

Dr. Carl Boettiger

Curriculum Vitae

ESPM Department, University of California,
130 Mulford Hall #3114 Berkeley, CA 94720
cboettig@berkeley.edu
<https://carlboettiger.info>
<https://github.com/cboettig>

WORK EXPERIENCE

CURRENT, FROM JULY 2015 (FT)
University of California, Berkeley
Assistant Professor
Department of Environmental Science, Policy and Management

2013-2015 (FT)
University of California, Santa Cruz
NSF Post-doctoral Scholar
Department of Applied Mathematics and Statistics

EDUCATION

2007 – 2012 **Doctor of Philosophy**
Population Biology. Mentor: Alan Hastings
University of California, Davis

2003 – 2007 **Bachelors of Physics**
WITH HONOURS
Physics, w/ Certs. in Applied Mathematics
Princeton University

GRANTS

2019 – 2020 **Chan-Zuckerberg Initiative, \$75,912**
C. Boettiger, N. Ross, D. Eddelbuettel
Essential Open Source Software for Science

2018 – 2022 **National Science Foundation, \$1,301,737**
T. Bowles, A. Iles, C. Kremen, C. Boettiger
Coupled Natural Human Systems #CNH-1824871

2019 – 2021 **Helmsley Charitable Trust, \$1,000,000**
K. Ram, C. Boettiger, S. Chamberlain
The rOpenSci Project

2018 **Berkeley Institute for Data Science, \$67,000**
C. Boettiger, R. Gillespie, R. Nielsen

2018 – 2021 **The Hellman Foundation, \$37,600**
C. Boettiger
Junior Faculty Fellowship

2018 – 2019 **Berkeley Collegium \$16,867**
C. Boettiger
Narrowing the Gap Between Teaching and Research

2016 - 2019 **James S McDonnell Foundation, \$200,000**
(Awarded to Allison Barner, who brought it to my team)
Post-doctoral Fellowship in Complex Systems

2015 – 2018 **Helmsley Charitable Trust, \$2,875,071**
K. Ram, C. Boettiger, S. Chamberlain

PUBLICATIONS (32)

Milad Memarzadeh, Gregory L. Britten, Boris Worm, **Carl Boettiger** (2019). Rebuilding global fisheries under uncertainty. *Proceedings of the National Academy of Sciences*. doi:10.1073/pnas.1902657116

Carl Boettiger, Ryan Batt (2019). Bifurcation or state tipping: assessing transition type in a model trophic cascade. *Journal of Mathematical Biology*. doi:10.1007/s00285-019-01358-z (oa, code)

Milad Memarzadeh, **Carl Boettiger** (2019). Resolving the Measurement Uncertainty Paradox in Ecological Management. *American Naturalist*. doi:10.1086/702704. (oa, code, data)

Dan Sholler, Karthik Ram, **Carl Boettiger**, Daniel S Katz (2019). Enforcing public data archiving policies in academic publishing: A study of ecology journals. *Big Data & Society* 6(1) 1-18. doi:10.1177/2053951719836258

Carl Boettiger (2019). Ecological Metadata as Linked Data. *Journal of Open Source Software*, 4(34), 1276, doi:10.21105/joss.01276 (software).

Katz, Allen, Barba, Berg, Bik, **Boettiger**, et al. (2018). The principles of tomorrow's university. *F1000Research*, 7:1926 doi:10.12688/f1000research.17425.1. (32 co-authors.)

Karthik Ram, **Carl Boettiger**, Scott Chamberlain, Noam Ross, Maelle Salmon, & Stephanie Butland (2018). A Community of Practice Around Peer-review for Long-term Research Software Sustainability. *Computing in Science & Engineering*, 9615(c), 1-1. doi:10.1109/MCSE.2018.2882753

Carl Boettiger (2018). Managing Larger Data on a GitHub Repository. *Journal of Open Source Software*, 3(29), 971, doi:10.21105/joss.00971. (software).

