

# Chad Freed, PhD

Two-Page Curriculum Vitae Summary  
For a full CV go to [www.drchadfreed.com](http://www.drchadfreed.com)

## General Profile

Dr. Freed is currently a tenured Professor and Director of the Geographic Information Systems Laboratory and the Engineering and Environmental Geoscience Laboratory in the Environmental Science Department at Widener University. At Widener University he teaches undergraduate and graduate classes in the engineering and environmental geosciences, as well as, supervising an active research program in the three-dimensional spatial characterization and visualization of geographic, hydrologic, and geophysical data. Outside of Widener University he holds a position as Lecturer in the graduate Applied Geosciences Program at the University of Pennsylvania where he teaches graduate classes and supervises graduate research in engineering geology. He also periodically serves as a consultant to URS Corporation, Washington Division in Princeton, New Jersey in the areas of engineering geology, geotechnical engineering, geophysics, and geographic information system applications.

## Education

Doctorate in Earth and Environmental Science  
College of Arts and Science, 2006  
University of Pennsylvania, Philadelphia, PA  
Academic Concentration in Engineering Geology and Geophysics  
Dissertation Subject: *Mathematical Modeling of Potential Fields in Exploration Geophysics*

Master of Science in Engineering Geology  
College of Engineering, 1993  
Drexel University, Philadelphia, PA  
Thesis Subject: *Hydrogeology of the Triassic Basin in Southeastern Pennsylvania*

Master of Science in Civil Engineering  
College of Engineering, 1993  
Drexel University, Philadelphia, PA  
Thesis Subject: *Hydrogeology of the Triassic Basin in Southeastern Pennsylvania*

Bachelor of Science in Civil Engineering  
College of Engineering, 1990  
Drexel University, Philadelphia, PA  
Senior Thesis Subject: *Design of a Solid Waste Management System for Milford Township, Pennsylvania*

## **Descriptions of Current Positions at Widener University**

### ***Associate Professor of Environmental Science***

Dr. Freed is responsible for all aspects of instruction in undergraduate geoscience courses offered in the Environmental Science Department with a contracted teaching load of seven courses per academic year. He is the supervisor for all undergraduate research projects in the geosciences including service learning projects and senior thesis projects. Below is a list of the courses designed and delivered at Widener University.

Engineering Geology	Geographic Information Systems
Environmental Geology	Geographic Information Systems Laboratory
Environmental Geology Laboratory	Advanced Geographic Information Systems
Water Resources	Remote Sensing and Digital Mapping
Quantitative Hydrology	Geologic Field Methods
Research Methods	Introduction to the Environment

Advanced Engineering Geology of Rocks and Soils (Graduate Class in Civil Engineering)

Ground Water Remediation (Graduate Class in Civil Engineering)

### ***Geographic Information Systems Laboratory Director***

Responsible for all aspects of education and applied research using geographic information systems technology and hydrologic modeling software. Research supports projects in civil engineering, engineering geology, environmental science, social work education, and criminal justice. Projects have been completed for the Obama Administrations Strong Cities Strong Communities Program, Chester Shade Tree Commission, Bucks County Audubon Society, New Jersey Wetlands Institute, El Bosque Nuevo Farm in Costa Rica, Amazon Conservancy for Tropical Studies in Peru, Delaware Valley Violence Prevention Center, Molasses Creek Farm, and the Azalea Stone Observatory. Recently, two projects that study the landscape effects of natural gas extraction from drilling the Marcellus shale formation and the potential effects on endangered species have been funded by the Clinton Global Initiative. In addition, an urban forestry study for the city of Chester has been funded by the Hartford Fund.

### ***Geology Laboratory Director***

The laboratory is currently working in three key areas of research. The first is to support the department's research initiative in international sustainable development projects. Dr. Freed is the geoscience expert on multiple expeditions into the coastal and mountainous regions of Costa Rica and the Amazon jungle of Peru. The second initiative is the development of surface water and ground water models for watersheds in southeastern Pennsylvania. These models are used to assess nutrient loadings to streams and map solute transport. The third area of study is the three-dimensional modeling of magnetic fields generated from buried 55-gallon drums. The magnetic

signal from single and multiple drum caches is measured using specialized sensors and mathematically modeled to determine drum location and depth. All three areas of research integrate with the geographic and hydrologic modeling capabilities of the Geographic Information Systems Laboratory. These efforts have resulted in several peer-reviewed publications, a textbook chapter, senior theses, independent study reports, and funded proposals. In addition, the research has been presented at over 30 international, national, regional, and local conferences.

## **Publications**

- Freed, C.H., D. Mohan, and A. Tether 2010. "Geotechnical Engineering Investigation Report, North Central Reliability Project – 100 Mile Transmission Line, PSEG". URS Corporation, Washington Division, Inc.
- Freed, C.H., D. Mohan, and A. Tether 2010. "Geotechnical Engineering Investigation Report, Burlington Camden Reliability Project – Transmission Line, PSEG". URS Corporation, Washington Division, Inc.
- Krumm, JL, JT Francesco, CH Freed, DM Thomas (2010). "*Host plant choice affects parasitism rates of the tulip tree beauty moth, Epimecis hortaria.*" Ecological Society of America Conference Abstract.
- Freed, CH and M. Barnett (2009). "Geographic Information System in Service Learning", *Academic Exchange Quarterly*, Vol. 13, Issue 3, pp. 31
- Freed, C.H. and D. Mohan 2008. "Geotechnical Engineering Investigation Report, Merrimack Power Station, Public Service of New Hampshire, Bow, New Hampshire". URS Corporation, Washington Division, Inc.
- Freed, C.H., R. Papescu, and D. Mohan. 2007. "Geotechnical Engineering Investigation Report for the Nelson Dewey Generating Station, Reliant Energy Corporation Cassville, Wisconsin." URS Corporation, Washington Division, Inc.
- Freed, C.H. and D. Mohan 2007. "Geotechnical Engineering Investigation Report, Jamestown Board of Public Utilities, Jamestown, New York". Washington Group International, Inc.
- Freed, C.H. and D. Mohan 2006. "Geotechnical Engineering Investigation Report for the Cheswick FGD Project, Reliant Energy Corporation Springdale, Pennsylvania." Washington Group International, Inc.
- Chad Hamlin Freed, "Geophysical investigation and interpretation of the magnetic properties and signature of 55-gallon cold -rolled carbon -steel hazardous -waste drums" (January 1, 2006). *Dissertations available from ProQuest*. Paper AAI3246159. <http://repository.upenn.edu/dissertations/AAI3246159>