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Friends and future friends,

GeoFORCE Texas continues to be a success. In the 2013 Annual Report, GeoFORCE measures of success were listed as: impact on a large number of students from diverse backgrounds, retention of students in the program through high school, high school graduation and college matriculation rates, and number of students studying STEM fields, especially geology and engineering. GeoFORCE has been successful in all four areas. The program has impacted 1,207 students since the first summer of 2005. No matter what life path these students take, they are Earth science literate citizens who have the knowledge to make science-based decisions about Earth resources, the environment and natural hazards at local, state, national, and global levels.

Starting in summer 2017, GeoFORCE is working to increase the already successful persistence rate by making the transition to college easier for students. By providing a week-long college experience on the University of Texas campus for seniors, with field experiences in the nearby Llano uplift area, students gain the confidence to be on a college campus and working on group projects in computer labs, and presenting as a group. The 2017 field experience was built on the central Texas academy that Dr. Leon Long led for students from the Fort Valley State University Mathematics, Science and Engineering Academy (MSEA) from 2004 to 2011. To encourage more students to choose geoscience majors, rising 12th grade academy seniors visited a variety of Jackson School of Geosciences faculty, research scientists, and graduate students in their labs to see the multiple opportunities for careers in the geosciences. Finally, to increase the competitiveness of STEM majors applying for graduate school and industry jobs, GeoFORCE will provide students entering the first year of college, a week-long residential calculus and chemistry summer camp to provide a foundation for math and science success.

Just as there were lessons learned from the first 9th grade academy in 2005 that led to improvements for the second 9th grade academy in 2006, GeoFORCE will make improvements to the 2018 central Texas 12th grade academy based on the experiences and feedback from the 2017 central Texas 12th grade academy. Improvements to the 2006 9th grade academy included reducing the trip from 13 to 8 days, administering age-appropriate quizzes developed by education specialists, providing an easy to understand field guide to focus activities, defining the roles and assigning duties to every adult participating, and adding educational coaches to assist the instructor. We look forward to working with all of the GeoFORCE stakeholders to learn from the past and build on the successes to meet the mission of diversifying the STEM workforce.

Best Regards,

Samuel L. Moore, Ph.D.
Director of Outreach and Diversity
Jackson School of Geosciences
The University of Texas at Austin
“THE BIGGEST IMPACTS ARE MADE HERE”

METHODOLOGY AND MEASURES

The Jackson School of Geosciences at The University of Texas at Austin is one of the largest and most prestigious academic geoscience institutions in the world. It was established as a college-level school in 2005, as the result of the bequest of Jack and Katie Jackson, with the overarching goal of becoming the preeminent academic geoscience program, with international prominence in geology and geophysics, energy, mineral and water resources and in the broad areas of earth science, including Earth’s environment.

The school consists of the Department of Geological Sciences (DGS), Institute for Geophysics (UTIG), and Bureau of Economic Geology (BEG), which also serves as the Texas Geological Survey. It is made up of 53 faculty, 90 research scientists, 110 research staff and postdoctoral scientists, 600 graduate and undergraduate students, and 140 support staff, working together to create a distinctive academic institution unlike any other in combined scope, impact, and direct societal relevance.
GeoFORCE maintains strong partnerships with universities, school districts, industry, and government organizations that share our values and goals. Together we are better at serving the needs of our target population and furthering our objectives.

Southwest Texas Junior College (SWTJC)

Our partnership with Southwest Texas Junior College is the cornerstone of the southwest Texas region’s success. SWTJC supports every aspect of GeoFORCE implementation, from building relationships with local school districts to providing logistical support for GeoFORCE events in the area.

University of Alaska Fairbanks (UAF)

GeoFORCE Alaska currently is working with their second student cohort, completing their third summer in 2018. We continue to collaborate with and support this growing GeoFORCE program as it develops into the second GeoFORCE program in the nation.

Houston Independent School District (HISD)

HISD supports our partnership in the Houston region by giving us access to middle schools for recruiting and to high schools for our outreach programs. We have used HISD facilities for meetings and as drop-off and pick-up locations. Most importantly, individual principals and teachers have gone out of their way to make GeoFORCE possible for their kids.

Fort Valley State University (FVSU)

We remain closely connected to FVSU, where the model for GeoFORCE was framed. We continue to work together to bring opportunities to students of color. Isaac Crumbly and Jackie Hodges run the Fort Valley programs.

Amigos de las Americas

GeoFORCE has collaborated with Amigos de las Americas to provide two GeoFORCE students the opportunity to gain essential education and life experience, leadership training, and an entirely new network of friends by living and working in amazing communities throughout Central and South America.
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<td>Emily</td>
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<tr>
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<td>University of Texas Marine Science Institute</td>
<td>Amanda Taylor 9th</td>
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<tr>
<td>Katy Research Vessel</td>
<td>Capt. Stan Dignum 9th</td>
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<td>Texas State Aquarium</td>
<td>Glenda Martinez 9th</td>
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<td>Galveston Island State Park</td>
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<tr>
<td>Wilderness River Adventure</td>
<td>Robin Marquis 10th</td>
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<tr>
<td>Grand Canyon National Park</td>
<td>Roy Benefield 10th</td>
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<tr>
<td>Sunset Crater/Wupatki National Indian Ruins</td>
<td>Steven Rossi 10th</td>
</tr>
<tr>
<td>Mt. St. Helen’s National Monument</td>
<td>Kristine Cochrane-Bell 11th</td>
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<tr>
<td>Vista House at Crowne Point</td>
<td>11th</td>
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<tr>
<td>Mt. Hood - Timberline Lodge</td>
<td>Kim Nylund 11th</td>
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<td>Pacific Northwest Region Forest Service</td>
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<td>Oregon Coast Aquarium</td>
<td>Carrie Evans 11th</td>
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<tr>
<td>Barton Springs Pool</td>
<td>Carlos Nunez 12th</td>
</tr>
</tbody>
</table>
For the most part, the trucks I have drawn have been pretty straightforward, not too many complications. But I have had a few where you really have to figure out how to make everything work. Though it is a lot of going back and forth with the customer and reading through our book of guidelines for components, it's just fun to figure those out. Sometimes because the customer requires certain components to be in certain places, you not only have to figure out one solution but two or three and then maybe the customer will pick one.

It may just be one component that is causing you problems, so you try to focus on that one area, but then you figure out the answer was with something on the other side of the truck.

I always think of GeoFORCE as the place where I realized what I wanted to be: an engineer. I remember being a student and having a sponsor, who happened to be an engineer, come talk to us and just hearing about all things that they do and the opportunities... something just clicked in me and I just knew engineering was what I wanted to do. GeoFORCE helped shine a light on a path had never even crossed my mind and I'm sure eventually I would have figured it out, but definitely not as early as I did.

"I always think of GeoFORCE as the place where I realized what I wanted to be... an engineer".

