THE COLLEGE OF GEOSCIENCES
GEOCONNECTIONS
TEXAS A&M UNIVERSITY | 2009

DIGGING INTO EARTH'S GEOLOGIC PAST TO PREDICT ITS FUTURE
DEPARTMENTS & PROGRAMS

Atmospheric Sciences
Geography
Geology & Geophysics
Oceanography
Environmental Programs in Geosciences
Water Management & Hydrological Sciences Program

INTERDISCIPLINARY DEGREES

- BS Environmental Geosciences
- BS Environmental Studies
- Master of Geoscience
- Master of Water Management
- Ph.D. Water Management & Hydrological Sciences

RESEARCH CENTERS & INSTITUTES

Geochemical & Environmental Research Group (GERG)
GERG is a research center for applied geosciences within the College of Geosciences and a Texas A&M Board of Regents’ Center for Excellence. GERG strives to link academic education and research in the college and the university to the real-world needs of government and industry.

Integrated Ocean Drilling Program (IODP)
IODP is the largest geosciences research program in the world. Texas A&M is the science operator for the program, managing the JOIDES Resolution drilling ship, archiving scientific core data and samples, and producing and disseminating data and program publications.

Texas Sea Grant
Texas Sea Grant was one of the first four programs established under the National Sea Grant College Act and is dedicated to the wise use and conservation of valuable marine resources. It supports college and university research and marine education and outreach.

DEPARTMENTAL DEGREES

- Atmospheric Sciences
  BS Meteorology; MS/Ph.D. Atmospheric Sciences

- Geography
  BS Geography; BS Spatial Science; BS Geography with GIS option; MS/Ph.D. Geography

- Geology & Geophysics
  BA/BS Geology; BS Geology/Engineering Geology option; BS Geophysics; MS/Ph.D. Geology; MS/Ph.D. Geophysics

- Oceanography
  MS/Ph.D. Oceanography

MINORS

Earth Sciences; Geography; Geoinformatics; Geology; Geophysics; Meteorology; Oceanography

CERTIFICATE PROGRAMS

Geographic Information Systems; Remote Sensing; Ocean Observing Systems; Petroleum Geosciences

ENROLLMENT (OISP REPORTS)

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FACULTY PROFILE (SEPT. 2009)

104 Tenured/Tenure-Track Faculty
57 Professors
24 Associate Professors
23 Assistant Professors

6 Instructional/Research (non-tenure track) Faculty
1 Research Professor
2 Research Associate Professors
1 Instructional Associate Professor
2 Instructional Assistant Professors

Gender: 93 Male; 17 Female

FACULTY HONORS, AWARDS & RECOGNITIONS (JULY 2009)

52 AFS Distinguished Achievement Awards (since est. in 1955)
11 Fulbright Scholars (since 1987 – est. in 1946)
5 Regents Professors (since est. in 1996)
1 Presidential Professor for Teaching Excellence (since est. in 2003)
3 Distinguished Professors

DEGREES CONFERRED (MAY 2009)

7,627 Total Geosciences Graduates
4,947 Bachelor Degrees
1,953 Master Degrees
727 Doctoral Degrees

GEOCONNECTIONS STAFF

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Justin Bailey, Editorial Assistant
Jim Hiney, Contributing Writer

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Geoconnections is intended to inform, engage and excite former students, future students, and friends of the College of Geosciences about our programs, endeavors, and initiatives. We invite reader response. Address correspondence to Geoconnections Editor, College of Geosciences, 3148 TAMU, College Station, Texas 77843-33148.
Howdy and welcome to the 2009 issue of Geoconnections, the magazine our College of Geosciences at Texas A&M publishes to keep friends and former students up-to-date on the new and exciting activities that abound in our college.
By way of introduction, I am Kate Miller, the new dean of the College of Geosciences. I want you to know how especially pleased and proud I am to have joined this college. I already feel at home in Texas and in the oil patch, having spent 18 years at the University of Texas at El Paso as a faculty member and academic administrator and over four years working for Amoco (now British Petroleum) in New Orleans. My academic research interests have been in applying “active source” seismology to studies of the origin and evolution of the lithosphere and to mitigation of earthquake and environmental hazards. Over the years, my students have generally chosen careers in hydrocarbon exploration and production.

For many years, I have admired Texas A&M University not only for its major commitment to the geosciences, but also as a rare institution where the geosciences come together within a single organizational structure. In a global economy, where innovation in science and technology is increasingly occurring at the boundaries between disciplines, our college is extraordinarily well positioned to expand our role as an international leader in the geosciences.

As the articles that follow in this issue of Geoconnections will show you, our students, staff, and faculty are already in hot pursuit of many endeavors that are making fundamental contributions to the sustainability of the planet in key interdisciplinary areas such as energy, climate, air, and water. One of my major goals as dean is to help all our programs work even more closely together in order to realize the ambitions of Vision 2020 for the university and to assure that our students leave with the premier education they need to be global leaders in business and science.

A major factor in my decision to join Texas A&M was unquestionably the well-known loyalty of the community of former students. All great universities rely, in countless ways, on the enthusiastic support and selfless service of friends and former students. Our faculty and staff are extraordinarily dedicated to the education of the next generation of Aggies and to the discovery of new knowledge through top-tier research.

What sets our programs apart is the myriad ways that our friends and former students help us. These range from facilitating the site for a USArray seismograph (as you will see in the article on page 18), to student internships and scholarships, to industry research collaborations and support for faculty development leaves, among many.

I very much look forward to hearing from and working with you, so that together, we can raise the level of recognition of our college and make our programs the very best they can be.

BEST REGARDS,

Kate

KATE C. MILLER, DEAN
BIG SCIENCE!
DIGGING INTO EARTH’S GEOLOGIC PAST TO PREDICT ITS FUTURE
“Fundamentally, IODP is a very simple program of research and discovery involving 24 nations contributing scientific expertise and money to understand our planet through the retrieval of cores of rock from the ocean basins.”

While a little long for a tweet on Twitter, that “in a nutshell” description of the Integrated Ocean Drilling Program (IODP) from former Interim Director Steve Bohlen describes it well.

Bohlen led IODP from August 2008 to August 2009, overseeing the final stages of a $115 million renovation of the program’s scientific ocean drilling vessel the JOIDES Resolution (JR) and the resumption of scientific expeditions. New Director Brad Clement took the helm August 1.

Since 1983, Texas A&M has been the science operator for the U.S. Implementing Organization (USIO) – the U.S. arm of IODP. Two other implementing organizations are based in Japan and Europe. As science operator, A&M manages the JR, the only U.S. sponsored drilling platform.

A&M’s other partners in the USIO are Lamont-Doherty Earth Observatory of Columbia University and the Consortium for Ocean Leadership, a nonprofit organization based in Washington D.C. that represents 95 leading public and private research and educational institutions, aquaria, and industries. Of the $620 million 10-year National Science Foundation (NSF) contract awarded to the USIO in 2003, A&M is allocated approximately 85%.
The ‘JOIDES Resolution’ received a Hawaiian blessing on May 6 in Honolulu Harbor as part of the rededication activities hosted by the IODP-USIO and the School of Ocean and Earth Science Technology (SOEST) at the University of Hawaii. In the background are (left to right) Arden Bement, director of the National Science Foundation; Bob Gagosian, president of the Consortium for Ocean Leadership; Brian Taylor, dean of SOEST, and Björn Kjerfve, then dean of the College of Geosciences.

The drill ship, which has been the mainstay of scientific ocean drilling for over 25 years, sailed January 25, 2009, from the Singapore shipyard where it was completely transformed. After completing science sea trials, it embarked from Honolulu March 10 for its first scientific drilling expedition after the refit, the Pacific Equatorial Age Transect. The second leg of that expedition began May 6 with Oceanography Professor Mitch Lyle sailing as co-chief scientist, Geology & Geophysics Assistant Professor Bridget Wade as micropaleontologist and Oceanography doctoral student Dan Murphy as sedimentologist. Oceanography Professor Will Sager is currently onboard the JOIDES as co-chief scientist for Expedition 324, the Shatsky Rise Formation.

The $115 million renovation focused on three areas: increased lab space and capabilities, increased drilling capabilities and improved habitability. The ship now has 34% more lab space with a “lab stack” organized on seven floors. The new layout allows better core handling and workflow. A new data management system and science instruments were installed, Bradford Mark Clement was appointed director of IODP August 1, 2009. He comes to Texas A&M from Florida International University, Miami, where he was professor and chair of the Department of Earth and Environment.

Clement leads a staff of 110 scientists, technicians, and support personnel at IODP/TAMU, who provide administrative, fiscal and science support for the program both on campus and on the IODP drill ship the JOIDES Resolution. He plans to work closely with the ocean drilling potential.

The JOIDES Resolution can drill deeper holes* through deeper water** than any other drilling platform on the planet.

* It drilled the deepest ocean borehole of 2,111 meters or 6,888 feet in 1993.

** It holds the record for drilling in the deepest water (7,000 meters/22,960 feet/4.3 miles). Oil companies normally only drill in about 2,000 meters of water.
logging capabilities and ship stability were improved, living quarters were expanded and modernized, and improvements were made to safety and environmental systems.

“We have a unique vessel in the JOIDES Resolution,” Bohlen said. “It is a piece of cutting-edge technology that, with these renovations, should serve science for at least another 20 years.”

“The improved science capabilities of the JOIDES Resolution allow shipboard scientists to obtain more results in near real-time as cores come aboard,” Clement said. “This in turn enables them to make informed decisions and adjust drilling strategies while on site, which is especially important given the complexity of the drilling operations.

“In only its second expedition following the renovation, the ship set new coring records. I think that speaks volumes about the tremendous job the technical and support staff based at 1000 Discovery Drive in College Station did in preparing an improved JOIDES Resolution for the scientific community,” Clement added.

The JR serves science by addressing a range of topics from continental drift and the evolution of the planet to understanding climate and environmental change over the last 100 million years. Past expeditions have

- investigated geological hazards such as earthquakes and volcanoes and how they formed;
- discovered methane hydrates which are now being looked at worldwide as an energy source;
- discovered a vast deep biosphere of microbial life in ocean rocks and sediments that may rival the amount of biomatter on Earth’s surface; and
- discovered conclusive evidence of a major meteorite impact 65 million years ago that contributed to the demise of the dinosaurs.

With the NSF contract for IODP up for renewal in 2013, plans are being made to ensure that the JR and Texas A&M continue to do “big science” for years to come.

“Scientific ocean drilling is perhaps the single most important tool geoscientists have at their disposal for addressing many of the major scientific issues facing our society today,” said Clement. “Problems such as climate change, sea level rise, and tsunami generating earthquakes can only be understood by sampling the geologic archive that lies beneath the seafloor. And that archive can only be obtained using IODP’s drilling capabilities. With a newly renovated drillship, the scientific community now has a more powerful tool to use as we continue uncovering Earth’s secrets.”

Clement was appointed to the new position of IODP chief scientist and director of the GEOTOP (Geological Ocean Drilling Technology Office, Planning) division. In this role, Clement will work with the scientific community and our program partners to build academic bridges and position IODP to take advantage of current and future research opportunities in climate change, sea-level rise, energy security and other relevant national issues. He will help develop a new vision and structure for IODP and lead planning for ocean science drilling beyond the year 2013 which marks the end of the program’s current funding contract with the National Science Foundation.

After earning a bachelor’s degree in geology from the University of Georgia, Clement earned MS and Ph.D. degrees in geology from Columbia University. He served in the Ocean Sciences Division of NSF as associate program director for the Ocean Drilling Program (ODP), a predecessor of IODP, from 2001 to 2003. Prior to that, he was a staff scientist for ODP and professor of geology at Texas A&M from 1984 to 1988.
Alligators swimming in the Arctic, bananas growing in Oregon, and palm trees swaying in warm Wyoming breezes. These aren’t global warming predictions. These are facts describing life on Earth during the Eocene epoch – 54.8 to 33.7 million years ago. At that time the subtropics stretched to the Canadian/U.S. border and the Arctic was ice free.

Researchers in paleoceanography and paleoclimates are studying this time period because the processes that created this warmer Earth haven’t changed in the last 60 million years. What has changed is the specific mix of the processes.

Scientific ocean drilling confirmed a great deal of what is now known about the Eocene. Faculty in the Ocean Drilling and Sustainable Earth Science (ODASES) program are exploring this and many other topics with IODP as both a partner and resource.

ODASES was created by the university five years ago to ensure that A&M faculty and students take full advantage of opportunities available to them for scientific discovery through IODP. Supported by the colleges of Geosciences, Science, Engineering, and Education, since 2003 ODASES has hired 11 new faculty – seven in Geosciences, two in Education and two in Engineering. Together with four tenured faculty in Geosciences, this core group is committed to interdisciplinary research and teaching using resources available to them due to the major role Texas A&M plays in IODP – the only entity in the world doing scientific ocean drilling.

The ODASES faculty participate in drilling expeditions, use data from prior expeditions, study samples from the core repository on campus, work in IODP’s state-of-the-art facilities, and collaborate with IODP scientists and staff in research, outreach activities, and in providing student learning opportunities.

“The impact of ODASES is just beginning to be felt,” said program coordinator Mitch Lyle, a professor in Oceanography. “Having IODP here and the core of expertise it provides is a tremendous benefit to the university. We are able to develop research across disciplines that we weren’t able to do before and involve students both in classroom projects and in doing hands-on research.

“Texas A&M maintains the best scientific drilling vessel in the world,” Lyle added, “and ODASES is here to ensure that our faculty and students realize the full academic potential of that.”

