

Professional Preparation

Ph.D., Integrative Biology (with Designated Emphasis in Computational and Genomic Biology).
University of California, Berkeley, 2013
M.A., Geography. University of California, Santa Barbara, 2003
Double B.S., Biology/Chemistry (summa cum laude). Valparaiso University, 1998

Appointments

8/2015-present **Discovery Early Career Award (DECRA) fellow**, The Australian National University
2013-2015 **Postdoctoral Fellow in Mathematical Biology**, National Institute of Mathematical and Biological Synthesis (NIMBioS), U. Tennessee
Spring 2013 **Graduate Student Instructor**, Origins in Science and Religion, instructors Kevin Padian (paleontologist), Ron Hendel (Ancient Near Eastern Studies).
2010-2013 **Graduate Student Researcher**, NSF grant "Bivalves in Time and Space: Testing the accuracy of methods to reconstruct ancestral morphology, dates, geography, and diversification patterns."
2010, 2011 **Graduate Student Instructor**, Principles of Phylogenetics A: Systematics, B: Ecology and Evolution. With B. Mishler, Kip Will, David Ackerly, David Lindberg
2007-2010 **Graduate Student Instructor** for: Human Genetics, Evolution, and Bio1B (introduction to Botany, Ecology, and Evolution)
2004-2007 **Public Information Project Director**, National Center for Science Education (NCSE; defends evolution in the public schools)
2000-2003 **Research and Teaching Assistant**, Geography Dept., UCSB. Topics include: GIS, remote sensing, physical geography
1995-1999 **Field crew and/or Research Technician** for: US Forest Service; Oregon State University Forest Science Department, and McDonald-Dunn Research Forest. Vegetation surveys, stream surveys, marbled murrelet surveys, forest inventory, GIS, air photo interpretation

Publications (selected) (*=NJM is co-first author; †=student-led research, where I assisted)

Summary: 33 peer-reviewed articles (not counting book reviews etc.). **h-index: 19. i10-index: 25**

Perez-Escobar, OA; Chomicki, G; Condamine, FL; Karremans, AP; Bogarin, D; **Matzke, NJ**; Silvestro, D; Antonelli, A (2017). Recent origin of Neotropical orchids in the world's richest plant biodiversity hotspot. *New Phytologist*, accepted.

Matzke, NJ; Irmis, R (2017). Including autapomorphies in paleontological datasets is important for tip-dating with clocklike data, but not with non-clock data. *PeerJ*, accepted.

Badgley, C; Smiley, TM; Terry, R; Davis, EB; DeSantis, LRG.; Fox, DL; Hopkins, SB; Jezkova, T; Matocq, MD; **Matzke, NJ**; McGuire, JL; Mulch, A; Riddle, BR; Roth, VL; Samuels, JX; Strömberg, CAE; Yanites, BJ (2017). Biodiversity and topographic complexity: Modern and geohistorical perspectives. *Trends in Ecology and Evolution*, 32(3), 211-226.

Zhang, G; Basharat, U; **Matzke, NJ**; Franza, NM (2017). Model selection in statistical historical biogeography of Neotropical insects -- The *Exophthalmus* genus complex (Curculionidae: Entiminae). *Molecular Phylogenetics and Evolution*, 109, 226-239.

Turner, AH; Pritchard, AC; **Matzke, NJ** (2017). Empirical and Bayesian approaches to fossil-only divergence times: a study across three reptile clades. *PLoS ONE*, 12(2): e0169885.

†Dupin, J; **Matzke, NJ**; Sarkinen, T; Knapp, S; Olmstead, R; Bohs, L; Smith, S (2016). Bayesian estimation of the global biogeographic history of the Solanaceae. *Journal of Biogeography*. 10.1111/jbi.12898.

Matzke, NJ; Wright, AM (2016). Inferring node dates from tip dates in fossil Canidae: the importance of tree priors. *Biology Letters*, 12(8), 20160328.

Bapst, DW; Wright, AM; **Matzke, NJ**; Lloyd, GT (2016). Topology, divergence dates, and macroevolutionary inferences vary between different tip-dating approaches applied to fossil theropods (Dinosauria). *Biology Letters* 12(7), 20160237.

