

GEOFORCE T E X A S

ANNUAL REPORT 2009



THE UNIVERSITY OF TEXAS AT AUSTIN

JACKSON

SCHOOL OF GEOSCIENCES



On the cover:

Students from the GeoFORCE Southwest 11th Grade Academy pose with Dr. Eleanor Snow on top of Big Obsidian Flow in Oregon.

Students from the GeoFORCE Southwest 10th Grade Academy, along with instructors Dr. Charles Woodruff and Dr. Jay Raney, pose in front of Balanced Rock, Lees Ferry, Arizona.

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Table of Contents

| | |
|---|----|
| Message from the Dean | 1 |
| GeoFORCE Overview | 2 |
| Goals and Objectives | 2 |
| Methods and Strategies | 3 |
| GeoFORCE Staff | 4 |
| Partnerships | 5 |
| Southwest Texas Junior College | 5 |
| Houston Independent School District..... | 5 |
| Fort Valley State University | 6 |
| Government and Industry | 6 |
| Financial Status | 10 |
| Sponsors | 11 |
| Maintaining the Numbers | 12 |
| Summary of 2009 Activities | 13 |
| GeoFORCE Goes to College..... | 14 |
| Dual-Credit Geology Course..... | 15 |
| NeoGEO Spring Field Trip..... | 16 |
| Academies | 17 |
| 9th Grade Academy..... | 17 |
| 10th Grade Academy | 18 |
| 11th Grade Academy | 19 |
| 12th Grade Academy | 20 |
| Young Geoscientists..... | 21 |
| 9th Grade Young Geoscientists | 21 |
| 10th Grade Young Geoscientists..... | 22 |
| 11th Grade Young Geoscientists..... | 23 |
| 12th Grade Young Geoscientists..... | 24 |
| Fort Valley State University Events | 25 |
| Professional Development | 26 |
| GeoFORCE in the News..... | 27 |



Laura Reich, Marathon, presents the geology of Salt Creek Falls, Oregon.



Students take in the geology of the Colorado River below Glen Canyon Dam.

Message from the Dean

In 2009, we learned that GeoFORCE works—it *really* works.

When the program started in 2005, it was definitely an experiment. There were many unanswered questions. Would the students stick with it for four years? Would they get excited about the geosciences? Most importantly, would a large number of them go to college? Would they pursue science and engineering degrees? Would some pursue the geosciences at (better yet) the Jackson School?

We now know the answer to all of these questions is a resounding yes.

Of the original 80 kids who started in the GeoFORCE Academy and Young Geoscientist programs in 2005, 76 have been admitted to colleges and universities. Not only are 95 percent of these students (61 percent female and 77 percent Hispanic) going to college, but more than 50 percent have chosen to pursue degrees in science and engineering. Eight of them are going after geoscience degrees—five at the Jackson School.

Inside the program, this first cohort of students became known as the “guinea pigs,” as every activity in every year of their four-year ride through GeoFORCE was new, untested, and full of surprises: some good, some not so good.

They endured field trips that lacked guidebooks, hotels and restaurants that did not have the capacity to deal with 40 kids,

and buses that broke down in the middle of nowhere. They set the standard for “no complaining, no matter what” as they tolerated a lot of lessons learned by the GeoFORCE staff, while expressing unbridled excitement and enthusiasm for the adventures offered to them. Remarkably, of the 40 students who started the Academy in 2005, all but one completed the full four-year program.

As GeoFORCE continues to grow and have broader impact, I think we will always remember these trailblazers and be thankful for the high standard they set for all those who follow. Congratulations to the GeoFORCE class of 2009.



*Dr. Sharon Mosher, Dean
Jackson School of Geosciences*

It is incredible and awesome to watch and nurture 42 sixteen-year-olds spend 14 hours a day learning, studying, acting, and writing poetry about geology. My whole life I have felt connected to the Earth, and this experience intensified that connection. It is spectacular to observe youthful minds finding their own passions and love of geology similar to my own.

*Laura Reich, Subsurface Manager, Marathon Oil Company,
reflecting on spending a week with the Southwest 11th Grade Academy*

GeoFORCE Overview

GeoFORCE Texas is a summer outreach program targeting predominantly minority and female honor students from the Houston Independent School District and school districts across southwest Texas. GeoFORCE is designed to address two pressing needs for the geosciences:

- ▶ Increase the number of students pursuing degrees in math and science.
- ▶ Increase the diversity of the future high-tech workforce.

The program is neither a subtle nor an inexpensive approach. It is designed to provide lasting experiences for middle and high school students that will capture their interest, motivate them to excel in their math and science courses, and build their awareness of opportunities in high-tech careers, especially the geosciences. This intense program is accomplished through a four-year series of summer academies and field courses that include learning in dynamic field and classroom environments, living on a major university campus, interacting with university faculty and research scientists, and participating in field trips to spectacular geologic settings in Texas and across the United States.

GeoFORCE recruits students at selected schools within the Houston Independent School District

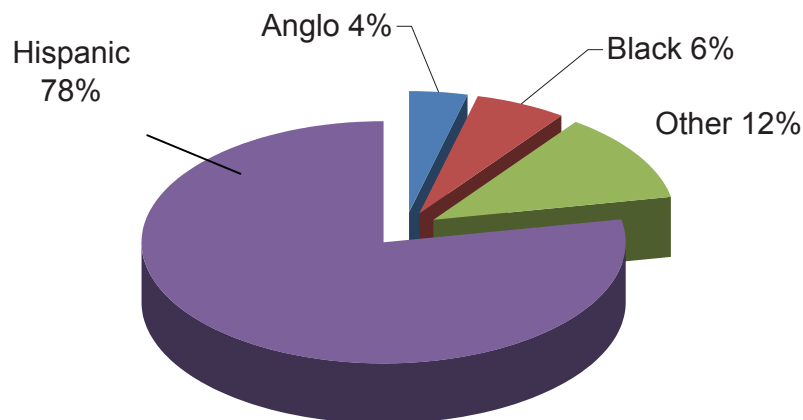
and from 18 independent school districts in southwest Texas. Although the program is open to all outstanding students, regardless of background, the recruiting areas exhibit a high percentage of minorities, and our academies and field courses reflect these demographics.

Since the late 1990s the number of students enrolled in the geosciences has been rapidly decreasing. GeoFORCE seeks to reverse this trend by increasing the number of students from diverse backgrounds who complete degrees in math and science and enter the workforce.

Goals and Objectives

Minorities represent a virtually untapped reservoir for increasing the number of individuals pursuing degrees in the sciences. National Science Foundation (NSF) statistics show participation by minorities in science and engineering, specifically the geosciences, to be unacceptably low. NSF numbers also indicate that underrepresented groups earn almost 15 percent of all U.S. bachelor's degrees in science and engineering but only 4.6 percent of the bachelor's degrees awarded in the geosciences. The projected demographics of Texas provide a clear indication of the need to engage minorities in the sciences.

Projected Percent of Net Change in Texas Population Attributable to Each Race/Ethnicity Group for 2000-2040



Using U.S. Census count for 2000 and Texas State Data Center 1.0 population projection scenario for 2040

Methods and Strategies

GeoFORCE draws on a wealth of resources to develop a comprehensive program of exciting hands-on learning for our students and participants. Financial assistance is received from the Jackson School's Geology Foundation to support the majority of full-time staff. As a result, outside contributions go directly to the student and educator activities. The School's units (Department of Geological Sciences, Institute for Geophysics, and Bureau of Economic Geology) provide instructors, counselors, and support to create the guidebooks and other teaching materials.

GeoFORCE partners with Fort Valley State University, the Houston Independent School District, and Southwest Texas Junior College to create a strong consortium to attract high-caliber students to the program. Through these partnerships, GeoFORCE has access to interaction with existing outreach programs such as Fort Valley's Cooperative Developmental Energy Program (CDEP). These partnerships were crucial to the initial creation of GeoFORCE and remain critical to its continued success.

Each year, about 75,000 Hispanics earn Bachelor's degrees in something, but only about 150 are in geosciences. Over 100,000 African Americans earn Bachelor's degrees, but only about 60 individuals earn a degree in geosciences.

Czujko, R., 2004, Painting by the Numbers: The Representation of Minorities in the Geosciences: Eos, American Geophysical Union.



Participants in the Houston 11th Grade Academy pose in front of Mt. Hood, Oregon, with instructor Dr. Jeff Paine.

GeoFORCE Staff

The Jackson School provides support for GeoFORCE that includes funding as well as personnel. Members of the outreach team assist with logistics, accounting, contracting, purchasing, communications, and human resources.

