

SALLY L. LETSINGER, Ph.D.

Curriculum Vitae

Senior Research Scientist (Water Resources)

Email: sletsing@indiana.edu

Phone: 812.855.1356

Department of Geography
Indiana University
Student Building 120
701 E. Kirkwood Avenue
Bloomington, IN 47405-7100

EDUCATION

Ph.D. Geological Sciences: Indiana University, Bloomington, IN, 2001. Department of Geological Sciences (Hydrogeology)

Dissertation: Simulating the evolution of seasonal snowcover and snowmelt runoff using a distributed energy balance model: Application to an alpine watershed in the Tobacco Root Mountains, Montana

M.S. Geology: University of Idaho, Moscow, ID, 1994.

Department of Geology and Geological Engineering (Fluvial Geomorphology and Hydrology)

Thesis: Late-stage syneruption sedimentation in the South Fork Toutle River, Toutle, Washington

B.S. Geology: Indiana University-Purdue University at Indpls, Indianapolis, IN, 1990.

Department of Geology

POSITIONS AND APPOINTMENTS

2022 - present	Senior Research Scientist, Department of Geography, Indiana University, Bloomington, Indiana.
2022 – present	Affiliate Researcher, Environmental Resilience Institute, Indiana University.
2021 – present	Member of the Midwest Climate Adaptation Science Center (MCASC).
2018 - present	Adjunct Assistant Professor, Department of Geography, Indiana University, Bloomington, Indiana.
2013 - present	Affiliate Member, Integrated Program in the Environment, Indiana University.
2007 - present	Member of Graduate Faculty, Indiana University, Bloomington, Indiana.
2018 - 2022	Associate Research Scientist, Department of Geography, Indiana University, Bloomington, Indiana.
2017 - 2018	Associate Research Scientist, Center for Geospatial Data Analysis, Indiana Geological and Water Survey, Indiana University, Bloomington, Indiana.
2013 - 2017	Assistant Research Scientist, Center for Geospatial Data Analysis, Indiana Geological Survey, Indiana University, Bloomington, Indiana.
2006 - 2009	Director, Center for Geospatial Data Analysis, Indiana University, Bloomington, Indiana.
2005 - 2010	Adjunct Assistant Professor, Department of Earth and Atmospheric Sciences (formerly, Department of Geological Sciences), Indiana University, Bloomington, Indiana.

2003 - 2006	Assistant Director, Center for Geospatial Data Analysis, Indiana University, Bloomington, Indiana.
2000 - 2013	Research Hydrogeologist, Center for Geospatial Data Analysis, Indiana University, Bloomington, Indiana.
1998 - 2000	Engineering Geologist, Basin Studies Section, Indiana Dept. of Natural Resources, Division of Water, Indianapolis, Indiana.
1996 - 1998	Research Assistant, Department of Geological Sciences, Indiana University, Bloomington, Indiana.
1997 Summer	GIS Programming Consultant, GIS Laboratory, School of Public and Environmental Affairs, Indiana University, Bloomington, Indiana.
1995 - 1996	Associate Instructor, Department of Geological Sciences, Indiana University, Bloomington, Indiana.
1994 - 1995	Research Scientist (Tolo Lake Fossil Site Project), University of Idaho, Moscow, Idaho.
1992 - 1994	Instructional Assistant, Department of Geology and Geological Engineering, University of Idaho, Moscow, Idaho.
1991 - 1992	Engineering Geologist, Ground Water Section, Indiana Dept. of Natural Resources, Division of Water, Indianapolis, Indiana.

PROFESSIONAL LICENSURE

Licensed Professional Geologist, State of Indiana, #2074 [through 04/30/2025]

Geographic Information Systems Professional (GISP), #49772 [through 01/25/2026]

RESEARCH INTERESTS

- Watershed hydrology, especially in areas of complex terrain
- Understanding the hydrologic implications of a changing climate
- Water infrastructure, water sustainability
- Modeling the land-surface energy balance for determination of the spatial distribution and timing of snowmelt runoff
- Using numerical methods to solve geologic and hydrogeologic problems
- GIS and remote sensing as tools for geospatial data analysis applied to geologic problems at all scales
- Scientific visualization

GRANTS AND FUNDING (Cumulative total of \$5.2M+ direct costs, \$39K in-kind awards)

2023-2024 Southeast Central Indiana Water Study: 50-year water demand and availability in the Driftwood, Flatrock-Haw, and Upper East Fork White watersheds, Indiana, USA. Project Director/PI/Analyst. Indiana Finance Authority. Eighteen-month project; \$408,502.

2022 Conference: Climate Resilience and Managing Water Resources. Supporting personnel (Ben Kravitz, IU DEAS, PI). National Science Foundation: Convergence Accelerator Research. Six-month project; \$94,090.

2021 Assistance for analyzing big-data water-balance model output. Project Director/PI. Indiana University Faculty Assistance in Data Science (FADS) [internal]. 6-month project; in-kind student research support ~\$5000.

2020-2021 Implications to aquifer storage from shifts in timing of water-balance partitioning. Project Director/PI/Analyst. Indiana Department of Environmental Management. Sixteen-month project; \$184,475.

2020 Building a climate, soil, and water monitoring infrastructure to improve water-resource planning and STEM education in Daviess, Dubois and Greene Counties. Co-Investigator (Shawn Naylor, IGWS, PI). Indiana University Center for Rural Engagement. One-year project; \$135,000 (total).

2017-2020 Planning, coordination, and training associated with lead sampling activities at Schools: Indiana School Lead Sampling Program. Project Director/PI/Analyst. Indiana Finance Authority. Three-year project, service extension for four years (to 2024); \$2.08M.

2019 Research applications of Leapfrog software in water resources. Project Director/PI. Seequent. Two-year project; \$15,000 (value) software donation.

2018-2019 An assessment of the persistence of chloride in the pathway from source water to tap and its implications for potential corrosion of metal pipes: A pilot study. Project Director/Co-PI (Branam)/Analyst. Indiana Finance Authority. Eighteen-month project; \$35,761.

2016-2018 Spatial analysis of registered significant water withdrawal facilities in Indiana. Project Director/PI/Analyst. Indiana Finance Authority. Two-year project; \$520,950

2016-2017 (1) Evaluating tillage practices on near-surface groundwater recharge, (2) Geological investigations to understand the distribution of arsenic in groundwater. Project Director/PI. Indiana Department of Environmental Management. Seventeen-month project; \$282,000.

2016 High performance numerical modeling in hydrogeology. Project Director/PI. NVIDIA Corporation. Received Tesla K40 GPU (graphics processing unit). Value: \$4,000.

2015 Spatial analysis of 20 selected water utilities in Indiana. Project Director/PI/Analyst. Indiana Finance Authority. Seven-month project; \$96,259.

2012-2015 Development of an aquifer sensitivity assessment for Indiana. Project Director/PI. Indiana Department of Environmental Management. Three-year project; \$328,830.

2014 Field hydrology research applications of drones. PrecisionHawk service agreement (in-kind award followed by equipment award of DJI Matrice 100 Quadcopter). Value: \$15,000.

2013 Glacial Stratigraphy Regional Geologic Framework Model Development: Erie Ice Lobe Basin in Indiana. Project Director/PI. USGS Great Lakes Geologic Mapping Coalition. One-year project; \$33,973.

2012 Evaluation of the Indiana Department of Environmental Management Ground Water-Quality Monitoring Network. Project Director/PI. Indiana Department of Environmental Management. Three-month project; ARN A305-2-71, \$35,500.

2012 Glacial Stratigraphy: Characterization of the Erie Lobe. Project Director/PI. USGS Great Lakes Geologic Mapping Coalition. One-year project; \$42,760.