Short-form CV for Dr. Nicholas Joseph Matzke. Overview: www.nickmatzke.net

For long-form CV, see attached or <http://phylo.wikidot.com/nicholas-j-matzke>

- Shih, P; Hemp, J; **Matzke, NJ**; Fischer, W (2016). Crown group Oxyphotobacteria postdate the rise of oxygen. *Geobiology*. July 8, 2016.
- Yuan, Z-y; Zhou, W-w; Chen, X; Poyarkov, NA; Chen, H-m; Jang-Liaw, N-h; Chou, W-h; **Matzke, NJ**; Iizuka, K; Min, M-s; Kuzmin, SL; Zhang, Y-p; Cannatella, DC; Hillis, DM; Che, J (2016). Spatiotemporal Diversification of the True Frogs (Genus *Rana*): A Historical Framework for a Widely Studied Group of Model Organisms. *Systematic Biology*, June 10.
- ^sVan Dam, M; **Matzke, NJ**. (2015). Evaluating the Influence of Connectivity and Distance on Biogeographic Patterns in the Southwestern Deserts of North America. *Journal of Biogeography*, published March 3, 2016.
- Matzke, NJ** (2015). The Evolution of Antievolution Policies After *Kitzmiller v. Dover*. *Science*. 351(6268), 10-12. Published online December 17, 2015.
- ^sDembo, M; **Matzke, NJ**; Mooers, A; Collard, M (2015). Bayesian analysis of a morphological supermatrix sheds light on controversial fossil hominin relationships. *Journal of the Royal Society: Proceedings B, Biological Sciences*, 282(1812), 20150943.
- ^sMeyer, E; **Matzke, NJ**; Williams, S (2015). Remote sensing of intertidal habitats predicts West Indian topsnail population expansion but reveals scale-dependent bias. *Journal of Coastal Conservation*. 19(2), 107-118.
- Matzke, NJ** (2015). Review of: Michael Heads, *Biogeography of Australasia: A Molecular Analysis*. *Quarterly Review of Biology*, 90(3), 327-328.
- Matzke, NJ** (2015). Ancient Forests and Peripatetic Primates: Alan de Queiroz's *The Monkey's Voyage*. *Reports of the National Center for Science Education*, 25(2), 1-8.
- Matzke, NJ** (2014). "Model Selection in Historical Biogeography Reveals that Founder-event Speciation is a Crucial Process in Island Clades." *Syst. Biol.*, 63(6), 951-970.
- *Lawing, M; **Matzke, NJ** (2014). Conservation paleobiology needs phylogenetic methods. *Ecography*. 37(11).
- Matzke, NJ**; Shih, PM; Kerfeld, CA (2014). Bayesian Analysis of Congruence of Core Genes in *Prochlorococcus* and *Synechococcus* and Implications on Horizontal Gene Transfer. *PLoS One*, 9(1), e85103.
- Matzke, NJ** (2013). Probabilistic historical biogeography: new models for founder-event speciation, imperfect detection, and fossils allow improved accuracy and model-testing. *Frontiers of Biogeography*, 5(4), 242-248.
- ^s*Shih, PM; **Matzke, NJ** (2013). Primary endosymbiosis events date to the later Proterozoic with cross-calibrated phylogenetic dating [...]. *PNAS*, 110(30), 12355-12360.
- Landis, MJ, **Matzke, NJ**; Moore, BR; Huelsenbeck, JP (2013). Bayesian Analysis of Biogeography when the Number of Areas is Large. *Systematic Biology*, 62(6), 789-804.
- ^sWood, HM; **Matzke, NJ**; Gillespie, RG; Griswold, CE (2013). Treating Fossils as Terminal Taxa in Divergence Time Estimation Reveals Ancient Vicariance Patterns in the Palpimanoidea Spiders. *Sys. Bio.*, 62(2), 264.
- ^s*Gong, Z; **Matzke, NJ**; Ermentrout, B; Song, D; Vendetti, J E.; Slatkin, M; Oster, G (2012). Evolution of patterns on *Conus* shells. *PNAS* 109(5), E234-E241.
- Alexandrou, MA; Swartz, B; **Matzke, NJ**; Oakley, TH (2013). Genome duplication and multiple evolutionary origins of complex migratory behavior in Salmonidae. *Molecular Phylogenetics and Evolution*, 69(3), 514.
- Barnosky, AD; **Matzke, NJ**; Tomiya, S; Wogan, G; Swartz, B; Quental, TB; Marshall, C; McGuire, JL; Lindsey, EL; Maguire, KC; Mersey, B; Ferrer, E (2011). Has the Earth's sixth mass extinction already arrived? *Nature* 471(7336), 51-5