Doug Ratcliff, Director of Outreach Programs, supervises the GeoFORCE program. He is assisted by program coordinators Julie O'Shaughnessy and Danielle Horton, who have primary responsibility for organizing

and conducting activities associated with the Academy program. Edgar Garza and Justin Hance are responsible for the Young Geoscientist events. Salwa Uzri assists with accounting, finances, and travel. Joel DePenning, an undergraduate assistant, helps with office support and trip preparation.

Many others in the Jackson School assist with GeoFORCE, and they are mentioned in other sections of this report. Of special note, Sigrid Clift



Julie O'Shaughnessy



Danielle Horton



Justin Hance



Edgar Garza



Salwa Uzri



Joel DePenning

and Jay Raney have helped immensely with designing and participating in field activities, as well as writing the guidebooks used on each trip. Julie Jackson, a professor of science education at Texas State University, developed the program content, testing materials,

and evaluations. She also participates in the summer academies as an educational coach. Guidebook preparation and layout were done by Susie Doenges, Joel Lardon, Jamie Coggin, and Lana Dieterich.

Chris Havelka, Manager of the Uvalde Asphalt Quarry operated by Vulcan Materials, explains the site to GeoFORCE 9th graders from southwest Texas.



Partnerships

The success of GeoFORCE depends on bringing together academic, government, and industry partners who have institutional and personal commitments to improving the lives of the next generation. The financial support provided by our partners allows the students to experience spectacular geologic venues that are important to increasing and maintaining their attraction to science and math. Personal commitments of individuals create one-on-one learning experiences, provide an opportunity to discuss careers with professionals, and make GeoFORCE the special experience it is.

Southwest Texas Junior College

Southwest Texas Junior College (SWTJC) is the connection between the Jackson School and 18 independent school districts in southwest Texas. They have provided access to their established network of

schools, administrators, and teachers. Because of this, GeoFORCE can efficiently disseminate information, conduct the application process, and establish the program across a vast geographic area. In addition, SWTJC is an active participant in all aspects of the program. SWTJC personnel (Blaine Bennett, Andrea Flores, Mayta Garza, Willie Edwards, Wade Carpenter, and others) assist in setting up GeoFORCE events in southwest Texas, arranging transportation for students in Eagle Pass and Del Rio, and preparing news articles for publication in local newspapers. SWTJC employees provide local logistical support, make initial contacts with students and teachers, and maintain financial records for local purchases.

Houston Independent School District

The Houston Independent School District (HISD) is the seventh largest school district in the country,

and its size alone can be intimidating. But with assistance provided by district administrators such as Kelly Trlica, Shelley McKinley, and John Haro we have managed to achieve our objectives in the Houston area. HISD administrators have worked alongside GeoFORCE staff to identify schools, teachers, and principals, as well as provide meeting space, for various GeoFORCE functions.

The Houston region was fast-tracked, which meant building the program to incorporate all four grades (9–12) within the first two years of operation. Without the support of HISD, GeoFORCE would not have been able to access the schools, recruit students, and establish our program.

Fort Valley State University

Fort Valley State University (FVSU) has played a significant role in the overall concept of GeoFORCE. GeoFORCE is modeled after FVSU's successful Mathematics, Science, and Engineering Academy (MSEA), which was started in 1993. Dr. Isaac Crumbly created the FVSU program, continues to direct it, and has personally provided valuable guidance to GeoFORCE.

As part of our partnership with FVSU, the Jackson School funds and hosts the FVSU MSEA 11th graders.



11th Grade Houston Academy at Crater Lake, Oregon.

The Jackson School also provides scholarships for FVSU students who choose to transfer to the Jackson School and pursue degrees in the geosciences. During 2009, one FVSU transfer student completed his master's degree in the Jackson School, and we accepted four new undergraduates beginning in the fall of 2009.

Government and Industry

Our government and industry partners provide funding, access to sites, instructors, mentors, and insight into what it is like to work as a geoscientist. As GeoFORCE has grown, the cost of the program has increased. The table on page 10 lists the contributions and expenses to date. This table is continually updated as sponsors and expenses change.

GeoFORCE students benefit from interactions with corporate and government participants who take the time to personally meet with them. The U.S. Geological Survey (USGS) contributes significantly by participating in our field events and our college admission workshops.

The USGS has historically hosted GeoFORCE 9th graders at their Reston headquarters, and through the tireless efforts of Steve Hammond, Randy Orndorff, Lydia Quintana, and Katrina Burke, these events have been outstanding. In our five years of GeoFORCE, 2009 has been the only year that we did not have an event at USGS headquarters because we were retooling the curriculum of the program. The new program design has been completed, and beginning in 2010 our 12th-grade students will spend time with the USGS.

Our other industry partners supply mentors for our field programs. These individuals spend up to a full week traveling with our students, providing insight into careers in the energy sector and, in many instances, teaching.

Our industry partners also contribute significantly to our Educator Workshops by supplying interesting venues such as drill sites, visualization laboratories, and geological field trips.

10th Grade Young Geoscientists study the back beach at Port Aransas, Texas.





*GeoFORCE
Houston
12th graders
at Lovers
Key, Florida,
with Dr. Terry
Quinn.*

Southwest Texas

| School District | Participating Schools |
|------------------------|---|
| Brackettville | Brackett High School, Brackett Junior High School |
| Carrizo Springs | Carrizo Springs High School, Carrizo Springs Junior High School |
| Cotulla | Cotulla High School, Frank Newman Middle School |
| Crystal City | Crystal City High School, Sterling Fly Junior High School |
| D'Hanis | D'Hanis School |
| Del Rio | Del Rio High School, Del Rio Middle School, San Felipe Memorial Middle School |
| Dilley | Dilley High School, Mary Harper Middle School |
| Eagle Pass | Eagle Pass High, CC Winn High, Eagle Pass Junior High, Memorial Junior High |
| Hondo | Hondo High School, McDowell Middle School |
| Knippa | Knippa School |
| La Pryor | La Pryor School |
| Leakey | Leakey School |
| Nueces Canyon | Nueces Canyon School |
| Pearsall | Pearsall School |
| Rocksprings | Rocksprings School |
| Sabinal | Sabinal School |
| Utopia | Utopia School |
| Uvalde | Uvalde High School, Uvalde Junior High School |

Houston Independent School District

| High Schools | | | Middle Schools | | | |
|---------------------|------------|---------|-----------------------|---------|--------|------------|
| Chavez | Sharpstown | Attucks | Dowling | Hogg | Long | Sharpstown |
| Madison | Sterling | Burbank | Fondren | Holland | Ortiz | Stevenson |
| Milby | Washington | Clifton | Hamilton | Jackson | Revere | Williams |
| Scarborough | Worthing | Deady | Hartman | Lanier | Ryan | |

**Danielle Carpenter
(far right) of
Chevron shows
12th graders
from southwest
Texas how to
dig a trench on
Cape Canaveral
Seashore, Florida.**



| Event | Field Instructor | Career Presentation/Closing Ceremony Attendees |
|--|-----------------------------|--|
| Houston | | |
| 9 th Grade Academy | Nysha Chaderton, ExxonMobil | Nysha Chaderton, ExxonMobil Chuck Caughey, ConocoPhillips Weston Mukalich, Chevron George Hildebrandt, Chevron Natalia Canahuati, Marathon |
| 10 th Grade Academy | Martha Barnes, Marathon | Martha Barnes, Marathon Wilfredo Solano, Chevron Irene Arango, Chevron Joni Baird, Chevron |
| 11 th Grade Academy | Denise Butler, Shell | Denise Butler, Shell Pam Darwin, ExxonMobil Chuck Caughey, ConocoPhillips Natalia Canahuati, Marathon Cora Robinson, Marathon George Hildebrandt, Chevron |
| 12 th Grade Academy | Laura DeMott, ExxonMobil | Laura Demott, ExxonMobil Chuck Caughey, ConocoPhillips Mac McGilvery, ConocoPhillips Mike Loudin, ExxonMobil George Hildebrandt, Chevron |
| 12 th Grade Young Geoscientists | Dominic Druke, Shell | Dominic Druke, Shell |
| Southwest | | |
| Graduating Seniors | Anna Morisani, Shell | Anna Morisani, Shell |
| 9 th Grade Academy | Kristen Woody, Shell | Kristen Woody, Shell Sylvia Rodriguez, Valero |
| 11 th Grade Academy | Laura Reich, Marathon | Laura Reich, Marathon Tony Arce, AEP Texas |
| 12 th Grade Academy | Danielle Carpenter, Chevron | Danielle Carpenter, Chevron |
| 11 th Grade Young Geoscientists | Matthew Densmore, Shell | Matthew Densmore, Shell |

