

Carl Boettiger

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Education University of California, Davis

Davis, CA 95616
2012

Ph.D Population Biology,
Completed Sept 18 2012, Awarded Dec 14 2012.
Mentor: Alan Hastings

Princeton University

Princeton, NJ 08544
6/2007

A.B in Physics with Honors
Certificate in Biophysics, Certificate in Applied and Computational Mathematics
Mentor: Stephen Pacala

Publications

Boettiger, C., Hastings, A. (2012) "Early Warning Signals and the Prosecutor's Fallacy." Accepted to the *Proceedings of the Royal Society B*.

Boettiger, C., Temple-Lang, D., Wainwright, P.C. (2012) "rfishbase: exploring, manipulating and visualizing FishBase data from R" Accepted to the *Journal of Fish Biology*.

Boettiger, C., Temple-Lang, D. (2012) "Programmatic access to TreeBASE phylogenies in R." *Methods in Ecology and Evolution* (in press)

Boettiger, C. Hastings, A (2012) "Quantifying limits to detection of early warning for critical transitions." *Journal of The Royal Society Interface*, 1-29. doi: [10.1098/rsif.2012.0125](https://doi.org/10.1098/rsif.2012.0125).

Beaulieu, J.M., Jhwueng, D., Boettiger, C., O'Meara, B. (2012) "Modeling Stabilizing Selection: Expanding the Ornstein-Uhlenbeck Model of Adaptive Evolution," *Evolution*. doi: [10.1111/j.1558-5646.2012.01619.x](https://doi.org/10.1111/j.1558-5646.2012.01619.x)

Boettiger, C., Coop, G., Ralph, P. (2012) "Is your phylogeny informative? Measuring the power of comparative methods." *Evolution*. doi: [10.1111/j.1558-5646.2012.01574.x](https://doi.org/10.1111/j.1558-5646.2012.01574.x)

Boettiger, C., Dushoff, J., Weitz, J. S. (2010) "Variation in the phenotypic dynamics of evolving populations," *Theoretical Population Biology* 77, 6-13. doi: [10.1016/j.tpb.2009.10.003](https://doi.org/10.1016/j.tpb.2009.10.003)

Wray, J., Bahcall, N., Bode, P., Boettiger, C., Hopkins, P. (2006) "The Shape, Multiplicity, and Evolution of Superclusters in Λ CDM Cosmology." *Astrophysical Journal* 652, 907. doi: [10.1086/508600](https://doi.org/10.1086/508600)

Submitted

Samantha A. Price, Lars Schmitz, Philip S. L. Anderson, Carl Boettiger, Peter C. Wainwright. Comparing disparity between traits using the Ornstein-Uhlenbeck model: a test of functional constraint on the eyes of labrid fishes.

Presentations

2012

ESA Portland, Oregon.

Evolution; Ottawa, CAN. SSB Symposium **invited speaker**.

iEvoBio; Ottawa, CAN.

	<i>Computational Science</i> ; Washington DC.	
2011	<i>Ecological Society of America</i> ; Austin, TX. <i>Evolution</i> ; Norman, OK. <i>iEvoBio</i> ; Norman, OK. <i>Science Online</i> ; Durham, NC. <i>Society for Integrative and Comparative Biology</i> . Salt Lake City, UT.	
2010	<i>iEvoBio</i> ; Portland, OR. <i>Evolution</i> ; Portland OR.	
2009	<i>University of Tennessee</i> , Knoxville, TN. <i>IIASA</i> , Vienna; Austria.	
Grants	<i>Short-term visitor grant to NIMBioS</i> for research on optimal control theory and applications to policy.	2012
	<i>PI on 50,000 hr supercomputing grant</i> for research on early warning signals, NERSC, Dept. of Energy Grant No. DE-AC02-05CH11231	2011,2012
	<i>Young Scientist's Summer Program, International</i> <i>Institute for Applied Systems Analysis</i> National Academy of Sciences under NSF Grant No. OISE-0738129, \$8,000	2009
	<i>Computational Science Graduate Fellowship</i> Department of Energy, Grant No: DE-FG02-97ER25308, 4 yrs × \$36,000/yr	2008-2012
Honors & Awards	<i>Third place in software development competition</i> Mendeley & PLoS API Binary Battle, \$1000 prize.	2011
	<i>Volterra Award</i> for best student talk in theory section at the annual meeting of the Ecological Society of America.	2011
	Elected to Membership in the Society of <i>Sigma Xi</i>	2007
	<i>Allen G. Shenstone Prize in Physics</i> , Princeton Physics Department	2007
	<i>The Class of 1870 Old English Prize</i> , Princeton English Department	2007
	<i>Kusaka Memorial Prize in Physics</i> , Princeton Physics Department	2006
	<i>Plasma Physics Fellow</i> , Princeton Plasma Physics Laboratory	2006
Authored Software	earlywarning: tools for the detection of early warning signals of regime shifts (2012) wrightscape: Infer adaptive landscapes from phylogenetic trees (2012) pmc: Phylogenetic Monte Carlo tools to quantify uncertainty in comparative methods. (2011)	

treeBASE: An R interface to the TreeBASE API (2011)
 rfishbase: An R interface to the fishbase database (2011)
 RMendeley: Implementation of the Mendeley API in R (2011)
 BranchingTime: Individual based simulations for adaptive dynamics. (2011)
 knitteditations: Dynamic citation manager for R. (2012)
 populationdynamics: Gillespie algorithms for exact simulation of continuous time Markov processes of common ecological models (2011)

More software at <http://carlboettiger.info/software.html>

Service **Reviewer for:** *Theoretical Ecology, Journal of Mathematical Biology, Ecological Modelling, Evolution, Methods in Ecology and Evolution, Ecosphere, Proceedings of the Royal Society B, Journal of Theoretical Biology, Ecology*

Teaching Experience	ESA Workshop Instructor: How to Access Ecological and Evolutionary Datasets in R	Aug 2012
	Mentor for Google Summer of Code Student	Summer 2012
	Instructor, Bodega Phylogenetics Workshop	Winter 2011
	Student Mentor, CLIMB program	Spring, Summer 2008
	Teaching Assistant: Introductory Zoology	Winter 2008

References Alan Hastings, Dept of Env Sci & Policy, UC Davis amhastings@ucdavis.edu
 Sebastian Schreiber, Dept of Evolution & Ecology, UC Davis sschreiber@ucdavis.edu
 Jim Sanchirico, Dept of Env Sci & Policy, UC Davis jsanchirico@ucdavis.edu
 Peter Wainwright, Dept of Evolution & Ecology, UC Davis pcwainwright@ucdavis.edu
 Simon Levin, Dept of Ecology & Evolution, Princeton slevin@princeton.edu
 Brian O'Meara, Dept of Ecology & Evolution, Knoxville, TN bomeara@utk.edu