

**Ethan P. White**

Department of Biology and the Ecology Center

Utah State University, Logan, UT 84322

**Email** [ethan.white@usu.edu](mailto:ethan.white@usu.edu) | **Website** [whitelab.weecology.org](http://whitelab.weecology.org)**Education**

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Ph.D. Biology (*Distinction*). 2005. University of New Mexico, Albuquerque.

Advisor: James H. Brown

B.A. Biology (*Magna Cum Laude, Distinction*). 1998. Colorado College, Colorado Springs.

Advisors: Marc A. Snyder and Alex Vargo.

**Research and Professional Experience**

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Assistant Professor, Utah State University (2007-present)

NSF Postdoctoral Fellow in Biological Informatics, Univ. of Arizona. &amp; U.C. Merced (2005-2007)

**Fellowships, Awards, and Honors**

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NSF CAREER 'Young Investigators' Award 2010-2015

NSF Postdoctoral Fellowship in Biological Informatics 2005-2007

NSF Graduate Research Fellowship 2000-2005

University of New Mexico Biocomplexity Fellowship 2002-2004

Santa Fe Institute Complex Systems Summer School 2001

Richard G. Beidleman Award 1998 (Outstanding Undergraduate in Ecology; Colorado College)

Phi Beta Kappa 1998

**Publications** (\*\*undergraduate, \*graduate student, †postdoc; citations = 1001, h-index = 17)

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†Thibault, K.M., S. Supp, M. Giffen\*\*, **E.P. White**, S.K.M. Ernest. In press. Species composition and abundance of mammalian communities. *Ecology*.Brown, J.H., S.K.M. Ernest, **E.P. White**. In press. Introduction to 'Macroecology before Macroecology'. In F.A. Smith, J.L. Gittleman, and J.H. Brown, eds. *Foundations of Macroecology*, University of Chicago Press.**White, E.P.** In Press. Commentary on Arrhenius (1920). In F.A. Smith, J.L. Gittleman, and J.H. Brown, eds. *Foundations of Macroecology*, University of Chicago Press.**White, E.P.** In Press. Commentary on Fisher et al. (1943). In F.A. Smith, J.L. Gittleman, and J.H. Brown, eds. *Foundations of Macroecology*, University of Chicago Press.**White, E.P.**, X. Xiao\*, N.J.B. Isaac, and R.M. Sibly. In press. Methodological tools. Pages TBD in J.H. Brown, R.M. Sibley, and A. Kodric-Brown, editors. *Metabolic Ecology*. Wiley-Blackwell.\*Xiao, X., **White, E.P.**, 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.Stegen, J.C., N.G. Swenson, B.J. Enquist, **E.P. White**, O.L. Phillips, P.M. Jørgensen, M.D. Weiser, A.M. Monteagudo, and P. Núñez Vargas. 2011. Variation in above-ground forest biomass across broad climatic gradients. *Global Ecology and Biogeography* 20:744-754.