| Park Rangers, Museum Staff, and Others in the Field | |
|--|--|
| Annandale Bat Cave: | Bane Walker |
| Archbold Biological Station: | Nancy Deyrup, Mark, Deyrup, Rick Lavoy, Shane Pruet, Marilyn |
| Austin State Capitol: | Amanda Lopez |
| Big Oak River Camp: | Terry Maner |
| Canaveral National Seashore: | Eric Lugo, John Stiner, Laura Henning, Candace Carter |
| Capitol Aggregates: | Steve Eckert, Barry Dickens, Dan Yentes, Andy Bujanos |
| Carl Hayden Visitor Center - Paleo: | Liz Losch |
| Colorado River Discovery Guide: | Korey Seyler, Karen Gullickson, Brenda, Matia, Adrian |
| CPR Trainer: | Orazio Loayza |
| Crater Lake National Park: | Amelia Bruno, Heidi Moore |
| Everglades National Park: | Bonnie Foist |
| Fort Ing and Uvalde Historical Society: | Dick Whipple |
| Glen Canyon Dam: | Nikki Johnson, Rachel Dawavendewa, Dana Crane, Curtis Jaborski |
| Grand Canyon: | Joshua Henson, Jacob Philien, David Smith, Randy Henderson, Jim Heywood |
| Gregory Gym Swim Complex: | Kristen Nussa |
| Guadalupe Mountains: | Dr. Jeanine Hearst |
| Hacienda Outcrop: | Sherman Mumme |
| Hueco Tanks: | Wanda Olszewski, Joe Barraza, Bill Barley |
| Inks Lake: | Pam Major |
| Inner Space Cavern: | Tonya Vessels |
| John Pennekamp Coral Reef: | Russ Kane, Kerry Whalley, Terri Polk, Cecelia McCafferty, Deanna Norling, Jesuela, Captain Stuckey, Jorge Alardo, Nathan |
| JSG Wind Tunnel Experiment: | Dave Mohrig |
| KATY Research Vessel: | Captain Stan Dignum |
| Longhorn Cavern State Park: | Kaye Barlow, Troy Futrel |
| Lovers Key State Park: | Michael Hensley |
| Marine Science Institute: | Rick Tinnin, Linda Fuiman, John Williams |
| McDonald Observatory: | Frank Ciancolo |
| Merritt Island National Wildlife Refuge: | Nancy Corona, Turtle Watch Volunteers |
| Mt Hood National Forest: | Tammy Villali |
| Mt St Helens: | Todd Cullings |
| Newberry National Volcanic Monument: | Pete Hatman |
| Oregon Coast Aquarium: | Leslie |
| Port Aransas Parks and Recreation: | Gary Mysorski, Mike Lauer |
| Shark Valley Visitors Center: | Christine Mackarvich |
| Siuslaw National Forest: | Carole Wendler, Paula DiCarlo |
| Sunset Crater: | Holly Richard, Floy Healer, Casey Hodnett |
| Texas Natural Science Center: | Cristina Cid |
| Texas State Aquarium: | Johnnie Smith, Tara Schultz |
| Thunderbird Lodge: | John Williams, Donna Williams |
| Tualatin Valley Fire & Rescue: | Jeff Rubin |
| UT Austin College of Engineering: | Erin Gandy |
| UT Multi-cultural Center: | Jay Guevara |
| UT Union Underground: | Robert Waters |
| Vulcan Materials, Knippa: | Dee Kirkpatrick, Ron Robles |
| Vulcan Materials, Uvalde: | Chris Havelka |
| White Sands | Cliff Wagner, McKinney Briske |
| Windley Key Fossilized Coral Reef: | Melba Nezbed |
| Wupatki National Monument: | Bonnie Stewart, Sherry Williams, Janice Richmond, Nicole Murphy |
| Zion National Park: | David Walker |

Financial Status

Numbers in blue are expected levels of support.

| GEOFORCE FINANCIAL STATUS | | | | | | | |
|----------------------------------|----------------|----------------|----------------|------------------|------------------|------------------|------------------|
| Sources | 2004-05 | 2005-06 | 2006-07 | 2007-08 | 2008-09 | 2009-10 | Total |
| Jackson School | 141,722 | 260,052 | 358,051 | 471,453 | 485,597 | 500,165 | 2,217,040 |
| Shell Oil Company | 60,000 | 65,000 | 40,000 | 70,000 | 125,000 | 125,000 | 485,000 |
| ExxonMobil | 10,000 | 25,000 | 50,000 | 100,000 | 120,000 | 120,000 | 425,000 |
| Chevron | | | 40,000 | 40,000 | 200,000 | 120,000 | 400,000 |
| BP | | | 50,000 | 80,000 | 135,000 | 120,000 | 385,000 |
| Marathon Oil Company | | 3,000 | 50,000 | 100,000 | 100,000 | 100,000 | 353,000 |
| Texas Workforce Commission | | | | 100,000 | 195,416 | | 295,416 |
| ConocoPhillips | 20,000 | 41,000 | 21,000 | 21,000 | 21,000 | 21,000 | 145,000 |
| UT Tuition Waivers | | 18,816 | 24,313 | 25,000 | 18,392 | 36,784 | 123,305 |
| Halliburton | | 10,000 | 20,000 | 30,000 | 30,000 | 30,000 | 120,000 |
| TG Foundation | | | | | | 100,000 | 100,000 |
| Minerals Management Service | | 25,000 | 25,000 | | 25,000 | | 75,000 |
| Devon | | | | 25,000 | 40,000 | | 65,000 |
| Vulcan Materials Foundation | | | 5,000 | 25,000 | 15,000 | 15,000 | 60,000 |
| Communities Foundation of TX | | | | 42,500 | | | 42,500 |
| AT&T Foundation | 25,000 | 15,000 | | | | | 40,000 |
| AAPG Foundation | | | | 10,000 | 10,000 | 10,000 | 30,000 |
| Estate of Myrtle Isensee | | | | | 29,975 | | 29,975 |
| AEP Texas | | | | 3,000 | 25,000 | | 28,000 |
| Valero Energy Corporation | | | | 15,000 | 10,000 | | 25,000 |
| Swift Energy | | 10,000 | 12,000 | | | | 22,000 |
| Alcoa | | | 5,000 | | 15,000 | | 20,000 |
| Dominion Exploration | | 10,000 | 5,000 | | | | 15,000 |
| El Paso Corporation | | | | | 10,000 | | 10,000 |
| Schlumberger | | 3,000 | 3,000 | | 3,000 | | 9,000 |
| Kinder Morgan Foundation | | | | | 5,000 | | 5,000 |
| Darwin Family GeoFORCE Endowment | | | | | 5,000 | | 5,000 |
| SEG Foundation | | | | | 5,000 | | 5,000 |
| GDL Foundation | | | | 1,400 | 2,500 | | 3,900 |
| Ernie Lundelius | | | | | | 2,000 | 2,000 |
| Fisher, Bill and Marilee | | | | 1,000 | 1,000 | | 2,000 |
| Priority Oil & Gas LLC | 2,000 | | | | | | 2,000 |
| Jim Sansom | | | | | | 1,000 | 1,000 |
| Subtotal | 258,722 | 485,868 | 708,364 | 1,160,353 | 1,631,880 | 1,300,949 | 5,546,136 |
| Expense Activity | | | | | | | |
| JSG Staff and Admin | 106,722 | 98,513 | 221,427 | 341,169 | 351,404 | 361,946 | 1,481,181 |
| Teacher Workshops | 6,000 | 6,500 | 5,172 | 20,689 | 19,400 | 19,982 | 77,743 |
| MSEA 11th grade academy | 39,300 | 40,694 | 40,031 | 31,960 | 37,808 | 35,000 | 224,793 |
| FVSU student visits | 0 | 4,700 | 9,770 | 5,198 | 9,770 | 6,000 | 35,438 |
| CDEP transfer scholarships | 0 | 51,216 | 39,301 | 17,408 | 82,400 | 164,800 | 355,125 |
| GeoFORCE Texas | 85,000 | 150,000 | 308,671 | 439,713 | 399,673 | 425,000 | 1,808,057 |
| GeoFORCE Houston | 0 | 0 | 10,000 | 203,088 | 400,020 | 628,154 | 1,241,262 |
| Dual Credit Courses in Geo | 0 | 0 | 0 | 14,766 | 100,000 | 100,000 | 214,766 |
| Textbooks | 0 | 85,000 | 54,345 | 57,070 | 78,470 | 75,000 | 349,885 |
| Total Expenses | 237,022 | 436,623 | 688,717 | 1,131,061 | 1,478,945 | 1,815,882 | 5,788,250 |
| Surplus/Deficit | 21,700 | 49,245 | 19,647 | 29,292 | 152,935 | -514,933 | |
| Cumulative Balance | 21,700 | 70,945 | 90,592 | 119,884 | 272,819 | -242,114 | |

