

Peter David Smits

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<https://psmits.github.io/>

- **University of California – Berkeley** Berkeley, CA
Postdoctoral Scholar *Sept 2017 – present*
 - Project lead for study on predicting when rare events (e.g. extinctions) are likely to be clustered
 - Developed a discrete-time survival model using Stan to predict probability of species extinction
 - Generalized results from this survival model to estimate the accuracy of predicting future species extinctions
 - Wrote online textbook/short-course on analyzing macroecological and paleontological data
 - Taught graduate level course on applied statistics, Bayesian modeling, and network analysis using R and Stan
- **University of Chicago** Chicago, IL
Doctoral Researcher *Sept 2012 – June 2017*
 - Completed dissertation on modeling emergent macroecological and macroevolutionary patterns
 - Analyzed how factors influencing extinction are correlated over time using a multi-level survival model
 - Developed a multilevel birth-death model to understand how species community structure changes over time
 - Mentored and taught graduate and undergraduate students in statistics, Stan, R, and pedagogy
- **Monash University** Melbourne, AUS
Postgraduate Researcher *Sept 2010 – Aug 2012*
 - Developed thesis on the relationship between tooth shape and jaw movement in carnivorous mammals
 - Used three-dimensional scans of mammal skulls to reconstruct jaw movement
 - Used R to analyze relationship among biomechanical measurements
 - Demonstrated for undergraduate course on introduction to data analysis and R

Skills

Statistical/Analytical: Bayesian data analysis, multilevel/mixed-effects models, generalized linear models (logistic, Poisson, multinomial, etc.), time-series analysis, survival analysis, longitudinal and cross-sectional data analysis, hidden Markov models, network analysis/graph theory, exploratory data analysis, clustering, classification, machine learning, measurement error/missing data, variable selection, etc.

Technologies: R (tidyverse, dplyr, purrr, ggplot2, knitr, shiny, caret, igraph), Stan (CmdStan, rstan, rstanarm, brms), JAGS, L^AT_EX, git/github, bash/Linux command line

Other: near-fluency French, dual US–Australian citizen, radio experience

Education

- **University of Chicago** Chicago, IL
Ph.D. in Evolutionary Biology *Sept 2012 – June 2017*
- **Monash University** Melbourne, AUS
M.Sc. in Biological Sciences *Sept 2010 – Aug 2012*
 - Vice-Chancellor’s Commendation for Master’s Thesis Excellence
- **University of Washington** Seattle, WA
B.S. in Biology – Ecology and Evolution *Sept 2006 – June 2010*