- \*Locey, K.J. and **E.P. White**. 2011. Simple structural differences between coding and noncoding DNA. *PLOS One* 6:e14651.
- †Thibault, K.M., **E.P. White**, A.H. Hurlbert, and S.K.M. Ernest. 2011. Multimodality in the individual size distribution of bird communities. *Global Ecology and Biogeography* 20:145-153.
- White, E.P.**, S.K.M. Ernest, P.B. Adler, A.H. Hurlbert, S.K. Lyons. 2010. Integrating spatial and temporal approaches to understanding species richness. *Philosophical Transactions of the Royal Society B* 365:3633-3643.
- White, E.P.** and A.H. Hurlbert. 2010. The combined influence of the local environment and regional enrichment on bird species richness. *American Naturalist* 172:E35-E43.
- \*Supp, S.R. and **E.P. White**. 2010. Measures of journal quality should separate reviews from original research. *Ideas in Ecology and Evolution* 3:16-19.
- †Thibault, K.M., S.K.M. Ernest, **E.P. White**, J.H. Brown, and J.R. Goheen. 2010. Complex dynamics of rodent response to precipitation in the Chihuahuan Desert. *Journal of Mammalogy* 91:787-797.
- Price, C.A., K. Ogle, **E.P. White**, and J.S. Weitz. 2009. Evaluating allometric scaling models in biology using hierarchical Bayesian approaches. *Ecology Letters* 12:641-651.
- Ernest, S.K.M., **E.P. White** and J.H. Brown. 2009. Metabolic zero-sum dynamics predict long term changes in a tropical forest. *Ecology Letters* 12:507-515.
- Morlon, H., **E.P. White**, R.S. Etienne, J.L. Green, A. Ostling, D. Alonso, B.J. Enquist, F. He, A.H. Hurlbert, A.E. Magurran, B.A. Maurer, B.J. McGill, H. Olf, D. Storch, and T. Zillio. 2009. Taking species abundance distributions beyond individuals. *Ecology Letters* 12:488-501.
- White, E.P.**, B.J. Enquist, and J.L. Green. 2008. On estimating the exponent of power-law frequency distributions. *Ecology* 89:905-912.
- Ernest, S.K.M., J.H. Brown, K.M. Thibault, **E.P. White**, and J.R. Goheen. 2008. Zero-sum dynamics, the niche, and metacommunities: a temporal perspective on community assembly. *American Naturalist* 172:E257-E269.
- Stegen, J.C. and **E.P. White**. 2008. On the relationship between mass and diameter distributions in tree communities. *Ecology Letters* 11:1287-1293.
- White, E.P.**, S.K.M. Ernest, A.J. Kerkhoff, and B.J. Enquist. 2007. Relationships between body size and abundance in ecology. *Trends in Ecology and Evolution* 22:323-330.
- Hurlbert, A.H., and **E.P. White**. 2007. Ecological correlates of geographic range occupancy in North American birds. *Global Ecology and Biogeography* 16:764-773.
- White, E.P.** 2007. Spatiotemporal scaling of species richness: patterns, processes and implications. Pages 325-346 in D. Storch, P.A. Marquet, and J.H. Brown, editors. *Scaling Biodiversity*. Cambridge University Press.