2011 Predictive modeling of potential karst-development areas in south-central Indiana: Project Director/PI. U. S. Forest Service. One-year project; \$20,005.

2011 Georeferencing high resolution coastal aerial photography for dissemination on the Lake Michigan Rim Internet mapping web site. Project Director/PI. Indiana Department of Environmental Management. Three-month project; \$15,000.

2010-2011 Glacial Stratigraphy: Aquifer Mapping, Characterization, and Sensitivity. Co-PI (with Michael Prentice). USGS Great Lakes Geologic Mapping Coalition. One-year project; \$76,000.

2009-2011 Three-dimensional geologic model development of the Huntertown Formation, Allen County, Indiana. Project Director/PI. USGS Great Lakes Geologic Mapping Coalition. Two-year project; \$115,195.

2008-2009 Three-dimensional geologic and ground-water flow model development in the Huntertown aquifer system, Indiana. USGS Great Lakes Geologic Mapping Coalition, Project Director/PI, one-year project, \$44,500.

2008 Development of a land cover classification data layer for the Indian Creek Watershed, Johnson, Morgan, Brown, and Monroe Counties, Indiana. Project Director. Johnson County Soil and Water Conservation District. Four-month project; \$8,233.

2007-2008 (1) Three-dimensional geologic and ground-water modeling of the Milan and Huron Quadrangles, Ohio, (2) Three-dimensional geologic modeling and interpretation in preparation for ground-water model development in the Huntertown aquifer system, Indiana, (3) Three-dimensional reconstruction of till stratigraphy to understand aquifer recharge, develop till depositional models, and improve ice-sheet modeling. USGS Great Lakes Geologic Mapping Coalition, Project Director/PI, one-year project, \$44,000.

2007 Update of the Lake Michigan Rim Web Site and Development of GIS Data Layers and Metadata. Co-Project Director with N. Eaton (Indiana Geological Survey). Indiana Department of Natural Resources, Lake Michigan Coastal Program. Eighteen-month project; \$76,167.

2007 Update of the Lake Michigan Rim Internet mapping web site to include recent data in support of the Grand Calumet Feasibility Study. Co-Project Director with N. Eaton (Indiana Geological Survey). U.S. Army Corps of Engineers. Two-year project; \$69,978.

2006 Development and Dissemination of Source Water Assessments for Non-Community, Non-Transient Systems, Source Water Assessment Program (SWAP), State of Indiana, Phase 2. Project Director and Co-Principal Investigator with G.A. Olyphant (Indiana Univ. Dept. Geol. Sci.). Indiana Department of Environmental Management. One-year project; \$74,930.

2006 Indiana Reach Index: Update of National Hydrography Dataset. Project Director and Co-Principal Investigator. Indiana Department of Environmental Management/USEPA Section 104(b)(3): One-year project; \$48,345.

2005 Dunes Creek Watershed [SWAT] Modeling, Porter County, Indiana. Project Director/PI. Save the Dunes Conservation Fund. One-year project; \$6000.

2005 Conversion of Historical Data to GIS Format for Grand Calumet Feasibility Study. Project Director. U.S. Army Corps of Engineers. Six-month project; \$36,414.

2005 An evaluation of the storage and movement of potential contaminants in soils at a CFO where manure is applied to highly permeable sands-Phase 2. Co-Project Director. Indiana Department of Environmental Management/USEPA Section 104(b)(3): Two-year project; \$98,035.

- 2004 Water-Quality Data Compilation and Analysis for the Coastal Nonpoint Source Management Plan. Project Director/PI. Indiana Department of Environmental Management/ USEPA Section 319: Fifteen-month project; \$98,046.
- 2003 An evaluation of the storage and movement of potential contaminants in soils at a CFO where manure is applied to highly permeable sands. Project Director. Indiana Department of Environmental Management/ USEPA Section 104(b)(3): One-year project; \$116,088.
- 2003 Mapping, correlation, and interpretation of geomorphic surfaces in and around Bloomington, Indiana. (Student mentoring grant.) Project Director/PI. Association of American State Geologists (AASG): Fall 2003 Semester; \$3,700.
- 2002 Development of bedrock and surficial geologic maps for the Griffy Woods Research and Teaching Preserve, Bloomington, Indiana. (Student mentoring grant.) Project Director/PI. Association of American State Geologists (AASG): Fall 2002 Semester; \$3,300.
- 2002 Evaluation of riparian buffer zones using GIS and remote sensing to target watershed restoration efforts. Project Director/PI. Indiana Department of Environmental Management/ USEPA Section 319: Two-year project; \$108,413.
- 2001 Development and Dissemination of Source Water Assessments for Non-Community, Non-Transient Systems, Source Water Assessment Program (SWAP), State of Indiana. Project Director and Co-Principal Investigator with G.A. Olyphant (Indiana Univ. Dept. Geol. Sci.). Indiana Department of Environmental Management. Two-year project; \$227,858.
- 2001 Development of Watershed Tools with User-Friendly Linkages to the Lake Rim GIS. Co-Principal Investigator with G.A. Olyphant (Indiana Univ. Dept. Geol. Sci.) and D. Harper (Indiana Geological Survey). Indiana Department of Environmental Management. One-year project; \$43,798.
- 1998 Geological Society of America Research Grant, Dissertation Support \$2000.
- 1998 Remote Sensing Laboratory of the Midwestern Regional Center of the National Institute for Global Environmental Change, matching award, Dissertation Support \$2000.
- 1998 Indiana University Department of Geological Sciences Grant-in-Aid of Research, Dissertation Support \$600.
- 1997 Shell Research Fellowship, Dissertation Support \$600.

PUBLICATIONS

Peer-reviewed articles:

- Rupp, J.A., [Letsinger, S.L.](#), and Carlson, G., 2018, Fault angle control on potential seismic slip in the Illinois Basin region: *Seismological Research Letters*, v. 89, no. 6, p. 2461-2472. doi: 10.1785/0220180153.
- Medina, C.R., [Letsinger, S.L.](#), and Olyphant, G.A., 2017, Hydrogeologic modeling of an area subjected to detailed geologic mapping in three dimensions: Do the details really matter? In, Kehew, A.E., and Curry, B. B., eds., *Quaternary Glaciation of the Great Lakes Region: Process, Landforms, Sediments, and Chronology*: Geological Society of America Special Paper 530, doi: 10.1130/2017.2530(11).

