

# NATHAN I. WISNOSKI

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## EDUCATION

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### Indiana University, Bloomington

2014 – Present

Ph.D in Biology – Evolution, Ecology, and Behavior

Minor in Environmental Sciences, O’Neill School of Public and Environmental Affairs

### The University of Texas at Austin

2009 – 2013

B.S. in Biology – Ecology, Evolution, and Behavior

Minor in Business, McCombs School of Business

## PUBLICATIONS

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**Wisnoski, N.I.**, M.E. Muscarella, M.L. Larsen, A.L. Peralta, and J.T. Lennon. In press. Metabolic insight into bacterial community assembly across ecosystem boundaries. *Ecology*.

Mueller, E.A., **N.I. Wisnoski**, A.L. Peralta, and J.T. Lennon. In press. Microbial rescue effects: how microbiomes can save hosts from extinction. *Functional Ecology*.

Ward, A.S., S.M. Wondzell, N.M. Schmadel, S. Herzog, J.P. Zarnetske, V. Baranov, P.J. Blaen, N. Brekenfeld, R. Chu, R. Derelle, J. Drummond, J.H. Fleckenstein, V. Garayburu-Caruso, E. Graham, D. Hannah, C.J. Harman, J. Hixson, J.L.A. Knapp, S. Krause, M.J. Kurz, J. Lewandowski, A. Li, E. Marti, M. Miller, A.M. Milner, K. Neil, L. Orsini, A.I. Packman, S. Plont, L. Renteria, K. Roche, T. Royer, C. Segura, J. Stegen, J. Toyoda, J. Wells, and **N.I. Wisnoski**. 2019. Spatial and temporal variation in river corridor exchange across a 5th-order mountain stream network. *Hydrology and Earth System Sciences* 23:5199-5225.

Ward, A.S., M.J. Kurz, N.M. Schmadel, J.L.A. Knapp, P.J. Blaen, C.J. Harman, J.D. Drummond, D.M. Hannah, S. Krause, A. Li, E. Marti, A. Milner, M. Miller, K. Neil, S. Plont, A.I. Packman, **N.I. Wisnoski**, S.M. Wondzell, and J.P. Zarnetske. 2019. Solute transport and transformation in an intermittent, headwater mountain stream with diurnal discharge fluctuations. *Water* 11(11): 2208.

Ward, A.S., J.P. Zarnetske, V. Baranov, P.J. Blaen, N. Brekenfeld, R. Chu, R. Derelle, J. Drummond, J.H. Fleckenstein, V. Garayburu-Caruso, E. Graham, D. Hannah, C.J. Harman, S. Herzog, J. Hixson, J.L.A. Knapp, S. Krause, M.J. Kurz, J. Lewandowski, A. Li, E. Marti, M. Miller, A.M. Milner, K. Neil, L. Orsini, A.I. Packman, S. Plont, L. Renteria, K. Roche, T. Royer, N.M. Schmadel, C. Segura, J. Stegen, J. Toyoda, J. Wells, **N.I. Wisnoski**, and S.M. Wondzell. 2019. Co-located contemporaneous mapping of morphological, hydrological, chemical, and biological conditions in a 5th-order mountain stream network, Oregon, USA. *Earth System Science Data* 11:1567-1581.

**Wisnoski, N.I.**, M.A. Leibold, and J.T. Lennon. 2019. Dormancy in metacommunities. *The American Naturalist* 194(2): 135-151.

In review/revision:

Voelker, N.M., S. Record, P.L. Zarnetske, **N.I. Wisnoski**, J.D. Tonkin, C.M. Swan, L. Marazzi, N. Lany, T. Lamy, A. Compagnoni, M.C.N. Castorani, R. Andrade, and E.R. Sokol. In revision. Novel insights to be gained from applying metacommunity theory to long-term, spatially replicated biodiversity data.

Graham, E.B., C. Averill, B. Bond-Lamberty, J.E. Knelman, S. Krause, A.L. Peralta, A. Shade, A.P. Smith, S. Cheng, N. Fanin, C. Freund, P.E. Garcia, S.M. Gibbons, M.W. Van Goethem, M.B. Guebila, J. Kemppinen, R. Nowicki, J.G. Pausas, S. Reed, J. Rocca, A. Sengupta, D. Sihi, M. Simonin, M. Słowiński, S. Spawn, I. Sutherland, J. Tonkin, **N. Wisnoski**, S.C. Zipper, and Contributor Consortium. Towards a unifying framework of disturbance ecology through crowdsourced science.