- McGill, B.J., R. Etienne, J. Gray, D. Alonso, M. Anderson, H. Benecha, M. Dornelas, B.J. Enquist, J.L. Green, F. He, A.H. Hurlbert, A.E. Magurran, P. Marquet, B. Maurer, A. Ostling, C. Soykan, K. Ugland, and **E.P. White**. 2007. Species abundance distributions: moving beyond single prediction theories to integration within an ecological framework. Ecology Letters 10:995-1015.
- McClain, C.R., **E.P. White**, and A.H. Hurlbert. 2007. Challenges in the application of geometric constraint models. Global Ecology and Biogeography 16:257-264.
- White, E.P.**, and M.A. Gilchrist. 2007. Effects of population level aggregation, autocorrelation, and interspecific association on the species-time relationship in two desert communities. Evolutionary Ecology Research 9:1329-1347.
- Savage, V.M., **E.P. White**, M.E. Moses, S.K.M. Ernest, B.J. Enquist, and E.L. Charnov. 2006. Comment on "The Illusion of Invariant Quantities in Life Histories". Science 312:198b.
- Goheen, J.R., **E.P. White**, S.K.M. Ernest, and J.H. Brown. 2006. Intra-guild compensation regulates species richness in desert rodents: reply. Ecology 87:2121-2125.
- White, E.P.**, P.B. Adler, W.K. Lauenroth, R.A. Gill, D. Greenberg, D.M. Kaufman, A. Rassweiler, J.A. Rusak, M.D. Smith, J.R. Steinbeck, R.B. Waide and J. Yao. 2006. A comparison of the species-time relationship across ecosystems and taxonomic groups. Oikos 112:185-195.
- Adler, P.B., **E.P. White**, W.K. Lauenroth, D.M. Kaufman, A. Rassweiler, and J.A. Rusak. 2005. Evidence for a general species-time-area relationship. Ecology 86:2032-2039.
- Goheen, J.R., **E.P. White**, S.K.M. Ernest, and J.H. Brown. 2005. Intra-guild compensation regulates species richness in desert rodents. Ecology 86:567-573.
- Hurlbert, A.H., and **E.P. White**. 2005. Disparity between range map and survey based analyses of species richness: patterns, processes, and implications. Ecology Letters 8:319-327.
- White, E.P.**, and J.H. Brown. 2005. The template: patterns and processes of spatial variation. Pages 31-47 in G.M. Lovett, C.G. Jones, M.G. Turner and K.C. Weathers, editors. Ecosystem Function in Heterogeneous Landscapes. Springer, New York.
- Sax, D.F., J.H. Brown, E.P. White, and S.D. Gaines. 2005. Dynamics of species invasions: Insights into the mechanisms that limit species diversity. Pages 447-465 in D.F. Sax, S.D. Gaines, and J.J. Stachowicz, editors. Species Invasions: Insights to Ecology, Evolution and Biogeography. Sinauer Associates, Sunderland, MA.
- White, E.P.**, S.K.M. Ernest, and K.M. Thibault. 2004. Tradeoffs in community properties through time in a desert rodent community. American Naturalist 164:670-676.
- Thibault, K.M., **E.P. White**, and S.K.M. Ernest. 2004. Temporal dynamics in the structure and composition of a desert rodent community. Ecology 85:2649-2655.
- White, E.P.** 2004. Two-phase species-time relationships in North American land birds. Ecology Letters 7:329-336.
- Lyons, S.K., F.A. Smith, P.J. Wagner, **E.P. White**, and J.H. Brown. 2004. Testing the disease hypothesis for late-pleistocene extinctions using West Nile virus as a model. Ecology Letters 7:859-868.

**White, E.P.** 2004. Factors affecting bat house occupancy in Colorado. The Southwestern Naturalist 49:344-349.

Ernest, S.K.M., B.J. Enquist, J.H. Brown, E.L. Charnov, J.F. Gillooly, V.M. Savage, **E.P. White**, F.A. Smith, E.A. Hadly, J.P. Haskell, S.K. Lyons, B.A. Maurer, K.J. Niklas, and B. Tiffney. 2003. Thermodynamic and metabolic effects on the scaling of production and population energy use. Ecology Letters 6:990-995.

Allen, A.P., and **E.P. White**. 2003. Interactive effects of range size and plot area on species-area relationships. Evolutionary Ecology Research 5:493-499.

**White, E.P.**, and S.D. Gehrt. 2001. Effects of recording media on echolocation data from broad band bat detectors. Wildlife Society Bulletin 29:974-978.

### **Manuscripts**

**E.P. White**, K.M. Thibault<sup>†</sup>, and X. Xiao\*. Maximum entropy models predict species-abundance distributions across taxa and ecosystems. Submitted to Ecology.

J.R. Coyle, A.H. Hurlbert, and **E.P. White**. Opposing mechanisms drive diversity patterns of core and occasional bird species. Submitted to Ecology Letters.

S.R. Supp, X. Xiao, S.K.M. Ernest, and **E.P. White**. Experimental evidence suggests that macroecological patterns are determined primarily by species richness and total abundance. Submitted to Ecology Letters.

### **Grants\***

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#### **Current**

National Science Foundation (DEB-0953694). CAREER: Advancing macroecology using informatics and entropy maximization. PI: **E.P. White**. 2010-2015.

Amazon Web Services (AWS in Education Research Grant). Synthesizing molecular and ecological neutral theories via genome based simulation. PIs: **E.P. White** and K.J. Locey.

#### **Completed**

National Science Foundation (DEB-0827826). Understanding multimodality in animal size distributions (Research Starter Grant). PI: **E.P. White**. 2008-2010.

National Science Foundation (DBI-0532847). Broad-scale patterns of the distribution of body sizes of individuals in ecological communities (Postdoctoral Fellowship in Biological Informatics). PI: **E.P. White**. 2005-2007.

