

CURRICULUM VITAE

Anthony D. Kendall
Michigan State University

EDUCATION

- 2004 - 2009 Ph.D. Environmental Geosciences Michigan State University
Thesis: *Predicting the Impacts of Land Use and Climate Change on Regional-Scale Hydrologic Fluxes*
Advisor: Dr. David W. Hyndman
- 1999 - 2004 B.S. Mechanical Engineering Michigan State University
B.S. Astronomy and Astrophysics Michigan State University

PROFESSIONAL APPOINTMENTS

- 2009 - Visiting Research Associate, Hydrogeology, Geological Sciences, MSU
- 2001 - 2009 Research Assistant, Hydrogeology, Geological Sciences, MSU
- 2005 - 2006 Teaching Assistant, Integrative Sciences Lab Course, MSU
- 2002 - 2004 Undergraduate Researcher, Fluid Mechanics, Mechanical Engineering, MSU
- 1999 - 2001 Professorial Assistant, Dr. David W. Hyndman, MSU

PROFESSIONAL AFFILIATIONS

- 2004 - American Geophysical Union
- 2007 - Geological Society of America
- 2008 - National Ground Water Association
- 2004 - 2005 American Physical Society

PEER-REVIEWED PUBLICATIONS

- 2009 Lusch, D.P., Stanley, K.E. Schaeztl, R.J., **Kendall, A.D.**, Van Dam, R.L., Nielsen, A., Blumer, B.E., Hobbs, T.C., Archer, J.K., Holmstadt, J.L.F., May, C.L., Characterization and Mapping of Patterned Ground in the Saginaw Lowlands, Michigan: Possible Evidence for Late-Wisconsin Permafrost, *Annals of the Association of American Geographers* 99(3): 445-466
- 2008 **Kendall, A.D.**, and M.M. Koochesfahani, A Method for Estimating Wall Friction in Turbulent Wall-Bounded Flows, *Experiments in Fluids* 44(5): 778 - 780
- 2007 Pijanowski, B., Ray, D.K., **Kendall, A.D.**, Duckles, J.M., and D.W. Hyndman, Using Backcast Land-Use Change and Groundwater Travel-Time Models to Generate Land-Use Legacy Maps for Watershed Management, *Ecology and Society* 12(2): 25 [online] URL: <http://www.ecologyandsociety.org/vol12/iss2/art25>
- Kendall, A.D.**, Hyndman, D.W., Examining Watershed Processes Using Spectral Analysis Methods Including the Scaled Windowed Fourier Transform, *Subsurface Hydrology: Data Integration for Properties and Processes*, AGU Geophysical Monograph Series 171: 183-200.
- Hyndman, D.W., **Kendall, A.D.**, and N.R.H- Welty, Evaluating Temporal and Spatial Variations in Recharge and Streamflow Using the Integrated Landscape Hydrology Model (ILHM), *Subsurface Hydrology: Data Integration for Properties and Processes*, AGU Geophysical Monograph Series 171: 121-141
- Rautian, T.G, Khalturin, V.I., Fujita, K., Mackey, K.G., and **A.D. Kendall**, Origins and Methodology of the Russian Energy K-Class System and its Relationship to Magnitude Scales, *Seismological Research Letters* 78: 579-590

- 2006 Capriotti, E.R, and **A.D. Kendall**, The Origin and Physical Properties of Cometary Knots in NGC 7293, *Astrophysical Journal* 642(2): 923-932

MANUSCRIPTS IN REVIEW OR PREPARATION (*drafts available)

- 2010 ***Kendall, A.D.**, and D.W. Hyndman, Examining Spatial and Temporal Variability of Regional Evapotranspiration and Recharge using a Process-Based Landscape Hydrology Model, *Water Resources Research*: in revision after review
- *Ray, D.K, Pijanowski, B.C., **Kendall, A.D.**, and D.W. Hyndman, Estimating Uncertainty in Land Use Legacy Maps Using Coupled Land Use and Groundwater Travel Time Models: Implications for Land Use Management, *Journal of Environmental Management*: in revision after review
- *Wiley, M.J., Pijanowski, B.C., Hyndman, D.W., **Kendall, A.D.**, Steen, P., Chen, S., Riseng, C., Richards, P., Rutherford, E., Tyler, J., Carlson, M., Stevenson, R.J., Seelbach, P., and J. Koches, A Multi-Modeling Approach to Evaluating Impacts of Global Change on River Ecosystems, *Hydrobiologia*: in review
- ***Kendall, A.D.**, and D.W. Hyndman, Simulating the Terrestrial Hydrologic Cycle at Regional Scales with the Integrated Landscape Hydrology Model (ILHM), *Journal of Hydrology*: in preparation
- Kendall, A.D.**, Hyndman, D.W., Pijanowski, B.P., and D.K. Ray, Predicting Regional-Scale Impacts of Forecast Climate and Land Use Change on Water Resources and Soil Moisture, *Environmental Science and Technology*: in preparation
- Kendall, A.D.**, Jayawickreme, D.H., Andresen, J. and D.W. Hyndman, Using NEXRAD Precipitation to Improve Hydrologic Model Estimates at the Regional Scale, *Journal of Hydrometeorology*: in preparation