- David, S.R., Edmonds, D.A., and Letsinger, S.L., 2017, Controls on the occurrence and prevalence of floodplain channels in meandering rivers: *Earth Surface Processes and Landforms*, vol. 42, no. 3, pp. 460–472, doi:10.1002/esp.4002.
- Berg, R.C., Brown, S.E., Thomason, J.F., Hasenmueller, N.R., Letsinger, S.L., Kincare, K.A., Esch, J.M., Kehew, A.E., Thorleifson, L.H., Kozlowski, A.L., Bird, B.C., Pavey, R.R., Bajc, A.F., Burt, A.K., Fleeger, G.M., and Carson, E.C., 2016, A multiagency and multijurisdictional approach to mapping the glacial deposits of the Great Lakes region in three dimensions: in Wessel, G.R., and Greenberg, J.K., eds., *Geoscience for the Public Good and Global Development: Toward a Sustainable Future: Geological Society of America Special Paper 520*, doi:10.1130/2016.2520(37).
- Naylor, S., Letsinger, S.L., Ficklin, D.L., Ellett, K.M., and Olyphant, G.A., 2016, A hydrogeological approach to quantifying groundwater recharge in various glacial settings of the mid-continent U.S.A.: *Hydrological Processes*, v. 30, p. 1594-1608. doi: 10.1002/hyp.10718.
- Ficklin, D.L., Letsinger, S.L., Stewart, I.T., and Maurer, E.P., 2016, Assessing differences in snowmelt-dependent hydrologic projections using CMIP3 and CMIP5 climate forcing data for the western United States: *Hydrology Research*, v. 47, no. 2, p. 483-500. doi:10.2166/nh.2015.101.
- Ficklin, D.L., Letsinger, S.L., Gholizadeh, H., and Maxwell, J., 2015, Incorporation of the Penman-Monteith potential evapotranspiration method into a Palmer Drought Severity Index tool: *Computers and Geosciences*, v. 85, p. 136-141. doi:10.1016/j.cageo.2015.09.013.
- Ficklin, D.L., Maxwell, J.T., Letsinger, S.L., and Gholizadeh, H., 2015, A climatic deconstruction of recent drought trends in the United States: *Environmental Research Letters*, v. 10, no. 4, 044009. doi:10.1088/1748-9326/10/4/044009.
- Ficklin, D.L., Barnhart, B.L., Knouft, J.H., Stewart, I.T., Maurer, E.P., Letsinger, S.L., and Whittaker, G.W., 2014, Climate change and stream temperature projections in the Columbia River Basin: biological implications of spatial variation in hydrologic drivers. *Hydrology and Earth System Sciences*, v. 18, p. 4897-4912. doi:10.5194/hess-18-4897-2014.
- Letsinger, S.L., and Olyphant, G.A., 2007, Distributed energy balance modeling of snow cover evolution and melt in rugged terrain: Tobacco Root Mountains, Montana, USA: *Journal of Hydrology*, v.336, no. 1-2, pp. 48-60. doi:10.1016/j.jhydrol.2006.12.012

Book chapters:

- Letsinger, S.L., Balberg, A., Hanna, E., and Hiatt, E.K., 2021, *Geohydrology: Watershed Hydrology*: in, Elias, S., and Alderton, D., eds., *Encyclopedia of Geology*, 2nd edition, p. 442-456. doi: 10.1016/B978-0-12-409548-9.12389-9.

Technical research reports to funding agencies:

- Letsinger, S.L. and Gustin, A.R., 2024, Hydrogeologic evaluation of proposed development sites near Greenfield, Hancock County, Indiana: report to Indiana Finance Authority, 20 p.
- Letsinger, S.L., and Gustin, A.R., 2024. Regional water study: Water Demand and Availability in the Driftwood, Flatrock-Haw, and Upper East Fork White River Watersheds; Report to Indiana Finance Authority, Award 079396-00002B, 106 p. plus appendices <http://dx.doi.org/10.13140/RG.2.2.21349.17126> (available at: https://www.in.gov/ifa/files/LetsingerGustin_I74CorridorWaterStudy_2024-02-14.pdf)

- Letsinger, S.L., Balberg, A., and Gustin, A.R., 2021, Implications to aquifer storage from shifts in timing of water-balance partitioning: report to Indiana Department of Environmental Management, Award #41486, 90 p. plus appendices. <http://dx.doi.org/10.13140/RG.2.2.22549.70881>
- Letsinger, S.L., and Branam, T., 2019, An assessment of the persistence of chloride in the pathway from source water to tap: A pilot study: report to Indiana Finance Authority, June 29, 2019, 55 p. <http://dx.doi.org/10.13140/RG.2.2.26524.05769>
- Indiana Finance Authority (authored by: Letsinger, S.L.), 2019, Indiana Lead Sampling Program for Public Schools, https://www.in.gov/ifa/files/Indiana_School_Lead_Sampling_Program_FinalReport_IFA2019.pdf (available at: <https://www.in.gov/ifa/2958.htm>), 32 p.
- Letsinger, S.L., 2018, Spatial distribution of significant water withdrawal facilities (SWWF) in Indiana. Report to Indiana Finance Authority, 108 p.
- Letsinger, S.L., 2017, Geological investigations of the distribution of arsenic in groundwater: report to Indiana Department of Environmental Management, Contract ARN A305-6-190, 132 p. <http://dx.doi.org/10.13140/RG.2.2.25066.29123>
- Letsinger, S.L., 2017, Water and energy fluxes in the School Branch watershed, Hendricks County, Indiana: report to Indiana Department of Environmental Management, Contract ARN A305-6-190, 40 p. <http://dx.doi.org/10.13140/RG.2.2.18355.40488>
- Letsinger, S.L., 2015, Hydrogeologic characterization of wellheads and surface-water intakes, Part 2: report to Indiana Finance Authority, 881 p.
- Letsinger, S.L., 2015, Spatial analysis of 20 selected water utilities in Indiana, Part 1: report to Indiana Finance Authority, 127 p.
- Letsinger, S.L., 2015, Relationship of groundwater recharge rates to aquifer sensitivity to contamination in shallow aquifers in Indiana using multiple regression analysis: report to Indiana Department of Environmental Management, Contract ARN A305-2-52, 32 p. <http://dx.doi.org/10.13140/RG.2.2.11644.51842>
- Letsinger, S.L., 2013, Regional Geologic Framework Model Development: Erie Ice Lobe Basin in Indiana. USGS Great Lakes Geologic Mapping Coalition, summary of products developed, 7 p.
- Letsinger, S.L., Clark, J.C., Olyphant, G.A., and Branam, T., 2012, IDEM Ground Water Monitoring Network – a review and evaluation. Indiana Department of Environmental Management, Contract ARN A305-2-71, 179 p.
- Letsinger, S.L., 2012, Erie Ice Lobe Basin in Indiana, Initial Hydrostratigraphic Data and Methods Development (focus area: Allen County). USGS Great Lakes Geologic Mapping Coalition, summary of products developed, 5 p.
- Martin R., Boetter, F., Clingerman, J., Hansen, E., Hereford, A., Letsinger, S.L., Petty, T., and Strager, J. 2012. Ohio River Basin and Southeast Aquatic Resources Partnership Model summaries. In: Midwest Fish Habitat Partnership fish habitat modeling results, report to U.S. Fish and Wildlife Service. 251 pp.
- Simon, T. P., de Leon, B., Ehman, J., Jones, W., Henshel, D., Morris, C.C., Letsinger, S.L., and Olyphant, G.A., 2012. Assessment of Natural Resource Conditions for Indiana Dunes National Lakeshore. GLRI #90 Task Agreement # J6300100818. Indiana University, The School of Public and Environmental Affairs, Bloomington, IN.

