Carl Boettiger

http://carlboettiger.info

## employment

* 2015 Assistant Professor, Department of [Environmental Science, Policy and Management](http://ourenvironment.berkeley.edu/), University of California Berkeley
* 2013 NSF post-doctoral scholar, Department of Applied Mathematics and Statistics, University of California, Santa Cruz. Mentors: Marc Mangel, Stephan Munch

## education

* 2012 Ph.D Population Biology, University of California, Davis. Mentor: Alan Hastings
* 2007 A.B in Physics Princeton University with honors and certificates in *biophysics* and *applied and computational mathematics.*

## publications

1. **Carl Boettiger**. (2015) An introduction to Docker for reproducible research. ACM SIGOPS Operating Systems Review, Special Issue on Repeatability and Sharing of Experimental Artifacts. 49(1), 71-79. [10.1145/2723872.2723882](http://doi.org/10.1145/2723872.2723882) ([arXiv](http://arxiv.org/abs/1410.0846))
2. **Carl Boettiger**, Marc Mangel, Stephan Munch. (2015) Avoiding tipping points in fisheries management through Gaussian process dynamic programming. *Proceedings of the Royal Society B* 282(1801), 8–11. [doi:10.1098/rspb.2014.1631](http://doi.org/10.1098/rspb.2014.1631) ([arXiv](http://arxiv.org/abs/1412.8081)) ([repository](https://github.com/cboettig/nonparametric-bayes)) ([data](http://dx.doi.org/10.5061/dryad.mj226))
3. **Carl Boettiger**, Alan Hastings. (2013) No early warning signals for stochastic transitions: insights from large deviation theory. *Proceedings of the Royal Society B*. [doi:10.1098/rspb.2013.1372](http://doi.org/10.1098/rspb.2013.1372) ([arXiv](http://arxiv.org/abs/1307.4415)) ([repository](https://github.com/cboettig/prosecutors-fallacy))
4. **Carl Boettiger**\*, Noam Ross\*, Alan Hastings. (2013) Early warning signals: The charted and uncharted territories. *Theoretical Ecology* [doi:10.1007/s12080-013-0192-6](http://doi.org/10.1007/s12080-013-0192-6) ([arXiv](http://arxiv.org/abs/1305.6700)) ([repository](https://github.com/cboettig/ews-review))
5. **Carl Boettiger**, Alan Hastings (2013). Tipping points: From patterns to predictions, *Nature* 493, 157–158. [doi:10.1038/493157a](http://doi.org/10.1038/493157a)
6. **Carl Boettiger**, Alan Hastings (2012). Early Warning Signals and the Prosecutor’s Fallacy, *Proceedings of the Royal Society B* 279 (1748) 4734-4739. [doi:10.1098/rspb.2012.2085](http://doi.org/10.1098/rspb.2012.2085) ([arXiv](http://arxiv.org/abs/1210.1204)) ([code](https://github.com/cboettig/prosecutors-fallacy)) ([data](http://dx.doi.org/10.5061/dryad.2k462))
7. **Carl Boettiger**, Duncan Temple Lang, Peter Wainwright (2012). rfishbase: exploring, manipulating and visualizing FishBase data from R, *Journal of Fish Biology*. 81 (6) 2030–2039. [doi:10.1111/j.1095-8649.2012.03464.x](http://doi.org/10.1111/j.1095-8649.2012.03464.x) ([preprint](https://github.com/ropensci/rfishbase/blob/master/inst/doc/rfishbase/rfishbase_github.md)) ([code](https://github.com/ropensci/rfishbase)) ([R package](http://cran.at.r-project.org/web/packages/rfishbase/))
8. **Carl Boettiger**, Duncan Temple Lang (2012). Treebase: An R package for discovery, access and manipulation of online phylogenies, *Methods in Ecology and Evolution* 3 (6) 1060–1066. [doi:10.1111/j.2041-210X.2012.00247.x](http://doi.org/10.1111/j.2041-210X.2012.00247.x) ([preprint](https://github.com/ropensci/treebase/blob/master/inst/doc/treebase/treebase_github.md)) ([code](https://github.com/ropensci/treebase)) ([R package](http://cran.at.r-project.org/web/packages/treebase/))
9. **Carl Boettiger** and Alan Hastings (2012). Quantifying Limits to Detection of Early Warning for Critical Transitions, *Journal of the Royal Society: Interface* 9 (75) 2527-2539. [doi:10.1098/rsif.2012.0125](http://doi.org/10.1098/rsif.2012.0125) ([arXiv](http://arxiv.org/abs/1204.6231)) ([code](https://github.com/cboettig/earlywarning))
10. Jeremy M. Beaulieu, Dwueng-Chwuan Jhwueng, **Carl Boettiger** and Brian O’Meara, (2012). Modeling Stabilizing Selection: Expanding the Ornstein-Uhlenbeck Model of Adaptive Evolution, *Evolution* 66 (8) 2369-2383. [doi:10.1111/j.1558-5646.2012.01619.x](http://doi.org/10.1111/j.1558-5646.2012.01619.x) ([R package](http://cran.r-project.org/web/packages/OUwie/index.html))
11. **Carl Boettiger**, Graham Coop, Peter Ralph (2012) Is your phylogeny informative? Measuring the power of comparative methods, *Evolution* 66 (7) 2240-51. [doi:10.1111/j.1558-5646.2011.01574.x](http://doi.org/10.1111/j.1558-5646.2011.01574.x) ([arXiv](http://arxiv.org/abs/1110.4944)) ([code](https://github.com/cboettig/pmc)) ([data](http://datadryad.org/handle/10255/dryad.37645))
12. **Carl Boettiger**, Jonathan Dushoff, Joshua S Weitz (2010) Fluctuation domains in adaptive evolution, *Theoretical Population Biology* 77 (1) 6-13. [doi:10.1016/j.tpb.2009.10.003](http://doi.org/10.1016/j.tpb.2009.10.003) ([arXiv](http://arxiv.org/abs/1004.4233)) ([code](https://github.com/cboettig/fluctuationDomains)) ([data](http://datadryad.org/handle/10255/dryad.37625))
13. James J. Wray, Neta A. Bahcall, Paul Bode, **Carl Boettiger**, Phillip Hopkins. (2006) The Shape, Multiplicity, and Evolution of Superclusters in ΛCDM Cosmology, *The Astrophysical Journal* 652 (2) 907-916. [doi:10.1086/508600](http://doi.org/10.1086/508600) ([arXiv](http://arxiv.org/abs/astro-ph/0603060))

