

Ph.D. Graduate Assistantship
University of Wyoming (UW)

Due to the increased demand for energy and the simultaneous needs for environmental protection, a new class of environmental engineering problems has arisen in recent years that involves engineered fluid flow in subsurface porous media. In a variety of applications such as CO₂ sequestration, geothermal extraction, contaminant remediation, and aquifer and petroleum reservoir engineering, accurate fluid flow analysis, modeling, and prediction are essential for effective management of the subsurface pore spaces. This Ph.D. research aims to develop and verify a new simulation inversion technology for improved analysis of subsurface fluid flow in data-poor reservoirs. Specifically, the research will integrate controlled laboratory experiments with a new computationally efficient, physically-based inverse theory that has been recently developed for fluid flow and transport analysis.

The Ph.D. project is funded for 2 years with an annual stipend: 20,000 U.S.D. (9-month academic year) + 4,400 U.S.D. (summer months). Tuition, fees, and health insurance will also be provided. An annual research progress report is required by the funding agency, and the second year's funding is pending performance of the first year. Prospective Ph.D. student should meet the following eligibility requirements:

- Bachelor's degree with an undergraduate GPA of 3.0 or higher; or master's degree with a graduate GPA of 3.5 or higher;
- GRE verbal + quantitative score of 316 or higher. This combined score corresponds to students scoring at approximately the 80th percentile;
- Admission in AY 2014-15 to a UW graduate program to pursue a PhD. Hence, the student must be matriculating in a UW graduate program of interest in Summer 2014, Fall 2014, or Spring 2015.
- Experience with computer programming (Fortran, C, or Matlab) and numerical methods (e.g., Finite Difference, Finite Element, Finite Volume);

Applicants with interests in quantitative analysis, programming, and modeling should (1) contact Prof. Ye Zhang (yzhang9@uwyo.edu) with their interest. (2) apply to the UW Graduate Degree Program at: <http://www.uwyo.edu/geolgeophys/graduate/apply.html>

Prof. Zhang directs an active modeling group with emphasis on subsurface flow and transport analysis. Information about the research group, including publications and current/past group members, can be found at: <http://geofaculty.uwyo.edu/yzhang/>