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Assistant Professor

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1. EDUCATION

Ph.D	Environmental Engineering, University of Cincinnati, Cincinnati, Ohio.	1998
M.S.	Environmental Engineering, University of Cincinnati, Cincinnati, Ohio.	1992
B. S.	Civil Engineering, <i>Hydraulics</i> , Jesuit University at Beirut, Lebanon.	1988

2. EXPERIENCE

Sept. 1999-present	Assistant Professor, Department of Civil and Environmental Engineering, Temple University.
Aug. 1998- Sept. 1999	Research Assistant Professor, Department of Environmental Engineering and Science, Clemson University.
Aug. 1997- Aug. 1998	Research Associate/Post-Doctoral Scientist, Department of Civil and Environmental Engineering, University of Cincinnati.
May 1994- Aug. 1997	Graduate Research Assistant, Department of Civil and Environmental Engineering, University of Cincinnati.
May 1993 - May 1994	Project Engineer, Energy and Environmental Services/Parsons Engineering, Cincinnati, Ohio.
Sept. 1991 - May 1993	Graduate Research Assistant, Department of Civil and Environmental Engineering, University of Cincinnati.
June 1989 - Aug. 1990	Project Engineer, Afrique Construction et Financement, Guinea, Africa.
June 1988 - June 1989	Project Engineer, Bureau of Technical Development, Beirut, Lebanon.

3. AREAS OF RESEARCH INTERESTS

- C Subsurface hydrology and contaminant transport.
- C Numerical modeling of environmental systems.
- C Stochastic subsurface hydrology.
- C Saltwater intrusion.
- C Oil spills on beaches and at sea.

4. JOURNAL PUBLICATIONS

1. **Boufadel, M.C.**, M.T. Suidan, and A. D. Venosa, "Density-dependent flow in one-dimensional variably-saturated media", *J. of Hydrology*, Vol. 202, p 280-301, 1997.
2. **Boufadel, M. C.**, M. T. Suidan, C. H. Rauch, A.D. Venosa, and P. Biswas, "2-D variably-saturated flow: Physical scaling and Bayesian estimation", *J. of Hydrologic Engineering, ASCE*, Vol. 3, p 223-231, 1998.
3. **Boufadel, M. C.**, "Unit hydrographs derived from the Nash model", *Journal of the American Water Resources Association*, Vol 34, p 167-177, 1998.
4. **Boufadel, M. C.**, M. T. Suidan, A. D. Venosa, and M. T. Bowers, "Steady seepage in trenches and dams: Effect of capillary flow", *J. of Hydraulic Engineering, ASCE*, Vol. 125, p 286-294, 1999.
5. **Boufadel, M. C.**, M. T. Suidan, and A. D. Venosa, "A numerical model for density-and-viscosity-dependent flows in two-dimensional variably-saturated porous media", *J. of Contaminant Hydrology*, Vol. 37, p 1-20, 1999.
6. **Boufadel, M.C.**, P. Reeser, M.T. Suidan, B. A. Wrenn, J. Cheng, X. Du, and A. D. Venosa, "Optimal nitrate concentration for the biodegradation of n-heptadecane in a variably-saturated sand column", *Environmental Technology*, Vol. 20, p 191-199, 1999.
7. **Boufadel, M. C.**, M. T. Suidan, and A. D. Venosa, "Numerical modeling of water flow below dry salt lakes: Effect of capillarity and viscosity", *J. of Hydrology*, Vol. 221, p 55-74, 1999.
8. **Boufadel, M. C.**, "Estimation of the HEC1 loss parameters for routing the probable maximum flood", *J. of the American Water Resources Association*, Vol. 36, p 1-11, 2000.
9. **Boufadel, M. C.** "A mechanistic study of nonlinear solute transport in a groundwater-surface water system under steady-state and transient hydraulic conditions", *Water Resources Research*, Vol. 36, p 2549-2566, 2000.
10. **Boufadel, M. C.**, S-L. Lu, F. J. Molz, and D. Lavallee, "Multifractal scaling of the intrinsic permeability", *Water Resources Research*, in press, 2000.
11. **Boufadel, M. C.** and V. Peridier, "Exact analytical expressions for the piezometric profile and water exchange between streamwater and groundwater during and after a uniform rise of the stream level", *Water Resources Research*, submitted, 2000.
12. Lu, S., F. J. Molz., and **M. C. Boufadel**, Numerical studies of flow and solute transport in three-dimensional, anisotropic, fractal porous media, *J. of Contaminant Hydrology*, submitted, 2000.