- Olyphant, G.A. and Letsinger, S.L., 2012, An evaluation of the storage and movement and potential contaminants in soils at a confined feeding operation in southwestern Indiana: Indiana Geological Survey Report of Progress 38, 28 p.
- Letsinger, S.L., and Olyphant, G.A., 2011, Prediction of potential areas of sinkhole development in southwestern Indiana using multiple regression analysis. Digital products and report of 12 p.
<http://dx.doi.org/10.13140/RG.2.2.14999.96162>
- Gray, H.H., and Letsinger, S.L., 2011, A History of Glacial Boundaries in Indiana: Indiana Geological Survey Special Report 71, 10 p.
- Olyphant, G.A., and Letsinger, S.L., 2010, Environmental Feasibility of Using Recycled Tire Pieces as Media in Septic System Absorption Fields: Indiana Geological Survey Open File Study 09-08, 22p.
- Letsinger, S.L., and Olyphant, G.A., 2010, Data Compilation and Analysis for the Coastal Nonpoint Source Management Plan: Indiana Geological Survey Open File Study 09-07, 73 p.
- Olyphant, G.A., and Letsinger, S.L., 2010, Field Evaluation of On-Site Sewage Disposal Systems and Broad-Scale Suitability Mapping, Morgan County, Indiana: Indiana Geological Survey Open File Study 09-04, 21 p.
- Harper, D., Dintaman, C., Mastalerz, M., and Letsinger, S.L., 2009, Reconnaissance of coal slurry deposits in Indiana: Occasional Paper 69, Indiana Geological Survey, Bloomington, 20 p.
- Olyphant, G.A. and Letsinger, S.L., 2009, An evaluation of the storage and movement of potential contaminants in soils at a confined feeding operation where manure is applied to highly permeable sands: Indiana Geological Survey Open File Study 09-01, 27 p.
- Olyphant, G.A., and Letsinger, S.L., 2008, Environmental feasibility of using recycled tire pieces as media in septic system absorption fields. Indiana Department of Environmental Management, Waste Tire Management Fund Grant Program, Contract ARN A305-4-113, 45 p.
- Olyphant, G.A., and Letsinger, S.L., 2007, An evaluation of the storage and movement of potential contaminants in soils at a CFO where manure is applied to highly permeable sands, Phase 2. Indiana Department of Environmental Management, Section 104(b)(3) Grant Program, Contract ARN A305-5-45, 53 p.
- Letsinger, S.L. and Dintaman, C., 2006, Indiana Reach Index Update, Indiana Department of Environmental Management, Section 319 Grant Program, Contract ARN A305-5-05, digital products and report of 7 p.
- Letsinger, S.L., 2005, Dunes Creek Watershed Model, Porter County, Indiana. Final report for Save the Dunes Conservation Fund. 129 p.
- Letsinger, S.L., 2005, Data compilation and analysis for the coastal nonpoint source management plan, Indiana Department of Environmental Management, Section 319 Grant Program, Contract ARN A305-4-59, 245 p.
- Letsinger, S.L., 2004, Final summary report for Evaluation of Riparian Buffer Zones using GIS and Remote Sensing. Indiana Department of Environmental Management, Section 319 Grant Program, Contract ARN A305-2-01-387-0, 72 p. <http://dx.doi.org/10.13140/RG.2.2.20652.03206>

Conference Presentations (published abstracts):

Letsinger, S.L. and Balberg, A., 2021, Implications to aquifer storage from climate-driven shifts in water-balance partitioning: Indiana, Midwest USA [Abs.]: 2021 Fall Meeting, AGU, New Orleans, LA, 13-17 Dec. in session H45D Abstract H45D-1211, Advances in quantifying impacts and extents of land-use/land-cover change on hydrology and climate change.

<https://doi.org/10.1002/essoar.10510273.1>.

Letsinger, S.L., 2020, Assessing the scope of lead contamination in public school drinking water in Indiana, USA [Abs.]: Geological Society of America Abstracts with Programs. v. 52, no. 6, doi: 10.1130/abs/2020AM-358753.

Letsinger, S.L., Branam, T., Green, R., Amoroso, R., Harris, M.B., Gokey, M., 2018, An assessment of the persistence of chloride from source water to tap and its implications for potential corrosion of metal pipes: A pilot study [Abs.]: Geological Society of America Abstracts with Programs. v. 50, no. 6, ISSN 0016-7592, doi: 10.1130/abs/2018AM-318163.

Naylor S., Getz, D.M., Autio, R.J., Letsinger, S.L., Ellett, K.M., Olyphant G.A., 2017, Determining vertical soil-water flux in glaciated terrains using a convective heat flux model and measured transient soil thermal properties [Abs.]: 2017 Fall Meeting, AGU, New Orleans, LA, 15-19 Dec. in session H41G, Abstract H41G-1537: Modeling the Critical Zone: Integrating Processes and Data Across Disciplines and Scales.

David, S.R., Edmonds, D.A., Letsinger, S.L., 2017, Controls on the occurrence and prevalence of floodplain channels in meandering rivers [Abs.]: Geological Society of America Abstracts with Programs., v. 49, no. 6, doi: 10.1130/abs/2017AM-307592.

Naylor, S., Letsinger, S.L., Ficklin, D. L., Ellett, K. M., Olyphant, G. A., and Dufficy, A. L., 2015, Integrating groundwater observations with models of soil-water dynamics to examine recharge patterns through glacial sediments in a humid continental climate [Abs.]: presented at 2015 Fall Meeting, AGU, San Francisco, Calif., 15-19 Dec. in session H23C: Estimation of Total Effective Recharge of Groundwater: Significant of Recent Applicable Approaches between Different Climate Regions.

Letsinger, S.L., 2014, Spatially distributed regional recharge-rate estimation to guide an aquifer- sensitivity assessment for mid-continental glacial environments, USA [Abs.]: Geological Society of America Abstracts with Programs. vol. 46, no. 6, p.110.

Ficklin, D.L., Letsinger, S.L., and Maxwell, J., 2014, From the past to the future: Changes in the spatiotemporal trends of droughts in the United States [Abs.]: Association of American Geographers meeting in Tampa, Florida, April 2014.

David, S.R., Edmonds, D.A., Letsinger, S.L., Hajek, E. A., 2013, Geomorphic mapping of floodplain accessory channels with implications for floodplain morphodynamics [Abs.]: Abstract EP43C- 0867 presented at 2013 Fall Meeting, American Geophysical Union, San Francisco, Calif., 7-13 Dec.

Ficklin, D. L., Letsinger, S.L., Stewart, I. T., Maurer, E. P., 2013, How do hydrologic projections for the western United States change with the new CMIP5 models? [Abs.]: Abstract GC44C-04 presented at 2013 Fall Meeting, American Geophysical Union, San Francisco, Calif., 7-13 Dec. Bibcode: <https://ui.adsabs.harvard.edu/abs/2013AGUFMGC44C..04F/abstract>

Morgan, J.A., Johnson, L.T., White, J.R., Priore, W., Letsinger, S.L., Olyphant, G.A., and Royer, T.V., 2013, Hydrological investigations of streambed sediment removal in the Fawn River, Steuben County,