Altogether, about 250 kilometers (155 miles) of cores have been pulled from below the floor of the ocean for scientific study and discovery.
Oceanography will commemorate its 60th anniversary this fall with a celebration for all former students, current students, colleagues, stakeholders, faculty and staff at the College Station Hilton November 6 and 7. This 60th anniversary celebration will also honor the life and work of Professor Robert O. Reid, a founding member of the department.

The two-day event will include an afternoon of presentations reviewing the Department’s past and showcasing present activities, followed the next morning by a keynote address on energy and water challenges and a session on the future of the department. More information is available online at http://ocean.tamu.edu.

Oil company representatives approached the Texas A&M Research Foundation, incorporated in 1944, to facilitate contracts between the A&M College System and industry to find out why the oysters were dying in the gulf. The oyster project eventually provided the desired answers and spawned a novel academic oceanography program firmly rooted in practical research.
BEGINNINGS

In the early 1940s, oysters were dying in record numbers in coastal bays and lagoons of Texas and Louisiana. Oystermen and fishermen, concerned for their livelihood, blamed the expanding offshore oil industry. In response, oil company representatives approached the Texas A&M Research Foundation, incorporated in 1944, to facilitate contracts between the A&M College System and industry to find out why the oysters were dying.

Foundation Executive Director A. A. Jakkula and Judy Davis, his one employee, responded with a proposal to study oyster mortality, and soon an extensive team of researchers was at work on the problem. The oyster project eventually provided the desired answers and spawned a novel academic oceanography program firmly rooted in practical research.

Aided by Claude Zobell, a collaborator on the oyster project from the University of California’s Scripps Institution of Oceanography, Jakkula proposed establishment of a Department of Oceanography to the A&M College Board of Directors on January 3, 1949. With amazing administrative alacrity, the board approved the proposal on January 9, 1949, founding the department with five faculty positions, a testimony to Jakkula’s persuasive powers. The landmark decision recognized oceanography as a distinct academic discipline and established the new department as the first of its kind in the U.S.

THE EARLY YEARS

With the new department formed, an oceanographer had to be found to lead it. Again Jakkula turned to Scripps for help, asking professor Harold U. Sverdrup and Zobell for recommendations. Sverdrup suggested Dale F. Leipper and Robert O. Reid. Reid decided to forego administrative duties at the time, but in May 1949, Dale Leipper visited College Station to interview for the job.

Leipper encouraged A&M to “build a program with regional significance,” and not just another campus department. The department’s first home was on the third floor of Bizzell Hall. Following the Scripps example, Leipper used the remaining four faculty positions to cover the principal subdisciplines in oceanography. John G. Mackin was chosen for the biological position. The geological post went to W. Armstrong Price. Donald W. Hood became the first chemical oceanographer, and Leipper finally convinced Bob Reid to leave Scripps and take the remaining position, sharing the physical and meteorological oceanography duties.

As the department grew, it had several homes on campus. From Bizzell it moved to Old Science, and then to Goodwin Hall. In 1960, Oceanography moved back to Bizzell Hall where it remained until the new David G. Eller Oceanography and Meteorology Building was completed in 1973.
SHIPS

From the beginning, the department needed a seagoing capability to support its research program. The Navy offered a surplus 31-meter harbor tug named Albermarle, but the vessel had no room for a laboratory and sea trials showed the tug to be poorly suited for open-water service.

A capable ship was needed, and the extensive network of the Research Foundation’s Board of Councilors provided one. Industry Councilor Robert A. Uihlein, Sr., vice president of the Joseph Schlitz Brewing Company of Milwaukee, and his brother Erwin, president of the company, had a ship that needed a new home. They offered their 37-meter, three-masted sailing schooner Atlantic. Wary of free boats after the tug experience, Leipper travelled to Milwaukee to inspect the vessel, which he accepted and pronounced “a very beautiful ship.” Sadly, A. A. Jakkula died just before the university accepted the vessel, but no doubt he realized that the impending gift held great promise for the new department.

The Gyre began operations for the department in 1974. For 31 years, A&M scientists used the Gyre to conduct research all over the world.

The ship was sailed from Milwaukee to Chicago and then down the Mississippi River, arriving at Galveston on April 8, 1953.

On June 14, the ship was formally transferred and rechristened the A.A. Jakkula in honor of the man who had envisioned oceanography at Texas A&M and almost single-handedly made it a reality.

The Jakkula served the department until 1958, carrying out numerous surveys of the Gulf of Mexico. The yacht still symbolizes the spirit and energy of the early department. The wooden minesweeper Hidalgo replaced the Jakkula in 1958, and a surplus Army freighter named Alaminos succeeded Hidalgo in 1963. Both vessels served the department admirably and set the stage for the Gyre, which began operations for the department in 1974. For the next 31 years, A&M scientists used the Gyre to conduct research all over the world. It was decommissioned and sold by Texas A&M in 2005.


TODAY’S DEPARTMENT

Today’s department is comprised of a diverse group of faculty and students from a wide range of backgrounds with degrees in the traditional sciences, engineering, and mathematics. They work in a variety of disciplines studying biological, chemical, geological and physical oceanography. All share a common passion for the oceans!

Under Department Head Piers Chapman, Oceanography now has 31 faculty in College Station, 9 faculty in Galveston, 17 research scientists, 7 staff, and 4 faculty emeriti. Spring 2008 semester there were 36 master’s students and 38 doctoral students. A joint program with Ocean University in Qingdao, China, brought six Chinese students to Texas A&M to work on their doctorates in 2008 and an additional five will arrive this fall. A joint marine biology program has been developed with TAMU Galveston and TAMU Corpus Christi.

In addition to graduate education, the department offers undergraduate courses that fulfill the University’s Tier I science requirement, has an undergraduate minor program in oceanography, and actively supports the Environmental Programs in Geosciences with four faculty serving as academic advisors.

Texas A&M faculty are leading the way in training a new generation of ocean professionals in the development, design, and implementation of real-time operational oceanographic systems.

Faculty have made major contributions to development of the international Global Ocean Observing System and its U.S. component—the Integrated Ocean Observing System (IOOS). They are leading the way in training a new generation of ocean professionals in the development, design, and implementation of real-time operational oceanographic systems through the Ocean Observing Systems Certificate—the first to be offered by
Practically everyone associated with the Department of oceanography since its inception knew Robert (Bob) Osborne Reid. He was a founding member of the department and remained active until his death in January, 2009, at age 87.

His distinguished career included service in the U.S. Army Air Corps, the U.S. Navy Electronics Laboratory, the Scripps Institution of Oceanography, and Texas A&M University. He was a faculty member in the Departments of Oceanography and Meteorology, Civil Engineering, and later, the Oceanography Department at TAMU. Bob served as Oceanography Department head from 1981 to 1987. During his career, he chaired or co-chaired 138 graduate student committees.

Perhaps the most vivid thread running through Bob’s career was his unswerving commitment to the highest academic and ethical standards. He was a recipient of the Minnie Piper Foundation award and two TAMU Association of Former Students (AFS) Distinguished Achievement awards for Teaching. His reputation as a distinguished researcher was recognized nationally; his many honors and awards included membership in the National Academy of Engineering and the Coastal Engineering Research Board, the Medal of the University of Liege, Belgium, an AFS Distinguished Achievement Award for Research, and an Honorary Doctor of Science from Old Dominion University.

Bob never sought the spotlight; he relied on a much-admired ability to initiate research and orchestrate its completion through teamwork with students and colleagues. His selfless dedication to improving education and research at Texas A&M has become legendary, and we seek to honor his service appropriately.
“Oceanography includes a little of every major scientific discipline, and the disciplines are interrelated,” Ruth Mullins said. “It is an exhilarating science and the fieldwork opportunities are amazing. Your lab is the ocean, and that is a luxury not many students experience.” A native Texan from San Marcos, Ruth did her undergraduate work in biology at A&M before entering the Oceanography graduate program.

“When I decided to go into oceanography, I looked at grad schools objectively and evaluated all the options, but the stipends and teaching opportunities here are just top notch and with the standard of living, graduate school at A&M is extremely affordable,” she said. “Even though we are not on the coast, I have been to sea more times than coastal school students.”

While Ruth enjoys research and has done extensive work through her M5 and Ph.D. programs, she credits graduate school for helping her discover a true passion for teaching.

“I never considered teaching as a career because both my parents were teachers and you tend to always say ‘I am not going to do what my parents do.’ But then you try teaching, and you realize you have a talent,” Ruth said.

For the past year and a half, Ruth has participated in a National Science Foundation GK-12 teaching fellowship, the PEER program (Partnership for Environmental Education and Rural Health), under principal investigator Larry Johnson. She spends 15 hours a week working with 6th graders in science teacher Naveen Cunha’s class at Stephen F. Austin Middle School in Bryan and during non-school months develops curriculum and classroom activities.

“Your lab is the ocean, and that is a luxury not many students experience.”

PEER trains graduate fellows to improve the science, technology, engineering, and mathematics (STEM) content in sixth- to eighth-grade classrooms. Fellows are role models who convey the excitement of science research and discovery.

“It’s been a real challenge, but I love it,” Ruth said. “Only two of my 80 students have ever been to the ocean. They love learning through my experiences. I think my greatest impact is showing them that college is an opportunity to learn any aspect of science anywhere in the world and that anybody can be a scientist.”

Ruth used video conferencing to share her experiences on a research cruise. “We took the students to sea with the Internet while I was in the Galápagos last fall. Before the trip, students conducted experiments in the classroom to learn about what the scientists were measuring on the cruise. They also learned about the Ecuadorian and Galápagos culture and what is out there in the world.”

While her students all know that Ruth is an exceptional teacher, she received formal confirmation of that last spring when she won a Distinguished Graduate Student Award for Teaching from the Association of Former Students and the Office of Graduate Studies. She would like to continue teaching at the university level after completing her Ph.D., although she hopes to work in industry first.

“I hope to start in environmental and oceanography research for the oil industry and then transition into an academic teaching career,” Ruth said. “Eventually, I would like to be at a Tier 1 teaching university where I could focus on mentoring, small scale research projects, and engaging graduate students in the importance of quality teaching.”
Seeing a TV program and reading a book about scientific ocean drilling helped her focus that fascination.

“I just happened to see a science program on ocean drilling when I was young that really made an impression on me, and I decided that I wanted to do something like that. I thought it would be great to have engineering and science together to drill down through the ocean floor,” Masako said.

As she finished high school, Masako stayed committed to a career in ocean science. “College is extremely competitive in Japan and I couldn’t get into the best school to study oceanography or geology and geophysics, so I chose petroleum engineering and took a lot of drilling and production courses, hoping that someday I could switch to scientific drilling.”

In the summer of 2001, the JOIDES Resolution made a port call in Yokohama, and Masako, who was finishing her undergraduate work at the time, went with her mom and a best friend to tour the ship.

“I told them that this is my dream place to work as a scientist, and I want to sail on that ship sometime in my future,” she said.

Masako got her wish four years later when she sailed on the JOIDES on her first Integrated Ocean Drilling Program (IODP) expedition. “It was amazing to me,” she said.

Masako switched from petroleum engineering to marine geophysics by coming to the U.S. to do graduate work at Texas A&M. She completed her Ph.D. in Oceanography last February and is now a postdoctoral scholar at Woods Hole Oceanographic Institution. She also is currently in the middle of the Pacific on her fourth IODP research cruise.

“Spending so much time at sea was indeed sacrificing many things in life, Masako said, but also very worth it. “I did it because I had a concrete goal to pursue. I really wanted to expand my connections and collaborate with people at other institutions and to establish my ability to work independently from my advisor. It was great to produce science and publications through collaborations.”

Masako was recognized for her commitment to research last spring when she won a Distinguished Graduate Student Award for Research from the Association of Former Students and the Office of Graduate Studies. She plans to continue in academic research, but she is also passionate about sharing science with non-scientists. As a graduate student, Masako was active in community outreach. She was a judge for the Bryan K-12 Science Fair and an international Olympiad event in Houston. She was also a coordinator and supervisor for the College of Science’s Texas Science Olympiad.

“It was great to produce science and publications through collaborations.”

As a graduate student, Masako participated in seven research cruises. When she finishes this fourth IODP expedition, she will have logged nearly 340 days at sea.
Global hydrocarbon production will peak in the next 10 years unless substantial improvements are made in oil and gas exploration and reservoir development. Given projected demand for energy in the next 50 years, new technologies must be developed now to enhance recovery from conventional reservoirs and to discover, image, characterize, model, and develop unconventional ones.

The College of Geosciences is leading the charge and teaming with the Colleges of Science and Engineering to meet these demands through a new multidisciplinary research center – the Berg-Hughes Center for Petroleum and Sedimentary Systems – created in July.

The Berg-Hughes Center integrates the study of geology, geophysics and petroleum engineering to give students exposure across these disciplines. This unique educational opportunity will give A&M graduates a significant advantage in the petroleum industry over graduates from traditional programs.

Additionally, the center provides the research focus and resources faculty need to develop integrated petroleum solutions for industry.

Twenty-six faculty are participating in the center, including geologists, geophysicists, marine geologists and geophysicists, and petroleum engineers. They are providing innovative, multidisciplinary education and research opportunities for students in these disciplines.

The center combines existing strengths in the colleges of Geosciences, Engineering and Science with new strengths in the Department of Geology & Geophysics in petroleum geosciences. While providing the balance between fundamental and applied research that is a hallmark of the department, the center will also help meet the needs of the Texas energy industry.

