**GeoFORCE/STEMFORCE 12th Grade Academy Instructional Team Roles**

## What are the roles of the different instructional team members?

Instructional teams are made up of geoscience faculty, graduate students, master teachers (Educational Coaches), preservice teachers and undergraduate geoscience majors. The Educational Coaches-in-Training (ECITs) may be graduate and undergraduate students.

Geoscience faculty and/or graduate students function as the team leader(s), also known as lead Instructor(s). They are the geoscience content experts. Some programs may have a single team leader. Others may have co-leaders. As a leader of the GeoFORCE 12th grade instructional team, team leaders work collaboratively with ECs, ECITs, and the GeoFORCE/STEMFORCE staff to deliver instruction to approximate 40 high students.

GeoFORCE/STEMFORCE Coordinators for the Central Texas 12th Grade academies are the ultimate authority on all decisions related to safety and logistics while in the field and ensure that all participants, including members of the instructional team, follow The University of Texas’ standards of conduct and procedures established for the GeoFORCE and STEMFORCE programs. Major adjustments to the delivery of instruction (for example, skipping a field stop or lab visit) are discussed by the lead instructor and trip coordinator who jointly arrive at the best decision for the program. Coordinators also supervise the Counselors, who are in charge of chaperoning a group of 6-7 students each, and the Trail Driver, who is part of the logistical team and handles tasks such as providing water, picking up meals and transporting materials and supplies.

**Lead Instructor(s),** as a leader of the GeoFORCE 12th grade instructional team, agrees to

1. Contribute to the instructional program based on current knowledge and best practices in geoscience field learning as described in the geoscience education literature.
2. Learn about Texas geology, especially the field stops, before the academy.
3. Arrive in Austin 1.5 days prior to the academy for a 1-day pre-academy workshop, GeoFORCE staff meeting and to ensure that all final preparations are in place.
4. Depart at the conclusion of the academy after the closing ceremony.
5. Serve as the geoscience expert in the field and in the classroom, guiding students and the EC and ECITS in geoscience content and the delivery of the instructional program.
6. Serve as the expert in geoscience skills such as field measurements and tools, and will help the ECs and ECITs to teach students.
7. Deliver short lectures, videos, etc. before visiting field locations so that the learners know what to expect.
8. Support the EC and ECITs to supervise student research, data collection, and field observations, as well the development of products that satisfy the challenge.
9. Serve as a mentor to the ECITS, who are graduate and undergraduate students.
10. Lead daily debriefs of each day’s activities and previews of the next day’s activities with the instructional team and GeoFORCE/STEMFORCE staff.
11. Write a short report of about 2-3 pages in which the successes, challenges, and lessons learned from the GeoFORCE/STEMFORCE 12th grade program are described.

**Educational Coaches (ECs)** agree to

1. Contribute to the instructional program based on current knowledge and best practices in STEM education and classroom management.
2. Learn about Texas geology, especially the field stops before the trip.
3. Arrive in Austin 1.5 days prior to the academy for a 1-day pre-academy workshop, GeoFORCE staff meeting and to ensure that all final preparations are in place.
4. Depart at the conclusion of the academy after the closing ceremony.
5. Serve as the educational expert in the field and in the classroom, guiding students and ECITS in the delivery of the instructional program, and providing support and feedback to the lead Instructor(s).
6. Serve as the expert for implementing a variety of assessments and checkpoints and guide the ECITs in monitoring student group progress.
7. Support the lead Instructor(s) and ECITs to supervise student research, data collection, and field observations, as well the development of products that satisfy the challenge.
8. Serve as a mentor to the ECITs, who are students learning how to teach geoscience in a field setting.
9. Participate in daily debriefs of each day’s activities and previews of the next day’s activities with the instructional team and GeoFORCE/STEMFORCE staff.
10. Write a short report of about 2-3 pages in which the successes, challenges, and lessons learned from the GeoFORCE/STEMFORCE 12th grade program are described.

**ECITs**, are students (can be undergraduate or graduate students) who are learning how to teach geoscience in a field setting. They support the lead Instructor(s) and ECs and take direction from the lead instructor(s) and the ECs. As part of the field trip’s instructional team, ECITs will:

1. Collaborate with the lead instructor and the Educational Coach (EC) (master teacher) to deliver instruction in the field.
2. Lead the delivery of planned learning activities in the field as instructed by the lead Instructor, and classroom learning activities each afternoon or evening, following the daily field excursions.
3. Help conduct Daily Deliverables formative assessment of the GeoFORCE students teams every night under the guidance of the EC.
4. Work one-on-one with students between and at field stops.

**Dr. Ellins** and **Dr. Thomas** will

1. Provide access to private, collaborative workspace on the DIG Texas website (May 2019).
2. List references for scholarly articles and reports on the geoscience education and geology of Central Texas on the website.
3. Collaborate with the GeoFORCE and STEMFORCE staff to create a Virtual and Physical Tool Box for the summer. The Virtual Tool Box will comprise useful apps and online geoscience tools (mapping, visualizations, etc.) recommended for use in the field and in a lab or classroom setting.
4. Participate in the daily debrief for the summer 12th grade STEMFORCE academy (Dr. Ellins).
5. Participate in the daily debrief for the summer 12th grade GeoFORCE academies (Dr. Thomas).

The **GeoFORCE/STEMFORCE** staff will

1. Assemble 8 Physical Tool Boxes, which contain a set of resources (articles, books, maps, tools, compasses, geologic time tubes, etc.) that may be used in the field or in the classroom
2. Create 8 “Virtual Toolkits” loaded onto iPads for use in the field.
3. Ensure safe practices in the field
4. Ensure that all participants, including members of the instructional team, follow The University of Texas’ standards of conduct and procedures established for the GeoFORCE and STEMFORCE programs.