

Project 6 - Modelling of arsenic mobility

Location: The project will be based at Flinders University, Adelaide, SA or University of Western Australia, Perth, WA

Required area of expertise/background: An Honours or MSc degree in Hydrogeology, with an interest in geochemistry and quantification of hydrogeological and geochemical processes with the aid of numerical modelling tools.

Project: Project Description (Max 200 words): Millions of individuals worldwide are chronically exposed to hazardous concentrations of arsenic from contaminated drinking water. Massive research efforts towards understanding the extent and underlying geochemical processes of the problem have helped identify natural dynamics of geogenic As. However, many questions remain unanswered and numerical modelling and reliable predictions of future arsenic behaviour remain a significant challenge. In collaboration with our research partners EAWAG (Switzerland) and Columbia University this PhD project will focus on developing and applying reactive transport modelling approaches to better understand and quantify the fate of arsenic during controlled laboratory and field experiments as well as to analyse field data from heavily polluted aquifers in S/SE Asia. Modelling will help to evaluate the role and relative importance of individual physical (e.g. As re-distribution by transport) and biogeochemical processes (e.g. Fe mineral transformations, As speciation) on As fate. Specific and/or competing process hypothesis on arsenic behaviour that emerge from the field- and laboratory studies will be tested.

2017 RTP full time RTP Stipend Rates* (\$26,682). Approximate annual top-up amount: Nil

Principal Supervisor:

[Dr. Henning Prommer](#) - CSIRO Floreat Labs, University of Western Australia

Co Supervisors:

[Dr. Ilka Wallis](#) - Flinders University, Adelaide

[Dr. Michael Berg](#) - EAWAG, Switzerland

[Dr. Ben Bostick](#) - Columbia University



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