The Berg-Hughes Center links A&M scientists and engineers with those in the energy sector including industry, government and academia. Together, they will educate a new generation of petroleum and sedimentary geologists, geophysicists and engineers who will become the industry leaders who power our future.
Dr. Ernest Mancini will lead the Berg-Hughes Center for Petroleum and Sedimentary Systems as its first director. Mancini is an outstanding leader and is known nationally for his high visibility research in petroleum geosciences.

Mancini is a distinguished research professor of petroleum geology and stratigraphy at The University of Alabama (UA) and director of its Center for Sedimentary Basin Studies. He has a remarkable record of success building programs and generating over $28 million in research funding while there.

When he joins the faculty at Texas A&M, Mancini will be appointed research professor of Geology & Geophysics and awarded the Dan A. Hughes ’51 Chair in Geosciences as stipulated by chair donor, Dan Hughes.

“Ernie Mancini is the best possible person to lead this center,” said Geology & Geophysics Department Head Andreas Kronenberg. “With his academic credentials, excellent industry and government contacts, and extensive knowledge of research applications, he will have it up and running immediately. And since he worked with Bob Berg and Wayne Ahr, in addition to his Ph.D. advisor, Robert Stanton, Ernie has an intuitive sense of what we need and how to go about it.”

Mancini earned his Ph.D. in geology from Texas A&M in 1974. He joined the faculty at UA in 1976. He also served as the Alabama State Geologist and Oil & Gas Supervisor from 1982 to 1996, during which time Alabama became a major producer of natural gas.

According to Geology & Geophysics Professor Wayne Ahr, “Ernie is one of the most energetic and dedicated professionals I’ve had the pleasure to know and work with. He built a remarkably successful program at Alabama where he and his team of researchers held workshops to present the latest geoscientific and engineering information on petroleum exploration and development to industry and academia alike – but especially to independent oil companies that lacked in-house research and technical service resources. We are truly lucky to have him join us.”
When Geology & Geophysics graduate students Shari Hilding-Kronforst and Ben Kolkmeier responded to a summer job posting in their department, they thought it would be a flexible, well-paying job that would allow them to travel through interesting areas of Texas while being part of the prestigious National Science Foundation EarthScope project. What they didn’t realize, however, is that they would also learn how to be door-to-door salesmen.
Hilding-Kronforst and Kolkmeier spent the summer of 2008 doing reconnaissance work for the USArray, a nationwide effort to collect accurate seismic data for the entire continental U.S. That reconnaissance work, however, demanded that Kolkmeier, a master’s student, and Hilding-Kronforst, a doctoral student, develop and use skills seldom taught in lectures or labs.

They learned how to knock on the doors of strangers and convince them to allow a national science entity to bury a 42-inch diameter tank with a concrete base, seven feet into the ground on the resident’s property, and then erect an eight-foot mast with solar panels, a GPS antenna and a radio antenna, with both being left in place for at least two years while the property owner gets no reimbursement whatsoever.

Their experience left Kolkmeier and Hilding-Kronforst greatly indebted to the vast Aggie network. According to Geophysics Associate Professor David Sparks who supervised the team, “They found Aggies all over and when Shari and Ben said they were from Texas A&M, it was like ‘Come on in!’”

Sparks, Hilding-Kronforst and Kolkmeier were one of six teams from Texas universities participating in the implementation of the transportable array element of the USArray project under EarthScope. Other teams were from Baylor, UT, Texas Tech, and Lamar.

The Transportable Array is a 15-year program that is placing a network of seismographs across the U.S. The seismographs record the energy released by Earth’s movements and are sensitive enough to detect everything from cars on a nearby highway to earthquakes around the world.

By analyzing the data from this dense grid of seismometers, scientists can learn about Earth structure and dynamics and the physical processes controlling earthquakes and volcanoes.

“The ultimate goal of the USArray is to look at the structure of the crust and upper mantle beneath the continental U.S. deeper and in more detail and with more resolution than we have been able to do in the past,” said Sparks.

The Transportable Array is placing 400 broadband seismometers across the U.S. and Alaska in a grid pattern, with each occupying a site for about two years. Teams of students are enlisted to evaluate potential sites and lay the groundwork with property owners so that EarthScope technicians can then complete the installation.
The first seismometers were installed in August 2007 along the West Coast. The array is being moved in leapfrog fashion from west to east and will complete an additional three full deployments to cover the conterminous U.S. with over 1600 observation points. Then they’ll be moved to Alaska.

Texas A&M’s team worked hard to identify 20 of those 1600 observation points.

After getting a property owner’s permission to go on their land, Hilding-Kronforst and Kolkmeier tested for adequate cell phone signal strength to ensure the seismometer could relay the data it collects. They then made sure the site met other criteria, documented the location with photographs and GPS coordinates, and left residents with information on the project. An EarthScope representative then followed up to make sure the site was appropriate and to finalize the agreement.

With help from the Aggie network and the interpersonal communication skills they developed, Hilding-Kronforst and Kolkmeier were the first team of students in Texas to pinpoint suitable sites and submit reports for their 20 assigned stations.

Although the training they attended recommended a different approach, Hilding-Kronforst and Kolkmeier worked out their own system over the summer. “We would look at a house to see if they had any A&M or other university flags or window stickers or things in the yard,” Kolkmeier said.

“That saved us quite a few times,” Hilding-Kronforst added. “We could knock on so many doors at some of these sites and not find anybody willing to let us do this, but if we found Aggies, they were certain to help, and if their property wasn’t suitable, they would tell us about ‘Joe’ over here or somebody else over there.”

“Teachers were also really good about helping us,” added Kolkmeier.

Hilding-Kronforst and Kolkmeier both feel they benefitted from the experience. Kolkmeier said the project definitely influenced him personally. “I’m not a good salesperson, and we were basically being salesmen for science. I had a lot of interviews for internships after that, and I know I was more comfortable because of the skills I’d developed over the summer.”

Hilding-Kronforst, who plans to continue teaching after completing her Ph.D., said that her experience helped her see the need for universities to do more community outreach so that people in rural areas know more about the research being done at the universities.

“We need to do more to help people learn how the science interacts with and affects their lives,” Hilding-Kronforst said.
Matthew Wehner knew that he wanted to focus on petroleum geology and was attracted by the strong reputation of the program here. Matthew’s initial interest in geology grew out of a childhood fascination with dinosaurs, but unlike many children who then move on to the next big fad, his attraction to prehistoric Earth never waned.

“Like most kids I went through the ‘dino’ phase,” Matthew said. “But at some point it developed into collecting fossils and rocks and identifying them. As I got older I realized that if I was going to make a career of this interest, then I would have to find a way to apply it, so I decided that petroleum exploration or something along those lines would be the best way to use that interest.”

Matthew transferred to A&M after spending two years at Olympic College in Bremerton, Washington. Before applying, he discovered that A&M grants in-state tuition rates to out-of-state students who receive competitive scholarships worth over $1,000. So Matthew pursued scholarships in the College of Geosciences and was granted the Marianne W. and Willard R. Green ‘53 Endowed Scholarship and the K.G. “Red” McCann Endowed Scholarship.

“Price-wise, this put Texas A&M on a level playing field with other schools that I considered.”

Matthew feels that the Geology & Geophysics Department here has been a good fit for him. “The department is small enough that you can know most everyone – faculty and students. A&M is also very fast paced, and students are really encouraged to get involved in meaningful research, even as undergraduates.”

Given that environment, Matthew decided to fulfill undergraduate elective hours by working on a professor’s research project. He began working with Professor Anne Raymond, whose research interests include paleoecology, geobiology, and paleobotany.

With a semester of experience under his belt assisting Raymond in her research, Matthew developed a proposal to complete his own undergraduate research project through the Office of Undergraduate Research.

“I was able to speed up the whole process by making use of my earlier experience with Dr. Raymond,” Matthew said. “For this project I used leaf geometry and statistics to distinguish new leaf species from previously discovered fossils in coal. It’s basically the same project, just with an expanded scope. And this time I was doing the microscope work and collecting the data.”

Through his project, Matthew proposed establishing a new morphology or species for an extinct group of seed ferns. He presented his findings at A&M’s Student Research Week and at the G&G Student Research Symposium last spring.

His undergraduate research experience served him well, as Matthew completed his BS in August and is now in the MS degree program here and completing a graduate certificate in petroleum geosciences. He plans to do a specialization in either sedimentary geology or reservoir characterization and response.

Although he hasn’t yet decided what path to take after graduate school, Matthew is confident that his Aggie experience will be an asset.
Geology & Geophysics Assistant Professor Bridget Wade is a paleontologist who works in a geologic timescale of eons, eras, periods, epochs, and ages. In her world, years are like heartbeats and decades are mere instances.
Bridget Wade’s days are consumed in the study of 30-million-year-old microscopic fossils to learn what they can tell about changes in ocean temperatures.

In that context, it doesn’t seem at all unusual to Wade that she has spent the last five years developing a proposal for a research expedition that even if accepted, might not be scheduled for another five years or so. She hopes to lead an Integrated Ocean Drilling Program (IODP) expedition on the JOIDES Resolution to drill off the coast of Tanzania in search of well-preserved microfossils from the Eocene and Oligocene epochs.

In 2004, as a postdoctoral research fellow at Cardiff University in the United Kingdom, Wade participated in the Tanzania Drilling Project that drilled into exposed marine sediments onshore along the coast of southern Tanzania. The study was aimed at understanding ancient climate change during the Eocene/Oligocene boundary period.

Last February, Wade went to the East African coast again with graduate student Clay Bowden to sail on the research vessel Pelagia. She was completing a site survey to collect the seismic data needed for a full proposal to IODP to continue this work.

“This area offshore in East Africa is a prime location for studies such as these because the older sediments are expanded so we can build a very detailed picture of climate changes,” Wade said.

The Eocene was the warmest epoch of the Cenozoic era and lasted from 54.8 to 33.7 million years. During the Eocene, subtropical conditions existed up to the Arctic Circle and palm trees flourished in Minnesota.

“But at the Eocene/Oligocene boundary interval, the first big ice cap appeared in Antarctica,” Wade said. “We know that the southern hemisphere cooled considerably and that there were a lot of extinctions at this time in microfossils too, so we’re trying to look at what happened in the tropics.”

Wade is studying microfossils of foraminifera plankton that live in the surface waters of the ocean. The fossils are made of calcium carbonate and, when dissolved, their chemistry reveals information about sea surface temperatures. With her IODP drilling proposal submitted October 1, Wade hopes to get the fossils she needs to construct an accurate record of tropical temperatures through time.

But even if the proposal is accepted, the actual expedition may not be scheduled for several years depending on the geographic locations of other accepted proposals.

That doesn’t deter Wade however. The College of Geosciences’ affiliation with IODP and the Gulf Coast Repository was a key factor in her decision to accept a faculty position here in 2007. Until she knows the fate of her IODP proposal, Wade and Bowden, who is completing a Ph.D. in Geology, will continue working with cores stored at the Repository. They are imaging and scanning cores drilled in 1972 by the Deep Sea Drilling Project, a predecessor of IODP, looking at magnetic susceptibility and color variations. Their hope is to eventually compare the climatic changes recorded in this deep-sea site (2,000-meter water depth) to the shallower record they hope to get from Tanzania (about 500-meter water depth).

It’s just a matter of time.

With her IODP drilling proposal, Wade hopes to get the fossils she needs to construct an accurate record of tropical temperatures through time.

TO LEARN MORE ABOUT THE WORK OF DR. WADE, VISIT HER FACULTY PROFILE AT GEOWEB.TAMU.EDU/PROFILE/BWADE.
When Assistant Professors of Geography Chris Houser and Steven Quiring first learned of a proposed research and education center in the Costa Rican cloud forest, they saw the potential to teach students about physical geography in effective and exciting ways.


“We really hope that giving students a positive experience in the field, and showing them what geography and the geosciences are all about, will have an influence on their global perspective. Maybe they’ll even consider becoming geosciences majors.”

Houser and Quiring’s vision became reality last spring break when they led 20 Texas A&M freshman on a trip to the 250-acre Casa Verde Reserve and were among the first to utilize the recently completed Soltis Center for Research and Education.

Donated by Charles Soltis, class of ‘55, and his family, the center is comprised of a 7,500-square-foot academic building with classroom, lab, and meeting spaces, and eight dormitories capable of housing up to 60 people.

The 20 lucky freshmen, who came from a variety of majors and colleges, enrolled in Geography 203 spring semester with one caveat. Rather than attend the lab portion of the class on campus, they completed their lab requirement at the center and learned physical geography as only work in the field can teach.

“Students did very similar exercises as what’s in the course lab manual, except they did it hands-on in the field,” Houser explained. “So for instance, instead of just using river data like they would in a classroom lab, students measured the speed and amount of water flowing in the river. Instead of going out and surveying the quad, they surveyed a mountainside.”

The trip was available to students at a reduced cost, only $600, thanks to funding from a new university initiative to ensure that at least 25% of all students have an international experience before they graduate. Judged only by that guideline, the trip appears to have been a shining success.

“Fifteen of the 20 students who went on the trip had never even flown before,” Houser said. “Looking at that kind of statistic makes you understand a little more clearly former President Murano’s push for more students to travel abroad while they’re at A&M,” Quiring added. “A lot of our students are from towns that are only a couple of hundred miles from College Station, and they may or may not have ever traveled outside of Texas.”

The trip wasn’t all work. Quiring and Houser lined up an exciting itinerary of excursions that highlighted physical and cultural geography and the Costa Rican environment.

