square Approach on mosaicing and calibration of ice velocity information derived from RADAR remote sensing technique. International Journal of Remote Sensing, in press.

Hongxing Liu, **Jaehyung Yu**, Zhiyuan Zhao, and Kenneth Jezek, 2007, Incorporation of Flow Stripes for Calibrating Surface Velocity Measurements from Interferometric SAR data. Photogrammetry and Remote Sensing, in press.

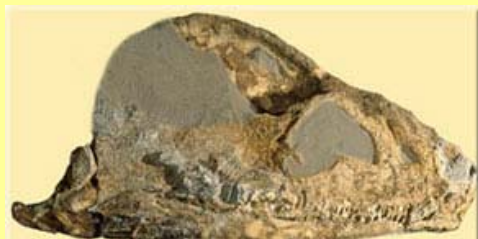
In addition, **Dr. Yu** assisted by Samuel Cantu (Geosciences Major) is working on two projects for South Texas area. The project is assessing hurricane and storm surge damages for Corpus Christi, TX. This study simulates the flood and storm surge area in Geographic Information Science (GIS) environment

and provides accurate quantitative damage estimations in terms of life and properties based on different water level. On the other hand, Dr. Yu and two Geosciences majors (Samuel Cantu and Marshal Saenz) have studied NAFTA impact on landuse and landcover in South Texas area. This study identifies the details of land-use/land-cover change on Commercial/industrial, water body, residential, agriculture and vegetation for 8 years during post NAFTA period. They are presenting the findings in an international conference which will be held in San Francisco, CA from April 17 to April 21, 2007.



Jaehyung Yu, Samuel Cantu, and Joon-yeol Oh, 2007, GIS-based flood and storm surge damage assessment of Corpus Christi, TX. The 2007 Annual meeting of the Association of American Geographers, San Francisco, CA, April 17-21, 2007.

Samuel Cantu, **Jaehyung Yu**, and Marshal Saenz, 2007, Monitoring Land-use/Land-cover change of South Texas during post-NAFTA years using Remote Sensing and GIS techniques: a Case Study of Weslaco, TX. The 2007 Annual meeting of the Association of American Geographers, San Francisco, CA, April 17-21, 2007.



Dr. Buckley is currently preparing the skull of a plesiosaur that was collected in Austin in 1990 by a team from Austin Community College lead by him. The remainder of the specimen was prepared for display at the Texas Memorial Museum. The skull languished in the basement of the Laboratory for 10 years before he secured permission to try to clean it up and assess its possibility for further study and possible papers on the specimen.

To be continued on Page 4



Research and Publications

Dr. Aiguo Bian and his advisor, Prof. Hongbin Zhan, from Texas A&M University at College Station, published a paper in *Journal of Hydrology*, in which they proposed a new method to calculate leakage from surface water body to groundwater aquifer triggered by pumping.

Hongbin Zhan, Aiguo Bian. 2006, A method of calculating pumping induced leakage. *Journal of Hydrology*, 328, 659-667.

Dr. Darlene J. Occeña-Gutierrez, a visiting lecturer in the Department of Physics and Geosciences, is working on an article from her dissertation research on tropical cyclone preparedness. Her work focuses on spatial vulnerability of island environments. The article on "Small-island coping patterns toward the tropical cyclone in Northern Philippines" examines how an island community located along the track of tropical cyclones adapts and copes with the hazard. Darlene received her Ph.D. in Geography from Texas State University-San Marcos in December 2006.

Geosciences Club News



Meeting on 3-20-2007

At 12:30pm, the Geosciences Club meeting began with a short set of announcements regarding the immediate plans for "Spring Fling", the "Bigger Event", and the "Student Leadership Recognition Award Dinner". Shortly thereafter, Scott Bick, Field Engineer for UNAVCO, showed geosciences students the different aspects of his job. UNAVCO is a cooperative of government and universities to share and use geoscientific equipment for research. For more information about finding employment with UNAVCO, please go to www.unavco.org

Spring Field Trip Cancelled

The spring field trip planned from On March 30th through April 1st has been cancelled due to the weather. The students from the Geosciences dept and invitees were supposed to be attending a three day sedimentological field trip at the Buckley Ranch near Austin, TX. Despite the emphasis being on sedimentary environments, this trip encompasses many geosciences disciplines.





Student Research

Billy Hales

Billy is a student researcher and part of Dr. McGehee's undergraduate research team. During the past year, Marshall Saenz—a past member of Dr. McGehee's undergraduate student research team—and Billy Hales were assisting Dr. Thomas McGehee with research using Groundwater Modeling Systems (GMS). On February 9th and 10th, Dr. Thomas McGehee and Billy Hales presented the findings of their research to the U.S. Army Corps of Engineers in Vicksburg, MS. Their research is on the development of a hydrogeologic model for the Yuma Proving Grounds (YPG) in Southwest Arizona and the feasibility of using remote sensing in determining specific geologic facies.