LTERR Network Office workshop grant. Species richness in space and time workshop. PIs: W.K. Lauenroth, **E.P. White** and P.B. Adler. 2004.

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\* I do not believe in listing the monetary value of grants because the true value of grants is in the science they facilitate, not in how much the research costs.

## Software

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**EcoData Retriever**: tool for easy acquisition of public ecological datasets.

<https://github.com/weecology/retriever>

**METE**: Python-based tool for fitting and modeling the Maximum Entropy Theory of Ecology.

<https://github.com/weecology/METE>

## Invited Workshops

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“Synthesizing Deep Time and Recent Community Ecology”. Smithsonian National Museum of Natural History Working Group. 2010-2015. Washington D.C. Organizers: A.K. Behrensmeyer, S.K. Lyons, and W.A. DiMichele.

“Tools and fresh approaches for species abundance distributions”. National Center for Ecological Analysis and Synthesis Working Group. 2006-2008. Santa Barbara, CA. Organizers: B. McGill, R.S. Etienne, J.S. Gray, and J.L. Green.

“Scaling Biodiversity”. Santa Fe Institute Workshop. 2004. Prague. (Invited Talk and Participant). Organizers: D. Storch, P.A. Marquet, J.H. Brown, and G.B. West.

“Species richness in space and time”. LTER sponsored working group. 2004. Albuquerque, NM. Organizers: W.K. Lauenroth, E.P. White, and P.B. Adler.

“Species richness in space and time”. LTER All Scientists Meeting Workshop. 2003. Seattle, WA. (Invited Talk and Participant). Organizer: W.K. Lauenroth.

“A Knowledge Network for Biocomplexity”. National Center for Ecological Analysis and Synthesis Working Group. 2001. Organizers: R.Waide, S. Andelman, M.R. Willig.

## Invited Seminars

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“Understanding ecology at broad scales: macroecology, maximum entropy, and environmental informatics”. February 11<sup>th</sup>, 2011. University of Maryland.

“Understanding ecology at broad scales using macroecology and ecoinformatics”. March 30<sup>th</sup>, 2010. University of Wyoming.

“A metabolic zero-sum approach to community ecology?”. March 28<sup>th</sup>, 2008. Keynote speaker at 21<sup>st</sup> Annual Colorado College Biology Day, Colorado Springs, Colorado.

## Professional and Community Service

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### Grant Panels and Reviewing

National Science Foundation Panelist (2009)

Review of grant applications for *NSF* (United States), *NSERC* (Canada), and *NRF* (South Africa)

### Editorial Boards

PLoS ONE (2011-present)

### Manuscript Reviewing

*Science*, *Nature*, *PNAS*, *PLOS Biology*, *Proceedings of the Royal Society B*, *Ecology*, *Ecology Letters*, *American Naturalist*, *Global Ecology and Biogeography*, *Journal of Animal Ecology*, *Journal of Ecology*, *Oikos*, *PLOS One*, *Bioscience*, *Bulletin of Mathematical Biology*, *Functional Ecology*, *Journal of Biogeography*, *Journal of Theoretical Biology*, *Theoretical Population Biology*, *Cambridge University Press*, *Folia Geobotanica*, *Research Letters in Ecology*,

*Geological Society of America*

External examiner of Ph.D. Theses: Macquarie University (2008)

**University Service**

Chair of Department of Biology committee on appointment of adjunct professor (2011)

Search Committee – Evolutionary Biology faculty search (2011)

Search Committee – Ecology Center staff search (2011)

**Teaching**

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**Courses Taught**

Maximum Entropy in Ecology (2011)

Advanced Programming and Database Management for Biologists (2011)

Introduction to Programming and Database Management for Biologists (2010, 2011)

Neutral Theories in Ecology (2010)

Biogeography (2008, 2009)

**Training**

*Utah State University Teaching Academy*

30 hours of instruction on contemporary approaches to teaching (Fall 2007)

*Master Teacher Observation*

Dr. Andy Anderson, Utah State University (Fall 2007)

**Research Mentoring**

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*Postdoctoral Associates*

Katherine Thibault (2008-2011). Lead Vertebrate Ecologist at NEON.

