

Xiao Xiao's Curriculum Vitae

School of Biology and Ecology, and Senator George J. Mitchell Center for Sustainability Solutions, University of Maine, Orono ME 04469

Email: xiao@weecology.org

Website: <http://xiao-xiao.org>

Tel: 435-213-6322

Education

- 11/2014 Ph.D. in Ecology, Utah State University
- 05/2011 M.S. Statistics, Utah State University
- 05/2008 B.Sc. Biology (Honours), minor in Mathematics, McGill University (Canada)

Research and Professional Experience

- 02/2015 – now Postdoctoral research associate, University of Maine

Honors and Awards

- Diversity Fellowship, Utah State University 2008 - 2011
- First Class Honours in Biology, McGill University 2008
- Science Undergraduate Research Award, McGill University 2007
- Dean's Honour List, McGill University 2006 - 2008

Skills

- Programming: Python, R, MATLAB, version control
- Quantitative: Bayesian statistics, spatial statistics, time series analysis, hierarchical modeling, GLM, stochastic processes, ODE, PDE
- GIS: GDAL/OGR, PostgreSQL

Publications

Journal Articles

Xiao, X., J. P. O'Dwyer, and E. P. White. Comparing process-based and constraint-based approaches for modeling macroecological patterns. *Ecology*. *In press*.

Xiao, X., K. J. Locey, and E. P. White. 2015. A process-independent explanation for the general form of Taylor's Law. *The American Naturalist* 186: E51-E60.

McGlinn, D. J., X. Xiao, J. Kitzes, and E. P. White. 2015. Exploring the spatially explicit predictions of the Maximum Entropy Theory of Ecology. *Global Ecology and Biogeography* 24: 675-684.

Xiao, X., D. J. McGlinn, and E. P. White. 2015. A strong test of the Maximum Entropy Theory of Ecology. *The American Naturalist* 185: E70-E80.

McGlinn, D. J., X. Xiao, and E. P. White. 2013. An empirical evaluation of four variants of a universal species-area relationship. *PeerJ* 1: e212.

Updated 12/09/2015

- Xiao, X.**, and G. F. Fussmann. 2013. Armstrong-McGehee mechanism revisited: competitive exclusion and coexistence of nonlinear consumers. Journal of Theoretical Biology 339: 26-35.
- Supp, S. R., **X. Xiao**, S. K. M. Ernest, and E. P. White. 2012. An experimental test of the response of macroecological patterns to altered species interactions. Ecology 93: 2505-2511.
- White, E. P., K. M. Thibault, and **X. Xiao**. 2012. Characterizing species abundance distributions across taxa and ecosystems using a simple maximum entropy model. Ecology 93: 1772-1778.
- Xiao, X.**, E. P. White, M. B. Hooten, and S. L. Durham. 2011. On the use of log-transformation vs. nonlinear regression for analyzing biological power-laws. Ecology 92: 1887-1894.

Book Chapters

- White, E. P., **X. Xiao**, N. J. B. Issac, and R. M. Sibly. 2012. Methodological tools. 7-20 in J. H. Brown, R. M. Sibly, and A. Kodric-Brown, editors. Metabolic Ecology: A Scaling Approach. Wiley-Blackwell.

Manuscripts

- Baldrige, E., **X. Xiao**, and E. P. White. An extensive comparison of species-abundance distribution models. *Manuscript. Preprint on bioRxiv:*
<http://www.biorxiv.org/content/early/2015/08/18/024802.abstract>

Software and Data Products*

*I support open science and reproducibility. Data and code for my research are provided as data products when possible.

METE: Python-based tool for fitting and modeling the Maximum Entropy Theory of Ecology.
By E. P. White, K. M. Thibault, **X. Xiao**, D. J. McGlinn, and S. R. Supp.
<https://github.com/weecology/METE>.

Data from: A process-independent explanation for the general form of Taylor's Law. By Xiao, X., K. J. Locey, and E. P. White, 2015. The American Naturalist, Dryad Digital Repository, <http://dx.doi.org/10.5061/dryad.h1c09>.

Data from: A strong test of the Maximum Entropy Theory of Ecology. By **Xiao, X.**, S. Aravajy, T. W. Baribault, N. Brokaw, N. L. Christensen, Dasappa, S. J. DeWalt, et al. 2014. The American Naturalist, Dryad Digital Repository, <http://dx.doi.org/10.5061/dryad.5fn46>.

Presentations

Invited Talks

“Process- and Constraint-Based Approaches for Macroecological Patterns”.

- School of Biology and Ecology 2015 Fall Seminar Series, University of Maine, Orono, ME, USA, January 23rd, 2015.

“Feasible Set: A mechanism-free explanation for Taylor’s Law”.

- Gordon Research Conference on Unifying Ecology across Scales, Biddeford, ME, USA, July 22nd, 2014.

Other Talks

“Confront big theory with big data: a strong test of the Maximum Entropy Theory of Ecology”.

- INTECOL, London, UK, August 21st, 2013.
- iEvoBio, Snowbird, UT, USA, June 25th, 2013. (*Winner of iEvoBio travel award*)

Posters

Xiao, X., E. P. White, and D. J. McGlenn.

- Ecological Society of America, 2012.
- Gordon Research Conference on Metabolic Basis of Ecology, 2012.

Xiao, X., E. P. White, M. B. Hooten, and S. L. Durham.

- Gordon Research Conference on Metabolic Basis of Ecology, 2010.

Invited Workshops and Working Groups

“Measurement of Biodiversity”. German Centre for Integrative Biodiversity Research (iDiv). 2015. Leipzig, Germany. Organizers: Jonathan Chase.

“Frontiers of Macroecological Theory”. University of California Berkeley. 2013. Berkeley, CA. Organizers: John Harte.

“VertNet Biodiversity Informatics Training Workshop”. University of Colorado Boulder. 2012. Boulder, CO. Organizers: David Bloom.

Teaching Experience

Guest lectures for Introduction to Programming for Biologists, Utah State University (Fall 2014)

Guest lecture for Business Statistics, Utah State University (Summer 2012)

TA for Biology I/II (Biology 1610/1620) lab, Utah State University (2012-2013).

TA for Software Carpentry Bootcamp, Utah State University (03/23/2013-03/24/2013)

Professional and Community Service

Manuscript Reviewing

Ecography, Ecological Monographs, Ecology, Environmental and Ecological Statistics, Global Ecology and Biogeography, Journal of Biogeography, Journal of Theoretical Biology, Journal of Zoology, Nature Communications, Oecologia, PLOS Computational Biology, PLOS ONE, Population Ecology

Updated 12/09/2015