“The first trip that we did off the property was zip lining down through the canopy of the forest, and then we took a horseback tour in the afternoon,” Houser said. “We also spent an entire day visiting Arenal, the third most active volcano in the world. Another exciting experience was having lunch at Paco’s,
“One of the coolest aspects of the trip was the actual site itself; we got to hike up a river! Getting to use a machete to cut your own path through the rainforest was pretty cool too. I felt like a true adventurer.”

which is a tilapia farm where the fish are taken right out of the pond before you eat.”

“We really hope that giving students a positive experience in the field, and showing them what geography and the geosciences are all about, will have an influence on their global perspective,” Quiring said. “Maybe they’ll even consider becoming geosciences majors.”

Whether it was their first or tenth time to travel abroad, students had nothing but positive things to say about their experience and several are considering majoring in the geosciences.

“One of the coolest aspects of the trip was the actual site itself,” freshman Brianna Evola said. “We got to hike up a river! I was up to my shoulders in water at times. Getting to use a machete to cut your own path through the rainforest was pretty cool too. I felt like a true adventurer.”

In addition to exploring and studying the cloud forest, students and faculty had another stirring experience, meeting the Soltis family, whose generous donation to Texas A&M made the center a reality.

“The Soltis Center was amazing,” Evola said. “The engineers that designed it were fantastic. Everything was so open and in touch with the surrounding environment. And meeting Mr. Soltis and his daughter, Kim, was a life-changing experience. His desire to help advance the lives of others truly was contagious. After this trip, I am in fact going to change my major to geosciences. It showed me that studying the Earth and how its people interact with each other is my true passion in life. It was an eye-opening experience.”

The center is comprised of a 7,500-square-foot academic building with classroom, lab, and meeting spaces, and eight dormitories capable of housing up to 60 people.

TO LEARN MORE ABOUT THE WORK OF DR. HOUSER (LEFT) OR QUIRING, VISIT THEIR FACULTY PROFILES AT GEOGRAPHY.TAMU.EDU/FACULTY.
Eric Sehn is a native of Canada and was a four-year member of the Texas A&M Diving team, which certainly had its benefits; he was able to travel and experience new cultures and people. However, it also had a price. Eric learned early on that being an athlete and a student was no walk in the park.

“Time management is key,” Eric said. “You’ve got to be able to make the most out of every minute of the day. Academically, the hardest part is definitely missing classes. I think last spring alone I missed eight weeks of school. A lot of professors do accommodate really well, but when they don’t, you just have to have that work ethic and be able to figure out how to utilize all of your available time.”

Eric took the 2007-2008 school year off to try out for the 2008 Canadian Olympic team. Though he missed making the team by only a few points, it left him more determined than ever to make the 2012 team and compete in the London Olympics.

“My NCAA career has ended,” Eric said, “but even though I’ll graduate in December, I’ll probably still be here at Texas A&M training until May. I’d like to eventually go to grad school and get my Ph.D., but I haven’t decided where or when yet. I do know that I want to go to the Olympics in 2012, so I may not go back to school until after that so that I can train for a good two years.”

Eric was a kinesiology major and planned to become a teacher when he came to A&M as a freshman. He switched to geography as a junior though and hasn’t looked back.

“I love it, I love it,” Eric said. “I think it’s funny when I tell people I’m a geography major. They kind of laugh at me and ask if I know where this is and where that is. But geography is a lot more than that. You know, I really want to get into the subject. My end goal right now is to be a geography professor, but I wouldn’t mind being a high school teacher for a little while first.”

Eric is interested in urban geography, which he said comes from the experiences he’s had traveling the world for diving meets. He said that since he’s been studying geography, he pays more attention to land use and culture during his travels.

Those experiences also reinforced his initial decision to come to Texas A&M – a university more than 2,000 miles from home.

“The funny part is that on the plane ride home after my recruiting trip, I had already decided I was going to A&M. And when I got home I said to my dad, ‘Guess what, I’m an Aggie!’ It was really funny because he goes ‘What the heck is an Aggie?’” Sehn laughed. “But then they got excited and I signed the forms and I have no regrets. My time here has been incredible, and I feel like now I’m prepared as a person to really go out and do what I want with my life. A lot of that is due to the people at A&M and in the Department of Geography.”
Geography Assistant Professor Brendan Roark made headlines this year with a breakthrough study that determined two groups of Hawaiian deep-sea corals are far older than previously recorded – thousands of years older in fact. This study should impact fisheries management practices worldwide.

Working with colleagues at Stanford University, Lawrence Livermore National Laboratory, and the University of California at Santa Cruz, Roark used radiocarbon dating to determine the ages or life spans of Gerardia, or gold coral, and specimens of the deep-water black coral Leiopathes.

The longest-lived of each species was found to be 2,740 years and 4,270 years, respectively. At more than 4,000 years of age, the deep-water black coral is the oldest living skeletal-accreting marine organism known.

“These corals are the oldest colonial organisms yet found on Earth,” Roark said. “While the living polyps are only a few years old, they have been continuously replaced for centuries to millennia while accreting their underlying skeleton.”

Ancient Corals Help Reconstruct Past Climate Changes

By Carol Trono

Geography Assistant Professor Brendan Roark made headlines this year with a breakthrough study that determined two groups of Hawaiian deep-sea corals are far older than previously recorded – thousands of years older in fact. This study should impact fisheries management practices worldwide.

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“These corals are the oldest colonial organisms yet found on Earth,” Roark said. “While the living polyps are only a few years old, they have been continuously replaced for centuries to millennia while accreting their underlying skeleton.”
Prior to Roark’s study, lifespans in Pacific coral specimens were measured by counting what were thought to be annual growth bands. This method suggested maximum ages of only 70 years for gold coral. Based on these new findings, the Western Pacific Regional Fisheries Management Council has enacted a five-year moratorium on the collection of gold corals.

“The extreme old age and slow growth, as well as the clear association that these coral have with a diverse assemblage of invertebrates and fish, make protecting these deep-sea coral beds a real priority,” Roark said.

“Gold coral is harvested for making jewelry, and both species are threatened worldwide by fishing methods that contact the seafloor such as bottom trawling. We hope these results will provide the scientific basis for further protection of deep-sea habitats around the world and in international waters in particular.”

The corals Roark has been studying for the past five years live at depths of up to 1,600 feet. The beds are reached using submersibles that carry two scientists and a pilot and can dive up to 6,500 feet. Powerful lights illuminate the near total darkness at these depths, and two robot arms are manipulated to collect specimens.

“I’ve made about 15 research dives in my career, and it’s quite an experience,” Roark said. “You spend up to eight hours in a submersible, working in total darkness. I’ve seen a lot of unusual sea creatures and even prehistoric sharks.”

Roark is an anomaly when it comes to being a geographer. He doesn’t fit the usual mold. His academic degrees root him firmly in geography, having earned a BA in environmental conservation and an MA and Ph.D. in geography. But his research defines him as a paleo-oceanographer and bio-geochemist.

Roark came to Texas A&M from Stanford where he was a postdoctoral scholar. He was hired through the Ocean Drilling and Sustainable Earth Science (ODASES) partnership that links scientists, engineers, and educators from the Colleges of Geosciences, Engineering and Education to the ocean drilling technology and resources available through the Integrated Ocean Drilling Program (IODP).

“The association with IODP and opportunity to do a lot of work across disciplines brought me to A&M. Ultimately, interdisciplinary research is one of the important foundations of physical geography,” Roark said.

His interest in reconstructing past climate and oceanographic variability led Roark to doing longevity studies with deep-sea corals initially. Deep-sea corals are a new and rapidly expanding archive in paleoceanography that have the potential to serve as recorders of intermediate water variability, a depth range in which few if any other archives exist.

“I hope to move forward now and continue to develop both stable isotopic and trace element indicators of past changes in ocean circulation, changes in subsurface temperatures and changes in ocean productivity,’’ Roark said.

To learn more about the work of Dr. Roark, visit his faculty profile at geography.tamu.edu/profile/broark.
Sarah Brooks spends a great deal of time with her head in the clouds – literally. While conducting a research study in Alaska in 2008, she and graduate student Andrew Glen logged over 110 hours flying through clouds, drawing airborne particles into their onboard cloud simulation chamber and observing ice crystal growth on those particles.

An assistant professor in Atmospheric Sciences, Brooks is an energetic rising star in her department. A graduate of MIT and the University of Colorado, her career at Texas A&M got off to a quick start after she joined the University in 2005. Her early accomplishments earned her a CAREER award from the National Science Foundation in 2006 and a Presidential Early Career Award for Scientists and Engineers (PECASE) in 2007.

MOST VISITORS TO ALASKA ARE AWED BY THE MAGNIFICENT LANDSCAPE OF THIS VAST ARCTIC WILDERNESS, BUT NOT DR. SARAH BROOKS. SHE’S DAZZLED BY THE SKY.
Brooks is one of a growing number of scientists racing to discover missing pieces in our understanding of climate change. An important aspect of her research focuses on the formation of ice crystals on aerosol particles in the atmosphere and how clouds made up of these ice crystals affect Earth’s temperature. To facilitate the research, Brooks and Glen took part in the Indirect and Semi-Direct Aerosol Campaign (ISDAC), which was organized and funded by the Atmospheric Radiation Measurement Program (ARM) of the U.S. Department of Energy.

“The general goal of ISDAC is to improve our understanding of the radiative impacts of aerosols and clouds on the global radiation budget, which is the sum total of all the incoming gains and outgoing losses of solar energy,” Brooks explained. “Our specific goals, though, are to count ice crystals and to understand the specific types of aerosols, which are tiny particles or droplets in the air, needed for ice crystals to grow and develop clouds with strong light scattering properties. Ice-laden clouds in the Arctic have a global influence on the Earth’s radiative budget.”

For their study, Brooks, with help from Glen and undergraduate Marissa Gonzales, designed a Continuous Flow Diffusion Chamber (CFDC) to collect and analyze airborne particles and simulate the role those particles play in the formation of clouds. Working from Brooks’ experience constructing a similar device while at Colorado, they built what is now one of three such instruments in the world.

Brooks and Glen took the CFDC to Alaska last year for the ISDAC study, where they spent a month flying over the Arctic. They used the instrument to collect and measure air particles at different altitudes and locations. By continuously drawing air samples into the CFDC and maintaining accurate temperatures and pressures, they were able to simulate cloud formation under the wide range of atmospheric conditions encountered that month in the Arctic.

The plane used in the study was an airborne laboratory. At any one time, dozens of instruments and at least eight scientists were onboard, all working on different projects.

“We were working all the time we were in the air,” Glen explained. “The instrument itself would be dangerous if you didn’t keep it finely tuned. You’re dealing with high pressures inside refrigeration lines, and you can build up pressure pretty quickly, so you want to constantly be monitoring it.”

“Also,” Brooks added, “since our cloud simulation experiment was actually going on right there, we had to be constantly adjusting the conditions inside the CFDC to make them match the conditions outside the plane so that we could keep it as realistic as possible.”

The pair returned from their trip with enough data to keep them busy for some time. “Now we’re generating samples in the laboratory of particles of the same compositions as those we collected on the airplane and using the CFDC to see how ice crystals form on them,” Brooks said.
There is still much work to be done, however. In January, Brooks and Glen will take the CFDC to Storm Peak Laboratory in Steamboat Springs, Colorado, to observe cloud formation on additional types of aerosols.

“Storm Peak is a unique high altitude lab which allows us to make in-cloud measurements without leaving the ground,” Brooks explained. “It’s one of only a handful of mountain-top labs in the world, and it will be great for our project because, as conditions vary, air masses containing both local pollution and free tropospheric air will be sampled.”

Brooks is excited by what they have achieved. “What we saw during the ISDAC study was a huge variation in the number of ice crystals and in what types of aerosols formed them,” she said. “Once we completely analyze the data, we’ll be able to use it in calculations to see how much of an impact those particles have on the radiative budget and overall temperatures in the Arctic.

“A snapshot of atmospheric ice crystals and clouds taken from the plane during takeoff on one of the many flights made by Brooks and Glen while participating in the ISDAC study in Fairbanks, Alaska.”

“Ice clouds and mixed phase clouds with both droplets and ice represent major remaining uncertainties in whether the atmosphere is going to warm or cool and how much it is going to warm or cool.”

According to Brooks, clouds play a complex role in the radiative budget. “Ice clouds and mixed phase clouds with both droplets and ice represent major remaining uncertainties in whether the atmosphere is going to warm or cool and how much it is going to warm or cool,” Brooks said. “Our goal is to be able to provide the numbers that are missing in that calculation.”

Based on her accomplishments so far, Brooks is well on her way to achieving that goal.
Since getting the opportunity to leave England for the United States to study meteorology at the University of Oklahoma, Elinor Martin has lived in three states – more than most Americans.

“I’d always wanted to come to the United States,” Elinor explained, “so when I got the opportunity to study meteorology at the University of Oklahoma via an exchange program with my university in England, I couldn’t pass it up.”

Elinor always knew she wanted to be a meteorologist, much to the puzzlement of her parents, who expected her career plans to change daily, like other kids her age.

“I have always loved the weather. Since I was about nine or ten years old, I just knew I was going to be a meteorologist. I found out everything about it,” she explained, “I knew I had to do math and physics, so that’s what I did. I really enjoy everything about it. Not just the weather part but the climate parts and the chemistry, I just like to have a really broad education.”