Additional Activities

Teaching: Accredited as an Associate Fellow of The Higher Education Academy (AFHEA, 04/2017); **Taught 5 lectures** for ANU's Biol. 1003: Biology 1: Evolution, Ecology and Genetics (400 students, 03/2017); Taught many lectures and labs at U.C. Berkeley (see long CV); **Workshops: BioGeoBEARS**: statistical model choice in historical biogeography. Since 08/2013, teaching R workshops on BioGeoBEARS on 5 continents: phylo.wikidot.com/biogeobears. **BEASTmaster**: using R to set up complex Bayesian "tip-dating" analyses, combining DNA, morphology, and dated fossils.

Students. Advising: As a DECRA fellow, I am currently co-advising 2 Ph.D. student at ANU (1: niche modeling endangered primates in SE Asia; 2: simulating biogeographic processes). **Student research:** Seven peer-reviewed articles (marked with "s") that were student-led. **Tutoring:** I have been a paid tutor for human genetics, writing workshops, etc.

Short-form CV for Dr. Nicholas Joseph Matzke. Overview: www.nickmatzke.net

For long-form CV, see attached or <http://phylo.wikidot.com/nicholas-j-matzke>

Organizing Symposia: Co-organizer/speaker: “Putting Evolution Into Ecological Niche Modeling,” Evolution 2016, Austin, TX; “Frontiers in Parametric Biogeography”, Evo. 2015, Guarujá, Brazil; “Putting Fossils in Trees” at Soc of Vertebrate Paleontology, Berlin, 11/2014.

Public outreach: Volunteer for Ask a Scientist (Climate change and evolution) at the March for Science, Canberra (4/2017); Biology in the Pub, Canberra (11/2016). *Science* article (12/2015); *Australasian Science* cover (4/2016). Organizer for 2015 Darwin Day, Univ. Tennessee, Knoxville; Many talks/papers on *Kitzmiller v. Dover* trial and history.

Peer-reviewer for: *J. Biogeography* (7 times); *PRSB* (2 times); *Systematic Biology* (4); *Evolution* (7); *Ecography* (2); *Methods in Ecology and Evolution* (3); *Am.Nat.* (2); *Evolution: Education and Outreach* (3), etc.

Funding: 2015-: DECRA, AUS\$369,536 over 3 years; 2013-2015 NIMBioS Postdoctoral Fellowship, \$55,000/year; 2011-2013: U.C. Berkeley Tien Fellowship, \$20,000/year; 2010: Wang Fellowship, \$15,000; Travel and workshop grants (e.g., \$1000, June 2015, Evolution 2015 speaker; \$4000, Jan. 2014, ANU to attend IBS2014 and teach BioGeoBEARS workshop; \$1000, BioGeoBEARS workshop at IBS2015, Germany).

Recent grant applications: (a) 2017, funded: “Genomes, phenotypes and fossils: integrative models of species evolution”. Marsden Fund (New Zealand). PIs: Drummond, AJ; Welch, D. AI: Stadler, T; **Matzke, NJ**; Vaughn, TG. **(b) 2017, submitted:** “Understanding American Amphitropic Distributions (AAD): combining morphometric and genomic data for the first Bayesian tip-dating of an angiosperm group, Amsinckiinae (Boraginaceae), and application of biogeographical statistical model comparison”. Pre-proposal for NSF-DEB. PI Matt Guillems. Co-PIs **Matzke, NJ**; Hasenstab-Lehman, K. **(c) 2016, in revision:** “Does competition block range expansion or access to climate change refugia?”. Full proposal for Australian Research Council Discovery Projects (ARC DP). Chief Investigators: Moritz, C; **Matzke, NJ**; Kearney, M; Ranjard, L.