Daniel McGlenn (2011-present).

*Graduate Students*

Xiao Xiao (PhD student; 2008-present). USU College of Science Diversity Fellow.

Kenneth Locey (PhD student; 2008-present). USU College of Science Eccles Fellow.

Elita Baldrige (PhD Student; 2010-present).

*Undergraduate Researchers*

Ben Morris (2010-present; NSF REU Summer 2011). NCUR participant.

Clayton Bingham (2009-2010)

Mikaelle Giffen (2008-2009)

*Graduate Student Committees*

Zachary Brym (PhD), Amy Croft (PhD), Sarah Mohlman (PhD), Lorin Neuman-Lee (PhD), Bridget Olsen (MS), Daniel Olson (PhD), Lori Spears (PhD), Gregory Vogel (PhD), Glenda Yenni (PhD), Chris Feldman (PhD, 2008, Utah State University), Ryan Choi (MS, 2011, Utah State University)

**Presentations** (\*\*undergraduate, \*graduate student, †postdoc)

- E.P. White, B. Morris\*\*, S.K. Morgan Ernest, K.M. Thibault†, A.H. Hurlbert, A.J. Kerkhoff, Z.T. Brym\*. 95<sup>th</sup> Annual Meeting of the Ecological Society of America. Austin, TX.
- J.R. Coyle, A.H. Hurlbert, E.P. White. 95<sup>th</sup> Annual Meeting of the Ecological Society of America. Austin, TX.
- K.M. Thibault†, E.P. White, X. Xiao\*. 95<sup>th</sup> Annual Meeting of the Ecological Society of America. Austin, TX.
- S.R. Supp, X. Xiao\*, S.K.M. Ernest, E.P. White. 95<sup>th</sup> Annual Meeting of the Ecological Society of America. Austin, TX.
- A.H. Hurlbert, Thibault, K.M., E.P. White, and S.K.M. Ernest. 2010. 94<sup>th</sup> Annual Meeting of the Ecological Society of America. Pittsburgh, PA.
- Xiao, X., E.P. White, M. Hooten, and S. Durham. 2010. Gordon Research Conference – Metabolic Basis of Ecology and Evolution, Biddeford, Maine.
- A.H. Hurlbert, Thibault, K.M., E.P. White, and S.K.M. Ernest. 2010. Gordon Research Conference – Metabolic Basis of Ecology and Evolution, Biddeford, Maine.
- Thibault, K.M., E.P. White, A.H. Hurlbert, and S.K.M. Ernest. 2009. 93<sup>rd</sup> Annual Meeting of the Ecological Society of America. Albuquerque, NM.
- White, E.P., B.J. Enquist, J.C. Stegen, S.C. Stark, and C.A. Price. 2008. 92<sup>nd</sup> Annual Meeting of the Ecological Society of America. Milwaukee, WI.
- Price, C.A., E.P. White, J.S. Weitz, and K. Ogle. 92<sup>nd</sup> Annual Meeting of the Ecological Society of America. Milwaukee, WI.
- Ernest, S.K.M., E.P. White, and J.H. Brown. 2008. 92<sup>nd</sup> Annual Meeting of the Ecological Society of America. Milwaukee, WI.
- White, E.P., B.J. Enquist, J.C. Stegen, S.C. Stark, and C.A. Price. 2008. Gordon Research Conference – Metabolic Basis of Ecology, Biddeford, Maine.
- Ernest, S.K.M., E.P. White, and J.H. Brown. 2008. Gordon Research Conference – Metabolic Basis of Ecology, Biddeford, Maine.
- White, E.P., A.H. Hurlbert, and S.K.M. Ernest. 2007. Macroecology of avian size distributions. 92<sup>nd</sup> Annual Meeting of the Ecological Society of America. San Jose, CA.
- Ernest, S.K.M., J.H. Brown, J.R. Goheen, K.M. Thibault, and E.P. White. 2007. 87<sup>th</sup> Annual Meeting of the American Society of Mammalogists. Albuquerque, NM.
- White, E.P., B.J. Enquist, S.K.M. Ernest, and J.L. Green. 2006. 91<sup>st</sup> Annual Meeting of the Ecological Society of America. Memphis, TN.
- Ernest, S.K.M., J.H. Brown, J.R. Goheen, K.M. Thibault, and E.P. White. 2006. 91<sup>st</sup> Annual Meeting of the Ecological Society of America. Memphis, TN.
- White, E.P., B.J. Enquist, S.K.M. Ernest, and J.L. Green. 2006. Gordon Research Conference – The Metabolic Basis of Ecology and Evolution. Lewiston, Maine.
- Ernest, S.K.M., J.H. Brown, J.R. Goheen, K.M. Thibault, and E.P. White. 2006. Gordon Research Conference – The Metabolic Basis of Ecology and Evolution. Lewiston, Maine.
- White, E.P., and M.A. Gilchrist. 2005. 90<sup>th</sup> Annual Meeting of the Ecological Society of America. Montreal, Canada.
- Hurlbert, A.H., and E.P. White. 2005. 90<sup>th</sup> Annual Meeting of the Ecological Society of America. Montreal, Canada.
- Goheen, J.R., E.P. White, S.K.M. Ernest, J.H. Brown, J.F. Merritt, P.L. Meserve, N.A. Slade. 2005. International Biogeography Society Meeting.
- Hurlbert, A.H., and E.P. White. 2005. International Biogeography Society Meeting.