- Indiana [Abs.]: Indiana Water Resources Association Spring Symposium, Muncie, Indiana, June 19-21, 2013.
- Prentice, M.L., Ducey, P.W., Ismail, A., [Letsinger, S.L.](#), Sargent, S., and Fenerty, B.S., 2013, Erie Lobe Till studies in Indiana reveal a dynamic ice margin arrays [Abs.]: North-Central Geological Society of America Abstracts with Programs, vol. 45, no. 4.
- Naylor, S., Gustin, A.R., [Letsinger, S.L.](#), Ellett, K.M., and Olyphant, G.A., 2013, Quantifying hydrologic budget components in Indiana using a network of meteorological and vadose-zone instrument arrays [Abs.]: North-Central Geological Society of America Abstracts with Programs, vol. 45, no.4.
- [Letsinger, S.L.](#), and Olyphant, G. A., 2012, Prediction of potential areas of sinkhole development in southwestern Indiana using multiple regression analysis [Abs.]: Geological Society of America Abstracts with Programs, vol. 44, no. 7.
- Shaffer, N.R. and [Letsinger, S.L.](#), 2012, Pumped water as a potential byproduct of mining [Abs.]: 48th Annual Forum on the Geology of Industrial Minerals, Scottsdale, AZ, April 30 - May 4, 2012.
- Clingerman, J., Petty, J. T., Boettner, F., [Letsinger, S. L.](#), and Strager, J., 2012, GIS Habitat Modeling: Details of the Boosted Regression Tree Modeling Process for the Midwest Regional Fish Habitat Assessment [Abs.]: American Fisheries Society 142nd Annual Meeting. Abstract # W-14-4.
- Gallagher, M., Petty, J. T., Clingerman, J., Boettner, F., [Letsinger, S. L.](#), and Strager, M. P., 2012, Scaling up – the Midwest Regional Assessment [Abs.]: American Fisheries Society 142nd Annual Meeting. Abstract # W-14-15.
- Petty, J. T., Boettner, F., Clingerman, J., Lamont, S., [Letsinger, S. L.](#), Martin, R., Strager, J., and Strager, M.P., 2012, Quantifying Stressors and Natural Fish Habitat Quality: Linking Data to Fish Habitat Conservation [Abs.]: American Fisheries Society 142nd Annual Meeting. Abstract # W-14-2.
- Strager, M. P., Lamont, S., Petty, J. T., Clingerman, J., [Letsinger, S. L.](#), and Strager, J., 2012, A Decision Support Tool to Support the Integration of Spatial Data Analysis and Statistical Modeling for Fish and Habitat Condition Assessments [Abs.]: American Fisheries Society 142nd Annual Meeting. Abstract # W-14-5.
- [Letsinger, S.L.](#), Prentice, M. L., Olyphant, G. A., and Riddle, A. D., 2011, Three-Dimensional Groundwater Flow Modeling using a Geologic Framework Model of Near-Surface Glacial Sequences: Northeastern Indiana [Abs.]: Geological Society of America Abstracts with Programs, vol. 43, no.5.
- [Letsinger, S.L.](#), Naylor, S., and Olyphant, G.A., 2009, A GIS-based approach to modeling three-dimensional geology of near-surface glacial morphosequences: Huntertown Formation, northeastern Indiana [Abs.]: Geological Society of America Abstracts with Programs, vol. 41, no.7, p. 166.
- [Letsinger, S.L.](#), and Olyphant, G.A., 2008, GIS-based potential recharge- and discharge-area mapping from three-dimensional hydrogeologic modeling in glacial terrains of the midwestern United States [Abs.]: Geological Society of America Abstracts with Programs, vol. 40, no. 6, p. 472.
- Pavey, R.R., Olyphant, G.A., and [Letsinger, S.L.](#), 2008, GIS-based three-dimensional geologic and hydrogeologic modeling of the Milan, Ohio 1:24,000 Quadrangle [Abs.]: North Central Section of the Geological Society of America Abstracts with Programs, vol. 40, no. 5, p. 72.
- Prentice, M.L., Arcone, S.A., Curren, M.G., Delaney, A.J., Horsman, J., [Letsinger, S.L.](#), Medley, E.A., and Gaynor, J.R., 2008, Stratigraphy and geomorphology of late Pleistocene moraine at the mouth of Taylor Valley, Antarctica: Implications for the melting history of the West Antarctic ice sheet during the last

- deglaciation [Abs.]: Eos Trans. AGU, vol. 89, no. 53, Fall Meet. Suppl., Abstract C31C-0504.
- Olyphant, G.A., Medina, C.R., Letsinger, S.L., 2006, Dressing the emperor (groundwater-flow model) of glacial geology: A tale of three tailors [Abs.]: Geological Society of America Abstracts with Programs, vol. 38, no. 7, p. 108.
- Letsinger, S.L., Olyphant, G.A., Medina, C.R., 2006, The role of GIS in the development of three-dimensional hydrogeologic models [Abs.]: Geological Society of America Abstracts with Programs, vol. 38, no. 7, p. 164.
- Medina, C.R., Olyphant, G.A., Letsinger, S.L., 2006, The Role of three-dimensional information visualization software in the development of three-dimensional hydrogeologic models [Abs.]: Geological Society of America Abstracts with Programs, vol. 38, no. 7, p. 164.
- Reeder, M.D., Olyphant, G.A., Letsinger, S.L., 2006, Nitrogen loading of shallow groundwater aquifers in varying soil and topographic settings of southwestern Indiana [Abs.]: Geological Society of America Abstracts with Programs, vol. 38, no. 7, p. 39.
- Letsinger, S.L., and Olyphant, G.A., 2005, GIS-based hydrologic modeling for prioritizing riparian buffer restoration areas, Young's Creek Watershed, Johnson County, Indiana [Abs.]: American Water Resources Association Annual Meeting, Seattle, November 7-10, 2005.
- Letsinger, S.L., and Olyphant, G.A., 2004, GIS-based hydrologic modeling for riparian buffer management, Young's Creek Watershed, Johnson County, Indiana [Abs.]: American Water Resources Association Summer Specialty Conference Proceedings, Olympic Valley, California, June 28-30, 2004.
- Letsinger, S.L., and Olyphant, G.A., 2003, Development of a method to assess riparian vegetated buffer zones using GIS and remote sensing in Young's Creek watershed, Johnson County, Indiana [Abs.]: Geological Society of America Abstracts with Programs, vol. 35, no. 6, September 2003, p.78.
- James, C.L., Letsinger, S.L., Basu, A., Wentworth, S.J., and McKay, D.S., 2003, Nanophase iron globules in lunar soil [Abs.]: 2003 Lunar and Planetary Sciences Conference, 34, Abstract 1992.
- James, C.L., Letsinger, S.L., Basu, A., Wentworth, S.J., and McKay, D.S., 2002, Size distribution of FeO globules in lunar agglutinitic glass [Abs.]: 2002 Lunar and Planetary Sciences Conference 33, Abstract 1827.
- Letsinger, S.L., and Olyphant, G.A., 2001, Assessing the heterogeneity of snow-water equivalent during the snowmelt season: Spatial variability and its controlling factors in an alpine setting [Abs.]: EOS Trans. American Geophysical Union, v. 82, no. 47, Fall Meeting Supplement., Abstract IP51A-0737.
- Douglas, B.J., Olyphant, G.A., Elliott, W., Letsinger, S.L., and Suttner, L.J., 1997, Importance of bedrock geology to the geoecology of a northern Rocky Mountain watershed [Abs.]: Abstracts with Programs Geological Society of America Annual Meeting, v. 29, no. 6.
- Letsinger, S.L., Rember, W.C., Sprenke, K.F., Sappington, R.L., Breckenridge, R.M., Othberg, K.L., and Stanford, L.R., 1995, Geologic studies of the Tolo Lake fossil site, Idaho County, Idaho [Abs.]: Transactions Rocky Mountain Section Geological Society of America Meeting.
- Letsinger, S.L., and Palmer, B.A., 1993, Preliminary flood history of the South Fork Toutle River, Toutle, Washington [Abs.]: Transactions American Geophysical Union, v. 74, p. 294.

Maps and datasets:

