PhD openings at University of Arizona in porous media flow for subsurface systems

Dr. Bo Guo’s lab (http://www.u.arizona.edu/~boguo/) has two openings for fully-funded PhD students starting in the Fall 2018 through the Department of Hydrology and Atmospheric Sciences (HAS) in The University of Arizona (UA). Successful candidates would have the opportunity to work on one of the following research directions:

1. Investigating nano-scale fluid flow physics and developing pore-to-core scale models for oil/gas transport in shale formations.
2. Designing a microfluidic experimental platform to investigate two-phase flow physics and developing hybrid multiscale models for two-phase flow in porous media.
3. Developing field-scale hybrid multiscale models for subsurface fluid flow with applications to geological CO\textsubscript{2} storage and energy storage using methane.

Our lab focuses on the fundamental physics of porous media flow at the intersection of subsurface energy development, hydrogeological processes, and the associated environmental impacts. We develop and use analytical, computational, and experimental tools, including reduced-order and multiscale modeling approaches, microfluidics, imaging techniques (e.g., micro/nano-CT, scanning electron microscopy), and advanced geostatistics, to improve fundamental understanding of porous media flow physics and to address practical engineering problems in subsurface energy and environmental systems. Students with bachelor’s and/or master’s degrees in hydrogeology, civil/ hydraulic engineering, mechanical engineering, petroleum engineering, environmental engineering, applied mathematics, and other closely related fields are encouraged to apply. Candidates with strong background in mathematics, fluid mechanics, and computation are especially welcome.

To apply, please contact Dr. Guo (boguo@stanford.edu) to discuss potential research projects and opportunities. When contacting via email, please include the following materials: unofficial transcripts, curriculum vitae, names and contact information of three references, and a brief personal statement that highlights the skills and research interests relevant to these two PhD positions. All applicants should meet the minimum admission requirements (see link here) set by the Graduate College at the UA.

Dr. Guo is currently a postdoctoral scholar in the Department of Energy Resources Engineering at Stanford University and will join the UA in August 2018 as an assistant professor in the Department of Hydrology and Atmospheric Sciences. He received his PhD in Civil and Environmental Engineering from Princeton University in 2016 and bachelor’s degree (with highest honor) in Hydraulic Engineering from Tsinghua University in 2011.

The UA HAS department has one of the most prestigious programs in hydrology and water recourses worldwide. It was previously known as the Department of Hydrology and Water Resources, which was the first department in the US (established in 1966) dedicated solely to science of water. The department just had its 50-year anniversary in 2016 (see archives here) right before evolving to the HAS department. The UA water resources program has always been top-ranking in various university ranking systems. To learn more, please see the following links from the UA websites (link1, link2).