

Scott A. Chamberlain

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SKILLS

- Python: 7 years experience. Maintaining 4 Python packages on PyPi. Flask. Async programming.
- Javascript: a few years experience, particularly Vue.js
- R: 16 years experience, research projects and packages. Created over 100 R packages.
- Ruby: 7 years experience. Maintaining 3 Ruby packages on Rubygems. Created many REST APIs with Sinatra.
- HTML/CSS: Proficiency; using HTML and customizing CSS for websites.
- Databases: Experience includes SQL (Redshift, MySQL, MariaDB, SQLite, PostgreSQL), document databases (MongoDB, CouchDB), and key-value stores (Redis).
- Cloud platform experience: AWS, DigitalOcean, Heroku

EDUCATION

2012 Ph.D., Ecology & Evolutionary Biology, Rice University

2009 M.A., Ecology & Evolutionary Biology, Rice University

2003 B.S., Biological Sciences, California State University, Chico

POSITIONS

August 2021 – present **OurResearch, Principal Software Engineer and Product Owner**

OurResearch is a non-profit that builds tools to make scholarly research more open, connected, and reusable.

- Principal Software Engineer and Product Owner of Unsub (<https://unsub.org/>) - a web application to help university librarians evaluate research journal access and costs.
- Unsub frontend is Javascript's Vue.js framework, while the backend is Python's Flask framework.
- Develop Unsub alone, front- and back-end, database, sales, demos, account management, etc.

June 2014 – July 2021 **rOpenSci, Co-Founder**

rOpenSci is a non-profit developer collective whose mission is to facilitate reproducible research.

- Along with rest of leadership team, deciding on vision and focal areas
- Maintained dozens of R packages to help researchers do more reproducible research.
- Built and maintained APIs using Ruby for two widely used sources of data for biologists. Proficiency in APIs in Python.
- Developed the infrastructure for software review, served as an editor and reviewer for R packages submitted to rOpenSci.
- Authored hundreds of technical blog posts on the rOpenSci blog (<https://ropensci.org/author/scott-chamberlain/>) and my personal blog (<https://recology.info/>). Compiled and distributed the rOpenSci newsletter (<https://ropensci.org/news/>) for 6 years. Co-authored a book on HTTP testing in R (<https://books.ropensci.org/http-testing/>).
- Managed the rOpenSci community discussion forum (Discourse, a self-hosted open-source application) for 5 years. Managing upgrades and server maintenance, as well as managing users.

June 2016 – Jan 2021 Open Knowledge Maps, Backend Volunteer Contributor

Open Knowledge Maps (<https://openknowledgemaps.org/>) is a visual interface to the world's scientific knowledge.

- Worked with a team using agile processes to maintain integration with many 3rd party APIs

May 2012 – April 2014 Postdoctoral Scholar, Simon Fraser University

Department of Biological Sciences. Mentor: Dr. Elizabeth Elle

- Built and curated a large SQL database (millions of rows) containing data from a network of dozens of researchers in CANPOLIN (Canadian Pollination Initiative).
- Synthesized data from CANPOLIN to answer questions about pollinator communities, leading to three peer-reviewed papers.

COMMUNITY

- Organized the Portland R User Group (<https://www.meetup.com/portland-r-user-group/>) for 5 years (2015-2019)
- Co-created, and organized for two years (2017-2018), a US pacific northwest regional R conference – CascadiaRConf (<https://cascadiarconf.org/>)

TEACHING

- Software Carpentry instructor: co-taught two 2-day workshops (in 2013 and 2016)