In preparation (drafts available):

**Wisnoski, N.I.** and J.T. Lennon. Microbial community assembly in a multi-layer dendritic metacommunity. bioRxiv: <https://doi.org/10.1101/2020.01.31.929562>.

**Wisnoski N.I.** and J.T. Lennon. Rare but metabolically active taxa are maintained by stabilizing biotic interactions and persistence traits in a temperate bacterioplankton community.

Lamy, T., **N.I. Wisnoski**, R. Andrade, M.C.N. Castorani, A. Compagnoni, N. Lany, L. Marazzi, S. Record, C.M. Swan, J.D. Tonkin, N. Voelker, S. Wang, P.L. Zarnetske, and E.R. Sokol. The dual dimensions of metacommunity stability.

Mobilian, C., **N.I. Wisnoski**, J.T. Lennon, M. Alber, S. Widney, C.B. Craft. Press and pulse saltwater intrusion reduce diversity and drive changes in microbial community composition in a tidal freshwater marsh.

## BOOK REVIEWS

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**Wisnoski, N.I.** and J.T. Lennon. 2016. "Principles of Microbial Diversity" by James W. Brown. The Quarterly Review of Biology 91(1): 98-99.

## GRANTS

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NSF LTER Network Communications Office (NCEAS). *A synthesis to identify how metacommunity dynamics mediate community responses to disturbance across the ecosystems represented in the LTER network*. PI: E.R. Sokol, co-PIs: C.M. Swan, **N.I. Wisnoski**. \$76,000. 2016–2018.

IU Sustainability Research Development Grant. \$5400. 2015.

## FELLOWSHIPS AND AWARDS

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Louise Constable Hoover Fellowship, IU Biology. \$2000	2019
Travel Award, Association for the Sciences of Limnology and Oceanography. \$606	2018
Travel Award, ESA Microbial Ecology Section. \$600	2017
George W. Brackenridge Fellowship, IU Biology. \$2000	2016
Travel Award, International Society for Microbial Ecology. €300	2016
Travel Award, Honorable Mention, ESA Microbial Ecology Section. \$150	2016
Departmental Research Recruitment Fellowship, IU Biology.	2014