After completing her studies at the University of Oklahoma, Elinor got her master’s degree in Atmospheric Science from Colorado State University. It was as she was looking for a school to pursue a Ph.D. that she found Dr. Courtney Schumacher, assistant professor of atmospheric sciences at Texas A&M. Thanks in part to a connection between Schumacher and her previous advisor, and an interest in Schumacher’s research, Elinor made the move to the Lone Star State.

“It is a really interesting and exciting project for me to work on,” Elinor said. “The fact that it is a little different from what I’d been working on for my master’s degree really spurred my interest.”

The two are now busily working on the project, which involves studying the validity of predictions that the Caribbean will steadily receive less rainfall over the next years and decades. They are making use of historical records that go back thirty years, as well as satellite data and rain gauge measurements.

“What makes this so much different than the work I was doing before is really the scope,” Elinor said. “Getting a broader perspective of how what I’m doing fits into the global aspect of climate change has really had a profound effect on me and the way I approach my research.”

But her time in College Station hasn’t been all research-related. Elinor makes time for fun and serving her fellow graduate students.

“I’ve been playing water polo since I was about 14, so when I came to A&M one of the first things I did was go out for the water polo team.”

Elinor is also a member of the Graduate Student Council, which provides opportunities for leadership and organizational experience, as well as a chance to meet graduate students from across the university. Last spring, Elinor worked as the assistant director for Student Research Week, a week-long effort to recognize and promote student research at Texas A&M.

“It was a huge job. We held weekly meetings since September, and right before and during the event, my life basically revolved around Student Research Week,” she said. “It was incredibly rewarding to see everybody really excited to present their research, especially the undergrads because they don’t get those experiences as much.”

After she completes her Ph.D., Elinor isn’t exactly sure of where life will take her.

“I’m still open to becoming a professor or maybe a research scientist,” Elinor said, “but I’m not completely decided. I also haven’t decided if I want to stay in America or go back home or go to another country altogether. Life is an adventure, and I just want to fit as many experiences in it as possible.”
An estimated 4.7 billion people tuned in to watch their nation’s athletes compete not only for the coveted gold, silver, and bronze medals, but also for national pride during the summer ’08 Olympics.

The intense attention on Beijing, however, focused the world’s eyes on other issues as well, some quite remote from sports. One of those was air quality.

According to a World Health Organization study, a typical day in Beijing sees air pollution levels five times higher than the limit considered “safe air.” China is home to 16 of the world’s 20 most polluted cities, and Beijing sits in a constant cloud of haze.

That’s what drew Atmospheric Sciences Professor Renyi Zhang to Beijing during the Olympics. Working through the National Natural Science Foundation of China and in collaboration with an advisor to the Olympic organizing committee, Zhang conducted measurements of air quality in Beijing several months before the government enacted emission control measures and again during the Games to evaluate their effectiveness.

Zhang’s work in Beijing is just one facet of his studies of air quality in major urban areas, including Houston and Mexico City, in an attempt to define the processes contributing to air pollution.
“Our goal is to understand what is going on in the air in terms of the physical and chemical processes so that we can provide input to policy decision makers as to how this knowledge can best be used to reduce pollution,” Zhang said.

According to Zhang, air pollution issues in megacities like Beijing and Mexico City and large urban areas like Houston are extremely complex. The air chemistry and sources of pollutants differ greatly, and the correlation between the chemical species is nonlinear. Controlling some chemical species or sources of pollution, such as auto emissions, can actually cause other species, such as ozone levels, to increase.

“The government tried to improve air quality for the Summer Games by relocating factories to other regions, implementing new emission standards for vehicles, and limiting traffic during the Games, but those things might not have had a major effect,” Zhang said.

What had the biggest effect was Mother Nature. Zhang said that a major change in weather patterns occurred after the opening ceremony for the Olympics that improved Beijing’s air quality during the games.

Air quality in Houston and Mexico City is impacted by different issues. Since Mexico City sits in a valley, regional transport has little effect there. Instead, that city has high levels of particulate matter, tiny particles that can cause major health problems and impact visibility and cloud formation, which ultimately affects overall climate.

“Beijing is a city with little geographic barriers. While local industrial emissions do contribute, most of the emissions in Beijing are from regional transport – dirty air being blown into Beijing from other industrial centers in China.”

Houston’s poor air quality is primarily the result of industrial emissions and ozone. As home to the nation’s largest complex of petrochemical refineries, Zhang said that Houston’s air quality is probably the worst in the nation.

“Houston has an ozone concentration in the summer that easily exceeds 100 parts per billion (ppb), well above the national standard of ~75 ppb,” Zhang said. “Texas is under a lot of pressure to comply with national standards.”

In the summer of 2006, Zhang worked with the Texas Environmental Research Consortium under the Houston Advanced Research Center to develop a state implementation plan for pollution controls, and he conducted more studies there this past summer.

Currently Zhang is continuing his work in Mexico City and Houston. He is working to establish a Megacity Integrated Climate and Air Quality Sustainability Alliance (MICASA) whose members work together to better understand air pollution science. The goals of this consortium are to establish common standards, develop control strategies, and balance economic, social and technological factors to make the best possible decisions in combating this major environmental issue.

“Most megacities do not have the resources or technical infrastructure to solve their local air quality problems or to mitigate the impact globally,” Zhang said. “MICASA will help enable megacities around the world to collaboratively solve common air quality problems and collectively mitigate the impacts of pollution on the global environment, thus promoting a sustainable future for the entire planet.”
Making the Most of Environmental Programs in Geosciences

By Carol Trono

The interdisciplinary Environmental Programs in Geosciences offers degree plans in Environmental Geosciences and Environmental Studies. Environmental Studies is for students with a deep interest in environmental policy as well as the sciences. Environmental Geosciences is for students who want an intensive science background to prepare them for science-based or technical careers. An Environmental Geology track also is offered through the Geology & Geophysics Department. All of these degrees give students the knowledge and marketable skills they need to pursue many different career and educational pathways.

For a glimpse of what these degrees have to offer, follow the paths of three Environmental Programs students – former student Sarah Kitchen Vidrine ’06, former student Sarah Helm ’08, and current student Matthew Hensley ’10.
“When I started looking at colleges, my dad said ‘I’ll pay for you to go to another school, but I really want you to go to A&M,’” Sarah Vidrine said. “So I went to A&M. I started out as a meteorology major, but I took a few environmental classes my first semester, thought it really interesting, and decided to look into the program.”

Sarah found her passion in Environmental Studies. “It was a perfect fit for me,” she said. “Growing up, I was always the one harping on my family to recycle and saying things like ‘why are you throwing that away?’”

An environmental law class inspired Sarah to focus on a career in policy and regulation, and she credits Professor Andrew Millington’s natural disasters class for giving her insight into how vital it is for governments to have strong environmental programs. “I have to say, though, that it was (Wendy) Jepson’s environmental justice class that really taught me how to write, and I use those skills almost daily now,” she added.

Sarah also completed a paid internship with the Brazos Valley Solid Waste Management Agency. She worked part time for the agency as a student and full time after graduating.

Building on that experience in city government, Sarah went to work for the City of Dallas in February 2007. She was hired as an environmental outreach coordinator and focused on community education – making presentations to schools, teaching environmental education classes, planning special events, and producing newsletters. She was promoted to environmental coordinator in the Office of Environmental Quality in May of 2008.

Sarah said she enjoys her new job monitoring city departments and services to ensure they are following Dallas’ Environmental Management System (EMS) plan. Auditors like Sarah make sure the city is in compliance with all state and federal regulations. Dallas is under a consent decree from the Environmental Protection Agency (EPA) for hazardous waste disposal violations. The city’s EMS was certified by the EPA last year.

“Environmental studies was a perfect fit for me. Growing up, I was always the one harping on my family to recycle and saying things like ‘why are you throwing that away?’”

“It’s a pretty big job,” Sarah said. “We monitor 14 different departments, and each of those has approximately 10 facilities that must be audited at least once each year.”

Although her job is demanding, Sarah said her degree in environmental studies prepared her well for it. “On a scale of 1 to 10, I’d say having my degree ranks either a 9 or 10 in qualifying me for this job,” Sarah said. She intends to continue building her career in environmental auditing, hoping to possibly work for the EPA some day.
Sarah Helm ’08

HOMETOWN: PHOENIX, ARIZONA
MAJOR: ENVIRONMENTAL GEOSCIENCES

THE ENVIRONMENTAL GEOSCIENCES PROGRAM DREW SARAH HELM TO TEXAS A&M.

“I took an AP environmental sciences class in my junior year of high school and just fell in love with it,” Sarah Helm said, “so when I started looking at colleges, I looked for those with strong environmental programs, and it came down to the University of Oregon or Texas A&M.”

A visit to A&M and a meeting with then Associate Dean for Academics Vatche Tchakerian helped her make up her mind. “Vatche’s passion for the program really impressed me,” Sarah said. “I also liked the fact that the college was small but had a lot of research funding. I found it attractive to be part of a program this size with a low student/faculty ratio, but still within a large institution. It had everything I was looking for.”

Sarah decided to focus on a career in environmental policy but pursued the Environmental Geosciences degree because she wanted a stronger foundation in the sciences. “My parents are both science oriented and encouraged me to get a good background in it. I’m really glad they did, because I’ve found that in order to really understand policy, you have to understand the science behind it.”

As an undergraduate, Sarah was an active member of the Environmental Issues Committee on campus, spent a semester studying abroad in Italy, did undergraduate research under Program Director Andrew Millington, and completed an internship for Gulf Restoration Network, a nonprofit based in New Orleans that does wetland conservation work.

While she always intended to go to law school, as graduation drew near Sarah started looking at other options. “I thought I would take a year off and work for an NGO (Non-Governmental Organization) or something,” she said, “but several faculty encouraged me to consider doing a one year master’s program. I was going to just apply to TCU because they have the strongest program around here, but Dr. Millington suggested I look farther afield. I ended up applying to TCU, UT, Yale, Duke, Columbia and even Oxford – all across the board.”

The rest is history. Sarah was accepted by several programs but decided to attend Oxford in the United Kingdom to pursue a master’s in environmental policy. She completed her degree just this past September and plans to enter law school in the fall of 2010. In the meantime, she is exploring working for an NGO.

Sarah is convinced that the close relationships she had with the faculty as an undergraduate were a large factor in her being accepted into a prestigious program like Oxford. “The approachability of the faculty was really instrumental in helping me make the decisions I made and be as successful as I was in my applications for graduate school,” she said.

“I also liked the fact that the college was small but had a lot of research funding.”

“In the Environmental Programs in Geosciences, you have great faculty who are doing interesting research, but they still take a teaching institution approach to their students. I knew I could always walk into a faculty member’s office – during office hours and even outside of office hours – and be able to talk one-on-one with that person. The faculty make time for students and make them feel that they can come to them with problems and ideas and questions. I think that really facilitated a great learning and academic experience for me.”
Although it wasn’t required for his degree, Matt Hensley decided to get involved in undergraduate research for a number of reasons. “I just didn’t want to take a typical route like doing a summer internship. I thought doing my own research would be a pretty unique experience and I would learn just as much,” Matt said. “Besides, A&M is one of the most prestigious research universities in the nation and Geosciences brings in the most research dollars at A&M, so it’s kind of silly not to take advantage of that while I’m here.”

Matt’s first foray into the world of academic research was working on a project for his advisor Debbie Thomas, an assistant professor in Oceanography. “I took OCNG 251 as a freshman and really liked it, and then I took Debbie’s geologic oceanography class and decided to minor in oceanography. She recruited me to work on her carboniferous project, and from that experience I decided I might as well do a project of my own.”

Working through the Office of Undergraduate Research, Matt submitted a proposal to study silicate weathering across the Mississippian/Pennsylvanian time boundary using strontium (Sr) and neodymium (Nd). He was trying to determine weathering patterns that occurred in Arrow Canyon, Nevada, 300 million years ago. He started the project last fall and finished in May.

“This was such an eye-opening experience for me,” Matt said. “Coming from Kerrville, Texas, you don't get much opportunity to work with things like a mass spectrometer. I’m the kind of person who just enjoys learning about different things, and this has been something completely different from anything I’ve ever done before.”

Matt decided in high school that he liked learning about Earth sciences and environmental issues. He knew he wanted to follow his older sister, Lauren, to Texas A&M, so he applied to the Environmental Geosciences Program and didn’t look back. “Environmental Geosciences just covers so many bases,” he said.

While his research and undergraduate thesis are completed, Matt still has work to do. To earn research hours a student must also make a poster presentation at a formal conference. Matt will get his chance to shine at the Geological Society of America’s annual conference this October in Portland, Oregon.

Matt hopes to eventually work for the EPA, but he has also talked to the Coast Guard about opportunities after graduation and hasn’t ruled out the possibility of graduate school at some point.

“Whatever I do, this experience has really helped me,” he said. “I want to eventually work in environmental protection. Having a deeper understanding of oceanographic processes or weathering should help me get my foot in the door.”
Since its establishment in 2005, the interdisciplinary Water Management and Hydrologic Science program has grown to an enrollment of 15 doctoral students and 35 master’s degree students.

The Water Degree Program at Texas A&M offers graduate students an innovative approach to a graduate degree.

“A&M is definitely a leader in this,” Program Chair Ronald Kaiser said. “You can get a degree in a number of areas such as geology, geography, engineering, forestry, or soils with an emphasis on water at A&M and at other universities in Texas and around the country, but our program is unique in that it offers a degree specifically in water management and hydrologic science. The difference is one of focus and emphasis, and ours is exclusively on water.”

“Our program integrates biophysical and geophysical sciences with social science, economics and management concepts so that our students become better managers and scientists. Our students can focus on water management or hydrologic science as part of their degree program,” Kaiser explained.