## invited presentations & workshops

#### 2015

* rOpenSci unconf, San Fransisco, CA
* NCEAS Science Advisers meeting, Santa Barbara, CA
* NIMBioS workshop, Knoxville, TN

#### 2014

* NESCent working group, Durham, NC
* [WSSSPE 2.0](http://wssspe.researchcomputing.org.uk/wssspe2/), New Orleans, LA
* rOpenSci Hackathon, San Fransisco, CA
* BIGCB symposium, Berkeley CA
* Zoology Seminar, Madison, WI
* [DIMACS Global Change](http://dimacs.rutgers.edu/Workshops/GlobalChange/announcement.html), Berkeley CA
* ESPM seminar, Berkeley, CA
* NCEAS Working group, Santa Barbara, CA

#### 2013

* MBI workshop, Columbus, OH
* WHOI seminar, Woods Hole, MA
* NCEAS/ISEES workshop, Oakland CA
* NCEAS/ISEES workshop, Santa Barbara, CA
* Environmental Resources and Economics Seminar, Davis, CA
* NIMBioS working group, Knoxville, TN

### 2012 & prior

* SSB symposium at Evolution, Ottawa, CAN
* IIASA YSSP, Vienna, Austria
* Dept Seminar at UTK, Knoxville, TN
* CPB Seminar, Davis, CA
* Cornell probability summer school, Ithaca, NY
* AMI workshop, Palo Alto, CA

## theses

* Carl Boettiger (2012). Regime shifts in ecology and evolution (PhD Dissertation). [doi:10.6084/m9.figshare.97218](http://doi.org/10.6084/m9.figshare.97218)
* Carl Boettiger, Stephen Pacala, David Huse (2007) Ensemble Behavior from Individual Dynamics in Multispecies Forest Populations. *Princeton Physics Dept*. [doi:10.6084/m9.figshare.678304](http://doi.org/10.6084/m9.figshare.678304) ([pdf](file:///assets/files/pubs/Boettiger-Pacala-Huse-2007-Princeton-Physics-Dept.pdf%2520))