CONFERENCE PAPERS AND PRESENTATIONS

- 2009 Hyndman, D.W. and **A.D. Kendall**, *Simulating Regional-Scale Terrestrial Hydrologic Fluxes at Fine Resolution with the Integrated Landscape Hydrology Model (ILHM) (Invited)*, H14C-01, Eos Trans. AGU. San Francisco, California
- Kendall, A.D.**, Hyndman, D.W., Pijanowski, B.C., and D. Ray, *Simulating Impacts of Climate and Land Use Change on Regional Hydrology at Fine Resolution with the Integrated Landscape Hydrology Model (ILHM)*, Annual Meeting of the North American Benthological Society (NABS). Grand Rapids, Michigan
- Pijanowski, B.C., Ray, D.K., **Kendall, A.D.**, and Hyndman, D.W., *Land Use Legacy and Watershed Management*, Annual Meeting of the North American Benthological Society (NABS). Grand Rapids, Michigan
- Kendall, A.D.**, Hyndman, D.W., Pijanowski, B.C., and D. Ray, *Simulating Impacts of Climate and Land Use Change on Regional Hydrology at Fine Resolution with the Integrated Landscape Hydrology Model (ILHM)*, Annual Conference of the International Association for Great Lakes Research (IAGLR). Toledo, Ohio
- Pijanowski, B.C., Ray, D.K., **Kendall, A.D.**, and Hyndman, D.W., *Land Use Legacy and Watershed Management*, Annual Conference of the International Association for Great Lakes Research (IAGLR). Toledo, Ohio
- Wiley, M.J., Pijanowski, B.C., Koches, J., Riseng, C.M., Stevenson, R.J., Seelbach, P.W., Cheng, S.T., **Kendall, A.D.**, Hyndman, D.W., Richards, P., Rutherford, E.S., Tyler, J.A., Carlson, M., and Steen, P.J., *A Multi-Modeling Approach to Great Lakes Watershed Planning: the Muskegon Mega-Model*, Annual Conference of the International Association for Great Lakes Research (IAGLR). Toledo, Ohio

Wiley, M.J., Pijanowski, B.C., **Kendall, A.D.**, Hyndman, D.W., Ladewig, M., Riseng, C.M., Koches, J., Stevenson, R.J., Seelbach, P.W., and Richards, P., *Nutrient and Sediment Load Responses to Land Management and Climate Change in the Muskegon River Watershed: a Modeling Assessment*, Annual Conference of the International Association for Great Lakes Research (IAGLR). Toledo, Ohio

Wiley, M.J., Pijanowski, B.C., **Kendall, A.D.**, Riseng, C.M., Cheng, S.T., Steen, P.J., Hyndman, D.W., Richards, P., Rutherford, E.S., Tyler, J.A., Carlson, M., Stevenson, R.J., Seelbach, P.W., and Koches, J., *A Multi-Modeling Approach to Evaluating Impacts of Climate Change on River Ecosystems*, Annual Conference of the International Association for Great Lakes Research (IAGLR). Toledo, Ohio

Kendall, A.D., Hyndman, D.W., Pijanowski, B.C., and D. Ray, *Simulating Impacts of Climate and Land Use Change on Regional Hydrology at Fine Resolution with the Integrated Landscape Hydrology Model (ILHM)*, Consortium of Universities for the Advancement of Hydrologic Sciences, Inc. (CUAHSI) Community Hydrologic Modeling Platform (CHyMP) Conference. Memphis, Tennessee.

