

Matt Williams



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Advisor Name: James Schneider

Previous Education: BS in GLE/G&G from UW-Madison 2008

Program: Geological Engineering

Research Focus:

"Use of in situ testing for wind turbine foundation design":

Foundations for wind turbines must resist high horizontal and overturning moment loads which are cyclic in nature. In the design of these foundation systems, the influence of soil stiffness and fatigue are often more critical to design than ultimate soil strength. This research explores how collection of additional site specific information during the investigation phase can be used to reduce

uncertainty in selection of stiffness and fatigue parameters. The reduction in stiffness with increasing strain level will be assessed through comparison of (i) Small strain shear modulus from seismic piezocone (SCPTU) and surface geophysical methods; (ii) intermediate strain level pressuremeter modulus (PMT); and (iii) larger strain stiffness from flat plate dilatometer (DMT). Cyclic cone penetration tests will also be performed to gain additional information on soil fatigue characteristics.

Outside Interests:

Wisconsin Union Directorate Music Committee, jazz improvisation, playing/watching live music, attempting to relate analog synthesizers to geophysics, hiking, climbing glaciers, snowboarding, skateboarding, disc golf, travelling: especially New Zealand and Fiji, and of course digging block samples.