Theresa Gaitian
Product Release Specialist

Peterbilt custom makes all of their trucks for each customer, so my job involves going through each frame layout in a 3D modeling program and placing certain components on the rails, such as air systems, fuel tanks, battery boxes, and cross members, according to the customer's needs. However each component has specific requirements related to things such as heat clearance zones, weight distribution, and cable lengths that all need to be taken into account. So some trucks require me to go back and talk with the customer about making small adjustments in order meet those requirements. By the end I have a drawing that shows where all the components will be, but mostly shows where each hole in the frame of the truck needs to be drilled.

After that drawing is done, I also go through the bill of materials for each truck. Based on where I placed certain components, I have to make sure the bills match what the frame layout data says.
Reynaldo Cabrera

Geologist at Luxe Minerals & Luxe Energy

I am currently a Geologist for both Luxe Minerals & Luxe Energy and I have been with the company for over a year and a half now. Being that Luxe is a smaller private company, I have been exposed to numerous aspects of the oil and gas industry. I have analyzed seismic data, geosteered wells, interpreted well logs, and generated numerous geological maps, while simultaneously gaining exposure to the land, finance, and engineering side of the business. Gaining expertise in these skills has allowed me to perform my primary job, which is providing thorough geologic assessments of all mineral deals sent to Luxe in the Permian Basin.

Reynaldo “Rey” Cabrera has been working for Luxe Minerals & Luxe Energy in Austin, TX for more than 1.5 years, and he has enjoyed the competitive nature of the business. “When good deals come in, you have to be fast and efficient with your analysis in order to get the big payouts,” Cabrera said. His primary responsibility is to provide thorough geologic assessments of all Permian Basin mineral deals sent to Luxe. As such, Cabrera engages in a variety of tasks, including analyzing seismic data and generating geologic maps, interpreting well logs and geosteering wellbores and even familiarizing himself with the land, finance, and engineering side of the business. Cabrera was first inspired to pursue a career in the petroleum industry by GeoFORCE sponsors on his summer trips. “Hearing them discuss their work experiences and how the knowledge we acquired from GeoFORCE instructors is utilized in their everyday work truly sparked my interest in geology,” he remembers. Years later, Cabrera finds himself following in their footsteps, eager to become a role model for younger GeoFORCE students.

"GeoFORCE truly opened my eyes into the industry by educating me on the fundamental processes of geology."
David Splawn

Geoscience Technician

I am working for ExxonMobil as a geoscience technician. I am supporting the West Africa New Opportunity team. My job involves using GIS to create accurate maps that efficiently display our data and information and geological knowledge to help support and manage data in petrel. My favorite thing is seeing all the different hypothesis in early research of leads where data is limited. GeoFORCE provided me with the fundamental geological and spatial knowledge that allowed me to easily build on from college.
Katherine Garcia
Geoscience Technician

Nearly 1,700 miles from where she takes geology courses at Franklin and Marshall College in Lancaster, PA, Katherine Garcia found herself applying the geoscientific knowledge learned in the classroom as an intern with DJR Energy in Denver, CO. “The internship reaffirmed my interest in the field of geosciences. It also provided me with a better understanding of the oil and gas industry,” said Garcia (GeoFORCE Class of 2017). She gained experience with a range of geologic techniques at multiple scales – from analyzing core samples to deciphering well log data. At an even larger scale, Garcia used ArcGIS to make topographic maps of the San Juan basin. To round out the internship, Garcia went to the field and performed a variety of tasks at wells in New Mexico, including restarting pump jacks, installing joints on wells and checking oil levels in tanks. Garcia credits GeoFORCE with leading her to the internship, saying that “GeoFORCE set the foundation towards my career in geosciences. Without GeoFORCE I would have never been introduced to geology or encouraged to apply to college.”

"GeoFORCE set the foundation towards my career in geosciences,
Without GeoFORCE I would have never been introduced to geology".

GeoFORCE Class of 2017
GeoFORCE collaborates with other organizations to provide opportunities to our students. We have the privilege of nominating students for and directing them towards competitive scholarships. For example, a number of our students are Posse Houston Scholars. Through a rigorous interview and application process, students are selected to be part of a cohort – or posse – and receive a four-year full tuition scholarship to attend a partner university. Posse Scholars are valued for their leadership skills, positivity, and ambition. Oftentimes GeoFORCE students are nominated by their high schools or other programs to become Scholars. Three students nominated by GeoFORCE have gone on to become Posse Scholars: Francisco Castro (GeoFORCE Class of 2014, Carleton College), Jamal Fielder (GeoFORCE Class of 2015, UT Austin) and Jennifer Ray (GeoFORCE Class of 2016, Texas A&M University). Currently, three more GeoFORCE students are in the semi-finalist round of their Posse interviews.
Sabinal High School senior Marlowe Story received one of her best presents just days after Christmas when University of Texas at Austin deputy director of admissions Miguel Wasielewski arrived on the family’s doorstep bearing news of a four-year scholarship.

The letter Wasielewski presented from UT admissions director Susan Kearns announces that Story has been admitted to the Jackson School of Geosciences for the fall 2018 semester. Kearns also writes that Story will benefit from a full scholarship, worth approximately $12,000 per year.

Wasielewski arrived bearing gifts. In addition to the oversized check declaring the scholarship amount, Story also received a University of Texas backpack and balloons.
Amigos and GeoFORCE
Participating in Amigos provided me with countless opportunity to prove myself as a leader. This was an unparalleled experience that awarded me with cross-cultural communications skills, collaborative skills, adaptability skills, critical thinking skills, etc. I was pushed out of my comfort zone and I learned how to embrace challenges and overcome obstacles. In collaboration with a partner and various community leaders, I led a youth development project on water conservation. I lived in an area that is a hydrological reserve, an important source of water for the country of Panama. This enabled us to build a water tank for the local clubhouse in our community. I organized and lead various meetings with my partner and community members.

At these meetings, we were able to decide on a project, draft an action plan, organize fundraising events, and schedule workdays. I also lived with a host family and collaborated with the Panamanian Ministry of Health on my community service project. Also, with my partner, I planned and facilitated extracurricular activities for kids centered on environmental sustainability and public health.

Most importantly, I learned how to support others. Maintaining a supportive partner relationship was very important to me. My partner got really sick and had to return back to Texas before the end of the program, and I was able to be there and support her through it all. The challenges we faced together enabled us to build a stronger relationship, and we have formed such a great friendship.