- Letsinger, S.L., 2021, FAULT_FAILURE_RISK_MIDWEST_USA: Risk classification for fault failure in Illinois, Indiana, Ohio, and Kentucky USA (Indiana University, 1:500,000, Line Shapefile). <https://doi.org/10.5281/zenodo.4591853>
- Letsinger, S.L., 2018, Potentially_Unregistered_SWWF_2018: Potentially Unregistered Significant Water Withdrawal Facility Water Sources in Indiana (Indiana Geological and Water Survey, Point Shapefile)
- Letsinger, S.L., 2018, IDNR_SWWF2017_UTM1983: Significant Water Withdrawal Facility Water Sources in Indiana (Indiana Geological and Water Survey, Point Shapefile)
- Letsinger, S.L., 2015, Map of Indiana showing near-surface aquifer sensitivity: Indiana Geological Survey Miscellaneous Map MM-93. <https://hdl.handle.net/2022/28008>
- Letsinger, S.L., 2015, Map of Indiana showing near-surface aquifer recharge: Indiana Geological Survey Miscellaneous Map MM-92. <https://hdl.handle.net/2022/28009>
- Letsinger, S.L., 2015, Map showing sinkhole development risk in south-central Indiana and north-central Kentucky: Indiana Geological Survey Miscellaneous Map MM-91. <https://hdl.handle.net/2022/28011>
- Letsinger, S.L., 2015, Aquifer_Recharge_Near_Surface_IN: Groundwater recharge rates to shallow aquifers, Indiana (Indiana Geological Survey, 100-Meter TIFF Image). https://maps.indiana.edu/arcgis/rest/services/Hydrology/Aquifer_Recharge_Near_Surface/MapServer
- Letsinger, S.L., 2015, Aquifer_Sensitivity_Near_Surface_IN: Aquifer sensitivity in shallow aquifers, Indiana (Indiana Geological Survey, 100-Meter TIFF Image). https://maps.indiana.edu/arcgis/rest/services/Hydrology/Aquifer_Sensitivity_Near_Surface/MapServer
- Letsinger, S.L., 2012, Three-dimensional geologic framework model of the glacial interlobate region of northern Allen County, Indiana: Indiana Geological Survey Open File Study 12-02, 79 p. https://scholarworks.iu.edu/dspace/bitstream/handle/2022/29188/IGWS50064_OFS12-02.pdf
- Letsinger, S.L., 2011, LAKE_MICHIGAN_COASTAL_AERIAL_PHOTO_INDEX: Index to Lake Michigan Coastal Aerial Photos in Indiana (Indiana Geological Survey, Point Shapefile).
- Letsinger, S.L., 2011, SINKHOLE_DENSITY_KM2_IN_KY_2011: Density of sinkholes per square kilometer in southern Indiana and Kentucky, Derived from the 2011 Sinkhole Inventory (Indiana Geological Survey, 30-Meter TIFF Image). https://maps.indiana.edu/metadata/Hydrology/Karst_Sinkhole_Density_2011.html
- Letsinger, S.L., 2011, SINKHOLE_DEVELOPMENT_RISK_SW_IN_2011: Probability of sinkhole development in southwestern Indiana (Indiana Geological Survey, 1:1.5M, Polygon Shapefile).
- Letsinger, S.L., 2011, SINKHOLE_INVENTORY_IN_KY_2011: Sinkhole inventory for southern Indiana and northern Kentucky (Indiana Geological Survey, Point Shapefile). <https://gisdata.in.gov/portal/home/item.html?id=0bf3406044b04de598d00bd789e1e04f>
- Gray, H.H., and Letsinger, S.L., 2010, PRE-WISCONSIN_GLACIAL_LIMIT_IN: Southern extent of glaciation in

- Indiana (Indiana Geological Survey, 1:500,000, Line Shapefile).
<https://www.indianamap.org/datasets/INMap::pre-wisconsin-glacial-limit/about>
- Gray, H.H., and Letsinger, S.L., 2010, WISCONSIN_GLACIAL_LIMIT_IN: Extent of Wisconsin glaciation in Indiana (Indiana Geological Survey, 1:500,000, Line Shapefile).
<https://www.indianamap.org/datasets/INMap::wisconsin-glacial-limit/about>
- Letsinger, S.L., 2010, THREE_DIMENSIONAL_GEOLOGIC_MODEL_BERRIEN_COUNTY_MI: Glacial deposit unit surfaces (Indiana Geological Survey, 1:100,000, File Geodatabase).
- Letsinger, S.L., 2010, THREE_DIMENSIONAL_GEOLOGIC_MODEL_HUNTERTOWN_IN: Glacial deposit unit surfaces (Indiana Geological Survey, 1:100,000, File Geodatabase).
- Letsinger, S.L., 2008, OBSERVATION_WELLS_USGS_IN: Water Wells for Monitoring Ground Water in Indiana (United States Geological Survey, 1:24,000, Point Shapefile).
https://maps.indiana.edu/previewMaps/Hydrology/Water_Wells_Observation_Wells.html
- Hereford, A., and Letsinger, S.L., 2008, AQUIFERS_UNCONSOLIDATED_USGS_IN: Unconsolidated Aquifer Systems in Indiana (United States Geological Survey, 1:500,000, Polygon Shapefile).
- Letsinger, S.L., 2008, GRANDCAL_LANDUSECHANGE1951_1990: Land-use/Land-cover Change in Northwestern Lake County, Indiana, between 1951 and 1990, Indiana (Indiana Geological Survey, 5-Meter TIFF Image).
- Letsinger, S.L., 2008, IMPERVIOUS_AREA_HUC14_SUBWATERSHEDS_IGS_IN: Percentage of 14-digit Subwatersheds Occupied by Impervious Surfaces (Indiana Geological Survey, 1:24,000, Polygon Shapefile).
- Letsinger, S.L., 2008, WATER_QUALITY_MONITORING_POINTS_IGS_NORTHERN_IN: Monitoring station locations in the Coastal Nonpoint Pollution Control Plan Area in Indiana (Indiana Geological Survey, 1:24,000, Point Shapefile).
- Letsinger, S.L., 2008, WATERWELLS_IDNR_IN: Water-Well Locations in Indiana (Indiana Department of Natural Resources, Point Shapefile).
- Course and workshop manuals:
- Letsinger, S.L., 2010, Watershed Hydrology: Impervious Surface Analysis in ArcGIS 9.3x, Indiana University Center for Geospatial Data Analysis Publication, 95 p.
- Letsinger, S.L., 2006, Using the Spatial Analyst Extension to ArcGIS 9.x, Indiana University Center for Geospatial Data Analysis Publication, 51 p.
- Letsinger, S.L., [original: 2002; revisions: 2003, 2005, 2006, 2007, 2008], Elements of Geospatial Data Analysis: Geological Applications, Indiana University Center for Geospatial Data Analysis Publication, 120 p.
- Douglas, B.J., Letsinger, S.L., and Olyphant, G.A., 1996, Manual for Field Study of Geology of the Northern Rocky Mountains: Environmental Supplement, Indiana University Department of Geological Sciences Publication, 61 p.

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS

- American Geophysical Union
- Indiana Water Resources Association
- Indiana Water Monitoring Council
- Indiana Geographic Information Council
- Indiana Geologists

SERVICE

Reviewer for Journal of Hydrology, Hydrogeology Journal, Environmental Management, PLOS One, Cogent Geoscience, Cogent Environmental Science, Geosciences, Journal of Environmental Quality, Journal of Agricultural Water Management, National Science Foundation, United States Department of Agriculture, Centers for Disease Control and Prevention, Nazarbayev University Faculty-Development Competitive Research Grants Program (Oak Ridge Associated Universities (ORAU)).

Annual proposal reviewer for: American Water Resources Association, Indiana Water Resources Research Center

Current:

2023-2024: Technical advisor to the Indiana Finance Authority, North Central Indiana Water Study

2023-2024: Department of Geography, policy revision committee

2012 - present: Serve on Indiana Water Monitoring Council Groundwater Focus Committee

2012 - present: Provide support for Indiana Water Resources Association (website, conference registration, membership, awards)

Completed:

2023 Summer: Indiana University Research Ranks Policy Working Group

2022 - 2023: Serve on University Faculty Council, Research Affairs Committee (Co-chair)

2021 - 2023: Serve on Bloomington Faculty Council (Chair 21-22 and Co-Chair 22-23), Research Affairs Committee

2021 - 2022: Serve on University Faculty Council (NTT Research Faculty Rep)

2020 - 2022: Serve on IU Department of Geography Diversity, Equity, and Inclusion Committee

2020 - 2022: Serve on Bloomington Faculty Council, Non-tenure Track Faculty Representative (two-year term)

2020-2021: Technical advisor to the Indiana Finance Authority, Central Indiana Water Study

2019 - 2022: Serve on Indiana University-Purdue University at Indianapolis, Department of Earth Sciences Alumni Advisory Board

2018 - 2021: Serve on Bloomington Faculty Council (member), Research Affairs Committee

2021 Interviewed by local TV station (reporter Kristen Eskow) for input on water-infrastructure funding legislation. A fragment of the interview was included on-air: <https://fox59.com/indianapolitics/127-million-in-federal-funding-for-indiana-water-infrastructure-projects>

2018 - 2020: Serve on Natural Resources Conservation Service State Technical Committee

2018: President, Indiana Water Resources Association

Organizer of 2018 Spring Symposium and Field Demo Day (Bloomington, IN)

Organizer of 2018 Fall Symposium (Indianapolis, IN)

April 1-2, 2016: Participated as a Judge in the Indiana University Department of Geological Sciences student-run Crossroads Conference.