Hyndman, D.W., Jayawickreme, D.H., **Kendall, A.D.**, and R.L. Van Dam, *Examining Impacts of Land Use and Climate Changes Using Geophysical Methods and Hydrologic Models*, Tropical Hydrology Symposium, Panama.

Kendall, A.D., Hyndman, D.W., Pijanowski, B.C., and D. Ray, *Simulating Impacts of Climate and Land Use Change on Regional Hydrology at Fine Resolution with the Integrated Landscape Hydrology Model (ILHM)*, Annual Meeting of the American Association for the Advancement of Science (AAAS). Chicago, Illinois.

- 2008 Hyndman, D.W., Jayawickreme, D.H., **Kendall, A.D.**, and R. L. Van Dam, *Examining Impacts of Land Use and Climate Changes Using Geophysical Methods and Hydrologic Models*, Consortium of Universities for the Advancement of Hydrologic Science Biennial Colloquium. Boulder, Colorado
- 2007 May, C.L., **Kendall, A.D.**, Lusch, D.P., Schaetzl, R.J., Van Dam, R.L., Stanley, K.E., and J.K. Archer, *Late Wisconsin Permafrost Conditions Evidenced by Patterned Ground in the Saginaw Lowlands, Eastern-Central Lower Michigan*, C41A-0057, Eos Trans. AGU. San Francisco, California
- Kendall, A.D.**, Bernstein, J.A., and D.W. Hyndman, *Improving Regional Groundwater Recharge Models with a Network of High-Resolution Temperature Recording Buttons*, National Meeting of the Geological Society of America, Abstracts with Programs. Denver, Colorado
- Kendall, A.D.**, and D.W. Hyndman, *Simulating Fluxes Through Large Watersheds Using Remotely Sensed and Ground Based Datasets with the Integrated Landscape Hydrology Model (ILHM)*, National Meeting of the Geological Society of America, Programs with Abstracts, Denver, Colorado
- Kendall, A.D.**, Hyndman, D.W., and N.R.H- Welty, *Predicting the Distribution of Groundwater Recharge at Regional Scales with the Integrated Landscape Hydrology Model (ILHM)*, National Meeting of the American Institute of Professional Geologists. Traverse City, Michigan
- 2006 **Kendall, A.D.**, and D.W. Hyndman, *Predicting Groundwater Recharge, Streamflow, and Watershed Hydrology at the Regional Scale with the Integrated Landscape Hydrology Model (ILHM)*, H31H-06, Eos Trans. AGU. San Francisco, California
- Hyndman, D.W., and **A.D. Kendall**, *The Integrated Landscape Hydrology Model (ILHM), A Fully-Distributed Approach to Simulate Regional Watershed Hydrologic Processes*, H11A-1234, Eos Trans., AGU. San Francisco, California

Van Dam, R.L., Hyndman, D.W., Jayawickreme, D.H., **Kendall, A.D.**, Roy, S., and J.E. Storms, *The St. Clair Delta: Examining Depositional History Using Geophysics and Well Cores*, NS24A-05, Eos Trans. AGU. San Francisco, California

Ray, D.K., Pijanowski, B.C., **Kendall, A.D.**, and D.W. Hyndman, *Coupling simulations of land use change and groundwater travel time to develop land use legacy maps for the Muskegon River watershed in Michigan*, H13B-1403, Eos Trans. AGU. San Francisco, California

Kendall, A.D., and M. Koochesfahani, *A Method for Estimating Wall Friction in Turbulent Boundary Layers*, 25th AIAA Aerodynamic Measurement Technology and Ground Testing Conference. San Francisco, California

Pijanowski, B.C. , Ray, D., **Kendall, A.D.** and Hyndman, D.W., *Using reverse trajectory models of land use and hydrologic flow to simulate multiple scale spatial-temporal interactions in regional watersheds of the Upper Midwest.*, US Meeting of the International Association of Landscape Ecology (IALE). San Diego, California

2005 Pijanowski, B., Pithadia, S., Hyndman, D., and **Kendall, A.D.**, *Backcasting land use: quantifying land use legacy on slow and fast environmental processes*, Institute for the Advancement of Great Lakes Research. Ann Arbor, Michigan

Richards, P.L., **Kendall, A.D.**, Wiley, M.J., Riseng, C., Carlson, M.L., and Hyndman, D.W, *Flow Exceedence Prediction in the Muskegon River Using Coupled Hydrologic Models*, Institute for the Advancement of Great Lakes Research. Ann Arbor, Michigan