Next semester, I will be studying and interning abroad in Granada, Spain. As an intern at a non-governmental organization (NGO), I will assist with administrative tasks, translate texts, and help with fundraising activities. Interning at an NGO will help me gain the hands-on, practical experience I need to start my environmental non-profit in the future. The knowledge and skills I gained from my environmental sustainability project in Panama furthered my activism for the environment. I want to be a part of grass root efforts that bring awareness to some of our environmental problems especially the contamination and depletion of ground and surface water. My knowledge of Spanish will definitely help me in my future goal because I want my non-profit to have its presence in the landscape of international development especially in South and Central America. In addition to being able to receive academic credits from my internship, I will further gain cross-cultural communication skills and networking opportunities with professionals and like-minded peers.
The GEAR UP partnership with GeoFORCE began the summer of 2014 and sought innovative programs to help encourage students to pursue their education. Since GEAR UP is a discretionary grant program designed to increase the number of low-income students who are prepared to enter and succeed in postsecondary education, GeoFORCE and GEAR UP became a perfect fit. As part of the GEAR UP program, students were offered the GeoFORCE experience with summer trips to Florida, Arizona, Oregon, and the Appalachian region. GeoFORCE GEAR UP was comprised of students from four Texas cities: Lubbock, Manor, San Antonio, and Somerset.
During the summer of 2017, 39 students completed their final academy with GeoFORCE. The 2018-2019 school year marks the next step in life for our GeoFORCE GEAR UP students as they embark on their first year of college. They are currently attending universities across the state, along with a few who have ventured beyond Texas to colleges such as the University of Arizona and Harvard University. Eight GEAR UP students attended the Math and Science Institute, and four students are majoring in geosciences.

Recipient of the 2016 GEAR UP Youth of the Year award, Lucero “Lucy” Castañeda participated in all four GeoFORCE GEAR UP Summer Field Experiences. The road to academic success hasn’t been an easy road for Lucy, who said she has faced big disadvantages, and in some situations even had to teach herself to keep up with the national competition. Graduating top of her class from Somerset High School, Lucy is the first Somerset graduate to attend Harvard University.
Students are introduced to basic geological terms and processes while provided with opportunities to experience life on a major university campus.
GFH 9 2018
June 2 – 8, 2018
Coordinator: Edgar Garza
Instructor: Tiffany Caudle
EC: Danielle Chambers
Trail Driver: Madelynn Mize
Media Coordinator: Selene Alba
Sponsor: Joel Le Calvez – Schlumberger
Student Participants: 40
Staff Participants: 10
Sponsors: 1

GFSW 9 2018
June 16 – 22, 2018
Coordinator: Chris Graham
Instructor: Tiffany Caudle
EC: Alejandra Martinez
Trail Driver: Kathleen Wilson
College Coordinator: Dana Thomas
Sponsor: Mark Martin – Shell
Christine Skirius – BHP
Yomi Olufowoshe – Halliburton
Student Participants: 44
During the second summer of GeoFORCE, we inspire students to “think like a geoscientist,” and apply geological concepts in real time. Students learn about sedimentary structures, processes, and environments.

**GFH 10 2018**
June 2 – 8, 2018  
Coordinator: John Hash  
Instructor: Jaime Barnes  
Educational Coach: Kyla Hardaway  
Trail Driver: Evan Ramos  
College Coordinator: Dana Thomas  
Sponsor: Jess Swafford – BHP  
Lauren Fortsen – ExxonMobil  
Erin Roehrig – Marathon Oil  
Student Participants: 40  
Staff Participants: 11  
Sponsors: 3

**GFSW 10 2018**
June 9 – 15, 2018  
Coordinator: Larry Savoy  
Instructor: Peter Flaig  
Educational Coach: Hector Garza  
Trail Driver: Teresa Gaitan  
Media Coordinator: Selene Alba  
Sponsor: Michael Gutierrez  
- ExxonMobil  
Student Participants: 44  
Staff Participants: 10  
Sponsors: 1
During the third summer, we introduce students to volcanic structures, processes, and environments. We compare and contrast West Coast and Texas Gulf Coast coastal processes, all while reinforcing the geological
July 21 - 27, 2018
Coordinator: Chris Graham
Instructor: Jeff Paine
EC: Matthew Moreno
Trail Driver: JT Treviño
Media Coordinator: Selene Alba
GeoFORCE Staff: Dan Campos
GeoFORCE Staff: Marissa Vara
College Coordinator: Dana Thomas
Sponsor: Belle German – JSG Staff
Student Participants: 40
Staff Participants: 12
Sponsors: 1

11th Grade Academy
12th Grade Academy

During the third summer, we introduce students to volcanic structures, processes, and environments. We compare and contrast West Coast and Texas Gulf Coast coastal processes, all while reinforcing the geological

GFM 12 2018

June 15 – 23, 2018
Coordinator: John Hash
Trail Driver: Marissa Vara
Instructor: Wonsuck Kim
EC: Phil Caggiano
EC: Michelle Ribelin
ECIT: Caitlin Tran
ECIT: Robin Lee
ECIT: Daniela Garza
Sponsor: Julie Jackson – Shell
Chris Lerch – BHP
Tom Griffith – Anadarko (Retired)
Student Participants: 31
Staff Participants: 12
Sponsors: 3

GFH 12 2018

June 8 – 16, 2018
Coordinator: Daniel Campos
College Coordinator: Dana Thomas
Instructor: Linda McCall
EC: Enrique Reyes
EC: Eric Goldfarb
Trail Driver: Rebecca Alexander
Sponsor: Bud Scherr – Valence Operating Company
Bill Magee – Shell
Student Participants: 32
Staff Participants: 12
Sponsors: 2
**GFSW 12 2018**

June 29 – July 7, 2018
Coordinator: Daniel Campos
College Coordinator: Dana Thomas
Trail Driver: Chris Graham
GeoFORCE Staff: Marissa Vara
Instructor: Sarah George
EC: Lauren Oefinger
EC: Eric Goldfarb
ECIT: Marianne Coholich
ECIT: Robin Lee
ECIT: Mia Moi
Sponsor: Kristen Guerra - Schlumberger
Student Participants: 34
Staff Participants: 16
Sponsors: 1
HIGH SCHOOL DATA
GeoFORCE has been very successful in recruiting the top performing students from the schools we target. Of the 144 GeoFORCE students who graduated high school this past year, 25 of them graduated at the very top of their class. These students exemplify the hard work and perseverance we have come to expect from all GeoFORCE students. These students, along with their fellow GeoFORCE alum are sure to become the future leaders and trailblazers on campus. We wish you all the best in your college endeavors.

Christa Chapa
Crystal City High School
Valedictorian

Sasha Corral
CC Winn High School
Salutatorian

Eleanor Cote
D’Hanis High School
Valedictorian

Jessica Dong
Knippa High School
Valedictorian

Nathan Alonzo
La Pryor High School
Valedictorian

Ayme Bruce
Brackett High School
Valedictorian

Brian Cardenas
Carrizo Springs High School
Valedictorian

Lucy Castaneda
Somerset High School
Valedictorian

Jolee Cave
Leakey High School
Valedictorian

Graduated 1st or 2nd in their high school class

17.4%
Jennifer Garcia
Young Women’s College Prep
Salutatorian

Alan Gonzalez
CC Winn High School
Valedictorian

Heather Hernandez
Cotulla High School
Valedictorian

Janae Jensen
Brackett High School
Salutatorian

Emma Lessing
Hondo High School
Valedictorian

Leah Lewis
Young Women’s College Prep
Valedictorian

Nadia Navarro
Sabinal High School
Salutatorian

Jennifer Pena
Eagle Pass High School
Salutatorian

Jaden Riley
Kashmere High School
Salutatorian

Brandon Garcia
Memorial High School
Valedictorian

Baylee Rubio
Sabinal High School
Valedictorian

Hector Ruiz
Rocksprings High School
Salutatorian

Ryan Salazar
John F. Kennedy High School
Salutatorian

Ernesto Salazar Yanez
E. L. Furr High School
Salutatorian

Alexzandra Urrabazo
Crystal City High School
Salutatorian

Matthew Williams
Uvalde High School
Salutatorian
84% of 2017 high school participants are minorities.