2004: Organizer of Midwest Groundwater Conference

AWARDS AND RECOGNITION

2018 Received the William G. Wilbur, John S. Zogorski Leadership Award for exemplary service as President of the Indiana Water Resources Association. Indiana Water Resources Association.

2017 Received staff merit bonus based on exceptional performance. Indiana University, Office of the Vice President for Research.

2013 Received Outstanding Achievement Award in the Public Sector for “for her constant giving to all that is hydrogeology and betterment of those she works with and for.” Indiana Water Resources Association.

TEACHING AND STUDENTS (Release time)

Courses

2022	GEOG-G830 Readings in groundwater resources	Directed (independent study) readings course with Seth Adelsperger
2011	GEOL G582 Computational Methods	Taught five-week GIS module: Computational Methods in Geosciences
2002, 2003, 2005, 2006, 2007, 2008	GEOL G424/G584 Geological Applications of GIS	Created and taught an accelerated eight-week intensive course to undergraduate and graduate students. Co-instructor: Greg A. Olyphant, IU Dept. Geol. Sci.
2003	GEOL G329 Introductory Field Experience in Environmental Science	Field experience in Montana; taught hydrology module of course

Workshops

2010 June	Watershed Hydrology: Impervious Surface Analysis in ArcGIS 9.3	Sponsor: Indiana University Information Technology Services (UITS)
2010 Feb	Watershed Hydrology: Impervious Surface Analysis in ArcGIS 9.3	Sponsor: Indiana Geographic Information Council, Indiana GIS Conference Workshop
2008	Water, Water, Everywhere: Finding and Using Hydrology Data	Sponsor: Indiana Geographic Information Council
2006	GIS: Using the Spatial Analyst extension for ArcGIS	Sponsor: Indiana University UITS
2005	Examples of GIS-based Hydrologic Modeling	Midwest Arc Users Group
2003	Griffy Research and Teaching Preserve Data Analysis Using GIS	Sponsor: Indiana University Information Technology Services (UITS)

Ph.D. Dissertation Research Committee

Seth Adelsperger – in progress – Subsurface agricultural tile drainage effects on surface-water hydrology, Midwest US

Paul Farrugia – in progress – Crocodylian Craniodental Ecomorphology and Ecological Niche Modeling: A New Approach for Reconstructing Hominin Paleoecology in the East African Rift System.

Elizabeth Olliver – 2020 – Ecogeomorphic feedbacks in Wax Lake Delta, LA

Scott David – 2018 – Floodplain Morphodynamics: The origin and function of floodplain channels

M.S. Thesis Committee

Seth Adelsperger – 2022 – Monitoring hydrologic effects in the Ogallala aquifer.

Elizabeth Olliver – 2015 – Ecogeomorphic feedbacks in Wax Lake Delta, LA

Ryan Wells – 2015 – Hydrophysical evaluation of an abandoned mine land site subjected to geomorphic reclamation: The importance of properly balancing groundwater recharge and surface runoff

Alex Riddle – 2015 – Hydrologic modeling as a basis for generating derivative maps from three-dimensional geologic framework models of surficial glacial land systems

Scott David – 2014 – Mapping floodplain morphological variability: Implications for controls on floodplain channel development

Mark Sherrill – 2014 – crop rotation, water use (MS, SPEA)

Samuel Blazey – 2014 – Modeling equilibrium and bedrock-controlled geomorphology using terrain analysis

Andrew Gustin – 2013 – The distribution, morphology, and temporal signature of rock glaciers in the Tobacco Root Mountains, Montana

Cristian Medina, 2007, Hydrogeologic characterization and groundwater flow modeling of a glacial aquifer system: Berrien County, Michigan

Kevin Thaisen, 2007, Geomorphic evidence for glaciation and catastrophic flooding in Candor Chasma, Mars

Boswell, James, 2005, Modeling Ground Water - Surface Water Interactions and the Hydroperiods of Groundwater Dominated Wetlands Application to a wetland restoration site in northwest Indiana.

Lampe, David, 2005, Geostatistical Characterization of Three Glacially Derived Aquifer Systems of Northern Indiana.

Rebecca Travis, 2003, Three-dimensional Saturated-Unsaturated Groundwater Model of the Lake Station Wetland Restoration Site, Lake County, Indiana.

Bachelor of Science, Environmental Science – Senior Research Project Advisor or Co-Advisor

Kara Gealy, 2023, Water demand and availability forecasting

Luke Fabina, 2020, Mapping unconsolidated aquifers using water well lithologic records

Julia Lynch, 2012, Geomorphic controls on knickpoint location: Morgan-Monroe State Forest, Indiana.

Anwar Alsanea, 2011, Preliminary numerical experiments involving water-table recharge in a glacial aquifer system.

David Grunat, 2007, Landfill to septic field: A study of the use of tire chips in septic system absorption fields.

Angela Heitger, 2006, Investigation of soil-moisture controls on vapor intrusion at an industrial site, Indianapolis, Indiana.

Sarah Germann, 2005, Source area determination and water-quality statistics: Salt Creek Watershed, Porter County, Indiana.

Anna Makowski, 2004, An evaluation of nitrate transport in sandy soils at a confined feeding operation.

Rachel Elliot, 2003, Bedrock and surficial deposits of Griffy Teaching and Research Preserve.

Andrew Smith, 2003, Mapping Geomorphic Surfaces in the Griffy Research and Teaching Preserve, Indiana University, Bloomington, Indiana.

Mikki Osterloo, 2002, The growing season water balance for a watershed located in southwestern Montana.

Graduate intern supervision 2000-present

Scott Frystak
Patrick Babbitt
Ben Sperl
Thomas (Max) Foltz
Mark Sherrill
Joe Morgan
James Boswell
Ginger Korinek

Matthew Reeder
Shawn Wheelock
Christina (James)
Ebey
Ritu Bose
Stacey Moore
Jodi Slough
Alex Riddle
Poonam Giri

Henry Collins
Samuel Blazey
Megan Gokey
Sara Swett
Kendra Morris
Logan Mort-Jones
Robin Green
Elias Hanna
Haley Waldkoetter

Allison Balberg
Anuj Patel
Jonathan Tirupuranthakam
Saicharan Vencha
William Unrue
Andrew Brown
Ruhui Chai

PROFESSIONAL DEVELOPMENT/TRAINING

2024

MOOC course on Cartography through ESRI. Cartography standards, 2D and 3D map design tools, information presentation, online publishing. April 3-May 15, 2024. 20 hours.

2023

Interdisciplinary Forum Workshop: Google Earth Engine, May 8-9, 2023 (in-person training, 5 hrs, Indiana University, Geography, Dr. Taehee Hwang)

2022

Introduction to Deep Learning on Big Red 200, July 21, 2022 (online training, 1.5 hrs, UITS Indiana University, Scott

Tiege)

2020

Non-detects and data analysis (NADA) (online training, 30 hrs, Practical Stats, Dennis Helsel)

2019

Climate Change: The Science and Global Impact (online course, semester, via edX: The Pennsylvania State University, Prof. Michael Mann).