PUBLICATIONS

- Mitchell, N., **Chamberlain SA**, & Whitney, K. D. (2021). Proximity to crop relatives determines some patterns of natural selection in a wild sunflower. *Evolutionary Applications*. <https://doi.org/10.1111/eva.13201>
- Guzman, L. M., **Chamberlain SA**, & Elle, E. (2020). Phenology and Robustness in plant-pollinator networks. *BioRxiv Preprint*. <https://doi.org/10.1101/2020.10.30.362616>
- Conde, D. A., Staerk, J., Colchero, F., **Chamberlain SA**, et al. 2019. Data gaps and opportunities for comparative and conservation biology. *PNAS*, 116(19), 9658–9664. <https://doi.org/10.1073/pnas.1816367116>
- Ram, K., Boettiger, C., **Chamberlain SA**, et al. 2019. A Community of Practice Around Peer Review for Long-Term Research Software Sustainability. *Computing in Science & Engineering*, 21(2), 59–65. <https://doi.org/10.1109/MCSE.2018.2882753>
- D Pearce, W., & **Chamberlain SA** 2018. Suppdata: Downloading Supplementary Data from Published Manuscripts. *Journal of Open Source Software*, 3(25), 721. <https://doi.org/10.21105/joss.00721>
- Foster ZSL, **Chamberlain SA** and Grünwald NJ. 2018. taxa: An R package implementing data standards and methods for taxonomic data. *F1000Research*, 7:272 <https://doi.org/10.12688/f1000research.14013.2>
- **Chamberlain SA**, C. Boettiger. 2017. R Python, and Ruby clients for GBIF species occurrence data. *PeerJ Preprints*. <https://peerj.com/preprints/3304v1/>
- Winslow, L. A., **Chamberlain SA**, et al. (2016). sbtools: A package connecting R to cloud-based data for collaborative online research. *The R Journal*, 8(1), 387-398. <https://doi.org/10.1371/journal.pone.0127781>

- Boettiger C, **Chamberlain SA**, et al. RNeXML: A Package for Reading and Writing Richly Annotated Phylogenetic, Character, and Trait Data in R. *Methods in Ecology & Evolution*, 7, 352-357. <https://doi.org/10.1111/2041-210X.12469>
- Boettiger, C., **Chamberlain SA**, Hart, E., & Ram, K. 2015. Building software, building community: lessons from the rOpenSci project. *Journal of Open Research Software*, 3(1). <https://doi.org/10.5334/jors.bu>
- Guo H, **Chamberlain SA**, Elhaik E, Jalli I, Lynes A-R, et al. 2015. Geographic Variation in Plant Community Structure of Salt Marshes: Species, Functional and Phylogenetic Perspectives. *PLoS ONE* 10(5): e0127781. <https://doi.org/10.1371/journal.pone.0127781>
- Mair, P, and **Chamberlain SA**. 2014g. Web Technologies Task View. *The R Journal* 6(1): 178-181. <https://journal.r-project.org/archive/2014-1/>
- Revell, L., **Chamberlain SA**. 2014f. Rphylip: An R interface for PHYLIP. *Methods in Ecology & Evolution*. <https://doi.org/10.1111/2041-210X.12233>
- **Chamberlain SA**, et al. 2014e. Traits and phylogenetic history contribute to network structure across Canadian plant-pollinator communities. *Oecologia*. <https://doi.org/10.1007/s00442-014-3035-2>
- **Chamberlain SA**, et al. 2014d. Phylogenetic tree shape and the structure of mutualistic networks. *Journal of Ecology*. <https://doi.org/10.1111/1365-2745.12293>
- **Chamberlain SA**, J.A. Rudgers, and J.L. Bronstein. 2014c. How context-dependent are species interactions. *Ecology Letters*. <https://doi.org/10.1111/ele.12279>
- Barraquand F, Ezard TH, Jørgensen PS, Zimmerman N, **Chamberlain SA** et al. 2014b. Lack of quantitative training among early-career ecologists: a survey of the problem and potential solutions. *PeerJ* 2:e285 <https://doi.org/10.7717/peerj.285>
- Vamosi, J.; **Chamberlain SA**, Garcha, N.; Moray, C.; Mooers, A. 2014a. Pollinators visit related plant species across 29 plant-pollinator networks. *Ecology & Evolution*. <https://doi.org/10.1002/ece3.1051>
- **Chamberlain SA**, Szöcs E. 2013. taxize: taxonomic search and retrieval in R. *F1000Research*, 2:191 <https://doi.org/10.12688/f1000research.2-191.v2>
- **Chamberlain SA**, J.A. Rudgers, & K.D. Whitney. 2013. Proximity to agriculture alters abundance and community composition of wild sunflower mutualists and antagonists. *Ecosphere*. <https://doi.org/10.1890/ES13-00026.1>
- **Chamberlain SA** 2013. Consuming Article-Level Metrics: Observations and Lessons from Comparing Aggregator Provider Data. *Information Standards Quarterly*. <http://doi.org/10.3789/isqv25no2.2013.02>
- **Chamberlain SA**, S.M. Hovick, ... et al ... K.D. Whitney. 2012. Does phylogeny matter? Assessing the impact of phylogenetic information in ecological meta-analysis. *Ecology Letters* 15(6):627-636. <https://doi.org/10.1111/j.1461-0248.2012.01776.x>
- **Chamberlain SA**, & J.A. Rudgers. 2012. How do plants balance multiple mutualists? Correlations among traits for attracting protective bodyguards and pollinators in cotton (*Gossypium*). *Evolutionary Ecology* 26:65-77. <https://doi.org/10.1007/s10682-011-9497-3>
- Holland, J.N., **Chamberlain SA** and T.E.X. Miller. 2011. Consequences of ants and extrafloral nectar for a pollinating seed-consuming mutualism: ant satiation, floral distraction, or plant defense? *Oikos*. <https://doi.org/10.1111/j.1600-0706.2010.18958.x>
- **Chamberlain SA**, J.K. Kilpatrick, & J.N. Holland. 2010. Do extrafloral nectar resources, abundances, and body sizes contribute to the structure of ant-plant mutualistic networks? *Oecologia* 164:741-750. <https://doi.org/10.1007/s00442-010-1673-6>