**HISPANIC PARTICIPANTS:**
57%

*Primarily from Southwest Region*

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### Geoforce Academies Data

#### GeoFORCE Academies Post Secondary Outcome Rates vs. State and National

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<th>HS Graduation %</th>
<th>College Enrollment %</th>
<th>College Persistence %</th>
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<td>U.S.A.</td>
<td>88</td>
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2016 1st year College Persistence to 2nd year %

#### Number of GeoFORCE H.S. Graduates per Cohort

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<td>2015</td>
<td>162</td>
</tr>
<tr>
<td>2016</td>
<td>146</td>
</tr>
<tr>
<td>2017</td>
<td>130</td>
</tr>
<tr>
<td>2018</td>
<td>103</td>
</tr>
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GeoFORCE Academies Data on Post Secondary Outcome Rates vs. State and National

AFRICAN AMERICAN PARTICIPANTS: 
17% PRIMARILY FROM HOUSTON REGION

FEMALE PARTICIPANTS: 
60% SUMMER 2018
342 THE NUMBER OF HIGH SCHOOL STUDENTS WHO PARTICIPATED IN GEOFORCE SUMMER FIELD EXPERIENCES IN 2018

103 THE NUMBER OF HIGH SCHOOL STUDENTS WHO GRADUATED FROM HIGH SCHOOL IN 2018
On average, 90% of GeoFORCE students persist into their second year of college. The national average for persistence to the second year in college is 75%. (National Center for Education Statistics, Integrated Postsecondary Education Data System, 2017)
At least 83% of GeoFORCE students enroll in college immediately upon graduating from high school. Nationally, 69.5% of recent high school graduates enrolled in college from 2014-2016 (NCES, IPEDS, 2017)
Thinking about the timeline of a GeoFORCE student

*A “fastest possible” outcome*

<table>
<thead>
<tr>
<th>High School Graduation</th>
<th>+4 years</th>
<th>College Graduation (B.S.)</th>
<th>+2 years</th>
<th>Graduate School (M.S.)</th>
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<td>2009</td>
<td></td>
<td>2013</td>
<td></td>
<td>2015</td>
</tr>
<tr>
<td>2010</td>
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<td>2011</td>
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<tr>
<td>2015</td>
<td></td>
<td>2019</td>
<td></td>
<td>2021</td>
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34% Bachelors degree earned from high school graduating classes 2011-2016 from socially economically disadvantaged homes.

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<th>Year Bachelor's Degree Earned</th>
<th>High School Graduation Year</th>
<th>Total</th>
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</tr>
<tr>
<td>2013</td>
<td>11</td>
<td>11</td>
</tr>
<tr>
<td>2014</td>
<td>8 25 8 1</td>
<td>42</td>
</tr>
<tr>
<td>2015</td>
<td>4 11 32 7 1</td>
<td>55</td>
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<tr>
<td>2016</td>
<td>2 10 16 41 10 1</td>
<td>80</td>
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<tr>
<td>2017</td>
<td>1 5 14 49 9</td>
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<tr>
<td>2018</td>
<td>2 5 6 13 56 4 1</td>
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</tr>
<tr>
<td>Total</td>
<td>32 60 66 69 73 66 4 1</td>
<td>371</td>
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</table>

Bachelor's Degrees Earned by High School Graduating Class

Total Bachelor's Degrees earned = 371
Bachelors Degrees Earned

Bachelor's Degrees Earned: Houston

Bachelor's Degrees Earned: Southwest

Absolute numbers: Bachelor's Degrees Earned

<table>
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<tr>
<th>STEM fields</th>
<th>Houston</th>
<th>Southwest</th>
<th>Total</th>
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<tbody>
<tr>
<td>Geoscience</td>
<td>15</td>
<td>37</td>
<td>52</td>
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<tr>
<td>Biological Sciences</td>
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<td>30</td>
<td>40</td>
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<tr>
<td>Engineering</td>
<td>9</td>
<td>13</td>
<td>22</td>
</tr>
<tr>
<td>Other STEM</td>
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<td>26</td>
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<tr>
<td>Non-STEM Business, Humanities, Fine Arts, Communication, etc.</td>
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<td></td>
<td></td>
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<tr>
<td>Health Professions and Studies</td>
<td>8</td>
<td>33</td>
<td>41</td>
</tr>
<tr>
<td>Unspecified (Interdisciplinary Studies)</td>
<td>4</td>
<td>9</td>
<td>13</td>
</tr>
<tr>
<td>Grand Total</td>
<td>111</td>
<td>261</td>
<td>372</td>
</tr>
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</table>

Percentages: Bachelor's Degrees Earned

<table>
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<tr>
<th>STEM fields</th>
<th>Houston</th>
<th>Southwest</th>
<th>Total</th>
</tr>
</thead>
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<tr>
<td>Geoscience</td>
<td>4%</td>
<td>10%</td>
<td>14%</td>
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<tr>
<td>Biological Sciences</td>
<td>3%</td>
<td>8%</td>
<td>11%</td>
</tr>
<tr>
<td>Engineering</td>
<td>2%</td>
<td>3%</td>
<td>6%</td>
</tr>
<tr>
<td>Other STEM</td>
<td>4%</td>
<td>7%</td>
<td>11%</td>
</tr>
<tr>
<td>Non-STEM Business, Humanities, Fine Arts, Communication, etc.</td>
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<tr>
<td>Health Professions and Studies</td>
<td>13%</td>
<td>30%</td>
<td>44%</td>
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<tr>
<td>Unspecified (Interdisciplinary Studies)</td>
<td>2%</td>
<td>9%</td>
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<tr>
<td>Grand Total</td>
<td>30%</td>
<td>70%</td>
<td>100%</td>
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Enrollment by fields of study (Bachelor’s-seeking and graduate degree-seeking)

<table>
<thead>
<tr>
<th>Field of study</th>
<th>No. of students</th>
<th>% of total students</th>
</tr>
</thead>
<tbody>
<tr>
<td>STEM fields</td>
<td></td>
<td>43%</td>
</tr>
<tr>
<td>Biological Sciences</td>
<td>57</td>
<td>13%</td>
</tr>
<tr>
<td>Engineering</td>
<td>54</td>
<td>10%</td>
</tr>
<tr>
<td>Geoscience</td>
<td>42</td>
<td>8%</td>
</tr>
<tr>
<td>Other STEM</td>
<td>69</td>
<td>13%</td>
</tr>
<tr>
<td>Non-STEM</td>
<td></td>
<td>45%</td>
</tr>
<tr>
<td>Business, Humanities, Fine Arts, Communication, etc.</td>
<td>162</td>
<td>31%</td>
</tr>
<tr>
<td>Health Professions and Studies</td>
<td>70</td>
<td>13%</td>
</tr>
<tr>
<td>Underdeclared and Unspecified</td>
<td>65</td>
<td>13%</td>
</tr>
<tr>
<td>Total</td>
<td>519</td>
<td></td>
</tr>
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</table>