## grants

* 2014-2015 Sloan Foundation, for the [rOpenSci Project](http://ropensci.org/) $ 300,000. (Co-PI)
* 2013-2014 Sloan Foundation, for the [rOpenSci Project](http://ropensci.org/) $ 180,000. (Co-PI)
* 2013-2015 NSF Postdoctoral Fellow, [DBI-1306697](http://www.nsf.gov/awardsearch/showAward?AWD_ID=1306697), $ 138,000. (PI) [doi:10.6084/m9.figshare.652970](http://doi.org/10.6084/m9.figshare.652970)
* 2011-2012 DOE Grant No. DE-AC02-05CH11231. 50,000 hr NERSC supercomputing. (PI)
* 2009 NSF IIASA-YSSP fellowship, Grant No. OISE-0738129, $ 8,000.
* 2008-2012 DOE CSGF, Grant No. DE-FG02-97ER25308, $ 150,000

## awards

* 2011 *Volterra Award* (Best student talk, ESA Theory Section)
* 2011 Mendeley & PLoS Binary Battle software competition award
* 2007 Elected to Membership in the Society of *Sigma Xi*
* 2007 Allen G. Shenstone Prize in Physics, Princeton University
* 2007 The Class of 1870 Old English Prize, Princeton University
* 2006 Kusaka Memorial Prize in Physics, Princeton University
* 2006 Plasma Physics Fellow, PPPL

## service

* [NCEAS Scientific Advisory Board](https://www.nceas.ucsb.edu/news/nceas-appoints-new-science-advisers)
* [rOpenSci Leadership board](http://ropensci.org/about/" \l "leadership)

**reviewer for:**

* **2015** Proceedings of the National Academy of Sciences, Journal of Statistical Software, Bioinformatics, Chapman & Hall, JLSC, Journal of Open Research Software, Ecology Letters
* **2014** Theoretical Ecology, Biodiversity Data Journal, Ecology Letters, Journal of Theoretical Biology, American Naturalist, Proceedings of the National Academy of Sciences, Proceedings of the Royal Society B.
* **2013** Theoretical Ecology, Francis & Taylor, Ideas in Ecology and Evolution, The R Journal, National Science Foundation, Proceedings of the Royal Society B, Journal of Open Research Software, Canadian Journal of Fisheries and Aquatic Sciences
* **2012** Theoretical Ecology, Evolution, Methods in Ecology and Evolution, Proceedings of the Royal Society B, PLoS ONE, Ecology, Conservation Letters, Ecology Letters
* **2011** Theoretical Ecology, Ecological Modelling, Evolution, Methods in Ecology and Evolution, Ecosphere
* **2010 & prior** Theoretical Ecology, Journal of Mathematical Biology, Ecological Modelling, Ecology

## media interviews

* Tachibana, C. (2014). "The paperless lab" *Science* 345(6195) pp. 468-470. [10.1126/science.opms.p1400087](http://www.sciencemag.org/site/products/lst_20140613.xhtml)
* Mascarelli, A. (2014) "Research tools: Jump off the page." *Nature* 507, 523–525. [doi:10.1038/nj7493-523a](http://doi.org/10.1038/nj7493-523a)
* Check Hayden E (2013). "Mozilla Plan Seeks to Debug Scientific Code." *Nature*, 501, pp. 472-472. [doi:10.1038/501472a](http://doi.org/10.1038/501472a)
* Van Noorden R (2013). "Data-Sharing: Everything on Display." *Nature*, 500, pp. 243-245. [doi:10.1038/nj7461-243a](http://doi.org/10.1038/nj7461-243a)
* Gewin, Virginia (2013). "Turning Point: Carl Boettiger" *Nature*, 493 p 711 [doi:10.1038/nj7434-711a](http://doi.org/10.1038/nj7434-711a)
* Wald, Chelsea (2010). "Scientists Embrace Openness" *Science*. [doi:10.1126/science.caredit.a1000036](http://doi.org/10.1126/science.caredit.a1000036)