



**GCD Boot Camp:
Aquifer Science**
January 30, 2024
Embassy Suites - Round Rock
Agenda

Speakers: *Brian Hunt (Geologist, University of Texas Bureau of Geology)*
Gretchen Miller (Senior Groundwater Engineer, Collier Consulting)

- 8:30am **Welcome and Introductions**
- 8:35am **Overview and Key Terminology**
- Discussion of pre-read handout
- 9:00am **Introduction to Consolidated Aquifers**
- Overview of consolidated aquifers in Central and West Texas
 - Overview of key hydrogeologic terms relevant to the aquifers
- 9:30am **Introduction to Unconsolidated Aquifers**
- Overview of unconsolidated aquifers in the Panhandle, Gulf Coast, and Central Texas
 - Tracking drawdown in an aquifer via hydrographs and water level maps
 - Subsidence processes
- 10:00am **Break**
- 10:15am **Recharge to Discharge: Case Study of the Edwards and Trinity Aquifers in Central Texas**
- Follow the pathway of water from a raindrop to its discharge
 - Processes and tools along the pathway
- 10:45am **Anatomy of a Well**
- Well design and construction for aquifer protection and regulatory compliance
 - Design for aquifer – differences between one-piece, two-piece, and open hole constructions
 - Design for purpose – differences between domestic, public water supply, irrigation, and injection wells
- 11:45am **The Source of Water Derived from Wells**
- Groundwater availability
 - Sustainable yield
 - Groundwater strategies (ASR, MAR, etc.)
- 11:45am **Question Session: IAmA Hydrogeologist, Ask Me Anything!**



Speaker Biographies

Brian Hunt

Geologist, University of Texas Bureau of Economic Geology

Brian's interests include geologic mapping and hydrogeology in Central and West Texas. Brian makes detailed geologic maps and map databases for the Bureau since he joined the BEG in 2020. He has 20 years of experience working on groundwater availability, sustainability, and aquifer management issues in central Texas. Those issues require the integration of a variety of methods and data such as geologic/structure mapping, stratigraphy, geochemistry, water levels, dye tracing, geophysics, flow measurements, aquifer testing, and analytical/numerical modeling. Brian is passionate about geology and hydrogeology and enjoys teaching students, leading field trips, and is a past president of the Austin Geological Society. He has over 100 published articles, maps, reports, and abstracts. Brian holds bachelor's and master's degrees in geological sciences from the University of Texas, and is a registered professional geoscientist in the state of Texas.

Gretchen Miller

Senior Groundwater Engineer, Collier Consulting

Gretchen Miller, Ph.D., P.E., recently joined Collier Consulting in Round Rock as a Senior Groundwater Engineer. Previously, she was an associate professor of water resources engineering in the Department of Civil & Environmental Engineering at Texas A&M University, where she taught fluid dynamics and engineering hydrogeology for twelve years. Her bachelor's and master's degrees in Geological Engineering are from the University of California at Berkeley. She is registered as a professional engineer in the state of Texas. Dr. Miller has expertise in hydrogeology, well hydraulics and design, aquifer storage and recovery, managed aquifer recharge, and numerical modeling of groundwater flows.