Fields of Study, Fall 2018

Ethnicity of GeoFORCE STEM degree earners

<table>
<thead>
<tr>
<th>Ethnicity of Degree Earner</th>
<th>Number of STEM degrees earned</th>
<th>Percent of GeoFORCE STEM degree earners</th>
<th>Ethnicity of GeoFORCE students (%) Class of 2009-2016</th>
<th>Percentage of STEM degrees conferred to U.S. citizens in 2015-2016+</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hispanic</td>
<td>89</td>
<td>57%</td>
<td>60%</td>
<td>11%</td>
</tr>
<tr>
<td>White/Caucasian</td>
<td>37</td>
<td>24%</td>
<td>18%</td>
<td>65%</td>
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<tr>
<td>Asian</td>
<td>15</td>
<td>10%</td>
<td>15%</td>
<td>7%</td>
</tr>
<tr>
<td>African American</td>
<td>14</td>
<td>9%</td>
<td>6%</td>
<td>14%</td>
</tr>
<tr>
<td>American Indian</td>
<td>1</td>
<td>0.6%</td>
<td>0.2%</td>
<td>0.40%</td>
</tr>
</tbody>
</table>

*National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS)
48

52
GeoFORCE alumni earned a Geoscience degree, from Southwest and Houston regions.

40
GeoFORCE alumni earned a Biological Science degree, from Southwest and Houston region.

156
GeoFORCE alumni earned a STEM related field degree, from Southwest and Houston region.
GeoFORCE alumni, Fabian Pena at graduation.
604
Geoforce graduates students currently in college (at least half time).

1311
of GeoFORCE students completed the program.

**Above is the number of degrees in STEM pursued by GeoFORCE in 2018.**
21 Certificates Technical diplomas earned by GeoFORCE students.

4 Doctoral degrees earned by GeoFORCE students.

98 Associate degrees earned by GeoFORCE students.

31 Master's degrees earned by GeoFORCE students, including 5 in Geoscience.

372 Bachelor's degrees earned by GeoFORCE students.

526 Total degrees earned by Geoforce graduates.
GeoFORCE alumni, (on right) Lea NellDungo and (on left) Zach Bordovsky at graduation.
"GeoFORCE on steroids," said Theresa Perez. That is how UT Austin students Perez (Petroleum Engineering, GeoFORCE Class of 2015), Thomas Quintero (Geological Sciences, GeoFORCE Class of 2016) and Gabriel Villaseñor (Geological Sciences, GeoFORCE Class of 2016) described their field experience in Slovakia with Jackson School of Geosciences Associate Professor Elizabeth Catlos. Professor Catlos is the Principal Investigator of a National Science Foundation International Research Experiences for Students (IRES) program that brings geoscience students to Slovakia for four weeks of geological field-based research. The students receive a weekly stipend, and all expenses are covered. Catlos conducts research in the Carpathian Mountain range of Slovakia to understand geological processes associated with the closure of ancient ocean basins, and she specifically recruits GeoFORCE students. As Catlos explains, “They have knowledge of geology and are used to challenging travel!” The research experience began long before the summer. To develop their research plans and learn about the geology, culture and even the language of the area, the students participated in a 2018 spring semester course with Professor Catlos. In Slovakia, the group visited historic and current mines, relating gold, silver and base metal deposits to the regional geologic history. At quite different elevations, the students endured challenging hikes through the scenic High Tatra Mountains, sometimes using cables and ladders. “We explored deep down from 600 m below the ground to thousands of meters above on the peaks,” described Perez.

Each student will continue working on their individual research projects throughout the 2018 fall semester. The tumultuous geologic history of the region offers a diverse range of research projects. Supervised by JSG Professor Richard Kyle, Quintero is studying hydrothermally altered clastic rocks of the Rozalia gold mine in central Slovakia to tease out any linkages between precious metals and textural features in the rocks. Villaseñor will be reconstructing the thermal history of a section of paleo-ocean floor using serpentinite samples from an asbestos mine in Dobšina, processing samples for U/Pb dating. Perez is already at work prepping samples for thin sections. She hopes to obtain information about the collision and burial of the Carpathians by age-dating monazite grains within garnet-bearing rocks from the Western and High Tatras.

All three students acknowledged that GeoFORCE helped connect them to the project. “GeoFORCE is really this sort of gateway to how college level education works, especially research,” said Quintero, and Villaseñor explained that GeoFORCE connected him with the professors involved. As Quintero puts it, GeoFORCE helped spark his innate curiosity. “When we go out to places like the Grand Canyon or Florida for the first time, our minds are flooded with questions asking why and how these landscapes came to be.” No matter the setting, GeoFORCE students continue to be curious about the world around them.
UT Austin Students Experience Fieldwork and Research in Slovakia

From left: Thomas Etzel, a PhD student with Professor Catlos, with GeoFORCE students Gabriel Villaseñor, Thomas Quintero and Theresa Perez
GeoFORCE alumni, Robyn Moses at graduation.
## Universities and Colleges attended by GeoFORCE Graduates

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<th>University/College</th>
<th>Count</th>
</tr>
</thead>
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<tr>
<td>ADAMS STATE UNIVERSITY</td>
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</tr>
<tr>
<td>ALBION COLLEGE</td>
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<tr>
<td>AMERICAN UNIVERSITY</td>
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<td>AMHERST COLLEGE</td>
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<td>ANTHONY UNIVERSITY</td>
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<tr>
<td>ASHLAND UNIVERSITY</td>
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<td>BALL STATE UNIVERSITY</td>
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<td>BAYLOR UNIVERSITY</td>
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<tr>
<td>BLINN COLLEGE - BRYAN CAMPUS</td>
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<tr>
<td>BLINN COLLEGE - TEXAS A&amp;M HSC CAMPUS</td>
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</tr>
<tr>
<td>BOWDOIN COLLEGE</td>
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<td>BRIGHAM YOUNG UNIVERSITY</td>
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<td>BRIGHAM YOUNG UNIVERSITY - IDAHO FALL/ WINTER</td>
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<tr>
<td>CARLETON COLLEGE</td>
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<td>University of the Incarnate Word</td>
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</tbody>
</table>
Photo: from left to right: JT Trevino, Daniela Garza, Suzet Salinas, Gabriella Marines-Chio, Cheyenne Hibbitts and Marlowe Zamora at The Grand Canyon, summer 2018.
Students consistently voice their desire to someday become a counselor because they want to “pay forward” the mentorship and friendship they experienced during the program. This life cycle model of students returning as counselors after they complete the GeoFORCE academy strengthens their resolve to succeed and promotes self-empowerment.