Sponsors



Shell Oil
Company



ExxonMobil



ConocoPhillips



HALLIBURTON



devon



Vulcan

Materials Company



el paso

Schlumberger

KINDER MORGAN

FOUNDATION

Darwin Family Endowment

Estate of Myrtle Isensee

Bill & Marilee Fisher

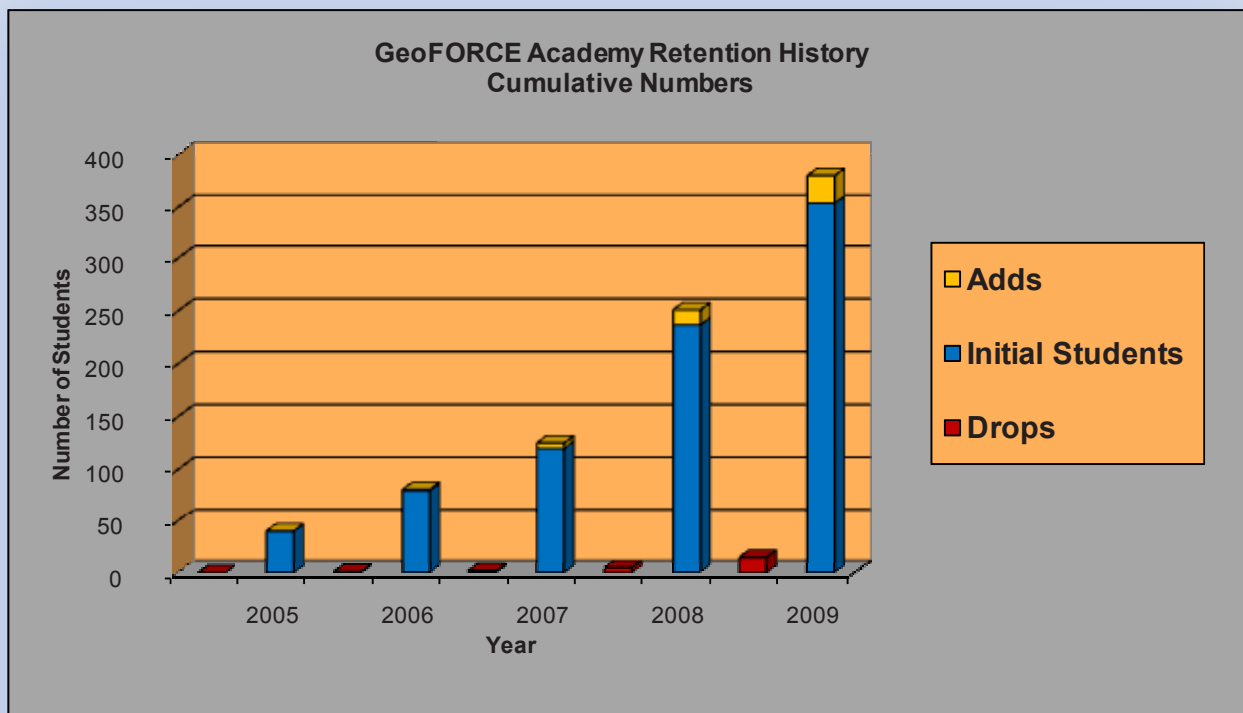
Maintaining the Numbers

The objective of GeoFORCE is to place substantially more students into the high-tech career fields of the future, particularly the geosciences. To achieve this objective in the coming years, it is essential that we have a high retention rate among students who begin the GeoFORCE program after completing the eighth grade.

The chart displaying retention history shows that we have lost only 15 students from the Academy program. The Young Geoscientist program provides replacements for those who choose to leave the Academy program.

Participation to date in both the Academy and Young Geoscientist programs now totals more than 600. This number includes 53 Houston students who participated in both the Academy and the Young Geoscientist events (shown in pink on the chart at the bottom of the page).

In 2010, we will add the class of 2014 in both Houston and the southwest region. In addition, we will take measures to increase existing cohorts to their capacity of 40 students in each event.



| | Houston | | | Southwest | | | Total | | |
|--------------|------------|-----------|------------|------------|------------|------------|------------|------------|------------|
| | Academy | Young Geo | Total | Academy | Young Geo | Total | Academy | Young Geo | Total |
| Class 2009 | 0 | 0 | 0 | 42 | 28 | 70 | 42 | 28 | 70 |
| Class 2010 | 40 | 28 | 68 | 44 | 26 | 70 | 84 | 54 | 138 |
| Class 2011 | 30 | 25 | 55 | 42 | 30 | 72 | 72 | 55 | 127 |
| Class 2012 | 37 | 17 | 54 | 40 | 53 | 93 | 77 | 70 | 147 |
| Class 2013 | 41 | 21 | 62 | 40 | 46 | 86 | 81 | 67 | 148 |
| Total | 148 | 91 | 239 | 208 | 183 | 391 | 356 | 274 | 630 |

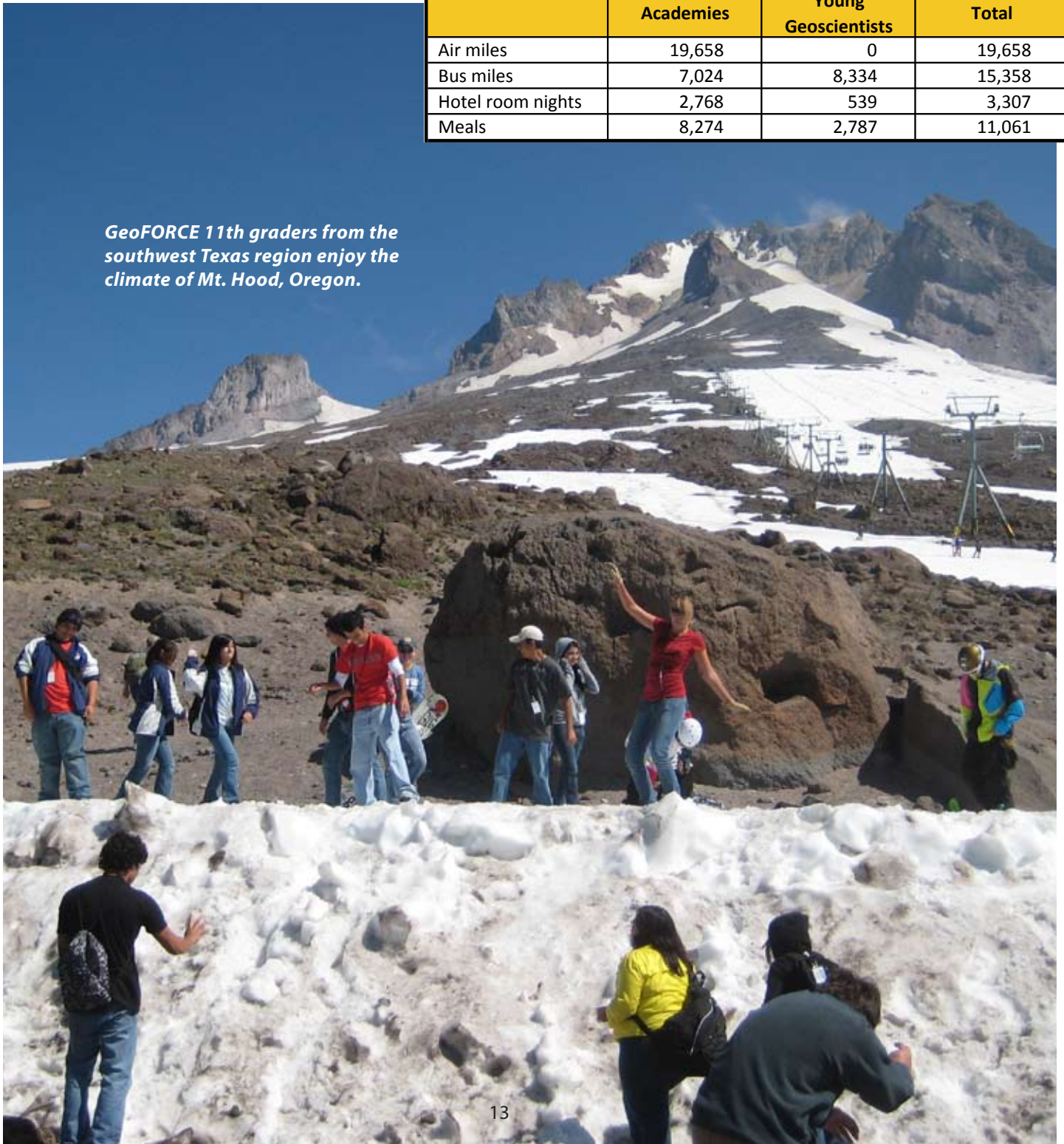
Summary of 2009 Activities

GeoFORCE completed several milestones during 2009, including graduating the first cohort of students, bringing the Houston program up to the full four-year cohort level, providing SAT review courses in both Houston and the southwest, initiating a dual-credit, Web-based freshman geology course, holding two professional development workshops,

and continuing collaboration with Fort Valley State University. The size of GeoFORCE is impressive, and the logistics required to accommodate more than 500 students plus instructors, counselors, and teachers is complex. The table below summarizes the main ingredients for the summer program.

| | Academies | Young Geoscientists | Total |
|-------------------|-----------|---------------------|--------|
| Air miles | 19,658 | 0 | 19,658 |
| Bus miles | 7,024 | 8,334 | 15,358 |
| Hotel room nights | 2,768 | 539 | 3,307 |
| Meals | 8,274 | 2,787 | 11,061 |

GeoFORCE 11th graders from the southwest Texas region enjoy the climate of Mt. Hood, Oregon.