- White, E.P. 2004. Santa Fe Institute Scaling Biodiversity Workshop. Prague, Czech Republic.
- Hurlbert, A.H., and E.P. White. 2004. Southwestern Association of Biologists Annual Meeting. Portal, AZ.
- Lyons, S.K., F.A. Smith, P.J. Wagner, E.P. White, and J.H. Brown. 2004. Geological Society of America's Annual Meeting. Denver, CO.
- White, E.P, S.K.M. Ernest, and K.M. Thibault. 2004. 89<sup>th</sup> Annual Meeting of the Ecological Society of America. Portland, OR.
- Thibault, K.M., E.P. White, and S.K.M. Ernest. 2004. 89<sup>th</sup> Annual Meeting of the Ecological Society of America. Portland, OR.
- White, E.P., S.K.M. Ernest, and K.M. Thibault. 2004. Gordon Research Conference – Metabolic basis of ecology. Bates College, ME.
- Lyons, S.K., F.A. Smith, E.P. White, and J.H. Brown. 2004. American Society of Mammalogists Annual Meeting. Humbolt State University, CA.
- White, E. P. 2003. Southwestern Association of Biologists Annual Meeting, Portal, AZ.
- White, E. P. 2003. LTER All Scientists Meeting, Seattle, WA.
- White, E. P. 2003. 88<sup>th</sup> Annual Meeting of the Ecological Society of America, Savannah, GA.
- Brown, J. H., and E. P. White. 2003. Cary Conference, Millbrook, NY.
- White, E. P. 2003. International Society of Biogeography Meeting, Mesquite, NV.
- White, E. P. 2002. Southwestern Association of Biologists Annual Meeting, Portal, AZ.
- Meehan, T. D., and E. P. White. 2002. Southwestern Association of Biologists Annual Meeting, Portal, AZ.
- White, E. P. 2002. 87<sup>th</sup> Annual Meeting of the Ecological Society of America, Tucson, AZ.
- White, E. P. 2002. British Ecological Society's Macroecology Conference, Birmingham, England.
- White, E. P. 1998. Guild of Rocky Mountain Population Biologists Annual Meeting, Nederland, CO.
- White, E. P. 1997. North American Symposium on Bat Research, University of Arizona, Tucson, AZ.