

GEOFORCE MONTHLY

Changing lives since 2005



Thomas Quintero working for NASA's DEVELOP internship program.

ALUMNI SPOTLIGHT: THOMAS QUINTERO

Thomas Quintero's graduation commencement from the University of Texas at Austin this May 2020 may not have been what he dreamed it would be, but the COVID-19 pandemic didn't deter him too long. Eight years after his first summer as a young GeoFORCE 9th grader, Quintero jumped immediately from earning his Bachelor of Science in General Geology with a minor in Business to interning with [NASA's DEVELOP program](#).

"GeoFORCE was a bridge from my curiosity of the outdoors to a discipline I could study," Quintero said. "I remember we were struggling to walk up Enchanted Rock. Someone started playing soul music on his speaker and instantly everyone was filled with joy. It's those small moments that people remember and make GeoFORCE unforgettably impactful."

Quintero's internship with DEVELOP tasked him and a team of three others to assess how urban expansion impacted the urban tree canopy of Huntsville, Alabama. The urban tree canopy is a vital component of minimizing the urban heat island effect, where impervious surfaces in cities absorb the sun's heat. Trees mitigate this effect through both shade and evapotranspiration. For two months, Quintero's job involved looking through NASA satellite imagery, calculating the heat index of the Earth's surface through custom Google Earth Engine scripts, and importing that information into ArcGIS pro to run statistical tests to find areas of heat vulnerability.

Quintero's next adventure will be as a full-time volunteer with the Christ the King Service Corps in Detroit, Michigan. He's set to work for the St. Suzanne Cody Rouge Community Resource Center as a sustainability intern tackling one of the biggest challenges facing the residents of Detroit today—the drainage fee all citizens and companies must pay.

"I will be working to enable citizens to build rain capture gardens to both decrease their water drainage fee bill and improve the quality of their local water supply," Quintero said. "We need to make sure we protect the most vulnerable when planning our cities for the future."

GeoFORCE Texas is an outreach program through The University of Texas at Austin's Jackson School of Geosciences that introduces high school students from underserved communities to STEM and geoscience careers through summer field experiences, corporate mentoring, and college guidance. In 2015, our program was honored with the Presidential Award for Excellence in Science, Mathematics, and Engineering Mentoring—the highest such honor from the United States government. More information can be found on our website at <https://www.jsg.utexas.edu/geoforce/>.



Geo-VISION students attending a virtual geostatistics class taught by Associate Professor Michael Pyrcz.

RECENT GRADS IN GEOLOGY

- **Thomas Quintero, Gabriel Villasenor, & Marlowe Zamora**
B.S. in General Geology from The University of Texas at Austin
- **John Carlo Garcia**
B.S. in Geophysics from Texas A&M University
- **Priscila Paez**
B.S. in Environmental Geosciences from Texas A&M University

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PROGRAM SPOTLIGHT: GEO-VISION

This summer the Jackson School of Geosciences' Office of Broader Impacts in Geoscience Research hosted a one-of-a-kind program entitled Geo-VISION: Geosciences Visualization, Imaging and Simulation in Online Networks. This research traineeship experience combined courses and training workshops with a more traditional undergraduate research experience.

"It came out of a desire to have more ways of engaging with diverse undergrads in the geosciences and related fields," Dr. Dana Thomas, a driving force behind the program, said. "We wanted GeoFORCE alumni from universities across the country to feel like they're not just part of the GeoFORCE community, but also the larger geoscience and Jackson School community."

20 of the 23 students were GeoFORCE alumni. The students participated at two levels: as Learners or Researchers. For 8 weeks, both groups had workshops on topics like applying to graduate school and geoscience internships. They took courses on geostatistics with Associate Professor Michael Pyrcz, Python in geosciences with Dr. Gail Christeson, remote sensing with Assistant Professor Tim Goudge, and high resolution X-Ray CT scanning with Dr. Jessica Maisano.

Researchers were paired with faculty, graduate students, postdoctoral scholars, and research scientists from the Jackson School Department of Geosciences, Bureau of Economic Geology, and Institute for Geophysics in guided independent research projects. Meanwhile, Learners joined virtual research group meetings to gain exposure to the variety and interdisciplinary nature of geoscience research.

"There's a need for students to become more adept at programming, statistics, and data science within the geosciences. Our goal wasn't for them to become experts, but to get them less intimidated with learning these skills," Dr. Thomas said.

At the end of the summer, the students presented their research during a two-day virtual Geo-VISION Symposium. Several expressed a desire to take these presentations to society meetings and larger conferences. In the post-experience survey, participants expressed an increased interest in pursuing a geoscience graduate degree, particularly at the Jackson School—undoubtedly a huge indication of Geo-VISION's success this summer.

Geo-VISION was made possible by an anonymous donor and by funding from the Jackson School of Geosciences' Dean's Office.