GeoFORCE Goes to College

This year marked the end of a four-year wait that started in 2005 when our first cohort of students just completed the eighth grade. This first group has wowed us with their achievements, which include a very high ratio of admission to college. The tables below summarize the current status of these students.

Students from this cohort are all from the southwest region, where the high school graduation rate is less than 62 percent and the number of students moving on to college and into science, technology, engineering, or math (STEM) degree programs is much less.

| | Gender | | | Ethnicity | | College | | Degree Program Pursued | | | |
|------------------|--------|------|-------|-----------|-----------|----------|---------------|------------------------|---------|------|------------------|
| | Female | Male | Total | Hispanic | Caucasian | Admitted | Not Attending | Geo | Sci/Eng | Math | Other/ Undecided |
| Academy | | | | | | | | | | | |
| Number | 26 | 16 | 42 | 34 | 8 | 41 | 1 | 8 | 13 | 1 | 19 |
| Percentage | 34% | 21% | 55% | 44% | 10% | 53% | 1% | 11% | 17% | 1% | 25% |
| Young Geo | | | | | | | | | | | |
| Number | 21 | 14 | 35 | 25 | 10 | 35 | 0 | 0 | 15 | 1 | 19 |
| Percentage | 27% | 18% | 45% | 32% | 13% | 46% | 0% | 0% | 20% | 1% | 25% |
| Total | | | | | | | | | | | |
| Number | 47 | 30 | 77 | 59 | 18 | 76 | 1 | 8 | 28 | 2 | 38 |
| Percentage | 61% | 39% | 100% | 77% | 23% | 99% | 1% | 11% | 37% | 2% | 50% |

| | Academy | Young Geoscientists | Total |
|------------------------------------|---------|---------------------|-------|
| A&M College Station | 3 | 2 | 5 |
| A&M Corpus Christi | 1 | 0 | 1 |
| A&M International | 2 | 2 | 4 |
| A&M Kingsville | 1 | 3 | 4 |
| Brigham Young | 1 | 0 | 1 |
| Coast Guard Academy | 1 | 0 | 1 |
| Concordia | 1 | 0 | 1 |
| Del Mar | 1 | 0 | 1 |
| Kansas State | 1 | 0 | 1 |
| North Texas | 2 | 0 | 2 |
| Northern Arizona | 0 | 1 | 1 |
| Ohio State | 2 | 0 | 2 |
| Rice | 1 | 0 | 1 |
| San Angelo State | 0 | 1 | 1 |
| St. Edwards | 1 | 0 | 1 |
| Sul Ross | 1 | 0 | 1 |
| Southwest Texas Junior College | 9 | 16 | 25 |
| University of Texas at Austin | 10 | 6 | 16 |
| University of Texas at Dallas | 1 | 0 | 1 |
| University of Texas at San Antonio | 1 | 4 | 5 |
| Yale | 1 | 0 | 1 |
| | 41 | 35 | 76 |

Marissa Vara meets with Vice President of BP, Dr. David Rainey, at a University reception. Marissa began GeoFORCE in 2005 when she completed the eighth grade. She completed the four-year GeoFORCE program and entered the Jackson School in fall 2009.



We will continue to track GeoFORCE graduates throughout their college years and on into the workforce. Next May will provide another milestone as we will graduate cohorts from both the Houston area and the southwest region. At this time there are 110 students in both cohorts, which could result in more than 100 GeoFORCE graduates entering college in 2010.

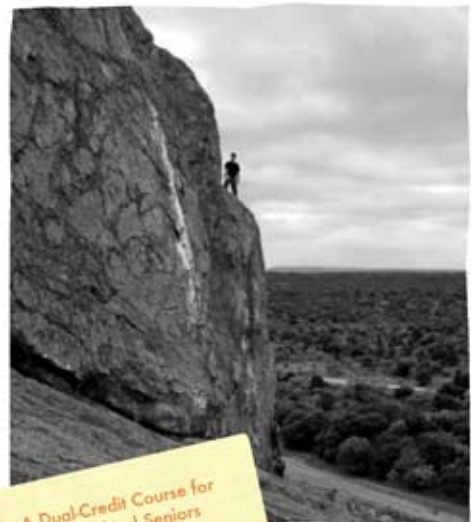
Dual-Credit Geology Course

Another milestone was reached in 2009 as the Jackson School's Dr. Eleanour Snow began teaching a Web-based, dual-credit physical geology course to our southwest Texas region. This course brings a high-quality science curriculum to rural high schools that are challenged to provide exciting, upper-division science to their students. It is the same physical geology course that is taught on campus and uses the same textbook. The course includes a laboratory section and a day-long field trip.

The course was delivered to eight high schools in our southwest Texas region during the spring semester of 2009. Twenty-six high school students successfully completed the freshman-level course.

We will continue to teach the course in our southwest Texas region and expand to the Houston Independent School District in fall 2010.

University of Texas at Austin Dual Credit in Geology
GEO401: Physical Geology
GEO271C: Issues in Geosciences
Earth and Space Science (High School)



A Dual-Credit Course for High School Seniors

W

NeoGEO Spring Field Trip

The first field event of 2009 was a trip to Port Aransas, Texas, with our graduating GeoFORCE students. The event was sentimental as we said goodbye to our initial group of students. Anna Morisani of Shell participated in the trip for the fifth year in a row with these students. Anna went on the initial 2005 trip as a graduate assistant and returned each year after accepting employment with Shell.

| NeoGeo 2009 (Port Aransas) | |
|----------------------------|---------------------|
| | Southwest Texas |
| Number of Students | 40 |
| Coordinator | Julie O'Shaughnessy |
| Trail Driver | Doug Ratcliff |
| Sponsor | Anna Morisani |
| Counselors | Edgar Garza |
| | Justin Hance |
| | Mary Gabaldon |



Academies

9th Grade Academy

| Objective(s) | Geologic Topics | Locations |
|--|--|--|
| Introduce students to basic geological terms and processes | Geologic time, erosion, deposition, lithification, Law of Superposition, Uniformitarianism, rock cycle, coastal plain, faults, geomorphology, differential erosion, lateral continuity, plate tectonics, orogeny | Austin: Aggregate quarry, McKinney Falls, Texas Memorial Museum |
| Experience life on a major university campus | | Florida: Lovers Key, Everglade City, Pennekamp National Park, Windley Key |

| 9 th Grade Academy (Austin, Florida) | | |
|---|----------------------|---------------------|
| | Houston | Southwest Texas |
| Number of Students | 41 | 40 |
| Coordinator | Edgar Garza | Julie O'Shaughnessy |
| Instructor | Jim Sansom | Jim Sansom |
| | Ernie Lundelius | Ernie Lundelius |
| | Charlie Kerans | Tiffany Caudle |
| Trail Driver | Doug Ratcliff | Mary Gabaldon |
| Sponsor Representative | Nysha Chaderton | Kristen Woody |
| Education Coach | John Won | B. Schroeder |
| Counselors | Courtney Alexander | Alicia Farre |
| | Carlos Camacho | Jose Guevara |
| | Elizabeth Collins | Evan Pearson |
| | Steve Gohlke | Matt Prudhomme |
| | Nicole Parker | Alyssa Rodriguez |
| | Vicki Perkins-Miller | Drew Slack |



