Peter David Smits

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RESEARCH INTERESTS

Macroevolution, macroecology, paleobiology, Bayesian modeling, extinction, mammals, brachiopods, survival analysis, time-series analysis, longitudinal and cross-sectional data analysis

EDUCATION

University of Chicago, Chicago, IL

Ph.D., Committee on Evolutionary Biology, June 2017

• Advisors: Michael Foote and Kenneth Angielcyzk

Monash University, Melbourne, AUS

M.S., Biological Sciences, Aug 2012

First Class Honours Advisor: Alistair Evans

University of Washington, Seattle, WA

B.S., Biology: Ecology and Evolution, June 2010

PUBLICATIONS

- 1. **Peter D Smits**. How macroecology affects macroevolution: the interplay between extinction intensity and trait-dependent extinction in brachiopods. *bioRxiv*, doi: https://doi.org/10.1101/523811, 2019.
- Stewart M Edie, Peter D Smits, David Jablonski. Probabilistic models of species discovery and biodiversity comparisons. Proceedings of the National Academy of Sciences, 114(14):3666-3671, 2017.
- 3. **Peter D Smits**. Expected time-invariant effects of biological traits on mammal species duration. *Proceedings of the National Academy of Sciences*, 112(42):1301513020, 2015.
- Liliana M Davalos, Paul M Velazco, Omar M Warsi, Peter D Smits, Nancy B Simmons. Integrating Incomplete Fossils by Isolating Conflicting Signal in Saturated and Non-Independent Morphological Characters. Systematic Biology, 63(4):582-600, 2014.
- 5. Christopher W Walmsley, Peter D Smits, Michelle R Quayle, Matthew R McCurry, Heather S Richard, Christopher C Oldfield, Stephen Wroe, Phillip D Clausen, and Colin R McHenry. Why the fong face? The mechanics of mandibular symphysis proportions in crocodiles. PLoS ONE, 8(1):e53873, 2013.
- 6. **Peter D Smits**, Alistair R Evans. Functional constraints on tooth morphology in carnivorous mammals. *BMC Evolutionary Biology*, 12(1):146, 2012.
- Gregory P Wilson, Alistair R Evans, Ian J Corfe, Peter D Smits, Mikael Fortelius, and Jukka Jernvall. Adaptive radiation of multituberculate mammals before the extinction of dinosaurs. Nature, 483:457-460, 2012.

Papers in Submission

- 1. **Peter D Smits**, Seth Finnegan. How predictable is extinction? Forecasting species survival at million-year timescales.
- 2. **Peter D Smits**, Kenneth D Angielczyk, James F Parham, Bryan Stuart. Supervised learning approaches to classifying morphological variation: assessing taxonomic hypotheses for the Pacific Pond Turtle (Emys marmorata).

Awards

Student Awards — University of Chicago

• Hinds Fund Grant

Student Awards — Monash University

- Vice-Chancellor's Commendation for Master's Thesis Excellence, 2012.
 - The Vice-Chancellor's Commendation is give out to the best thesis submitted that year across all divisions at the university; between 0 and 5 are awarded per year.

Student Awards — University of Washington, Department of Biology

• Casey Award for Research, 2008.

Travel Awards

- Summer Travel Award, Committee on Evolutionary Biology, 2013, 2014, 2015, 2016.
- Student Travel Stipend, Society for the Study of Evolutionary Biology, 2015.
- Faculty of Science Travel Grant, Monash University, 2011.

Presentations

Professional Meetings (last 5 years)

• Geological Society of America Annual Meeting, Indianapolis, IN	November 2018
• Geological Society of America Annual Meeting, Seattle, WA	Sept 2017
• Geological Society of America Annual Meeting, Denver, CO	Sept 2016
• Evolution Meetings, Austin, TX	June 2016
• Geological Society of America Annual Meeting, Baltimore, MD	Nov 2015
• Evolution Meetings, Guaruja, Brazil	June 2015
• Geological Society of America Annual Meeting, Vancouver, BC	Oct 2016
• Evolution Meetings, Raleigh, NC	June 2014
• Society for Vertebrate Paleontology, Los Angeles, LA	Oct 2013
• Evolution Meetings, Snowbird, UT	June 2013

TEACHING EXPERIENCE

Co-Instructor

Fall 2018

Analytical Paleobiology

with Seth Finnegan, Charles Marshall Department of Integrative Biology, University of California Berkeley

Co-instructor Falls 2015–16

BSDG 5000 - Teaching Assistant Training

with Alicia Santos

Division of Biological Sciences,

University of Chicago

Teaching Assistant Spring 2016

BIOS 20151 - Introduction to Quantitative Modeling in Biology

Instructor: Dmitry Kondrashov Division of Biological Sciences,

University of Chicago

Teaching Assistant Winter 2015

BIOS 13107 - Environmental Ecology

Instructor: Trevor Price

Division of Biological Sciences,

University of Chicago

Teaching Assistant Spring 2012

BIO2011 - Research Methods

Instructor: Ross Thompson, Patrick Baker

School of Biological Sciences,

Monash University

Peer Teaching Assistant Fall 2009

Biol 443 - Evolution of Mammals and their Ancestors

Instructor: Gregory Wilson Department of Biology University of Washington

SERVICE Recording Secretary for UC Berkeley, University of California Postdoctoral Union, UAW

5180 December 2018 – Present

REFERENCES Michael Foote

Professor Phone: 773-702-4320 Department of Geophysical Sciences E-mail: mfoote@uchicago.edu

University of Chicago

Kenneth Angielczyk

Associate Curator Phone: 312-665-7639 Integrative Research Center E-mail: kangeilczyk@fieldmuseum.org

Field Museum of Natural History

P. David Polly

Professor Phone: 612-626-9070

Department of Earth and Atmospheric Sciences E-mail: pdpolly@indiana.edu

Indiana University

Seth Finnegan

Associate Professor Phone: 510-664-9916
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University of California Berkeley