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- **Chamberlain SA**, & J.N. Holland. 2009. Quantitative synthesis of context-dependency in ant-plant protection mutualisms. *Ecology* 90(9):2384-2392. <https://doi.org/10.1890/08-1490.1>
- Holland, J.N., **Chamberlain SA**, A.M. Waguespack, and A.S. Kinyo. 2009. Effects of pollen load and donor diversity on variation in seed and fruit size in a columnar cactus, *Pachycereus schottii* (Cactaceae). *International Journal of Plant Sciences* 170:467-475. <https://doi.org/10.1086/597266>
- **Chamberlain SA** & J.N. Holland. 2009. Body size predicts degree in ant-plant mutualistic networks. *Functional Ecology* 23:196-202. <https://doi.org/10.1111/j.1365-2435.2008.01472.x>
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- **Chamberlain SA** & J.N. Holland. 2008. Density-mediated and context-dependent consumer-resource interactions between ants and extrafloral nectar plants. *Ecology* 89(5):1364-1374. <https://doi.org/10.1890/07-1139.1>
- **Chamberlain SA** & R.A. Schlising. 2008. Role of honeybees (Hymenoptera: Apidae) in the pollination biology of a California native plant, *Triteleia laxa* (Asparagales: Themidaceae). *Environmental Entomology* 37(3):808-816. <https://doi.org/10.1093/ee/37.3.808>
- Holland, J.N. & **Chamberlain SA**. 2007. Ecological and evolutionary mechanisms for low seed:ovule ratios: need for a pluralistic approach? *Ecology* 88(3):706-715. <https://doi.org/10.1890/06-1283>
- Schlising, R.A. & **Chamberlain SA**. 2006. Biology of the geophytic lily, *Triteleia laxa* (Themidaceae), in grasslands of the Northern Sacramento Valley. *Madroño* 53(4):321-341. [https://doi.org/10.3120/0024-9637\(2006\)53\[321:BOTGLT\]2.0.CO;2](https://doi.org/10.3120/0024-9637(2006)53[321:BOTGLT]2.0.CO;2)