10th Grade Academy

| Objective(s) | Geologic Topics | Locations |
|--|--|--|
| Inspire students to “think like a geoscientist” | Law of Superposition, lateral continuity, crossbedding, unconformity, desert varnish, monocline, gradient, antecedent drainage, mass wasting, Uniformitarianism, differential erosion, dendrochronology, cinder cone, strata volcano | Utah: Zion National Park |
| Apply geological concepts to what is seen in in real-time | | Arizona: Glen Canyon, Balancing Rock, Lees Ferry, Navajo Bridge, Grand Canyon - Desert View, Grand Canyon - Kaibab Trail hike, Wupatki, Sunset Crater |
| Expose students to sedimentary structures, processes, and environments | | |
| Reinforce geological concepts from 9 th Grade Academy | | |

| 10 th Grade Academy (Nevada, Utah, Arizona) | | |
|--|---------------------|---------------------|
| | Houston | Southwest Texas |
| Number of Students | 37 | 40 |
| Coordinator | Justin Hance | Julie O'Shaughnessy |
| Instructor | Lesli Wood | Charles Woodruff |
| Trail Driver | Doug Ratcliff | Mary Gabaldon |
| Sponsor Representative | Martha Barnes | Jay Raney |
| Education Coach | Julie Jackson | B. Schroeder |
| Counselors | Samantha Abbott | Sordaya Arellano |
| | Steff Lazo-Herencia | Elizabeth Collins |
| | Jennifer Loeffler | Alicia Farre |
| | Kendall Phillips | Jose Guevara |
| | Brandon Steele | Bianca Sanchez |
| | Zach Zhenani | Drew Slack |



11th Grade Academy

| Objective(s) | Geologic Topics | Locations |
|---|--|---|
| Expose students to volcanic, structures, processes, and environments | Law of Superposition, lateral continuity, Uniformitarianism, magma, lava, fissure, vesicular texture, pyroclastic flow, caldera, longshore current, tides, tsunami, sea stack, marine terrace, intertidal zone | Washington: Mount St. Helens |
| Compare beach environments on East and West coasts of US | | Oregon: Columbia River Gorge, Mt Hood, Newberry Caldera - Big Obsidian Flow, Crater Lake, Salt Creek Falls, Multnomah Falls, Cape Perpetua, Hecetea Head, Oregon Dunes, Seal Rock, Glacial Erratic |
| Reinforce geological concepts from 9 th and 10 th Grade Academies | | |

| 11 th Grade Academy (Oregon) | | |
|---|-----------------------|-----------------------------------|
| | Houston | Southwest Texas |
| Number of Students | 30 | 42 |
| Coordinator | Justin Hance | Doug Ratcliff/Julie O'Shaughnessy |
| Instructor | Jeff Paine | Jeff Paine |
| Trail Driver | Doug Ratcliff | Mary Gabaldon |
| Sponsor Representative | Denise Butler | Laura Reich |
| Education Coach | Julie Jackson | Eleanour Snow |
| Counselors | Courtney Alexander | Soryada Arellano |
| | Carlos Camacho | Alicia Farre |
| | Jay Guevara | Sarah Doyle |
| | Hana Kabazi | Evan Pearson |
| | Vickie Perkins-Miller | Matt Prudhomme |
| | Kendall Phillips | Bianca Sanchez |



12th Grade Academy

| Objective(s) | Geologic Topics | Locations |
|--|---|--|
| Immediately apply teaching, seeing, doing, and testing methodology to all field work | Carbonate rocks, reefs, high/lowstand, rock record, siliciclastic, beach renourishment, barrier flat, longshore drift, washover, storm surge, beach profiling, ocean currents | Florida: Pennekamp Coral Reef, Windley Key Fossilized Coral Reef, Everglades - Shark Valley, Lovers Key State Park, Canaveral Seashores, Merritt Island Wildlife Refuge – Sea Turtle Watch, Epcot |
| Expose students to carbonate structures, processes, and environments | | |
| Reinforce geological concepts from past three summers | | |

| 12 th Grade Academy (Florida) | | |
|--|-----------------------|---------------------|
| | Houston | Southwest Texas |
| Number of Students | 40 | 44 |
| Coordinator | Edgar Garza | Julie O'Shaughnessy |
| Instructor | Jeff Paine | Eleanour Snow |
| Trail Driver | Doug Ratcliff | Mary Gabaldon |
| Sponsor Representative | Laura DeMott | Danielle Carpenter |
| Education Coach | John Won | Marla Hibbitts |
| Counselors | Courtney Alexander | Soryada Arellano |
| | Carlos Camacho | Alicia Farre |
| | Steve Gohlke | Martha Gomez-Ponce |
| | Jay Guevara | Jose Guevara |
| | Vickie Perkins-Miller | Michael Ponce |
| | Andrew Wang | Bianca Sanchez |



Young Geoscientists

9th Grade Young Geoscientists

| Objective(s) | Geologic Topics | Locations |
|--|--|--|
| Introduce students to basic geological terms and processes | Geologic time, erosion, deposition, lithification, Law of Superposition, Uniformitarianism, rock cycle, coastal plain, faults, geomorphology, differential erosion, lateral continuity, plate tectonics, orogeny | Austin: Aggregate quarry, McKinney Falls, Texas Memorial Museum |
| Experience life on a major university campus | | Florida: Lovers Key, Everglade City, Pennekamp National Park, Windley Key |

| 9 th Grade Young Geoscientists (Uvalde) | | |
|--|------------------|------------------|
| | Houston | Southwest Texas |
| Number of Students | 21 | 46 |
| Coordinator | Justin Hance | Justin Hance |
| Instructor | Pat Bobeck | Pat Bobeck |
| Education Coach/Trail | Jessica Gordon | Jessica Gordon |
| Counselors | Samantha Abbott | Samantha Abbott |
| | Nicole Parker | Nicole Parker |
| | Kendall Phillips | Kendall Phillips |
| | Alyssa Rodriguez | Alyssa Rodriguez |
| | Brandon Steele | Brandon Steele |
| | Zach Zehani | Zach Zehani |



10th Grade Young Geoscientists

| Objective(s) | Geologic Topics | Locations |
|--|---|---|
| Learn basic costal processes and nomenclature of the coastal zone | Accretion, algal mat, swash zone, longshore drift, salt marsh, scarp, surf zone, estuary, fetch, high tide, jetty, beach, backbeach | Port Aransas: Mustang Island, Packery Channel, Leona Belle Turnbull Birding Center, UT Marine Science Institute KATY Research vessel |
| Inspire students to “think like a geoscientist” and apply the geological concepts to what they are seeing in real-time | | |
| Reinforce geological concepts from previous summer | | Corpus Christi: Texas State Aquarium |

| 10 th Grade Young Geoscientists (Port Aransas) | | |
|---|------------------|----------------------------|
| | Houston | Southwest Texas |
| Number of Students | 17 | 53 |
| Coordinator | Edgar Garza | Justin Hance |
| Instructors | Tiffany Caudle | Pat Bobeck Lindsay Lowe |
| Trail Driver | George Bush | Marc Airhart |
| Education Coach | Lisa Green | Lisa Green |
| Counselors | Samantha Abbott | Elizabeth Collins |
| | Jay Guevara | Ymarie Leija |
| | Kendall Phillips | Steve Gohlke |
| | Jamie Ramage | Nicole Parker |
| | Alyssa Rodriguez | Jamie Ramage |
| | Zach Zehani | Joe Zimowski |



11th Grade Young Geoscientists

| Objective(s) | Geologic Topics | Locations |
|---|--|---|
| Give students a glimpse of life on a major university campus | Law of Superposition, Uniformitarianism, geologic time, erosion, deposition, watershed, stream discharge, geomorphology, topography, flood, fault, earthquake, escarpment, karst, cave, speleothem | Austin and surrounding area: McKinney Falls, Barton Springs, Texas Memorial Museum, Texas State Capitol, Inner Space Cavern, Mount Bonnell, Perry Park |
| Expose students to fluvial systems and aquifers | | |
| Compare fluvial systems in Austin and Uvalde | | |
| Reinforce geological concepts from 9 th and 10 th Grade field courses | | |

| 11 th Grade Young Geoscientists (Austin) | | |
|---|-----------------------|-----------------------|
| | Houston | Southwest Texas |
| Number of Students | 25 | 30 |
| Coordinator | Edgar Garza | Edgar Garza |
| Instructors | Ernie Lundelius | Ernie Lundelius |
| | Jim Samson | Jim Samson |
| Trail Driver | Doug Ratcliff | Doug Ratcliff |
| Sponsor Representative | | Matthew Densmore |
| Education Coach | Jessica Gordon | Jessica Gordon |
| Counselors | Samantha Abbott | Samantha Abbott |
| | Alicia Farre | Alicia Farre |
| | Steve Gohlke | Steve Gohlke |
| | Nicole Parker | Nicole Parker |
| | Evan Pearson | Evan Pearson |
| | Vickie Perkins-Miller | Vickie Perkins-Miller |