## TALKS AND POSTERS

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- Wisnoski, N.I.**, E.R. Sokol, R. Andrade, M.C.N. Castorani, C.P. Catano, A. Compagnoni, T. Lamy, N.K. Lany, L. Marazzi, S. Record, A.C. Smith, C.M. Swan, J.D. Tonkin, N.M. Voelker, P.L. Zarnetske. 2019. *Patterns and drivers of stability in long-term metacommunity data*. Ecological Society of America Annual Meeting. Louisville, KY.
- Wisnoski, N.I.**, M.A. Leibold, J.T. Lennon. 2019. *Dormancy in metacommunities: when can temporal dispersal maintain diversity in variable landscapes?*. Society for Freshwater Science Annual Meeting. Salt Lake City, UT.
- Ward, A. S., C.J. Harman, N.M. Schmadel, M.J. Kurz, P. Blaen, S.M. Wondzell, J.D. Drummond, D.M. Hannah, J.L. Knapp, S. Krause, A. Li, E.R. Martí, M. Miller, A. Milner, K. Neil, S. Plont, K.R. Roche, A.I. Packman, **N. Wisnoski**, J.P. Zarnetske. 2018. *How do evapotranspiration-driven discharge fluctuations alter reach-scale ecosystem function?*. American Geophysical Union, Fall Meeting. Washington, D.C..
- Ward, A. S., S. Herzog, S.M. Wondzell, N.M. Schmadel, P. Blaen, J.D. Drummond, D.M. Hannah, C.J. Harman, J.L. Knapp, S. Krause, M.J. Kurz, A. Li, E. Martí, M. Miller, A. Milner, K. Neil, S. Plont, K.R. Roche, A.I. Packman, **N. Wisnoski**, and J.P. Zarnetske. 2018. *Spatial and temporal relationships between hydrologic forcing, geologic setting, and river corridor exchange in a mountain stream network*. American Geophysical Union, Fall Meeting. Washington, D.C..
- Ward, A.S., S. Herzog, S.M. Wondzell, N. Schmadel, P. Blaen, J. Drummond, D.M. Hannah, C.J. Harman, J. Knapp, S. Krause, M.J. Kurz, A. Li, E. Marti, M. Miller, A. Milner, K. Neil, S. Plont, K. Roche, A.I. Packman, **N. Wisnoski**, and J. Zarnetske. 2018. *How do hydrologic forcing and geologic setting control river corridor exchange in a 5th order mountain stream network?*. Geological Society of America Annual Meeting. Indianapolis, IN.
- Wisnoski, N.I.** and J.T. Lennon. 2018. *Contribution of “seed banks” to bacterioplankton community dynamics*. Society for Freshwater Science Annual Meeting. Detroit, MI.
- Sokol, E.R., **N.I. Wisnoski**, and C.M. Swan. 2018. *Using long-term data to understand when metacommunities respond to disturbance*. Ecological Society of America Annual Meeting. New Orleans, LA.
- Wisnoski, N.I.**, M.E. Muscarella, and J.T. Lennon. 2018. *Dispersal and dormancy across ecosystem boundaries*. Association for the Sciences of Limnology and Oceanography. Victoria, BC, Canada.
- Wisnoski, N.I.** and J.T. Lennon. 2017. *Microbial community assembly in dendritic metacommunities*. Ecological Society of America Annual Meeting. Portland, OR.
- Sokol, E.R., **N.I. Wisnoski**, C.M. Swan, R. Andrade, H.L. Bateman, A.G. Hope, J. Kominoski, N.K. Lany, L. Marazzi, S.J. Presley, A. Rassweiler, S. Record, M.R. Willig, and P.L. Zarnetske. 2017. *The role of long-term ecological research programs for testing metacommunity theory and understanding biodiversity patterns*. Ecological Society of America Annual Meeting. Portland, OR.
- Voelker, N.M., E.R. Sokol, **N.I. Wisnoski**, C.M. Swan, T. Lamy, M.C.N. Castorani, L. Marazzi, A. Compagnoni, J.R. Blanchard, R. Andrade, and N.K. Lany. 2017. *Evaluating the link between metacommunity stability and environmental variability across trophic groups represented at LTER sites*. Ecological Society of America Annual Meeting. Portland, OR.
- Wisnoski, N.I.** and J.T. Lennon. 2016. *Community assembly processes differ between surface water and sediment-associated communities in stream networks*. Ecological Society of America Annual Meeting. Fort Lauderdale, FL.
- Wisnoski, N.I.** and J.T. Lennon. 2016. *Local and regional processes in stream microbial community assembly (poster)*. International Symposium on Microbial Ecology (ISME 16). Montreal, QC.

**Wisnoski, N.I.,** A.S. Ward, and J.T. Lennon. 2015. *Bacterial metacommunity structure across a stream network (poster)*. LTER All Scientists Meeting. Estes Park, CO.

## TEACHING

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**Co-Instructor.** Quantitative Biodiversity (<https://goo.gl/y4oK7c>). *Indiana University*. Spring 2017.

**Associate Instructor.** Foundations of Biology: Diversity, Evolution, and Ecology. *Indiana University*. Spring 2016, Fall 2016, Spring 2018, Spring 2019.

**Associate Instructor.** Biology Laboratory. *Indiana University*. Fall 2014, Fall 2017, Fall 2018, Fall 2019.

**Grader.** Microbial Ecology. *University of Texas*. Spring 2014.

**Teaching Assistant.** Biostatistics. *University of Texas*. Spring 2013, Fall 2013.

## WORKSHOPS

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**Lead Organizer.** 2018. Synthesizing long-term community data: questions, challenges, and advances. LTER All Scientists Meeting. Pacific Grove, CA.

## PEER REVIEWER

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Peer reviewer for the following journals: Aquatic Ecology, BioScience, Ecology Letters, and Journal of Biogeography.

## MENTORSHIP AND SERVICE

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Undergraduate and Summer REU STEM Mentor	Jan 2015 – Present
High School STEM Mentor <i>Jim Holland Summer Scholars Program</i>	Summer 2015 – Present
Coordinator, High School Riverwatch Sampling <i>Jim Holland Summer Enrichment Program</i>	Summer 2017 – Present
EcoLunch Co-Organizer	August 2015 – May 2016
Metacommunity Reading Group Organizer	Summer 2015

## COMPUTATIONAL SKILLS

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R, python, bash, Mathematica,  $\text{\LaTeX}$ , markdown, git/GitHub

## PROFESSIONAL SOCIETY MEMBERSHIP

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Ecological Society of America  
Society for Freshwater Sciences  
American Society of Naturalists