SELECTED ORAL PRESENTATIONS

Slides for talks available at <https://scotttalks.info/>

- **2019** HTTP Requests for Users & Package Developers. useR, Toulouse, France.
- **2018** Phylogeny Based Biodiversity Data Queries. Biodiversity Information Standards (TDWG), Dunedin, New Zealand.
- **2018** Harnessing the Power of Open Data on the Web. Joint Statistical Meeting, Vancouver, Canada.
- **2018** taxonomic data methods for R & Python. Bioinformatics Open Source Conference (BOSC), Portland, OR.
- **2018** Biodiversity and Taxonomy Software Tools in R. Digital Data in Biodiversity Research Conference, Berkeley, CA.
- **2018** Open Science / Research w/ R featuring rOpenSci. Talk to the Centers for Disease Control and Prevention (CDC) R user group.
- **2017** The Taxonomic and Biodiversity Software Stack in R. Biodiversity Information Standards (TDWG) meeting, Ottawa, Canada.
- **2017** Cultivating Community around software and data. Ecological Society of America conference, Portland, OR.
- **2017** Two talks: "Open science and R" and "Open science, R & rOpenSci". Open Source Systems in the Public Sector Symposium. Stockholm, Sweden.

- **2016** Software & best practices to facilitate open science. Philosophy and History of Open Science symposium, Helsinki, Finland.
- **2015** Thinking programmatically. Keynote at Crossref Annual Meeting, Boston, MA.
- **2014** Building tools and community for open and reproducible research. Seminar at Simon Fraser University Statistics Department, Vancouver, BC, Canada.
- **2014** Cultivating open and reproducible science. Seminar at University of Georgia Odum School of Ecology, Athens, GA.
- **2013** Article-level impact for web native scholarship. Simon Fraser University Library, Vancouver, BC, Canada.
- **2012** Variation in species interaction outcomes. Seminar at University of Calgary Biological Sciences Department, Calgary, Alberta, Canada.

VOLUNTEER AND PROFESSIONAL SERVICE

- DataONE - Community Education and Engagement Working Group, 2012-2014
- British Ecological Society (BES) Digital Strategy Working Group, 2012-2014
- Board Member, Friends of Bidwell Park Board of Directors, Chico, California, 2004-2005

PEER REVIEW SERVICE

Subject editor for Biodiversity Data Journal for 6 years

Grant proposal review: Chan Zuckerberg Initiative, 2x

Journal article peer review (~55): African Journal of Agricultural Research, Agricultural & Forest Entomology (2), The American Naturalist, Annals of Botany (2), Biodiversity Data Journal, Biological Invasions, Ecography (4), Ecological Complexity, Ecological Entomology, Ecological Complexity, Ecology (3), Ecology Letters, Ecology and Evolution, Environmental Management, Evolutionary Ecology, Florida Entomologist (2), Journal of Avian Biology, Journal of Ecology (4), Journal of Tropical Ecology, Methods in Ecology and Evolution (7), New Phytologist, Oecologia, Oikos (3), Plant Ecology, PLOS One (2), Population Ecology (2), Proceedings of the Royal Society B, The R Journal (2), Scientific Data (3), PeerJ, F1000Research

REFERENCES

- Dr. Carl Boettiger, rOpenSci, University of California, Berkeley, cboettig@berkeley.edu
- Dr. Elizabeth Elle, Biology Department, Simon Fraser University, eelle@sfu.ca
- Dr. Jennifer Rudgers, Biology Department, University of New Mexico, jrudgers@unm.edu
- Dr. Robert Schlising, Biology Department California State University, Chico, rschlising@csuchico.edu