The program’s integrative interdisciplinary design is reflected in the curriculum and administrative structure. The program is guided by an executive committee of
During both good and bad economic times, Texas A&M Water Program graduates consistently get job offers upon graduation.

faculty drawn from 12 departments in four different colleges. The Geography Department in the College of Geosciences provides office facilities, financial support and administrative assistance to the program. Its teaching faculty are based in a dozen departments across the university, including all four departments in the College of Geosciences.

“Our students are involved with faculty in cutting-edge research on issues of climate change and its impact on water resources, water quality concerns, conservation, aquifer contamination and surface/groundwater interactions,” Kaiser said. “Their research is carried out in laboratories, on rivers and lakes, in aquifers and in computer simulation rooms.”

This integrative interdisciplinary approach has made graduates of the program a hot commodity; during both good and bad economic times, Water Program graduates consistently get job offers upon graduation. This, along with the hands-on courses taught by faculty who are leaders in their fields, has resulted in a steady surge in enrollment. Kaiser sees the program continuing to grow as it matures.

“It depends on the level of financial support we get from the university,” Kaiser said. “The program could easily grow to 100 graduate students, which would make it one of the larger graduate programs at Texas A&M University. There’s a real demand out there for water managers as consultants, scientists and academics. We’re seeking to educate the next generation of water managers and scientists so that they will make a real difference in the way we manage our water resources. So far, it’s been a success.”

that they will make a real difference in the way we manage our water resources.”

“Our student research is carried out in laboratories, on rivers and lakes, in aquifers, and in computer simulation rooms.”

TO LEARN MORE ABOUT THE WATER MANAGEMENT AND HYDROLOGIC SCIENCE PROGRAM, VISIT WATERPROGRAM.TAMU.EDU.

Dr. Ronald Kaiser, Program Chair
For the last five years, GERG researchers Jose Sericano, Stephen Sweet and Terry Wade have been working under a contract with the Texas Department of State Health Services (DSHS) to provide analytical testing for environmental contaminants in fish tissue samples from Texas lakes, rivers, bays and estuaries.

GERG staff has ground up thousands of frozen fish filets – carp, flathead, bass, etc. – to conduct more than 5,000 analytical tests on the tissue samples. Once the analytical results are reported, the remaining samples are stored in freezers at GERG’s facility on Graham Road.

The Seafood and Aquatic Life Group (SALG) at DSHS is charged with determining whether chemical contaminants in fish and shellfish living in public water bodies in Texas pose a health risk to people who consume them. Since 2004, GERG’s Environmental Sciences Group has been doing all of the fish tissue testing for SALG. Based on this testing, SALG decides whether to issue or rescind health advisories and possession bans.

According to GERG Environmental Sciences Deputy Director Terry Wade, this contract was awarded to GERG based on its experience working with other national and international environmental monitoring programs and its reputation for producing valid analytical data.
GERG Environmental Sciences Deputy Director Terry Wade and staff technicians have conducted more than 5,000 analytical tests on tissue samples of fish from Texas waters.

“When we take custody of fish filets shipped to us in coolers or brought in from the field by SALG staff, we have to track each sample throughout the analytical process. We log in the samples, note the types of contaminants each is to be tested for, and then store them in our freezers until we complete the testing,” said Wade.

The tissue samples are tested for a variety of common contaminants including mercury, trace elements, pesticides such as DDT, polychlorinated biphenyls (PCB), volatile and semi-volatile organic compounds, and dioxins and furans. These analyses require the use of sophisticated and expensive instrumentation. Concentrations of contaminants are measured at very low concentrations, as parts per billion to parts per trillion.

An advisory means that eating more fish than recommended from a particular water body may pose a human health risk.

“DSHS determines which tests they want done on each sample based on historical data they have on areas of concern for a particular water body,” Wade added. “Many times we’re testing samples to see if things have gotten better so that DSHS can remove a fish advisory. They compare our results to their historical data and EPA criteria and make decisions regarding whether or not it is safe to consume fish from that water body.”

Since GERG has been doing this work for DSHS, new advisories have been issued for several water bodies in Texas. As of last January, there were 27 public water bodies with advisories in effect and five with possession bans. An advisory means that eating more fish than recommended from a particular water body may pose a human health risk, but harvesting fish from that water body is not illegal. A possession ban means that it is illegal to even take fish from a water body where tissue testing indicates the likelihood of a serious or imminent threat to public health from consumption of those fish.

Based on the success of the work GERG has completed thus far for DSHS, the group has proposed to begin additional analytical work this fall. “We want to continue this relationship because it is a way for GERG to use its analytical expertise to benefit the residents of Texas,” Wade said.

For additional information on fisheries advisories, visit the Seafood and Aquatic Life Group website at http://www.dshs.state.tx.us/seafood/survey.shtm.

“We want to continue this relationship because it is a way for GERG to use its analytical expertise to benefit the residents of Texas.”

TO LEARN MORE ABOUT THE GEOCHEMICAL AND ENVIRONMENTAL RESEARCH GROUP, VISIT GERG.TAMU.EDU.
The Starfish Fingers

By Jim Hiney

TERRIE LOONEY AND RHONDA CUMMINS FELT PRETTY OVERWHELMED IN THE WEEKS AND MONTHS FOLLOWING HURRICANE IKE’S DEVASTATING ARRIVAL ON THE UPPER TEXAS COAST IN SEPTEMBER 2008.
There is a story about a boy walking along a beach, picking up starfish stranded by the tide and tossing them back into the surf. A man watching the boy takes him to task for the futility of his efforts, saying, ‘Why are you wasting your time? There are millions of starfish, and you can’t possibly make a difference.’ As the boy picks up another starfish and flings it into the surf he replies, ‘It makes a difference to this one.’

Texas Sea Grant Extension Agents Terrie Looney and Rhonda Cummins often felt they were tilting at windmills as they tried to help residents in Galveston, Jefferson and Chambers Counties rebuild their lives after Hurricane Ike.

They lacked the financial resources, manpower and authority that local, state and federal agencies had to implement large-scale recovery programs that affected thousands.

Instead, they pitched in where they could, working 15-hour days and spending several more hours each night at Looney’s Jefferson County home planning their next steps.

Progress was often measured one person at a time — which to them seemed like a small impact considering the tens of thousands left hurting after the storm.

“I feel frustrated,” said a still exasperated Looney last spring. “It seems like I’ve worked two years in the past six months, but when I look back I ask myself, ‘What did I do?’ I don’t feel I made much of a difference at all. I don’t know whether that is fatigue talking or the reality of it.”

Definitely blame fatigue, said Looney’s supervisor Logan Respess.

According to Respess, who is head of Texas Sea Grant Extension, Looney and Cummins did “yeomen’s work” during the hurricane recovery. Looney, a coastal and marine agent for Chambers and Jefferson Counties, and Cummins, an agent for Calhoun County, aided in storm recovery in ways the government couldn’t — meeting with victims in the field, one-on-one and face-to-face. Many helped by Looney and Cummins would have fallen through the cracks otherwise.
Making their efforts even more remarkable, Looney was helping her constituents while addressing her family’s own post-Ike recovery, and Cummins had only spent a few months on the job as a marine agent when the hurricane hit.

One of the pair’s early projects was reuniting boats found scattered inland with their owners.

“We felt this was something we could do as we were making our way around the counties to check on Terrie’s commercial fishermen,” Cummins said. “We were driving down the road anyway, so we could get information on vessels we discovered, track the owners through registration numbers and other information, and let them know their boats’ locations.”

Cummins recalled one owner in particular who was astonished that his 27-foot Catalina sailboat boat was found five miles inland from Smith Point, on the southeast side of Galveston Bay just north of the Bolivar Peninsula. He was extremely grateful to get it back.

“This gentleman just knew that his boat was gone forever,” Cummins said. “The boat had been part of his family for many years. He had taught his kids how to sail on it, and he had planned to teach his grandkids how to sail on it. So there were a few bright moments in this ordeal.”

Perhaps their most lasting impact was on the largely Vietnamese crab fishing community of Oak Island, located on the eastern shore of Galveston Bay.

Oak Island’s 300 residents faced missing out on government aid largely because of a language barrier. Looney and Cummins fought to get a representative from the Federal Emergency Management Agency (FEMA) assigned to handle requests coming out of Chambers and Jefferson Counties, and then they educated him about the needs of the Oak Island community.

“The crab industry is not a typical industry where close financial records are kept. Plus, Ike went straight up Galveston Bay, so Oak Island was on the dirty side of the storm, and the area was basically destroyed,” Looney explained. “Once we got the FEMA representative to understand the issues within the community, he was able to become an effective liaison.”

Looney worked through local churches to provide residents places to shower and wash clothes. With the help of Sea Grant Environmental Quality Specialist Russ Miget, meetings were set up between the out-of-work crabbers and the Texas Workforce Commission (TWC). Looney even arranged for a vehicle to take the crabbers to the TWC office in Beaumont and found interpreters who helped them apply for unemployment assistance.
“We’ve also done a whole lot of listening, what Rhonda refers to as ‘shoulder erosion,’” said Looney. “Everybody had a story, and the fact that we showed up to check on them and listen to them, help them fill out the right forms, and give them phone numbers for relief agencies seemed to be the most important service we could provide.”

The importance of this service was not lost on its beneficiaries. Respess remembered accompanying Looney on a tour of Chambers County last spring. One of their stops was Oak Island.

“It was amazing to see people coming up to Terrie and thanking her for all the work she had done,” said Respess. “Some people were almost in tears when they talked about how much Terrie and Rhonda meant to them as they were trying to recover from Ike.

“These agents’ work was made more challenging because Texas Sea Grant Extension did not have a clearly defined role in the recovery response process,” he added. “But Terrie and Rhonda jumped in without any hesitation and started addressing needs as they saw them.”

Looney and Cummins say they wish they could have helped more people, but they also take solace from the nickname they gave themselves — the Starfish Flingers.

Perhaps their most lasting impact was on the largely Vietnamese crab fishing community of Oak Island, located on the eastern shore of Galveston Bay.

“There is a story about a boy walking along a beach, picking up starfish stranded by the tide and tossing them back into the surf. A man watching the boy takes him to task for the futility of his efforts, saying, ‘Why are you wasting your time? There are millions of starfish, and you can’t possibly make a difference.’ As the boy picks up another starfish and flings it into the surf he replies, ‘It makes a difference to this one.’”

“Well, we don’t have money to spread around, and we can’t do much for a whole lot of people at once,” said Looney, “but maybe we can help this one.”

Bob Berg was a preeminent faculty member of the Department of Geology and Geophysics from 1967 to 1995. His teaching and research were legendary. A member of the National Academy of Engineering, Berg was highly respected and admired for his contributions to geological principles and petroleum geoscience applications. Among petroleum geoscientists and engineers, Berg’s name is synonymous with scientific and educational excellence.

“We knew from its inception that this center would be named for Bob Berg because it epitomizes his legacy,” said college Development Director Diane Barron. “He taught students what they needed to know for professional practice which was a solid background in geology and exploration geophysics as well as knowledge of engineering. He insisted on basing his courses in theory illustrated by real examples.”

The Hughes family has built a similar legacy in the petroleum industry. Brothers Dan A. and Dudley J. Hughes are geologists who graduated from Texas A&M University in 1951. They used their A&M degrees to craft highly successful careers in exploration geology, eventually building their own companies. Dan Hughes is owner of the Dan A. Hughes Company in Beeville, Texas. Dudley Hughes is president of Hughes South Corporation in Jackson, Mississippi. Dan’s son, Dan Allen, graduated from the Mays Business School at A&M in 1980 and holds a degree in geology. He is president of the Dan A. Hughes Company.

Together, they have created a $1 million endowment to establish this center. As independent oilmen, the Hughes family is recognized in the industry for its successes in exploration and recovery. “I’ve heard it said that they have a genetic ability to pursue oil and gas plays,” Barron said, “and that may be, but what I can speak to is their commitment to this center and to Texas A&M University.

Both Dan and Dudley have created chairs in the College of Geosciences and contributed to the Berg Professorship and the Bryant Endowed Chair. They have also given to the College Excellence Fund and the Corp of Cadets Enrichment Fund, and most recently, Dan pledged a multi-million-dollar gift to restore Military Walk on campus.

“This family truly believes in giving back to Texas A&M, but in establishing the Berg-Hughes Center, they are also helping to build a program that will establish A&M as a true leader in petroleum and sedimentary studies,” Barron said. “Dan, Dudley and Dan Allen are committed to building the Berg-Hughes Center because they want this to be the best program in the country and to ensure that A&M graduates stand head and shoulders above the rest in the petroleum industry.”
Six Aggies who are acclaimed giants in the oil and gas industry led a panel discussion on campus in May with faculty and students from Geology & Geophysics, Oceanography and Petroleum Engineering to unveil plans for the Berg-Hughes Center for Petroleum and Sedimentary Systems.

These industry leaders helped spur creation of the center. They asked to meet with faculty and students to share their industry perspective on why the center was needed and to show their full support.

All agreed that meeting the nation’s energy challenges will take a new generation of graduates in geology, geophysics and engineering who have experience working on interdisciplinary teams and tackling real-world problems. They also were unanimous in their support of Ernest Mancini ’74 who will lead the new center as its director.

Working with administrators and faculty in Geology & Geophysics, Oceanography and Petroleum Engineering, a proposal was developed and submitted to the Texas A&M University System Board of Regents in May. The Berg-Hughes Center was officially approved on July 17, 2009.

