

CURRICULUM VITA
James M. Martin-Hayden
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Basic Information

Associate Professor, Department of Environmental Sciences, University of Toledo,
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Education

Doctor of Philosophy in Geology, 1994, University of Connecticut, Storrs, Connecticut
Master of Science in Geology, 1990, University of Connecticut, Storrs, Connecticut
Bachelor of Arts in Geology, 1985, University of Maine, Orono, Maine

Appointments and Experience

Associate Professor, University of Toledo, Department of Environmental Sciences,
Toledo, Ohio, 2000 to present

Associate Editor, Ground Water Monitoring and Remediation, Association of Ground Water
Scientist and Engineers, 2002 to present

Assistant Professor, University of Toledo, Department of Geology,
Toledo, Ohio, September 17, 1994 to 2000

Environmental Analyst/Hydrogeologist, Connecticut Dept. of Environmental Protection,
Hartford, Connecticut, 1994

Hydrogeologist/Numerical Model Analyst, Lenard Engineering,
Storrs, Connecticut, 1989-1993

Research Assistant, U.S. EPA Research Grant, University of Connecticut,
Storrs, Connecticut, 1988-1994

Research Assistant, Water Resources Institute Research Grant, University of Connecticut,
Storrs, Connecticut, 1987-1990

Research and Scholarship

Relevant Publications

Hanes, B.E., Fisher, T.G., Becker, R.H., Martin-Hayden, J.M. 2014. Elucidating paleo dune activity and timing from wetlands in the lee of coastal sand dunes, Grand Mere Lakes, Michigan, USA. Geological Society of America Special Papers, v.508, no.8, pp. 133–149.

Martin-Hayden, J.M., Plummer, M. and Britt, S.L. 2014. Controls of wellbore flow regimes on pump effluent composition. Groundwater, v. 52, no. 1, pp. 96–104.

Fisher, T.G., Weyer, K.A., Boudreau, A.M., Martin-Hayden, J.M., Krantz, D. 2012. Constraining Holocene-aged lake levels and coastal dune activity in the Lake Michigan Basin. Journal of Paleolimnology, v. 47, no. 3, pp. 373–390

Martin-Hayden, J.M. and Britt, S.L. Revealing the black box of groundwater sampling: effects of well-bore flow and mixing. Proceedings of the 2006 North American Environmental Field Conference and Exposition: Advances in Environmental Site Characterization and Monitoring Technology, January 10-12, 2006, University Of South Florida, Tampa, Florida.

- Martin-Hayden, J.M. and N.B. Wolfe. A novel view of well-bore flow and partial mixing: digital image analyses. *Ground Water Monitoring and Remediation*, v.20, no. 4, pp. 96–103, Fall 2000.
- Martin-Hayden, J.M. Sample concentration response to laminar well-bore flow: implications to ground-water data variability. *Ground Water*, v.38, no. 1, pp. 12–19, January-February 2000a.
- Martin-Hayden, J.M. Controlled laboratory investigations of well-bore concentration response to pumping. *Ground Water*, v.38, no. 1, pp. 121–128, January-February 2000b.
- Skirta, E.A., E.M. Weber, J.M. Martin-Hayden, and L.A. Ostrovsky. Time-frequency analysis of Lake Erie surface elevations. Proceedings, International Workshop on Statistical Modeling, Technological University of Graz, Austria, pp. 673–678, July 1999. (Refereed proceedings)
- Martin-Hayden, J.M., R.J. Minarovic, E.S. Andreus, and S.L. Kozak. Carbonate aquifer recharge in western Lucas County, northwest Ohio. *The Ohio Journal of Science*, v.99, no. 4., December 1999.
- Spongberg, A.L. and J.M. Martin-Hayden. Pesticide stratification in an engineered wetland delta. *Environmental Science and Technology*, v.31, no.11, pp. 3161–3165, November 1997.
- Martin-Hayden, J.M. and G.A. Robbins. Plume distortion and apparent attenuation due to concentration averaging in monitoring wells. *Ground Water*, v.35, no. 2, pp. 339–347, March-April 1997.
- Martin-Hayden, J.M., 1994. The groundwater sampling process: The physical elements influencing data representativeness and variability. Ph.D. Dissertation, Department of Geology, University of Connecticut-Storrs.
- Martin-Hayden, J.M., G.A. Robbins, and R.D. Bristol. 1991. Mass balance evaluation of monitoring well purging: Part II. Field tests at a gasoline contamination site. *Journal of Contaminant Hydrology* 8, no. 3/4: 225–241.
- Robbins, G.A., and J.M. Martin-Hayden. 1991. Mass balance evaluation of monitoring well purging. Part I: Theoretical models and implications for representative sampling. *Journal of Contaminant Hydrology* 8, no. 3/4: 203–224.