Undergraduate GeoFORCE counselors are vital to the success of the program. Each counselor has been through four years of summer field experiences. They are assigned a group of students for whom they are responsible, ensuring the students stay focused and safe throughout the week. To students, their counselors are more than just chaperones—they are role models to whom they comfortably relate and seek advice about college. When counselors share their journeys to college, they provide unique insight to students who often grew up in the same towns or region from which they come.
Universities Attended

by COUNSELORS

1. University of Texas at Austin (8)
2. University of Notre Dame (8)
3. The University of Texas at San Antonio (3)
4. St. Mary's University (2)
5. University of Houston (2)
6. University of Colorado Boulder (1)
7. The University of Oklahoma (1)
8. Texas Woman’s University (1)
9. Texas Tech University (1)
10. Texas Southern University (1)
11. Stephen F. Austin State University (1)
12. Sam Houston State University (1)
13. Rice University (1)
14. Prairie View A&M University (1)
15. Pitzer College (1)
16. McMurry University (1)
17. Lone Star College Montgomery (1)
18. Houston Community College (1)
19. Angelo State University (1)
20. University of the Incarnate Word (1)
We redesigned the 12th grade GeoFORCE summer program as a challenge-based learning capstone experience. Central Texas was selected as the setting because of access to JSG research labs, technology and communication experiences available on UT’s campus and the proximity to interesting field settings that span more than a billion years of Earth history. Curriculum and instruction followed the STAR Legacy Cycle, developed at the Learning Technology Center at Vanderbilt University. The instructor-led direct teaching (lecture) of previous GeoFORCE trips was replaced by learning facilitated by a multi-person instructional team that reflected the racial, ethnic, gender, and cultural diversity that the geosciences strive to achieve.

Students worked in teams to solve one of two challenges. Challenge A tasked students with conducting site surveys of the field sites visited as “scenic connectors” for a hypothetical high-speed railway. For Challenge B, students created designs for a series of Snapchat (Snap Inc.) filters – photo overlays to represent the geology and geologic history of sites visited – to entice more millennials to visit Texas State Parks. Although students needed time to adapt to the new style of learning, they soon adjusted to learn new content and skills. All student teams successfully addressed the challenge. As evident in the examples of student work (see figures 1 and 2), the challenge “deliverables”—12-minute technical talk, poster, and 5-minute lightning talk—were of high quality and reflected varying levels of comprehension and ability to use scientific knowledge towards solving the challenges. Examples of deep learning were observed during the delivery of the technical talks and as students explained their posters to guests and parents at the closing ceremony.
The Central Texas capstone experience provided the context for students to begin to truly experience the practices that constitute geologic reasoning (i.e., temporal thinking, scale, understanding complex Earth systems, and spatial visualization). Indeed, students are beginning to “see the world like geologists,” moving from novice learner to geoscience apprentice. Beyond a deeper understanding of geoscience, role-playing gave students the opportunity to use their personal strengths and knowledge of other disciplines, including art, engineering, statistics, and theater to help solve the challenge and further develop important soft skills (e.g., communication, collaboration) that will serve them well no matter what career choice they make. Students expressed gratitude for their GeoFORCE experiences and feel a strong sense of belonging to the group.

Summary of the 2018 Summer Twelfth Grade Capstone Experience
Written by Dr. Kathy Ellins
Purpose:
Our goal is to make SnapChat Geo-Filters for Texas’s parks. By using these three themes: Life Through Time, The Power of Water, and Dynamic Earth Processes, we aim to increase the attendance of 18-30 year-olds to these parks.

Mount Bonnell
30.3208° N, 97.7732° W
Mount Bonnell is made of the Glen Rose formation which was deposited during the Cretaceous period 113 Ma
Mostly composed of limestone
The climate during deposition was relatively warmer than it is today
We observed fossils in the rock leading us to infer that the area used to be under the sea

Barton Springs
30.2670° N, 97.7729° W
The water that gets inside the cave helps erode the sides and makes the cave bigger
From observing the inverse potholes, we can infer that a river cut through the rock to create the cavern. These are caused by the intense pressure of the water being trapped in a small space
The spring was formed from the aquifer underneath spewing out water, known as the discharge zone

Longhorn Cavern
30.2670° N, 97.7729° W
Began forming 1.5 Ma and took 700,000 years to form
Formed in the Ellenburger Limestone (~450 Ma)
From observing the inverse potholes, we can infer that a river cut through the rock to create the cavern. These are caused by the intense pressure of the water being trapped in a small space
The water that gets in to the cave helps erode the sides and makes the cave bigger

Power Of Water

References:
Smith, Shepard. Texas Parks and Wildlife, tpwd.texas.gov/.
Life Through Time

- Using these three themes: Life Through Time, The Power of Water, and Dynamic Earth Processes, we aim to increase the attendance of 18-30 year-olds to these parks.
- Barton Springs
- Mount Bonnell
- Longhorn Cavern

Dynamic Earth Processes and Events

- Began forming 1.5 Ma and took 700,000 years to form
- 30.6839° N, 98.3523° W
- The spring was formed from the aquifer
- The limestone here is about 100 Ma
- 30.2670° N, 97.7729° W
- The climate during deposition was relatively warmer than it is today
- The fossils and the fact that Wanda may have been with her kid, and I found shark teeth in the fossil hunt.
- Raphael de los Santos Truba, 22
- 31.6067° N 97.1760° W
- The mammoth fossils at the Waco Mammoth Monument were from 67,000 years ago
- The fossils were located in alluvial strata
- The rock was darker than the rest of the rock because of the rainfall and flooding that occurred
- There is no erosion currently because it is inside a shelter

Key Locations

- Inks Lake
- Pedernales Falls
- Enchanted Rock
- Waco Mammoth National Monument

Acknowledgements

- Ashley Ethredge
- Andrew Castro
- Alizandra Berrelez

Introduction

Our project’s purpose is to provide information to engineering companies about the geology of the areas based on the research that we conducted in different locations. We conducted several procedures at each site to test how reliable each location would be to place the rail line across the major cities in Texas. The rail line is responsible for connecting geological historical landscapes to provide the public with an opportunity to learn while relishing the picturesque environment.