Kendall, A.D., and D.W. Hyndman, *Using Dual-Region Calibration To Improve Recharge and Hydraulic Conductivity Estimates for Hydrological Modeling*, H51B-03, Eos Trans. AGU. New Orleans, Louisiana

2004 **Kendall, A.D.**, Hyndman, D.W., Phanikumar, M.S., and B.C. Pijanowski, *Using Spectral Analysis to Relate Climate and Land-Use Changes to Processes Influencing Stream Flow*, H21F-1095, Eos Trans. AGU. San Francisco, California

Kendall, A.D., and M. Koochesfahani, *A New Method for Estimating Wall Shear Stress in Turbulent Boundary Layers*, APS-DFD '04, Abstract KA.004. Seattle, Washington

GRANT WRITING EXPERIENCE (#pending, +funded)

2010	#Co-PI, EPA Great Lakes Restoration Initiative Proposal <i>Nutrient management models to constrain harmful algal blooms</i>	\$499,954
2009	Co-PI, USGS NIWR Water Resources Research Proposal <i>Implications of Converting from Conventional to Biofuel Cropping Systems for Great Lakes Regional Water Resources</i>	\$248,521
2008	+Co-PI, NSF Hydrologic Sciences Proposal, EAR-0911642 <i>Multi-scale Monitoring and Modeling of Land Use and Climate Change Impacts on the Terrestrial Hydrologic Cycle: Implications for the Great Lakes Basin</i>	\$243,552
2007	+Co-author, MSU Center for Water Sciences Postdoctoral Proposal <i>The role of climate variations and land transformation on human and ecological health in large watersheds that drain to Lake Michigan</i>	\$116,587
	PI, National Center for Airborne Laser Mapping graduate student data proposal <i>Improving Regional-Scale Landscape Hydrologic Modeling with High Resolution Topographic Data</i>	in kind

2002 +Assisting author, NSF Water Cycle proposal, EAR-02333648 \$490,000
Quantifying the Impact of Land Use and Climate Change on Groundwater/Surfacewater Interactions in Regional Great Lakes Watersheds

TEACHING EXPERIENCE

2003 - 2009 Guest lecturer for introductory, upper undergraduate, and graduate courses, 10 lectures
 2006 Instructor, *Integrative Sciences Geology Laboratory*, 1 section
 2005 Instructor, *Integrative Sciences Geology Laboratory*, 3 sections

RECENT AWARDS AND FELLOWSHIPS

2009	Departmental fellowships (2), Geological Sciences Department, MSU	\$2,000
2008	Dissertation Completion Fellowship, College of Natural Sciences, MSU	\$6,000
	Departmental fellowship, Geological Sciences Department, MSU	\$500
2007	Best Graduate Student Poster, American Institute of Professional Geologists	\$1,000
	Departmental fellowship, Geological Sciences Department, MSU	\$1,500
2006	Doctoral Recruiting Fellowship, College of Natural Sciences, MSU	\$23,000
	Rasmussen Fellowship, College of Natural Sciences, MSU	\$4,000
2005	Graduate Fellowship, Michigan Space Grant Consortium	\$5,000
2004	Outstanding Senior Award, Astronomy and Physics Department, MSU	\$300
	Departmental fellowship, Geological Sciences Department, MSU	\$1,500

OUTREACH ACTIVITIES

2009 Co-author of *Alien Hand Syndrome*, a compilation of interesting non-fiction published by Workman
 2002 - 2009 *Compute This!* event supervisor, Michigan State Science Olympiad
 2003 & 2008 Large interdisciplinary grant stakeholders' meetings (~75 attendees), panelist
 2006 - 2007 Staff writer for *DamnInteresting.com*, focusing on popular science
 2005 & 2006 Presentations about Martian exploration to public and K-12, five 30-minute
 2005 Martian exploration simulation, 1 month in Canadian high arctic
 2004 & 2005 GPR forensics, 2 cases, suspected homicides, Garden City P.D., MI and Romulus P.D., MI

SKILLS AND INTERESTS

Developed the Integrated Landscape Hydrology Model (ILHM)
 Familiarity with coding in MATLAB, FORTRAN, and Python
 Expertise in GIS analysis
 Familiarity with near-surface geophysical techniques, including GPR and ER
 Deployed and maintained computer networks and web-based technologies
 Understanding of design and construction of electromechanical systems
 Interest in developing customized field data collection instruments
 Interest in scientific graphic design