Grants

- Plummer M., Martin-Hayden, J.M., and Britt S., A novel Thermal Tracer Approach to Characterizing Diffusive Transport to Low Permeability Layers in Contaminated Aquifers. Proposal submitted to U.S. Dept. of Defense and U.S. Environmental Protection Agency SERDP program in the amount of \$590,000 (UT portion \$50,000) [Plummer et al.] pending
- Britt S., Martin-Hayden, J.M., Plummer M., and Parker, L. 2009. An Assessment of Aquifer/Well Flow Dynamics: Identification of Parameters Key to Passive Sampling. Grant Funded by U.S. Dept. of Defense and U.S. Environmental Protection Agency SERDP program in the amount of \$1,299,031 (UT portion \$120,229, 2009-2012)

- Martin-Hayden, J.M., Fisher, T.G., and Stierman, D. Surficial Geology of the Whitehouse Quadrangle, Ohio. Grant Funded by USGS EDMAP program in the amount of \$42,479.
- Dwyer, D., Gottgens, J., Apul, D., and Martin-Hayden, J.M. Phytoremediation Plant Research, Design of a Passive Biological Treatment System for Arsenic. 2007-2010, Grant funded by USDA CSREES in the amount of \$728,882.
- Lake Erie Groundwater Influx and Cycling: Monitoring, Modeling and Prediction of Physical, Chemical and Biological Influences. PI: J.M. Martin-Hayden. Funded by Research Awards and Fellowship Program, University of Toledo in the amount of \$8,844 for the period May, 2000-August, 2000.
- Hydraulic, Geochemical and Biological Influences of Up-Welling Groundwater in Sandusky Bay and Lake Erie. CO-PIs: J.M. Martin-Hayden and E. Skirta (Department of Mathematics). Funded by the Lake Erie Center for Research and Education Summer Fellowship Program in the amount of \$15,000. Period covered: May, 1998 - December 1998.
- Pesticide transport, water balance, and geochemical characterization of the Blue Creek watershed. PI: J.M. Martin-Hayden and co-PI: A.L. Spongberg. Funded by Ohio Board of Regents Research Challenge in the amount of \$22,018 for the period June, 1996 - June, 1997.
- Viral pathogen and herbicide fate and transport in agricultural soil and runoff. PI: A.L. Spongberg, CO-PIs: J. Gottgens, S. Leisner, J.M. Martin-Hayden, and R. Sinsabaugh. Funded by USDA Special Grants Program in the amount of \$158,747 for the period: July, 1995 - June, 1997.
- Analysis of Pesticide Transport Pathways and Degradation in Engineered Wetlands. PIs (co-equal): A.L. Spongberg and J.M. Martin-Hayden. Funded by the United States Department of Agriculture National Research Initiative Competitive Grants Program in the amount of \$74,834 (UT contribution \$36,879) for the period July, 1995 - June 1997.

Teaching

Courses Developed and Taught (*currently teaching)

- *Hydrogeology, EEES-4410/5410
- *Advanced Applied Hydrogeology, EEES-6450
- *Engineering Geology, EEES-4250
- *Earth Materials I: Mineralogy/Petrology, EEES-3220
- *Geological Field Methods: Structural Geology and Mapping EEES-3210
- *Physical Geology, EEES-1010
- *Contaminant Hydrogeology, EEES-6440
- Environmental Research, GEOL-6930
- Water and Mineral Resources and the Environment, GEOL-2020

Individual Work with Graduate Students

M.S. theses supervised: under supervision and completed*

- Tharp, Kyle: Wellhead protection plan for the village of Whitehouse, Ohio. Graduated June 1996.*
- Andreas, Eric: Groundwater recharge to the simiconfined carbonate aquifer near Whitehouse, Ohio. Graduated December 1996.*
- Hornberger, Brant: Wellhead protection plan for the city of Bryan, Ohio. Graduated December 1996.*
- Li, Xiaolin: Contaminant Transport from an unlined landfill. Graduated May, 1997.*
- Forester, Kenneth: A geochemical and flood pulse analysis through continuous electronic monitoring of springs in the Bellvue-Castalia area, north-central Ohio. (coadvised with Craig Hatfield) Graduated May 1997.*
- Kleinheider, Steve: Surface water groundwater interactions of Beaver Creek, Bryan Ohio. Graduated August 1998.*
- Kozak, Sharron: Hydrogeology and geochemistry of the Blue Creek drainage basin. Graduated July, 1999.*
- Minarovic, Raymond: Hydraulic and geochemical interactions between an engineered wetland and the underlying carbonate aquifer. Graduated July, 2000*
- Snyder, Lorna: Groundwater/Surface-Water Interactions of Lake Erie. Performing research.
- Bensman, Kelly: Investigation reactive transport of pesticides using laboratory columns, revising drafts of theses (coadvised with Dr. Spongberg)
- Vagen, Jenifer: Groundwater controls on bluff erosion, coastal Lake Erie. Graduated May 2003 (coadvised with Dr. Spongberg)*
- Sara Mierzwiak: Enhanced in situ bioremediation of a trichloroethylene groundwater plume using a dilute vegetable oil emulsion Graduated August, 2008 (coadvised with Dr. Dwyer)*
- James Fisher: Evaluating the effectiveness of an evapotranspirative cover using an integrated hydrologic model August, 2009*
- Lucas Groat: The Physical Hydrogeology of the Broader Historical Irwin Prairie Wetland System. Thesis research in progress, August 2015.

Professional Affiliations

National Ground Water Association
Association of Ground Water Scientists and Engineers
American Geophysical Union
Geological Society of America