12th Grade Young Geoscientists

| Objective(s) | Geologic Topics | Locations |
|--|---|--|
| Immediately apply teaching, seeing, doing, and testing methodology to all field work | Carbonate rocks, reefs, high/lowstand, rock record, siliciclastic, beach renourishment, barrier flat, longshore drift, washover, storm surge, beach profiling, ocean currents | Florida: Pennekamp Coral Reef, Windley Key Fossilized Coral Reef, Everglades - Shark Valley, Lovers Key State Park, Canaveral Seashores, Merritt Island Wildlife Refuge – Sea Turtle Watch, Epcot |
| Expose students to carbonate structures, processes, and environments | | |
| Reinforce geological concepts from past three summers | | |

| 12 th Grade Young Geoscientists (New Mexico) | | |
|---|-----------------------|-----------------------|
| | Houston | Southwest Texas |
| Number of Students | 28 | 26 |
| Coordinator | Justin Hance | Edgar Garza |
| Instructor | Dave Mohrig | Brian Horton |
| Trail Driver | Edgar Garza | Doug Ratcliff |
| Sponsor Representative | Dominic Druke | |
| Education Coach | John Won | Cristopher Marshall |
| Counselors | Courtney Alexander | Courtney Alexander |
| | Carlos Camacho | Steve Gohlke |
| | Steve Gohlke | Carlos Camacho |
| | Steff Lazo-Herencia | Steff Lazo-Herencia |
| | Vickie Perkins-Miller | Jennifer Loeffler |
| | Alyssa Rodriguez | Vickie Perkins-Miller |



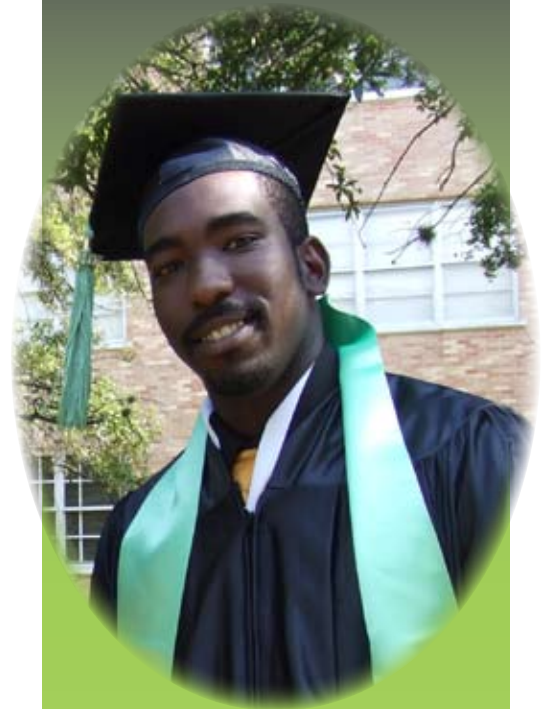
Fort Valley State University Events

Fort Valley State University (FVSU) and the Jackson School of Geosciences (JSG) continued their partnership into its sixth year. We reached a milestone this year when one of the FVSU transfer students completed his graduate studies at JSG. We will also receive four FVSU undergraduates beginning in the fall 2009.

JSG hosted FVSU's 11th-grade Math, Science, and Engineering Academy (MSEA) for the sixth straight year. As usual the academy ended with a rousing closing ceremony that featured skits, musical performances, and awards. The closing ceremony was attended by more than 20 people, including the Jackson School dean Sharon Mosher, professors Leon Long and Peter Fleming, Erin Gandy from the Cockrell School of Engineering, and Mary Long from the UTeach Institute. Former MSEA students who were summer interns at the Institute for Geophysics also attended. The closing ceremony was a great way for the students to demonstrate and reinforce what they learned during their week at UT.

JSG also hosted a campus visit for transfer students and provided summer internships for four FVSU students.

| 11 th Grade MSEA Academy | |
|-------------------------------------|---|
| Number of Students | 23 |
| Coordinators | Patrice McGhee, Jackie Hodges, Danielle Horton, Justin Hance, Julie O'Shaughnessy |
| Instructor | Leon Long |
| Education Coach | Jessica Gordon |
| Counselors | Hazel Abe, Jasmine Bowers, Johnne Dawson, Mario McGregor, Luther Harris |



Stanley Stackhouse, a member of the first group of transfer students from Fort Valley State University in Georgia, completed his undergraduate degree in geophysics in 2007 and earned his master's degree in 2009.



Dr. Leon Long points out the geology of Austin from Mt. Bonnell to students participating in Fort Valley State University's MSEA program.

Professional Development

GeoFORCE maintains close contact with educators at our target schools in southwest Texas and Houston. Our educators assist us with the application process, help monitor our students' progress through high school, participate in GeoFORCE activities, and make exceptional suggestions on how to improve our program. Without them, GeoFORCE would not be enjoying the success we have with the number of high-caliber students in our program. The Jackson School hosts two workshops each year in an effort to maintain that connection with our educators.

Our fall workshop was held September 23–24, 2008, for southwest Texas educators and November 11–12,

2008, for Houston educators. A total of 44 educators attended. The workshop was held in Port Aransas and mirrored the 10th Grade Young Geoscientists trip. Educators went on a science cruise on the *KATY* Research Vessel at the UT Marine Science Institute and toured the new Wetlands Education Center.

On the second day of the workshop, Leslie Peart from the Deep Earth Academy, a part of the Consortium for Ocean Leadership, presented. She worked with the educators on activities and materials based on authentic data from shipboard research expeditions to strengthen students' mathematics, science, and analytical skills for a lifetime of learning. She discussed the ability of scientific ocean drilling, as carried out by Integrated Ocean Drilling Program, to provide a multidisciplinary approach to Earth systems science education and to engage broader audiences with the excitement of discovery and the scientific process.

Our spring workshop was held February 11–12, 2009, in Austin. A total of 32 educators attended. This workshop mirrored the 11th Grade Young Geoscientists trip in and around Austin. Dr. Ernie Lundelius and professional geologist Jim Sansom led the educators on a hike up Mt. Bonnell for an overview of Austin geology.

They then went to Inner Space Caverns, where educators were treated to an in-depth and personal tour of the caverns. Jim Sansom was on hand when the caverns were discovered and was the second person in the cavern. Ernie Lundelius has extensively studied the fossils and bones found in the caverns. On the second day of the workshop Dr. John Firth, the Curator in the Department of Science Services, Ocean Drilling Program, and an adjunct assistant professor of geology in the Department of Geology and Geophysics at Texas A&M University, presented. He brought core and core samples for the educators and discussed ways of interpreting results on the basis of data from cores.



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Fisher, Bill and Marilee

GeoFORCE Texas is a summer program of the Jackson School of Geosciences at The University of Texas at Austin, in partnership with Southwest Texas Junior College, that offers outstanding 8th - 12th grade students from Southwest Texas the chance to travel the country learning about geology, meeting inspiring people and discovering career opportunities in the geosciences. The Jackson School of Geosciences and Southwest Texas Junior College join our students in thanking industry sponsors for their generous support. For more information on this exciting program visit the GeoFORCE Texas Web site at www.jsg.utexas.edu/geoforce.

The ad appeared in local newspapers in Pearsall, Uvalde, Crystal City, Eagle Pass, and Hondo.

The following article, written by Marc Airhart, appeared in the September issue of OnCampus, a Web-based news venue sponsored by the Office of

Public Affairs at The University of Texas at Austin. It became the third most viewed and e-mailed article in the OnCampus series that month.


WHAT STARTS HERE CHANGES THE WORLD

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GeoFORCE grads head to college

by Marc Airhart
Published: Sept. 21

Twenty-three young scholars entered into the university this fall as some of the first graduates of the GeoFORCE Texas program, one of the nation's largest geosciences pipelines for high school students


The GeoFORCE program takes high school honor students from predominantly minority regions of southwest Texas and the Houston area on geological field trips across the country to educate and excite them about science. Each summer for four years, students travel to different sites – some as close as Austin, Uvalde and Port Aransas, and some as far away as Florida, Washington, D.C., and Oregon.

"Up until that point, I didn't know what I wanted to do," said Katie Bales, a GeoFORCE graduate from Sabinal, Texas (population 1,600) and incoming freshman in geosystems engineering and hydrogeology. "And that summer I knew that I was going to be in geology for the rest of my life."

Program influences futures


The program, run by the Jackson School of Geosciences, is designed to increase the number and diversity of students pursuing degrees in math and science, especially the earth sciences.

The first cohort of 80 students came from southwest Texas, and while not every graduate went on to study geosciences, it did influence their views on higher education – 90 percent were accepted into junior colleges,



Students take a break to enjoy lunch and the view.

Video Feature:



BOB TAYLOR SPEAKS

STUDENT BLOGS REVEAL

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CONFIDENTIAL

LOOK AT COLLEGE LIFE

Get the scoop about college life from Longhorn Confidential's eight new student bloggers.

