

# Florida Karst Hydrogeology and Its Environmental Impacts

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**and Department of Scientific Computing**  
**Florida State University**

**Friday, Feb. 27**  
**12:30 p.m.**  
**COE B134**



**FAMU-FSU**  
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**This event is**  
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The entire Florida (except for a small portion such as Escambia County in the west panhandle) is on carbonate (limestone) bedrock, and karst hydrogeology and geomorphological features (e.g., karst conduits and sinkholes) are prevalent across the state. Characterizing karst hydrogeology and groundwater flow is challenging due to complex cave systems and strong interactions between groundwater and surface water. This seminar will discuss general features of Florida karst hydrogeology and its impacts on the environments and ecosystems in karst terrains. A special attention will be paid to two lake dry-down events in Lake Miccosukee and Lake Jackson in Leon County. During a lake dry-down event, a lake periodically drains into a karst aquifer through sinkholes within the lakebed. These events have been recorded throughout Florida. With this rapid influx of surface water into the karst aquifer, there are questions concerning the impacts of these events on groundwater budget and geochemistry. The seminar will present a dye-tracing experiment and an isotope study (using hydrogen and oxygen isotopes) at Lake Miccosukee. This study indicates that, during a lake dry-down event, about 10% of the discharge at the Natural Bridge Spring was from the lake. A geochemical study (using major ions) at Lake Jackson will also be presented. Daily groundwater sampling of the well showed distinct shifts in groundwater chemistry, leading to changes in the hydrofacies of the groundwater, following the dry-downs. Long-term impacts of the lake dry-down events on spring geochemistry are still unknown.



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Ming Ye is a Professor in the Department of Earth, Ocean, and Atmospheric Science and the Department of Scientific Computing at Florida State University (FSU). He received a Ph.D. degree in Hydrology from the University of Arizona in 2002, and joined FSU in 2007. He was elected as a Fellow of the Geological Society of America in 2012. He received an Early Career Award from the Department of Energy in 2012, and the Walter L. Huber Civil Engineering Research Prize from the American Society of Civil Engineers in 2015. He has extensive experience in numerical modeling, field investigation, and laboratory analysis.