Milad Memarzadeh, **Carl Boettiger** (2018). Adaptive management of ecological systems under partial observability. *Biological Conservation*. 224, 9-15. doi:10.1016/j.biocon.2018.05.009. (software)

Carl Boettiger (2018). From noise to knowledge: how randomness generates novel phenomena and reveals information. *Ecology Letters*. doi:10.1111/ele.13085 (oa, code, data)

Carl Boettiger, Dirk Eddelbuettel (2018). An Introduction to Rocker: Docker Containers for R. *The R Journal*. doi:10.32614/RJ-2017-065

Carl Boettiger (2017). Generating Codemeta Metadata for R Packages. *The Journal of Open Source Software* 2 (19), 454, doi:10.21105/joss.00454

The rOpenSci Project, #2016PG-BR1004

- 2015 – 2018 **National Science Foundation, \$165,782**
C. Boettiger, M. Jones
The CodeMeta Project #ACI-1549758
- 2014 **Alfred P. Sloan Foundation, \$300,000**
K. Ram, C. Boettiger, S. Chamberlain
The rOpenSci Project Phase II funding
- 2013 **Alfred P. Sloan Foundation, \$180,000**
K. Ram, C. Boettiger, S. Chamberlain
The rOpenSci Project Phase I funding
- 2013 – 2015 **National Science Foundation, \$138,000**
C Boettiger. *NSF Biology Post-doc*, #DBI-1306697
- 2009 **National Academy of Sciences \$8,000**
IIASA YSSP fellowship
OISE-0738129
- 2008 – 2012 **Department of Energy, \$149,000**
Computational Science Graduate Fellowship
#DE-FG02-97ER25308

Getz, Marshall, Carlson, Giuggioli, Ryan, Romañach, **Boettiger**, Chamberlain, Larsen, D’Odorico, O’Sullivan (2017). Making ecological models adequate. *Ecology Letters*. doi:10.1111/ele.12893

Ben Marwick, **Carl Boettiger**, Lincoln Mullen (2017). Packaging data analytical work reproducibly using R (and friends). *The American Statistician*. doi:10.1080/00031305.2017.1375986. (oa)

Hampton, Jones, Wasser, Schuldhauser, Supp, Brun, Hernandez, **Boettiger**, Collins, Gross, Fernandez, Budden, White, Teal, Labou, Aukema (2017). Skills and Knowledge for Data Intensive Research. *BioScience*. doi:10.1093/biosci/bix025. (oa)

T Alex Perkins, **Carl Boettiger**, Benjamin L. Philips. (2016) After the games are over: life-history trade-offs drive dispersal attenuation following range expansion. *Ecology and Evolution* 6 (18) 6425–6434. doi:10.1002/ece3.2314. (oa, code)

Carl Boettiger, Michael Bode, James N. Sanchirico, Jacob LaRiviere, Alan Hastings, and Paul Robert Armsworth (2016). Optimal management of a stochastically varying population when policy adjustment is costly. *Ecological Applications* 26 (3) 808–817. doi:10.1890/15-0236. (oa, code)

Carl Boettiger, Scott Chamberlain, Rutger Vos and Hilmar Lapp (2016). RNeXML: a package for reading and writing richly annotated phylogenetic, character, and trait data in R. *Methods in Ecology and Evolution*. doi:10.1111/2041-210X.12469. (oa, code, software)

Carl Boettiger, Scott Chamberlain, Edmund Hart, Karthik Ram (2015). Building Software, Building Community: Lessons from the rOpenSci Project. *Journal of Open Research Software* 3: e8, doi:10.5334/jors.bu.

Carl Boettiger (2015). An introduction to Docker for reproducible research. *ACM SIGOPS Operating Systems Review* 49(1), 71–79. doi:10.1145/2723872.2723882. (oa)

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.2014.1031. (oa, code, data)

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. (oa, code)

Carl Boettiger, Noam Ross, Alan Hastings (2013). Early warning signals: The charted and uncharted territories. *Theoretical Ecology* doi:10.1007/s12080-013-0192-6. (oa, code)

Carl Boettiger, Alan Hastings (2013). Tipping points: From patterns to predictions, *Nature* 493, 157–158. doi:10.1038/493157a.

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. (oa, code, data)

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. (oa, code, software)

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.2012.00247x. (oa, code, software)

Carl Boettiger, 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. (oa, code)

Jeremy M. Beaulieu, Dwueng-Chwuan Jhwueng, **Carl Boettiger**, 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 (software)

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, (oa, code, data)

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. (oa, code, data)

James J. Wray, Neta A. Bahcall, Paul Bode, **Carl Boettiger**, Phillip Hopkins (2006). The Shape, Multiplicity, and Evolution of Superclusters in Lambda-CDM Cosmology, *The Astrophysical Journal* 652 (2) 907–916. doi:10.1086/50860. (oa)

BOOK CHAPTERS

Carl Boettiger (2017). A Reproducible R Notebook Using Docker. In J. Kitzes, D. Turek, & F. Deniz (Eds.), *The Practice of Reproducible Research: Case Studies and Lessons from the Data-Intensive Sciences* (1st ed., pp. 109–117). Oakland, CA: UC Press. ISBN:9780520294752