Digital Media Spotlight

- **Take a Stress Recess**
 The interactive Stress Management and Reduction Web site from the Counseling and Mental Health Center will take you on a guided journey to best meet your stress management needs.
- **The Sounds of the Longhorn Band**
 If you can't be there on game day, experience the sounds of "The Showband of the Southwest" with clips from both traditional and half-time music.
- **Make a Date with the Stars**
 StarDate Online from the McDonald Observatory is your guide to the universe. Get weekly stargazing tips, tune in to the daily English and Spanish radio programs, view a regularly updated image gallery and more.

colleges and universities, with 63 percent majoring in science, engineering or math. This year, five of the 23 GeoFORCE students at The University of Texas at Austin are pursuing majors in the Jackson School of Geosciences.

Creating excitement at UT

Half of the first cohort of GeoFORCE students began their odyssey in the summer of 2005 with a visit to the Austin campus. For most of the students, it was their first extended time on a university campus. They stayed for several days in Jester dorm and participated in a series of introductory geology seminars with professor Leon Long.

"That was the first time I'd been to UT and Austin," said Elyana Barrera, a GeoFORCE graduate from Del Rio, Texas (population 37,000) and incoming freshman in geosystems engineering and hydrogeology. "I was overwhelmed. It's a big campus, but I liked it a lot. (Coming for the visit) had a big influence on me being here right now."

Navigating first-generation students

Mike Loudin, manager of ExxonMobil's Global Geoscience Recruiting & Early Career Program and supporter of GeoFORCE, said one of the great strengths of the program is how it helps students navigate the process of getting into college. Many of the students don't have family members who have gone to college.

"You have to work with the families and students to demystify the whole process," Loudin said. "If you don't have any role models and nobody in the family has ever done it before, there's no one to tell you how to do it or what not to do."

GeoFORCE staff members and volunteers help students apply for university admissions and financial aid, and students are even taught strategies for taking the Scholastic Aptitude Test. Representatives from the Hispanic Scholarship Fund, UT Outreach and the U.S. Geological Survey also talk with students.

"We go to these little high schools and it's like everyone is there to just pass a class and get out," said Bales. "And on these trips, we were with teachers and sponsors who cared, who wanted us to succeed in life. That's what pushed us the most. There was finally someone in our lives besides our parents who wanted us to get a good education and have the opportunities that were out there."

[Read more](#) about GeoFORCE students.

[Watch](#) GeoFORCE students in action.

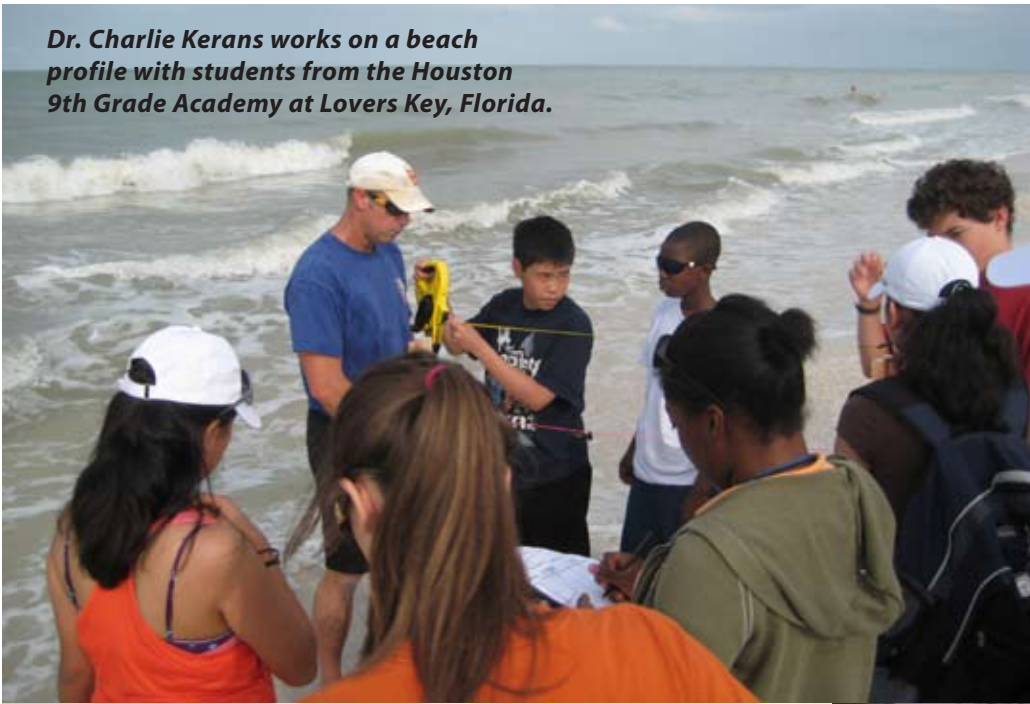
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Dr. Charlie Kerans works on a beach profile with students from the Houston 9th Grade Academy at Lovers Key, Florida.



A 9th grade Southwest Young Geoscientist student checking out a rock at Knippa Quarry.



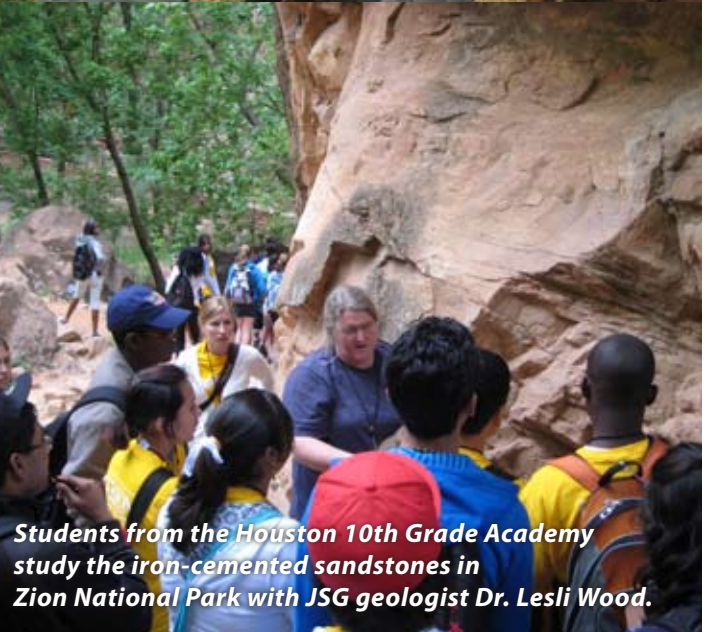
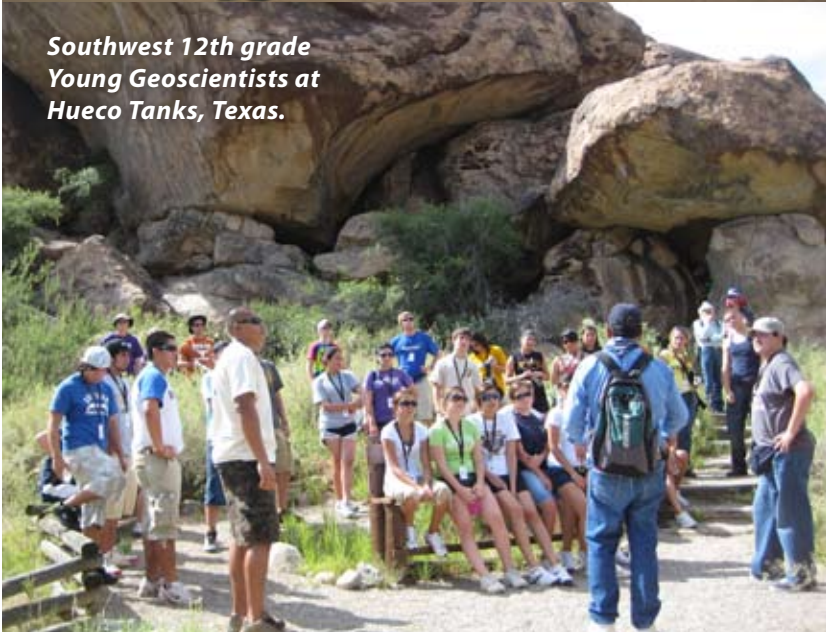
Dr. Jeff Paine and the students of the Southwest 11th Grade Academy on top of the glacial erratic in Oregon.



Dr. Ernie Lundelius and Jim Samson discuss the significant geologic features of Perry Park with Houston 11th Grade Young Geoscientists.



Southwest 12th grade Young Geoscientists at Hueco Tanks, Texas.



Students from the Houston 10th Grade Academy study the iron-cemented sandstones in Zion National Park with JSG geologist Dr. Lesli Wood.