

## 2023 ARMA Future Leader Webinar Series

Every Two Weeks on Fridays 9-10 AM MT



**19<sup>th</sup> lecture: December 01, 2023**

**Please reach out to [shahrzad.roskhah@utah.edu](mailto:shahrzad.roskhah@utah.edu) to get the Zoom meeting information.**

**Speaker: Junlong Shang**

### **Deformation and failure of rocks containing mineralized fractures**

Although rock mechanical behavior has a long record of study, attempts to understand the role of fractures on rock deformation still has unresolved issues. Due to technical and/or economic challenges, natural rock fractures are often dealt with crudely, without detailed consideration of fracture geometry and heterogeneity in many geoscience and subsurface engineering applications. Mineralized fractures that are ubiquitous in the upper Earth crust fall in that category, where sustained efforts are needed to offer essential information for rock mechanics and geomechanics applications. In this talk, I will introduce the occurrence and origin of mineralized fractures in diagenetic environments and the deformation properties of rocks containing mineralized fractures under confined and unconfined conditions. I will also briefly introduce our ongoing INFORM project at the Universities of Glasgow and Manchester, where a focus is given on fracture heterogeneity and its implications for the geological disposal of nuclear wastes.

#### **Biography:**

Junlong Shang is an Assistant Professor University of Glasgow, and an incoming Associate Professor at the University of Manchester (Feb 2024). He leads a rock mechanics and geomechanics [team](#), where research combines an array of approaches, including laboratory/field experiments, computational modeling, and analytical solutions, to understand the mechanical and geo-hydrological behavior of rocks and fractures under subsurface environments. He is interested in coupled thermal–hydrological–mechanical–chemical (THMC) processes in fractured rocks and clay formations with applications in the context of energy transition (subsurface nuclear waste disposal, geothermal energy extraction, hydrogen storage). Dr Shang is a recipient of the ISRM Rocha Medal and Marie Curie Fellowship. He serves as a Future Leader Member of ARMA, a Scientific Editor of JRMGE (Elsevier), and an Editorial Board Member of RMRE (Springer). Dr Shang holds an EPSRC New Investigator Award.