5. CONFERENCE PROCEEDINGS (* indicates presenter)

- 1. Boufadel***, M. C. and S. G. Buchberger, “A robust method to generate multiple unit hydrographs”, *ASCE International Symposium on Engineering Hydrology*, p252-257, San Francisco, CA, 1993.
- 2. Boufadel***, M.C., M.T. Suidan, “Tide-driven nutrient transport in a laboratory beach in the absence of waves”, in *Proceedings of the 1997 International Oil Spill Conference*, p 713-718, Fort Lauderdale, FL, 1997.
- 3. Wrenn*** B. A., **M. C. Boufadel**, M. T. Suidan, and A. D. Venosa, “Nutrient transport during bioremediation of crude oil contaminated beaches”, in *Fourth International Symposium on In-situ and On-site Bioremediation*, Battelle Press, p 267-272, New Orleans, LA, April 1997.
- 4. Boufadel***, M.C., M.T. Suidan, C.H. Rauch, C-H Ahn, and A. D. Venosa, “Nutrients transport in beaches subjected to freshwater input and tides”, in *Proceedings of the 1999 International Oil Spill Conference*, Seattle, WA, 1999.
- 5. Boufadel***, M. C., M. T. Suidan, and A. D. Venosa, “Effect of unsaturated flow on steady seepage”, in *ASCE’s Waterpower 99*, Las Vegas, NV, 1999.
- 6. Lu***, S., **M. C. Boufadel**, I. Chiguirinskia, F. J. Molz, “Is the hydraulic conductivity at the MADE site governed by stable processes?” in *Proceedings of Applications of the Heavy-Tailed Distributions in Economics, Engineering, and Statistics*, American University, Washington, DC, 1999.

6. NON-REFEREED CONFERENCES (* indicates presenter)

- 1. Boufadel***, M.C., M.T. Suidan, and A. D. Venosa, “Challenges facing successful bioremediation of oil spills on beaches”, presented at the *E.P.A. Symposium on Bioremediation of Hazardous Wastes*, San Francisco, CA, 1994.
- 2. Boufadel***, M.C., M.T. Suidan, and A. D. Venosa, “Density effects in variably-saturated media” presented at the *1996 Fall Meeting of the American Geophysical Union*, San Francisco, CA, 1996.
- 3. Boufadel***, M.C., M.T. Suidan, C. H. Rauch, and A. D. Venosa, “The entrapment of the freshwater lens in beaches subjected to tides” presented at the *1997 Spring Meeting of the American Geophysical Union*, Baltimore, MD, 1997.
- 4. Boufadel***, M.C., M.T. Suidan, C. H. Rauch, and A. D. Venosa, “Nutrient transport during bioremediation of oil spills on beaches subjected to freshwater input and tides”, presented at the *1998 Fall Meeting of the American Geophysical Union*, San Francisco, CA, 1998.
- 5. Boufadel***, M.C., M.T. Suidan, C. H. Rauch, C-H. Ahn, and A. D. Venosa, “Inverted salinity distribution in beaches subjected to tides and waves: Experimental and numerical results”, presented at the *1999 Spring Meeting of the American Geophysical Union*, Boston, MA, 1999.

6. Boufadel*, M.C., F. J. Molz, and S-L. Lu, “Multifractal representation of the hydraulic conductivity”, presented at the *1999 Spring Meeting of the American Geophysical Union*, Boston, MA, 1999.

