Arthur Wiedmer

CONTACT INFORMATION

Department of Civil and Environmental Engineering
University of California, Berkeley, CA 94720-1710

cell: (510) 666-7852 linkedin: arthurwiedmer
e-mail: arthur.wiedmer@berkeley.edu github: artwr

RESEARCH INTERESTS

Environmental data analysis and statistics, uncertainty quantification, spatial statistics, complexity

EDUCATION

University of California – Berkeley, Berkeley, California USA

Ph.D. Candidate, ENVIRONMENTAL ENGINEERING **Aug 2008 – Present**

- Dissertation Topic: "Estimating contaminant inventory at the Savannah River Site F-area seepage basins"
- Advisor : James R. Hunt (Retired)
- Minors : Statistics, Public Health

M.S., ENVIRONMENTAL ENGINEERING **Aug 2007 – May 2008**

Ecole Polytechnique, Palaiseau, France

M.S., ENGINEERING SCIENCE **Aug 2007 – May 2008**

B.S., ENGINEERING SCIENCE **Aug 2004 – May 2007**

- Physics, Mathematics, Chemistry, Biology, Computer Science,
- Final Year Emphasis : Mathematical Models for Ecology, Population dynamics, Biodiversity, Energy and Resources

HONORS AND AWARDS

Excellence Award on the Mobile Century Project, California Center for Innovative Transportation, Berkeley, CA **2008**
Ranked first among lieutenants, 3rd overall for the Certificat d'Etat Major for reservists, Paris, France **2006**
Médaille de la Défense Nationale, agrafe Corps Européen, German-French Brigade, Mülheim, Germany **2005**

RESEARCH EXPERIENCE

University of California – Berkeley, Berkeley, California USA
Graduate Student **2007 – present**
Includes current Ph.D. research, Ph.D. and Masters level coursework and research projects.

Lawrence Berkeley National Laboratory, Berkeley, California USA
Graduate Student Research Assistant **Jan 2012 – Dec 2012**

As part of the ASCEM project data management team in the Computational Research Division, I used site and field knowledge to ingest heterogeneous data sources (Oracle DB, Access DB, flat files in various formats) and help develop the schema for a MS SQL Server database with GIS capabilities, transforming the data for a PostgreSQL instance serving as a backend for visualization in the browser.

Lawrence Berkeley National Laboratory, Berkeley, California USA
Guest Graduate Student Researcher **Jan 2009 – Dec 2009**
Collected and extracted data from archives and interpreted them, leading to a better understanding of the contamination history and transport processes at the site of study (Savannah River Site). Based on this I created visualizations (MATLAB, R) used as a support for conceptual understanding by research teams at the Earth Science Division.

California Center for Innovative Transportation, Berkeley, CA
Research Assistant/Junior Programmer **August 2007 – May 2008**
Carried out several programming and visualization projects, ranging from creating animated movies from GPS logs using Google Earth, Python, and ffmpeg to using Java to compute statistics on travel times for the MITTENS system displaying messages on Changeable Message Signs in the Bay Area.

Supagro Montpellier, Montpellier, France
Research Assistant **April 2007 – July 2007**
Carried out measurement campaigns and lab experiments on the growth of freshwater algae in irrigation channels. Compiled a review of population dynamics models with applications to the environmental conditions.

Teaching Experience

University of California – Berkeley, Berkeley, California USA
Classes were taught in the Civil and Environmental Engineering (CEE) Department unless noted otherwise. I was a Graduate Student Instructor (GSI), Berkeley's title for Teaching Assistants.

Graduate Level
Environmental Physical-Chemical Processes **Fall 2013**
Led class discussions including lab demos, provided feedback on the content for the new version of the class, graded exams.

Undergraduate Level
Introduction to Hydrology **Spring 2013**
Led class discussions and additional workshops on Differential Equations, Statistics, MATLAB. Produced original materials for sections and exams. Conducted two full lectures on statistical modelling in Hydrology.

Introductory Physics, Physics department **Spring 2011**
Managed two discussion and lab sections per week and provided additional tutoring

to students in difficulty.

Introduction to Hydrology **Spring 2010**
Led class discussions (30-50 students), provided original materials for review sessions

Tutoring
Peer and undergrad tutoring at Berkeley on engineering and science fundamentals including : Differential Equations, Fluid Mechanics, Fate and Transport, Statistics, Linear Models, Uncertainty Quantification.

Conference Proceedings

Agarwal, D., **A. Wiedmer**, B. Faybishenko, J. Hunt, G. Kushner, A. Romosan, T. Whiteside (2012). A Methodology for Management of Heterogeneous Site Characterization and Modeling Data. In XIX International Conference on Computational Methods in Water Resources (CMWR 2012). Retrieved from http://cmwr2012.cee.illinois.edu/

Conference Presentations

Wiedmer, A., J.R. Hunt, D. Agarwal and B. Faybishenko (2012), Data-driven modeling of radionuclide inventory at the Savannah River Site F-area seepage basins and implications for long-term behavior, Abstract H34C-07 presented at 2012 Fall Meeting, AGU, San Francisco, California, 3-7 Dec.

Conference Posters

Wiedmer, A., J.R. Hunt, N. Spycher and M.E. Denham (2009), Long-term groundwater transport of radionuclides from seepage basins at the Savannah River Site, Abstract H31E-0832 presented at 2009 Fall Meeting, AGU, San Francisco, California, 14-18 Dec.

Other talks and Posters

Wiedmer, A., Dealing with uncertainty, an introduction, presented in the Environmental Fluid Mechanics group meeting, 2014, Berkeley, California.

Wiedmer, A., J.R. Hunt (2012), Tritium inventory in the subsurface at the F-area seepage basins at SRS: A tracer for radionuclide migration, poster presented at the Sustainable Systems Science Focus Area retreat, Berkeley, CA, 12-13 Jan.

Wiedmer, A., Tritium in the Savannah River Site subsurface : A spatial interpolation problem in the presence of uncertainty, presented in the Environmental Fluid Mechanics group meeting, 2010, Berkeley, California.

Technical Reports

Wiedmer, A. (2007), Étude de modèles de croissance des algues dans les canaux d'irrigation du Sud de la France (A study of algae growth in irrigation canals in Southern France), Technical Report, 68pp, 2007, Ecole Polytechnique, Palaiseau, France.

Computing Skills

- Statistical/Scientific Computing Packages: R; MATLAB/GNU Octave/Scilab; Scipy Stack.

- Programming Languages: Python, SQL, various unix shell scripting languages.
- Markup Languages: LaTeX, XML, KML, (R)Markdown
- Databases : Microsoft SQL Server and Analysis Services, PostgreSQL, mongodb, Access
- Version control : git, svn, hg
- Other Tools : Quantum GIS, Google Earth
- Operating Systems: Unix/Linux, Windows, OS X.