



## USGS NSF GRIP Opportunity

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| <b>USGS Center:</b>                      | New Jersey Water Science Center  |
| <b>Project Title:</b>                    | Reactive Diffusion Field Method Development for VOCs in Fractured Rock   |
| <b>Project Hypothesis or Objectives:</b> | USGS scientists, in cooperation with the University at Buffalo, and the Strategic Environmental Research and Develop Program (SERDP), are developing innovative field methods, including model analysis tools, for measurement of reaction and diffusion rate coefficients for prediction of long-term volatile organic compound (VOC) fate in fractured-sedimentary-rock aquifers.  |
| <b>Duration:</b>                         | 3 to 12 months   |
| <b>Internship Location:</b>              | Lawrenceville NJ   |
| <b>Area of Discipline:</b>               | Geochemistry (Aqueous), Hydrology (Groundwater), Microbiology (Environmental), Geology (Hydrogeology), Environmental Engineering (Bioremediation, Contaminant Transport, Environmental Sciences, Soil Science  |
| <b>Expected Outcome:</b>                 | This internship will leverage ongoing USGS and cooperator research and allow the intern to contribute independent research that improves the methods being developed for characterization of long-term fate and transport of VOC contaminants at complex hydrogeologic sites. The intern will have the opportunity for guided, independent research on a topic that furthers his/her educational development and career goals. The USGS will benefit from contributions from the intern's recent advanced study to improve the outcomes of the USGS research program on the behavior of Toxic Substance in the environment, and effects of those substances on environmental Health. |
| <b>Special skills/training Required:</b> | A strong background in hydrogeology, environmental geochemistry, and fate and transport of contaminants in groundwater is required. Field or laboratory experience in groundwater monitoring and water-quality sampling is preferred.  |
| <b>Duties/Responsibilities:</b>          | The intern will contribute to apparatus design, bench-top testing, field testing, data analysis, and development of modeling tools for   |

analysis of field data. The intern will have the opportunity to develop a focused research program as part of the overall research program, depending on interest. For example, specific bench-top testing methods could be developed to evaluate innovative gas sampling methods in controlled experiments prior to field testing. Or, the intern could focus on numerical methods and user interface development for data analysis tools, for example.

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