Barton Springs

**Background**
- Discharge zone to the Edwards Aquifer, supplies abundant amounts of water to cities of Texas
- Composed of limestone and is a habitat to many animals (Barton Springs Salamander)
- Environmental concern (contamination of the water supply to cities in Texas)

**State of Transformation/Red Flags & Solutions**
- Hiring Environmental engineers once a month to monitor threats (test the water samples)
- Barton Springs can be used to build the rail line

Waco Mammoth

**Background**
- A national monument museum open to the public
- Several Columbian Mammoth fossils discovered (years: 1978 - 1990)
  - From the Pleistocene epoch

**State of Transformation/Red Flags & Solutions**
- Stable site for construction with conditions
  - Poor, dry, non porous soil cause recurring floods in the area
    - Evidence seen in layers of bedding
      - Implementing early flash flood warning systems
      - Protective scenic rest stop (protecting the public and fossils)

Pedernales Falls

**Background**
- Composed of Marble Falls (about 300 million year old Cretaceous rocks) and Pedernales Falls (100 million year old Cretaceous rocks)
- Crinoid stems: small fossilized organisms

**State of Transformation/Red Flags & Solutions**
- Potential risk of flash flooding
  - Bridge or tunnel submerged in water
  - Use of LIDAR to detect movement in rock formations
- Angular unconformity
  - 320 million year old Paleozoic rocks (bottom) and 100 million year old Cretaceous rocks (top)

Longhorn Cavern

**Background**
- Longhorn caverns (1932)
- Composed of limestone
- Carved by a river

**State of Transformation/Red Flags & Solutions**
- The vibration and potential for collapse
- Not suitable for establishing a rail line

Conclusion


**Background**

- Composed of Marble Falls (about 320 million years old)
- Acceptable location
- Crinoid stems: small fossilized organisms trapped in rock
  - Very sturdy and durable rock (Marble Falls Limestone)
  - Bridge or tunnel submerged in water
  - 320 million year old Paleozoic rocks (bottom) and 100 million year old Cretaceous rocks (top) overlay

**State of Transformation/Red Flags & Solutions**

- Rock formations are composed of solid, strong limestone which is susceptible to malleability
- A point along Lake Austin portion of the Colorado River in Austin, Texas
- Balcones Fault has been inactive for millions of years

**Mt. Bonnell**

- Rock formations are composed of solid, strong limestone which is susceptible to malleability
- A point along Lake Austin portion of the Colorado River in Austin, Texas
- Balcones Fault has been inactive for millions of years

**State of Transformation/Red Flags & Solutions**

- Susceptible to future faulting
- Glen Rose formation has potential for sinkholes
  - Dangerous and expensive accidents
  - Placing barriers along the pathway to prevent future hazards

**Inks Lake**

- Valley Spring Gneiss was named after Valley Springs Creek
- Contains a mixture of metamorphic rock, and igneous rock (migmatite, dikes) which are strong, sturdy, and resistant
- Boudinage is found in rocks, showing compressional forces that acted on the rock and created folds in several events

**Red Flags & Solutions**

- Joints and faults are likely to occur, so we would need to monitor movement with LiDAR

**Conclusion**

After conducting our research, we came to the coherent conclusion that our rail line would be established through Austin, Dallas, Houston, and San Antonio. Our goal is to connect the geological sites, but because many of them are unsuitable for construction, we will proceed with certain conditions. We will resolve this issue by installing flash flood warning systems, safety signs, barriers, hiring environmental engineers to periodically monitor water conditions, and using a extensometers and lidar tools to detect movement in rock formations.

**References**


**Enchanted Rock**

- Once part of a huge underground magma chamber called a batholith from the Precambrian age
- Made of igneous rock
- Plants and animals struggle to survive within the shallow depression of the granite

**State of Transformation/Red Flags & Solutions**

- Weathering and Erosion
  - Small pieces (approx. cm to metres ) of granite are being broken away
  - Signs will be set up to alert the public of the dangers
- Exfoliation Sheets
  - Breaking away and are sliding down the dome
- Safe Distance from potential falling rocks
- Tourist Attraction
  - Threat towards extremely sensitive water pools on enchanted rock
  - Signage will be put in place to inform/warn the public

**GeoFORCE Express**


**Enchanted Rock**

- A point along Lake Austin portion of the Colorado River in Austin, Texas
- Balcones Fault has been inactive for millions of years

**State of Transformation/Red Flags & Solutions**

- Susceptible to future faulting
- Glen Rose formation has potential for sinkholes
  - Dangerous and expensive accidents
  - Placing barriers along the pathway to prevent future hazards

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**References**

GeoFORCE Outreach Program
GeoFORCE participates in community outreach events each year to broaden our impact. We partnered again with Shell to engage with Houston students and families at the Houston Hispanic Forum Career and Education Day. Houston-area GeoFORCE high school students helped lead a hands-on activity simulating searching and drilling for oil in the subsurface. In addition, Stanley Stackhouse, a Jackson School alumnus at BXP Ltd., and Stephanie Suarez, a GeoFORCE alumnus and University of Houston Master’s student, joined Shell employees on a panel to talk about their careers.

In February, we had the unique opportunity of being an exhibitor at the American Association for the Advancement of Science (AAAS) Family Science Days, part of this year’s AAAS Annual Meeting held in Austin. We also welcomed visiting students from across Texas to our table at Explore UT in March. At these events we engaged students in a hands-on activity for learning about how water moves through different sediments. GeoFORCE College students volunteered to help visitors at our booth at both of these outreach events. Offering volunteer opportunities like these is a great way for us to stay engaged with GeoFORCE students throughout the year.
The GeoFORCE College Program aims to support current undergraduates, graduate students and recent graduates in their academic and professional endeavors. It starts while students are still in high school, during their junior year, and continues throughout the college application period and into the beginning of their first year. Dr. Dana Thomas became the Program Coordinator for GeoFORCE College in December 2017, and Edgar Garza continues to provide scholarship support.

To provide critical information to GeoFORCE high school students, we offered Transition to College workshops in the spring and during the 12th Grade Academies at UT Austin. Nearly 100 students, as well as numerous parents, received valuable advice from GeoFORCE staff and current college students on applying to college, finding scholarships and seeking out financial aid. With these efforts we are maintaining our commitment to ensure that every GeoFORCE student graduates from high school and attends college.

There are currently about 600 GeoFORCE students in undergraduate and graduate degree programs, and we continue to visit campuses across Texas to foster GeoFORCE student communities. As part of the 2017-2018 mentorship program at UT Austin, students learned about UT programs from guest speakers, including Earth and Energy Resources Program Director Richard Chuchla and UTeach Coordinator Annette Hairston. Jackson School Master’s student Mario Gutierrez, who is now at ExxonMobil, gave a presentation on professional development. Dr. Thomas also connects students to summer research and internship opportunities, and several GeoFORCE students’ stories are presented in this report.