The mystery of nondetects: How censored data methods work, May 21, 2019 (webinar, 1 hr, PracticalStats, Dennis Helsel)

Testing groups with multiple detection limits, March 19, 2019 (webinar, 1 hr, Practical Stats, Dennis Helsel)

2018

"One-day Basic QGIS" and "Two-Day Advanced QGIS" December 17-19, 2018. Sponsored by: Indiana Geographic Information Council and TopCon, Instructor: Philip Bernard. Certificate earned.

2016

Introduction to programming using MATLAB (9-week online course by Vanderbilt University on Coursera), Instructors: Michael Fitzpatrick, Akos Ledeczki. Certificate earned on June 26, 2016.

Permutation Tests and Bootstrapping, May 10, 17, and 24, 2016, (online) (4.5 hours, plus homework), Instructor: Dennis Helsel, Practical Stats.

Modeling water flow and contaminant transport in soils and groundwater using the HYDRUS software packages, March 2016, (onsite: Golden, Colorado) (24 hours), Instructor: Dr. Jirka Simunek.

Petroleum Vapor Intrusion: Fundamentals of Screening, Investigation, and Management, February 23, 2016 (webinar, 2.5 hours, EPA Technology Innovation and Field Services Division, Interstate Technology and Regulatory Council)

How to automatically update your Vector GIS Data using Trimble eCognition, February 16, 2016 (webinar, 1 hr, Trimble)

Seven Perilous Errors in Environmental Statistics, January 26, 2016 (webinar, 1 hr, Practical Stats, Dennis Helsel)

2015

ESRI Online Training: Deriving Rasters for Terrain Analysis Using ArcGIS (3 hours) ESRI

Online Training: Building Models for GIS Analysis Using ArcGIS (3 hours)

2014

Applied environmental statistics (to support multiple regression in ArcGIS), May 2014 (onsite, Indianapolis, Indiana) (37 hours), Instructor: Dennis Helsel, Practical Stats.

Time series methods (statistics to work with time aware datasets), October 2014 (onsite, Lakewood, Colorado) (15 hours), Instructor: Dennis Helsel, Practical Stats.

2013

ASPRS Webinar Workshop: Object based image analysis (4 hours)

2012

Multipoint and Conditional Facies Modeling, Schlumberger, Petrel software, February 7-9, 2012 (24 hours) (onsite, Bloomington, Indiana), Instructor: Alan Lee Brown.

ESRI ArcGIS III: Performing Analysis, September 12-13, 2012 (16 hours). ESRI Instructor-led online Training. Instructor: James Wojcik.

Estimating Groundwater Recharge, (onsite) (8 hours), Geological Society of America Meeting workshop. Instructors: Bridget Scanlon and Richard Healy. Charlotte, NC, November 3, 2012.

2011

Handling Nondetect Data Correctly, Midwest Geosciences Group – May 16, 2011 (2+ hours), Instructor: Dennis Helsel, Practical Stats.

Learn R In-Depth: A Free Software Environment for Statistical Computing and Graphics. (June – September, 2011, 23 classes), Instructor: by Dr. Paul Geissler (USGS).

Getting started with eCognition. Dec. 1, 2011, Instructor: Jarlath O'Neil-Dunne, GIS Analyst, Spatial Analysis Laboratory (SAL) University of Vermont.

Segmentation algorithms in eCognition. Dec. 1, 2011, Instructor: Jarlath O'Neil-Dunne, GIS Analyst, Spatial Analysis Laboratory (SAL) University of Vermont.

GEOL G612 Inverse Methods (audited), Jan-May 2011, Instructor: Prof. Kaj Johnson, Indiana University, Department of Geological Sciences, Bloomington, IN.

2010

ASPRS Webinar Workshop: Hyperspectral Remote Sensing: Phenomenology and Data Processing Workshop. March 11, 2010. (4 hours) Instructor: William Farrand, Space Science Institute.

Taking the mystery out of complex glacial sequences at environmental and geotechnical sites in the midcontinent: Part 1, Deciphering stratigraphy and depositional environments. March 30, 2010. (2 hours), Instructor: Midwest Geosciences Group, Tim Kemmis, Ph.D.

Taking the mystery out of complex glacial sequences at environmental and geotechnical sites in the midcontinent: Part 2, Understanding the Effects of Post-Depositional Weathering: Development of Surficial Soils, Weathering Zones, and Secondary Jointing. April 6, 2010. (2 hours), Instructor: Midwest Geosciences Group, Tim Kemmis, Ph.D.

Taking the mystery out of complex glacial sequences at environmental and geotechnical sites in the midcontinent: Part 3: Taking the Mystery Out of Glacial Successions for Environmental and Geotechnical Projects: (Unanticipated Subsurface Site Conditions). April 13, 2010. (1.5 hours), Instructor: Midwest Geosciences Group, Dan Kelleher.

Understanding Spatial Statistics in ArcGIS 9 (Webinar: 1 hour). July 8, 2010

Regression Analysis Basics in ArcGIS 9.3 (Webinar: 1 hour). July 8, 2010

Geoprocessing raster data using ArcGIS Spatial Analyst. August 13, 2010, ESRI Instructor-led online Training (8 hours). Instructor: Mark Stewart

Understanding ArcSDE Table Relationships (Webinar: 1 hour). August 19, 2010.

2009

Indiana University UITS: Scientific Computing with MATLAB at Indiana University. October 14, 2009.

Recent Developments in the Methods and Applications of Terrestrial Laser Scanning (Ground-based LiDAR) in Geologic Research and Education, (onsite) (8 hours), Geological Society of America Meeting, Interface workshop.

Three-Dimensional Geologic Mapping, (onsite) (8 hours), Geological Society of America Meeting, Interface workshop.

2006

16-17 Jan 2006

ERDAS (onsite) Using Imagery to Update your GIS, Atlanta, Georgia. 17-18 May 2006

ERDAS (onsite) Spatial Modeling and Expert Systems, Atlanta, Georgia.

18-19 Jan 2006

ERDAS (onsite) Image analysis for ArcGIS, Atlanta, Georgia.

Primer for working on Big Red (supercomputer): Hands-on Workshop: October 27, 2006 (IUPUI).
Instructor: Arvind Gopu of IU High Performance Computing group.

2005

HEC-RAS, a hydraulic modeling software package developed by the U.S. Army Corps of Engineers. (onsite) Rose-Hulman Institute of Technology in Terre Haute, Indiana. (3 days)

I-Light Symposium regarding high performance computing and scientific visualization (IUPUI), Indianapolis, Indiana, September 21, 2005.

Creating models with model builder in ArcGIS 9, October 5, 2005, (8 hours), Instructor: Melissa Brenneman (8 hours)

2004

ESRI (onsite) ArcHydro GIS for Water Resources (2 days)

Leica/ERDAS (onsite) Multispectral Classification (2 days)

Indiana University UITS: ArcGIS Tracking Analyst Extension

Indiana University UITS: ArcGIS Spatial Analyst Training

2003

Indiana University UITS-DMS: Intro to Arc MapPublisher and MapReader

Indiana University [IUPUI] UITS: ERDAS Imagine: Turning imagery into information. (8 hours)

Indiana University UITS: SPSS (statistical software): The Basics

Indiana University UITS: ERDAS Imagine: Geometric Correction

Indiana University UITS: Image Analysis using ArcGIS (Leica Image Analysis Extension for ArcGIS)

Indiana University [IUPUI] UITS: 3-D Visualization with LIDAR Data in GIS

2002

NASA/AASG (onsite) Remote Sensing Workshop, EROS Data Center, South Dakota.

Indiana University UITS: ERDAS Imagine: Visualizing remote-sensing data

Indiana University UITS: ERDAS Imagine: Landcover classification

Indiana University UITS: GIS Seminar for Research and Teaching

Indiana University UITS: ERDAS Imagine: Spatial modeling

2001

Indiana University UITS: ArcIMS – GIS for the internet