Here’s what these Aggie industry giants had to say:

Dan A. Hughes Jr. ’80
President of the Dan A. Hughes Company –

“I think our world is in a critical situation of trying to figure out where we’re going to get our energy for the next 50 years, and we’re going to be relying more on oil and natural gas until other things come along. With geologists, geophysicists and petroleum engineers working together, this center can turn out the type of explorationists who can solve these world problems.”

Dan A. Hughes ’51
Owner, Dan A. Hughes Company –

“Industry wants graduates who can go to work on day 1 and start contributing.”

Dudley J. Hughes ’51
President, Hughes South Corporation –

“Ernie Mancini has been head of the oil and gas board in Alabama for years. . . . He’s always tough, but I’ll tell you one thing, we’ve taught him a lot about the oil business.”
Berg-Hughes Center Endowment Dedicated to Student Support

By Diane Barron

Texas A&M University has a rich tradition and legacy for training the leaders and giants of the oil industry. Former students such as Michel T. Halbouty ’30, Dan A. Hughes ’51, Dudley J. Hughes ’51, Clayton W. Williams Jr. ’54 and George P. Mitchell ’40 are widely known for their contributions to the oil industry and for their Aggie spirit.

Even more than in the past, with today’s challenge of supplying enough energy to meet world demands, it is important that Texas A&M educate tomorrow’s energy industry leaders. They will also be needed to envision and then help transition the world from conventional forms of energy to those yet unrealized.

As former students and supporters of Texas A&M, you can provide support for our most valuable resource, Aggies destined for the energy industry, so they can assert the same level of expertise and leadership exemplified by the giants who preceded them at our great university.

Many Aggie leaders in the oil and gas industry – from owners and presidents of independent companies, to CEOs and senior executives of mid-size and major corporations – have already committed their support to the Berg-Hughes Center for Petroleum and Sedimentary Systems.

To ensure not only its impact, but also the sustainability of this center, it is in fact necessary to establish a tremendous endowment.

Our graduates with a BS degree in either Geology or Geophysics are sought after by the finest academic institutions in the country, and most are recruited to go elsewhere by significant graduate fellowship offers.

In order to keep these students here at A&M and to attract the best students from other institutions, it is imperative that we provide competitive graduate fellowships in the geosciences.

It is the intention of the Center Director Designate, Ernie Mancini, to use the accrued funds from this endowment for a singular purpose, to provide the necessary support for our students through scholarships and fellowships.

Several former students have already stepped up to the plate.

Priscilla and Thomas E. Kelly ’53 have made a lead endowed gift of $250,000 which will annually support one master’s student. Tom earned his bachelor’s and master’s degrees in geology at Texas A&M and is owner of Thomas E. Kelly Interests. He serves on the College of Geosciences Advisory Council.

W. “Dusty” Marshall ’75, vice president of U.S. Exploration for Hess Company in Houston, has established an endowed fellowship with a gift of $125,000. Dusty earned his bachelor’s and master’s degrees in geology here and is an active member of the Geology & Geophysics Department Advisory Council.

Kellam Colquitt ’70, retired COO of Reef Exploration in Dallas, has made a lead gift of $50,000 to create an undergraduate endowed scholarship in petroleum geosciences. Kellam is a member of the Geology & Geophysics Department Advisory Council and was instrumental in making the dream of the Berg-Hughes Center a reality.

These gifts and those that follow will be part of the $300 million Operation Spirit and Mind initiative launched by the Texas A&M Foundation in October 2008. They are the first of what I know will be tremendous support from our former students in Geosciences.

Every challenge is but an opportunity to an Aggie, and today our opportunity is to ensure the sustainability of the Berg-Hughes Center for Petroleum and Sedimentary Studies.

Won’t you help? Please contact me to find out how you can make this goal a reality and help us keep the legacy of Aggie giants alive.

Diane Barron ’81
Development Director,
College of Geosciences
d-barron@tamu.edu
W: 979.862.4944
C: 979.255.6656
Berg-Hughes Center Founders: A Testament to the Vision

Before it was even established, these Founders made a profound commitment to the Berg-Hughes Center. Because of their faith in the rich heritage of Texas A&M and great confidence in Aggie geologist and Center Director Designate Ernie Mancini ’74, these energy industry leaders pledged a total of $2.92 million to the Berg-Hughes Center Endowment.

This testament to the vision of the center is truly remarkable.

It is Mancini’s commitment that these endowed funds be used solely to support student research in the Berg-Hughes Center.

Now that the center is a reality, we are calling on all Aggies to help grow this endowment exponentially. With a pledge of $100,000 or greater, you will join the ranks of Center Founders, or you may become a Center Benefactor with a pledged gift of $50,000 up to $100,000.

### Center Founders

<table>
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<tr>
<th>Name</th>
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<tr>
<td>Dan A. Hughes ’51</td>
<td>Owner, Dan A. Hughes Co.</td>
</tr>
<tr>
<td>Dan Allen Hughes ’80</td>
<td>President, Dan A. Hughes Co.</td>
</tr>
<tr>
<td>Dudley J. Hughes ’51</td>
<td>President, Hughes South Corp.</td>
</tr>
<tr>
<td>Carlos Dengo ’82</td>
<td>V.P., ExxonMobil Upstream Research Co.</td>
</tr>
<tr>
<td>Tom Kelly ’53</td>
<td>Owner, Tom Kelly Interests</td>
</tr>
<tr>
<td>Dustin Marshall ’75</td>
<td>V.P. for U.S. Exploration, Hess Corp.</td>
</tr>
<tr>
<td>Dan Pedrotti ’53</td>
<td>President &amp; CEO, SueMaur Exploration Inc.</td>
</tr>
<tr>
<td>Thomas Ruffer ’81</td>
<td>Geoscience Manager, ESSO Exploration Angola</td>
</tr>
<tr>
<td>Clayton Williams Jr. ’54</td>
<td>President, Clayton Williams Energy Inc.</td>
</tr>
<tr>
<td>R. Ken Williams ’45</td>
<td>Oil and Gas Professional</td>
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### Center Benefactors

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<tr>
<td>Kellam Colquitt ’70</td>
<td>Retired COO, Reef Exploration</td>
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<tr>
<td>Doug McGehee ’81</td>
<td>Angola/Congo Exploration Manager, ExxonMobil Exploration Co.</td>
</tr>
<tr>
<td>Bruce Sidner, ’73</td>
<td>Executive V.P. Exploration, Energy Partners Ltd.</td>
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Each fall, the College of Geosciences hosts a gala event to honor the many donors who have established scholarships and fellowships in the college and that year’s student recipients. More than 250 faculty, students, donors and their guests usually attend this event. Students and donors have an opportunity to meet and share their experiences.

Keynote speaker for this year’s banquet held October 9 at Pebble Creek Country Club was Carlos Dengo ’82, V.P., ExxonMobil Upstream Research Co. and a member of the College of Geosciences Advisory Council. In 2008, former student Thomas Kelly ’53, owner of Thomas E. Kelly Interests, gave the keynote address, and in 2007, Kellam Colquitt ’70, retired COO of Reef Exploration Inc., shared his insights and experiences.

2008 Scholarship Banquet keynote speaker Tom Kelly ’53 with his wife, Cyd. The Kellys have established two endowed scholarships in Geology and most recently made the lead endowed gift to establish a graduate fellowship to support a master’s student in Geology who is also pursuing a certificate in petroleum geosciences.

2009 Scholarship Banquet keynote speaker Carlos Dengo ’82, V.P., ExxonMobil Upstream Research Co. and a member of the College of Geosciences Advisory Council. Dengo is also a co-founder of the Berg-Hughes Center for Petroleum and Sedimentary Studies and a donor to Texas A&M.
Jonathan Funk '08 with his parents Karen and Robert Funk, Geosciences Development Director Diane Barron, and 2007 Scholarship Banquet speaker Kellam Colquitt '70 and his wife Emily. Funk was a recipient of the Murry D. Page '51 Endowed Scholarship in 2007. Colquitt has made a lead gift to create an undergraduate endowed scholarship in petroleum geosciences in 2009. He is a member of the Geology & Geophysics Department Advisory Council.

In 2007, the Murry D. Page '51 Endowed Scholarship supported nine undergraduate students in Geology & Geophysics. Illustrating this significant contribution is this photo of benefactor Murray Page with five of those nine students: (l to r) John Deng, Jordan Noret, Ashley Jordan, Dax Soule, Page and Alana Robinson.

College of Geosciences Development Director Diane Barron with donors Eddie and Faye Gray '57 at the 2007 Scholarship Banquet. The Grays have established an endowed scholarship in the college and continue to contribute to Geosciences and Texas A&M.

(1 to r) Joan Fritze, Dana Cole, Carol Belville and Jim Belville '68 at the 2007 Scholarship Banquet. Joan established the Lt. Col. Lee Victor Fritze '60 Memorial Scholarship in Atmospheric Sciences in honor of her son. Belville is a member of the College Advisory Council, and he and his wife are donors to Texas A&M.
The College of Geosciences heartily congratulates Mr. Clayton W. Williams Jr. ’54 as recipient of the 2008 Michel T. Halbouty Geosciences Medal.

The college awards the Halbouty Geosciences Medal annually to an individual who has accomplished outstanding achievement in the discovery, use and application of the geosciences and the conservation of Earth resources. The medal is named for the late Michel T. Halbouty ’30 who was the first recipient of Texas A&M’s professional degree in geological engineering and later founded Halbouty Energy Co.

The medal was presented to Williams, also known as Claytie, at a special celebration last March. At his request, Claytie met with students and faculty to share his insights on the “highs and lows” from his 50-year career in the oil and gas industry. He then joined them for a dinner in his honor.

Williams is chairman of the board, president, CEO and a director of Clayton Williams Energy, Inc., in Midland, Texas. Since drilling his first successful oil well in 1959, he has been involved in the discovery and development of oil and gas fields in Texas, New Mexico and Louisiana, including the discovery of prolific deep gas fields in West Texas.

Born into a West Texas family and raised in Fort Stockton, Claytie earned a BS in Animal Husbandry from Texas A&M. In 1981, he was named a Distinguished Alumnus. A loyal Aggie and generous benefactor, he underwrote the Clayton W. Williams, Jr. Alumni Center, is a founding member of the Presidents Endowed Scholarship for Gifted Students, and has served as vice president and director of the Association of Former Students.

With two dozen Aggie geology students on his shoulders, Clayton Williams proudly displays his Halbouty Medal. This ad ran on the back cover of the March 2009 issue of Texas Aggie.
Donor Recognition
(AS OF SEPTEMBER 1, 2009)

The following list of recent gifts to the college is evidence of the commitment and foresight of these many generous donors. Their contributions will enable students and faculty to expand their studies and discoveries in the Geosciences.

- A $2 million gift from Mr. R. Ken Williams '45 for the Radiogenic Isotope Geosciences Lab and a $500,000 endowment to purchase equipment and provide direct support;
- A $1 million gift from Mrs. Elizabeth Whatley, wife of the late James R. Whatley '47, a longstanding member of the College of Geosciences Development Council, to create a chair in Geosciences as specified in his will;
- A $1 million William R. Bryant Chair in Oceanography created by Les Shephard '77, Mary Feeley '82, Stuart P. Burbach '77, Bruce Sidner '73, Dudley Hughes '51, Bruce Appelbaum '71, Lyle Baie '67, Scott Chaffey '86, Dale Coulthard '76, Gary Hall '71, Sterling Helwick Jr. '77, Michael Kaluza '77, Yir-Der Lee '95, Claudia Ludwig '71, Anthony Moherek '77, Thomas Neurauter '88, Michael Riggins '73, Rocky Roden '80, Anne Rutledge '79, Gregory Simmonds '92, Elliott Taylor '84 and Peter Trabant '72;
- An IRA bequest from the estate of George W. Crocker of nearly $800,000 to create endowed scholarships in the College of Geosciences with priority given to students from Atascosa County, Texas;
- A $333,333 gift from Dan A. Hughes '51 to establish the Berg-Hughes Center for Petroleum and Sedimentary Systems;
- A $333,333 gift from Dan Allen Hughes Jr. '80 to establish the Berg-Hughes Center for Petroleum and Sedimentary Systems;
- A $333,333 gift from Dudley J. Hughes '51, to establish the Berg-Hughes Center for Petroleum and Sedimentary Systems;
- A gift funded with cash from Thomas E. Kelly '53 to create an endowed fellowship ($250,000) in Petroleum Geosciences;
- A planned or estate gift from Richard Orville for an endowed professorship ($250,000) in the college;
- A trust bequest from Patricia and George Morgan '48 to create an endowed fellowship ($250,000) in Geology & Geophysics;
- A gift funded with cash from Dusty Marshall '75 to create an endowed fellowship ($125,000) in Geology & Geophysics;
- A gift funded with cash from Carlos Dengo, '82 to support the Berg-Hughes Center for Petroleum and Sedimentary Systems($100,000);
- A gift funded with cash from Dan Pedrotti '53 to support the Berg-Hughes Center for Petroleum and Sedimentary Systems($100,000);
- A gift funded with cash from Thomas Ruffer '81 to support the Berg-Hughes Center for Petroleum and Sedimentary Systems($100,000);
- A gift funded with cash from R. Ken Williams '45 to support the Berg-Hughes Center for Petroleum and Sedimentary Systems($100,000);
- A gift funded with cash from Doug McGeehie '81 to support the Berg-Hughes Center for Petroleum and Sedimentary Systems($75,000);
- A gift funded with cash from Kellam Colquitt '70 to create an endowed scholarship ($50,000) in Geology & Geophysics;
- The Ralph Rayburn '69 Texas Sea Grant Endowed Scholarship in Oceanography was established;
- The Mike Frossard '80 Endowed Fellowship in honor of Dr. Tieh in Geology & Geophysics was established.
- A pledged anonymous gift for an endowed fellowship in Oceanography was established ($100,000).