GeoFORCE College students highly value the opportunity to be summer counselors for the high school field experiences. Several geoscience and petroleum engineering majors served on trips this summer, including Hector Jett Black, Raeann Garcia, Juan Carlos Gonzalez, Nicole Gonzalez, Cheyenne Hibbits, Emma Johnson, Priscila Paez, Theresa Perez and Marlowe Zamora.
The number of GeoFORCE students earning undergraduate and graduate degrees in geosciences is increasing. In 2017-2018, at least fourteen GeoFORCE students earned their Bachelor’s degrees in geoscience bringing the total geoscience degrees earned to 54. Four students are entering geoscience Master’s programs at University of Texas at Austin, Auburn University, University of Texas at El Paso and University of Arkansas. Jordan Oefinger (B.S. Geology, UT Austin, GeoFORCE Class of 2014) is conducting her Master’s research at University of Arkansas with Professor Glenn Sharman, after the two met in a 12th Grade GeoFORCE Academy in 2017 for which Sharman was the Instructor and Oefinger was a Counselor. A student from the first GeoFORCE cohort, Marissa Vara (B.S. Geology, UT Austin, GeoFORCE Class of 2009) completed her M.S. in Paleoclimatology, from Louisiana State University this summer. As more students complete their degrees, more GeoFORCE students are also entering the workforce. David Splawn (B.S. Geology, Texas A&M, GeoFORCE Class of 2014) began a position with ExxonMobil as a geoscience technician with the West Africa New Opportunity team. Other student careers are profiled throughout the report.
The first-ever GeoFORCE Math and Science Institute was held August 12-17, 2018 at the University of Texas at Austin. Seventeen incoming college freshman and one rising college sophomore challenged themselves in the classroom to prepare for their math and chemistry courses. UT faculty, graduate students and GeoFORCE undergraduates served as Instructors, Teaching Assistants, and Peer Learning Assistants (PLAs), respectively. Professor Mark Daniels, UT Department of Mathematics and Associate Director UTeach, encouraged students to understand the “hows and whys” of math by working problems and doing hands-on activities.

"The demos kept me captivated, and even the more abstract topics such as quantum mechanics were interesting because she gave engaging lectures”.

One student explained, “Having the instructor make us think of the bigger picture and ask ‘why’ helped me get into the mindset of a college student.” Professor Kate Biberdorf, Department of Chemistry, brought excitement and enthusiasm to each chemistry section with demonstrations such as popping helium-filled balloons with different salts to display electromagnetic radiation.
“The demos kept me captivated, and even the more abstract topics such as quantum mechanics were interesting because she gave engaging lectures,” said a student. By going over learning styles, note-taking techniques, study strategies and other college skills, the students also got a jump-start on becoming a college student. One student noted that “the most valuable aspect had to be the feel of what it’s going to be like to be a college student.

The next few weeks are going to feel like a crazy blur, and...I’ve gained a bit of understanding as to what I can expect in classes, new connections with professors, studying habits, and even just simple email etiquette...I will be way more prepared than I would be had I not attended this.” Each student expressed their gratitude to the sponsors and to the individuals who donated to a fundraising campaign through HornRaiser, UT’s official crowdsourced funding platform, and they strongly encouraged the continuation of the Institute.
GeoFORCE Financial Status

GeoFORCE started providing visual “snapshots” of income versus expenses versus the ending balance to provide an “at-a-glance” understanding of the history and projections of GeoFORCE finances. This was done at the request of advisory members to make the big picture of finances easier to read with a glance. In the staff and operations chart, the commitment of the Jackson School is clear as staff and operational support has remained and is projected to remain over $500,000. The sponsor funded programs chart make it easy to see the impact of the plan put forward in 2012-13 to replace the Houston and Southwest Young Geos with a new more expensive Academy of 40 students each year comprised of students from Houston and Southwest. The plan was that the current Houston and Southwest Academies would be continued in addition to the third mixed Academy, with increased spending on GeoFORCE Grads.

The advisory committee was presented with data about the greater effectiveness of the Academy program versus the Young Geos. The data showed that all Academies were in the field for seven days while Young Geos time varied from two to four days in the field. Academies allowed more time for learning and building self-efficacy as geoscientists and more time for participants to create a community that encouraged high rates of students continuing in GeoFORCE for four years. The chart shows that combined with the increase in spending in the GeoFORCE Grads program (students who completed the final Academy but had not started college), expenses increased the next two years as the remaining Young Geos continued until they completed all four years while adding a combined Academy in 2014 and 2015. As the Young Geos phased out and the decision was made to not add more combined Academies in the current oil and gas price environment, expenses declined and are projected to remain constant by running a Houston Academy and Southwest Academy at each grade level. Any future considerable increases in the market value of oil and gas will allow for reconsideration of returning to the 2012-13 plan to run three Academies at each grade level.
Active FY1617 Contracts and Grants are:
Summer STEM - 26321526 (GEOF-MOORE TXWC 09-30-16)
Summer STEM - 26321630 (GEOF-MOORE TXWC 09-30-17)

Note 1: Income is in fiscal year when funds arrive (e.g. $200K of FY1516 gifts arrived in FY1617)
Note 2: Expenses are in fiscal year when payments are made (e.g. some Summer FY1617 expense payments occur in FY1718)
GeoFORCE Donors
Dana L. Thomas
Dr. Robert L. Boyce
Mr. David Luke Gorney
Mr. Ben P. Hooper
Mr. Edward C. Cazier III
Mr. Charles A. Caughey
Mr. Richard J. Chuchla
Mr. William D. Demis
Ms. Gretchen M. Gillis

Graduate Student Executive Committee
George and Mary Josephine Hamman Foundation
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Ms. Maren Gabriella Mathisen
Mrs. Linda H. McMillan
Mr. Douglas N. Toepperwein
Mr. Dennis R. Trombatore

Undergraduate Geological Society
Ms. Susan L. Wygant

Friends of GeoFORCE Endowments
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Mrs. Eleanor A. Saathoff
Mr. Federico Salinas
Mrs. Georgia B. Sanders
Ms. Susan Collins Starks
Mr. Richard Tesson
Ms. Margaret V. Tran
Mr. Ramon H. Trevino
Mr. Joshua L. Ward
Ms. Jill Whatley
Ms. Toya Wilson
Ms. Molly Witter
Ms. Patricia Zamora
The outreach staff bring a diverse background to help evolve our program to better prepare our students for the future.

Dr. Sam Moore
Director of Outreach and Diversity
For more than 20 years Dr. Moore has provided leadership in engaging faculty with K-12, undergraduate, and graduate students. Along with GeoFORCE, Sam also oversees Jackson School outreach programs to increase participation in the geosciences.

Lindsay Stephens
Senior Program Coordinator
Oversees the GeoFORCE College Program, which includes statistics, college leadership opportunities, and scholarship management. Served as a field experience evaluator.

Dana Thomas, Ph.D.
Coordinator for College Transition
Student Success, and Learning Experiences Primary contact for graduating seniors and college students; develops and evaluates learning experiences for students and educators.

Edgar Garza
Outreach Program Coordinator
Coordinates the GeoFORCE College program and scholarship program. Assists with the High School Program, along with GeoFORCE’s social media presence. Also serves as a field experience evaluator.

Alison Hansen
Administrative Assistant (PT)
Coordinates all aspects of the accounting and human resources process to ensure the program runs smoothly.

John Hash
Program Coordinator
Coordinates the Houston Academy field courses, assists with development activities for GeoFORCE and college transition initiatives for the College program.
OUTREACH STAFF

Matt Hofer
High School Program Coordinator
Oversees logistics and operations for all high school program field courses and events. Coordinates the Southwest Academy field courses.

Selene Alba
Media Coordinator
Assist in all aspects of media for GeoFORCE, including video content, digital design, social media and website and layout design.

Daniel Campos
Office Assistant
Maintains office operations by handling logistical and organizational support tasks. Ensures trip supplies and equipment are properly maintained and serviced.