7. Molz*, F. J., M . C. Boufadel, S-L Lu, and I Tchiguirinskaia, “Characterization of aquifer heterogeneity: where are modern stochastic theory and field methods leading?”, presented at the *1999 Spring Meeting of the American Geophysical Union*, Boston, MA, 1999.

8. Boufadel*, M.C. “Hydraulic separation between surface water and groundwater during rising reach stage”, presented at the *1999 Fall Meeting of the American Geophysical Union*, San Francisco, CA, 1999.

9. Boufadel*, M.C. “The effect of bank slopes on solute exchange between surface water and groundwater in transient regimes”, presented at the *2000 Spring Meeting of the American Geophysical Union*, Washington D.C., 2000.

7. OTHER PUBLICATIONS

1. Buchberger S. G. and M. C. Boufadel, “Rainfall Losses in the Great Miami River Watershed” Final report prepared for the Miami Conservancy District, Dayton Ohio, August 1992.

2. Boufadel, M. C., “Nutrients Transport in a Beach Mesocosm”, Quality Assurance Project Plan (QAPP) approved by the U.S. EPA at Cincinnati, April 1998.

3. Boufadel, M. C. and M. Kupferle, “Optimal Nitrate Concentration for the Biodegradation of Oil”, Quality Assurance Project Plan (QAPP) approved by the U.S. EPA at Cincinnati, October 1998.

8. INVITED TALKS

“Nutrients transport during bioremediation of oil spills on beaches”

C Department of Civil and Environmental Engineering, University of Cincinnati, 1998.

C Environmental Engineering and Science Department, Clemson University, 1998.

C Department of Civil and Environmental Engineering, University of South Carolina, 1999.

C Department of Civil and Environmental Engineering, Virginia Tech, 1999.

C Department of Civil and Environmental Engineering, Temple University, 1999.

“Stationary versus nonstationary stochastic models of subsurface heterogeneity”, Hydrology Symposium I, Modeling Aquifer Heterogeneity, University of South Carolina, January 2000.

12. PROFESSIONAL AFFILIATIONS

C American Geophysical Union, AGU

C American Society of Civil Engineers, ASCE

13. SESSIONS CHAIRED

“An integrated view of subsurface heterogeneity: Measurements, geology, modeling, and implications for contaminant transport”, in *Fall 2000 American Geophysical Conference*, San Francisco, December 2000. Co-chairs are: Fred Molz, Graham Fogg, and David Benson.

“Interaction between surface water and groundwater: Bridging the gap between theory and experiment” in *Fall 2000 American Geophysical Conference*, San Francisco, December 2000. Judson Harvey is co-chair.

16. SERVICE

Societies

Serving on the following American Geophysical Union Committees: Water Quality Committee, Groundwater Committee, and Student Posters Evaluation Committee.

At Temple University

09/99-09/00 Member of Computer and Research Committee, College of Engineering.

01/00-06/00 Member of an Environmental Engineering/Science Search Committee, College of Engineering and College of Science and Technology.

07/00- Member of Graduate Affair Committee, College of Engineering.

07/00- Graduate Director, Department of Civil and Environmental Engineering.

Reviewer

C J. of Environmental Eng., J. of Hydrologic Eng., J. of Hydraulic Eng., ASCE.

C Computers and Fluids, Elsevier.

C J. of the American Water Resources Association.

15. HONORS

C Quality Team Award, Parsons Engineering, Cincinnati, OH 1994.

C University Research Council Fellowship, University of Cincinnati, 1993-1994.

C University Graduate Scholarship, University of Cincinnati, 1991-1993, 1994-1997.

C Graduate Research Assistantship, University of Cincinnati, 1991-1993, 1994- 1997.

C Fellowships (two) from the American Petroleum Institute (API) to attend national API conferences in 1997 and 1999.

17. OTHER

Immigration Status U.S. Permanent Resident.

Languages Fluent in English, French, and Arabic

Professional Registration Engineer-in-Training, Ohio.

Interests Volley Ball, Ping Pong, Traveling.