Joshua Dye

During the last three months, Joshua has been learning Ground Water Modeling Systems (GMS) and (Finite Element Modal) FEMWater. GMS and FEMWater are both used extensively in hydrological water modeling of the subsurface, as well as other flow driven applications. Additionally, SoilVision, a soil database program, has also been learned to further the study of sedimentology with complex borehole, sieve, and well analysis. This will assist in future research goals of the department.

Orlando Gonzalez

Orlando is a recent addition to Dr. McGehee's undergraduate student research team. With a prior experience in mudlogging, he adds practical knowledge and application to compliment the skills that the team already possesses. With the addition of new members, our team gains in experience and becomes more well-rounded. Dr. McGehee's undergraduate student research team welcomes Orlando, and looks forward to doing projects with him.

Sam Cantu

Sam has been working with Dr. Yu since late Spring of 2006. In that time, he has done a study on the impact of NAFTA on the Mexico-Texas border region focusing on the city of Weslaco, TX. Sam has also supervised the creation of a geodatabase of the TAMUK campus that will eventually be uploaded onto the Internet. Right now he is wrapping up a project that involves predicting the economic damage caused by a hurricane or storm surge on the city of Corpus Christi, TX. All of his projects involve various GIS and remote sensing techniques.

Alumnus Report

We would like to keep up with our alumnus during their walk through their professional careers. TAMUK geosciences program has had over 300 graduates with either a Baccalaureate or a Masters Degree. If you send us an email with your current bio-sketch we would like you to come to TAMUK, meet our faculty and students, and present a talk. Here are a few bits of information sent in by five of our graduates.

Eugene C. Everett

Eugene C. Everett received his baccalaureate degree from Texas A&M University-Kingsville in 1999 from the Education Department with an emphasis in Life/Earth Sciences. Eugene is working as a fifth grade school teacher at Mathis Independent School District. He is also enrolled at TAMUK as a geology major this Spring, 2007. He can be reached at elchivo54@yahoo.com.

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Alumnus Report

Eric Beller

Eric Beller received his baccalaureate degree from Texas A&M University-Kingsville in August, 1999. In January 2000 he took a position with the Texas Commission on Environmental Quality in Austin in the Municipal Solid Waste Permits Section. Mr. Beller's title is an Environmental Permit Specialist. When someone wishes to open a new solid waste facility, they must obtain a permit from his department. Part of an application for a new landfill is a Geology report that includes subsurface cross-sections, geotechnical lab results, piezometric groundwater maps, and a proposed groundwater monitoring system. He has worked at TCEQ for 7 years now. In December 2006 he received his Professional Geoscientist's license after taking the ASBOG exam. He can be reached at his work email address ebeller@tceq.state.tx.us.

Norma Martinez

Norma Martinez received her baccalaureate degree from TAMUK (class of 1980) and Masters degree from Baylor University in Geology. She is the EHS Manager of OXEA Corporation in Bishop Texas. Ms. Martinez is the Manager for all EHS functions and EHS management systems of this chemical intermediates manufacturer. This company is the result of purchase by Advent International (Frankfurt Germany) of Celanese Chemicals (Dallas Texas) polyolefins and oxo-derivatives. I represent OXEA at state and national level industry groups. She can be reached by email at norma.martinez@oxea-chemicals.com.

Jon Pollock

Jon Pollock received his Bachelors degree in Geography (2005) from TAMUK. He is currently working for the Chief Operating Officer and Director Harry Anthony at Uranium Energy Corporation. Mr. Pollock assists in the oversight of daily operations and exploratory drilling currently underway at the Weesatche Project in Goliad, Texas. He can be reached at his work email address at Jmp5er@yahoo.com.

Juan Uribe

Juan Uribe received his Masters degree from TAMUK (class of 1991). Mr. Uribe is a geophysicist currently working at Repsolypf in Houston, Texas. Repsol is a oil and gas exploration company that is ranked number 8 in the world. He is the manager of geophysical operations worldwide. He can be reached at his work email address at jfuribeu@repsolypf.com.

Summer Internship and Jobs

Several of the Uranium mining companies located in the South Texas Area has expressed interest in hiring student geology interns for the summer. Students will have to register at Career Services with Karen Engebrecht for all internship opportunities. Please contact:

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Eckhardt Hall-104 / 361.593-2218 (office) / 361.593-4088 (fax)
kakne00@tamuk.edu / www.tamuk.edu/csc

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