Hammers fund a Weather Station for the Soltis Center

Kim (Soltis) and Matthew Hammer '80 have pledged to provide private financial support to the Department of Geography to purchase equipment needed to establish a national weather station at the Texas A&M Soltis Center in Costa Rica. When completed, the station will meet all requirements of the Costa Rican Instituto Meteorológico Nacional and will also be part of the Global Historical Climatology Network (GHCN). The GHCN monitors long-term trends in temperature and precipitation and has also been employed in several international climate assessments, including the Intergovernmental Panel on Climate Change 4th Assessment Report. Plans are to establish a world-class weather reporting station at the Soltis Center that will benefit the residents of Costa Rica and the global climate community as well as Texas A&M faculty and students undertaking research at the Soltis Center.
Access to a totally “green,” off-the-grid marine research center in one of the most biologically diverse areas of the world may soon be a reality for Texas A&M researchers and students.

Through an ongoing collaboration between the Department of Oceanography, the College of Architecture and the Oceanographic Institute of the Ecuadorian Navy (Instituto Oceanográfico de la Armada or INOCAR), plans are underway to build a facility on San Cristóbal in the Galápagos Islands to be used for marine and environmental education and research.

Oceanography Professor Niall Slowey, INOCAR Lieutenant Edwin Pinto, and Architecture Professors Pliny Fisk, Craig Babe, Jodi Naderi and their students are working to design, construct, and operate the first dedicated oceanographic laboratory in the eastern equatorial Pacific Ocean.

Surprisingly few details are actually known about this vitally important environment which now faces imminent threats from natural and human-related stressors and is listed as a World Heritage in Danger site by UNESCO.

Given this fragile ecosystem, Fisk, Babe, Naderi and their architecture students created designs and concepts for a solar- and wind-powered research center as a class project. Since then, plans...
Breaking Ground in the
for a sustainable green building that
meets the highest LEED certification
level have been refined, and private
funding is being sought to support the
final design and construction.

According to Slowey, this lab will
play a key role in efforts to address
several of today’s most prominent
environmental issues.

“Since sailing ships first visited
this region in the early 1700’s and
the works of Charles Darwin were
published a century later, this fantastic
environment has been recognized for
its special significance,” Slowey said.

“These waters are one of the ocean’s
most biologically productive
ecosystems and its greatest
fishery. They play a central role
in the global carbon cycle,
and marine conditions
are extremely sensitive to the globally
significant El Niño/Southern Oscillation
climate fluctuations. In fact, changes in
the region’s climate and hydrography
are used to define and characterize
these phenomena. Active volcanism
also makes the region an archetype for
studies of oceanic hotspot processes,”
Slowey said.

Planning for this laboratory grew out
of an ongoing relationship between
Oceanography and INOCAR. Several
high-ranking INOCAR officers,
including Admiral Fernando Zurita
’86 and Lieutenant Patricio Goyes
’87, are former students, and many
other officers are currently completing
graduate degrees in oceanography
here. With support from these
former students, a memorandum of
agreement was established in 2005
between INOCAR and Oceanography.
The department sponsors joint
cruises for faculty and students on
INOCAR ships, joint research and
teaching projects with Ecuadorian Navy
scientists, and study-abroad programs
taught by A&M faculty at INOCAR’s
research facilities in Guayaquil, Ecuador.
Last fall, ten students spent three weeks
in the equatorial Pacific on an INOCAR
research cruise.

“Our relationship with INOCAR is
tremendously important and very
special,” Slowey said. “This ongoing
exchange of students and personnel
has benefitted our department
immensely, and when the Galápagos
lab is completed, Texas A&M will be the
first university in the world to have a lab
there that focuses on marine science.”

“Because of the Galápagos environ-
ment’s special status, the project will
be internationally visible,” Slowey
added. “Both the research conducted
there and the building itself will serve
to meet urgent needs in the Galápa-
gos region and moreover, will serve
as a model that will ultimately impact
similar environments globally.”
Texas A&M Geosciences Faculty Win Multiple Awards

Two professors in the College of Geosciences had the distinction of being elected fellows of the American Geophysical Union (AGU) this year. John Morse, professor in the Department of Oceanography, and Richard Orville, professor in the Department of Atmospheric Sciences, were awarded the distinguished title “Fellow,” which is given annually to only one in every 1,000 AGU members and is reserved for those who have “attained acknowledged eminence in the geophysical sciences.”

Ann E. Jochens, research scientist in the Department of Oceanography, won the Offshore Leadership Award from the Minerals Management Service (MMS) of the U.S. Department of the Interior. This award recognizes individuals for performing an act or service that significantly enhances MMS’s ability to meet offshore energy and minerals management mission objectives.

Charles Lafon, associate professor in the Department of Geography, won the Denali Award from the Mountain Geography Specialty Group at the 2009 Association of American Geographers Conference. The award recognizes recent significant contributions to mountain geography.

Christopher Mathewson, regents professor in the Department of Geology & Geophysics, was named the first recipient of the Karl and Ruth Terzaghi Outstanding Mentor Award given by the Association of Environmental and Engineering Geologists. This international award was created to recognize outstanding mentors in both practice and academic careers.

William Sager, professor in the Department of Oceanography and holder of the Jane and R. Ken Williams ’45 Endowed Chair in Ocean Drilling, has been honored by Texas A&M University with a 2009 Distinguished Achievement Award for Research. The award recognizes and rewards A&M faculty whose research efforts have been particularly significant and outstanding.

Thomas Wilheit, professor in the Department of Atmospheric Sciences, was named recipient of the 2008 Verner E. Suomi Award given by the American Meteorological Society. This national award recognizes highly significant technological achievement in the atmospheric and related sciences.

Fuging Zhang, associate professor in the Department of Atmospheric Sciences, was honored with the 2009 Clarence Leroy Meisinger Award given by the American Meteorological Society. The award highlights promising atmospheric scientists under the age of 40 who have shown outstanding ability.

Renyi Zhang, professor in the Departments of Atmospheric Sciences and Chemistry and director of the Center for Atmospheric Chemistry and the Environment, received the 2009 Bush Excellence Award for Faculty in International Research. This award is presented to one A&M faculty member each year in recognition of the international preeminence of that faculty member’s work.
Alcorn Retires from Atmospheric Sciences

Marion Alcorn, lecturer in the Department of Atmospheric Sciences, retired in January 2009. A reception was held in his honor February 19 at the University Club.

Alcorn joined the department in 1988. He was hired over the phone and made the trip to College Station without ever seeing the campus or meeting the people in person.

During his 20-year career here, Alcorn helped develop and taught many courses and labs and served as academic advisor for freshmen and sophomore meteorology students. Jim Scoggins, former Atmospheric Sciences department head, lauded Alcorn at his retirement reception for “modernizing the department’s meteorological data system.”

Ken Bowman, current department head, added, “In addition to a long and valued teaching career, he was a caring academic advisor who guided a generation of students into careers in meteorology.”

Alcorn came to A&M after a career in the navy as Lieutenant Commander. He earned a MSc in meteorology at the Naval Postgraduate School in 1984. He is considered an expert in his field and is truly dedicated to the prosperity of the university and his department.

Scott Retires from Oceanography

Martha Scott, associate professor in the Department of Oceanography, retired in May 2009, after a 38-year career at Texas A&M.

Scott earned BA and Ph.D. degrees in geology at Rice University and completed postdoctoral fellowships at Yale and Florida State. She joined the Oceanography Department at Texas A&M as a research associate in 1971, was promoted to assistant professor in 1975 and associate professor in 1981. She served as an associate program director for the National Science Foundation’s (NSF) Chemical Oceanography Program in 1992-93 and has served on NSF review panels since 1975.

While at Yale, Scott worked with National Academy of Sciences member Karl Turekian. She continued to work in biogeochemistry and chemical oceanography at Texas A&M. Her research centered on the distribution of metals in the environment, particularly radionuclides in the Gulf of Mexico and the Arctic.

Within the department, Scott’s forte was teaching. During her career, she helped scores of Aggies discover oceanography through the introductory oceanography courses.

“Dr. Scott has contributed significantly to the academic programs in the Department of Oceanography over the past four decades,” said Luis Cifuentes, professor of Oceanography and executive associate dean and associate dean for research. “As one of the earliest female faculty members in the department, Martha fought for the hiring of more women in the college.”

Stewart Retires from Oceanography

Bob Stewart, professor in the Department of Oceanography, retired in August, 2009, after a 20-year career at Texas A&M.

Prior to joining the department in 1989, Stewart spent 20 years in research holding various positions in the NASA Jet Propulsion Lab at the California Institute of Technology and the Scripps Institution of Oceanography at the University of California San Diego.

According to Oceanography Department Head Piers Chapman, “Bob has made a huge contribution to teaching at TAMU, both in Oceanography and through his enthusiastic promotion of the Environmental Programs in Geosciences where he has taught classes and served on the program committee since its inception.”

Stewart is a world expert on satellite altimetry, and he remains in demand as a consultant to NASA. He is probably best known, however, for his outreach efforts using the web as a teaching aid. His OceanWorld website, which includes three of his electronic books for free downloading, receives thousands of hits and has won awards for its efforts to improve ocean and Earth science literacy.

“Bob also runs a popular service named ‘Ask Dr. Bob’ on his website where anyone can ask questions on ocean science,” Chapman said. “This site is so well known that when a colleague of Bob’s, Ping Chang, made one of his frequent visits to China, he was introduced as ‘the man in the office next to Dr. Bob!’”

Oceanography Professor Bob Stewart with the website that has made him practically famous – OceanWorld. Stewart retired from Texas A&M in August.

Atmospheric Sciences Lecturer Marion Alcorn (center) with his wife, Jacqulin, and Department Head Ken Bowman at a retirement reception held in his honor February 19.

Oceanography Associate Professor Martha Scott retired in May after a 38-year career at Texas A&M.
Miller Appointed Dean of College of Geosciences

Kate C. Miller, professor of geophysics and former associate dean of the College of Science at the University of Texas at El Paso, was appointed Dean of the College of Geosciences on August 17, 2009.

Miller’s selection followed an extensive search that considered candidates from leading geoscience programs in the United States. Luis A. Cifuentes, executive associate dean of the College, served as interim dean from June 1 to August 16, 2009.

Miller earned a bachelor's degree in geological and geophysical sciences from Princeton University and a master’s and Ph.D. in geophysics from Stanford University. She previously served as chair of the Department of Geological Sciences at UTEP. Before joining the faculty at UTEP in 1991, she was a development geologist and an exploration geophysicist for Amoco Production Co. (now BP) in New Orleans.

She was selected as a recipient of a 2001 University of Texas System Chancellor’s Council Award for Teaching Excellence and is a Fellow of the Geological Society of America and a member of the scientific research society Sigma Xi. She holds memberships in the American Geophysical Union, the Geological Society of America, and the Society of Exploration Geophysicists and is licensed by the State of Texas as a Professional Geoscientist.

NEW FACULTY

Don T. Conlee
Instructional Associate Professor, Department of Atmospheric Sciences
Ph.D. Meteorology, Texas A&M University

Russ S. Schumacher
Assistant Professor, Department of Atmospheric Sciences
Ph.D. Atmospheric Science, Colorado State University

Istvan Szunyogh
Associate Professor, Department of Atmospheric Sciences
Ph.D. Earth Sciences, Hungarian Academy of Sciences, Budapest

Erik Prout
Instructional Assistant Professor, Department of Geography
Ph.D. Geography, Louisiana State University

Oliver W. Frauenfeld
Assistant Professor, Department of Geography
Ph.D. Environmental Sciences, University of Virginia

Michael Pope
Associate Professor, Department of Geology & Geophysics
Ph.D. Virginia Polytechnic Institute and State University

L. Joe Morgan
Instructional Assistant Professor, Department of Geography
Ph.D. The University of Buffalo, SUNY
Björn Kjerfve stepped down as dean of the College of Geosciences at Texas A&M University on May 25, 2009, to become president of the World Maritime University (WMU), an affiliation of the International Maritime Organization (IMO), a United Nations agency. The World Maritime University is in Malmö, Sweden, and was founded by IMO in 1983. It is a global center for advanced education, training and research for scientists in the international maritime community.

Kjerfve served as dean of the college from August 2004 through May 2009. Prior to joining Texas A&M, Kjerfve was a tenured professor of marine and geological sciences at the University of South Carolina, where he also served as director of the Marine Science Program.
Her spirit will embrace every challenge.
Her mind will question, solve and advance.
She will relish each step on her path to mastery.

Graduate Fellowships via Operation Spirit and Mind.®

The Texas A&M Scholarship Initiative.

Recruiting exceptional graduate-level students is critical to Texas A&M’s teaching and research missions. To stay competitive with other universities, A&M must expand and improve our financial and research opportunities for grad students.

Graduate Fellowships are integral to building the intellectual capital of Texas. As a top research university, Texas A&M is duty bound to address challenges in society and science, and world-class minds are absolutely essential to this task.

Operation Spirit and Mind is in motion. Be part of its success. Your generous spirit will attract the brilliant graduate minds so crucial to Texas A&M, today and tomorrow.

Call Diane Barron from the Texas A&M Foundation at (979) 862-4944 or give online at giving.tamu.edu