P. David Polly

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Education

PhD	1993, Paleontology (via department of Integrative Biology), University of California, Berkeley (committee: William A. Clemens, F. Clark Howell, James L. Patton, and Kevin Padian)
BA	1987, Plan II Honors Program, University of Texas, Austin (thesis advisor: Timothy B. Rowe)

Academic Appointments

2013-Present	Professor, Department of Earth & Atmospheric Sciences, Indiana University, Bloomington (with affiliated faculty appointments in Biological Sciences and Anthropology)
2024-Present	Visiting Professor of Evolutionary Paleobiology, Geosciences & Geography, University of Helsinki
2023-2025	Visiting Honorary Professor, Department of Anthropology, Australian National University
2017-2020	Robert R. Shrock Professor, Indiana University, Bloomington
2018-2019	Edward P. Bass Distinguished Visiting Environmental Scholar, Yale Institute for Biospheric Studies, Yale University
2006-2013	Associate Professor, Department of Geological Sciences, Indiana University, Bloomington. (with affiliated faculty appointments in Biological Sciences and Anthropology)
2001-2006	Lecturer, British usage (Tenured), School of Biological Sciences, Queen Mary, University of London
1997-2001	Lecturer, British usage (Tenured from 2000 onwards) Division of Biomedical Sciences, St. Bartholomew's and the Royal London School of Medicine and Dentistry, Queen Mary and Westfield College, University of London
1994-1996	Postdoctoral Fellow and Visiting Assistant Professor, The Michigan Society of Fellows and Department of Geology, University of Michigan, Ann Arbor
1994	Lecturer, US usage, Department of Integrative Biology, University of California–Berkeley

Scientific Appointments

2006-Present	Research Curator, IU Paleontological Collection
2009-Present	Research Associate, Department of Zoology, Field Museum of Natural History, Chicago
1996-2006	Research Associate, Department of Palaeontology, The Natural History Museum, London

1996-1997	Research Fellow, Department of Anatomy & Developmental Biology, University College London
1996-1997	Internet and Database Coordinator, The Natural History Museum, London
1994-1996	Visiting Research Scientist, Museum of Paleontology, University of Michigan, Ann Arbor
1991	Visiting Scholar, Staatliches Museum für Naturkunde, Stuttgart

Administrative Appointments

2023-Present	Department Chair (2nd term), Earth & Atmospheric Sciences, Indiana University, Bloomington
2020-2023	Department Chair (1st term), Earth & Atmospheric Sciences, Indiana University, Bloomington
2018-2020	Immediate Past President, Society of Vertebrate Paleontology
2016-2018	President, Society of Vertebrate Paleontology
2017-2018	Associate Director, Environmental Resilience Institute at Indiana University and Prepared for Environmental Change grand challenge initiative
2014-2016	Vice President, Society of Vertebrate Paleontology
2013-2019	Director, Center for Biological Research Collections, Indiana University, Bloomington
2005-2008	Executive Committee Member, Society of Vertebrate Paleontology, Member-at-Large
2002-2007	Member of Council, Palaeontological Association

Qualifications in Teaching & Learning

2002	Postgraduate Certificate in Academic Practice (PGCAP), Queen Mary, University of London
1999-2000	Problem-Based Learning (PBL) training workshops, Centre for Medical and Dental Education, St Bart's and The Royal London School of Medicine and Dentistry
1988-1993	Annual teaching training, University of California Berkeley

Selected Publications (see complete ***Lifetime Publication List*** in the second half of this document)

Totals: 152 research articles, 3 edited books or volumes, 5 software packages, 2 scientific reports, 78 book reviews and encyclopedia articles. H-index 53; i10-index 114 (from Google Scholar).

Highest cited papers

Barnosky, A. D., E. A. Hadly, P. Gonzalez, J. J. Head, **P. D. Polly**, and 36 additional authors. **2017**. Merging paleontology with conservation biology to guide the future of terrestrial ecosystems. *Science*, **355:** eaah4787.

Goswami, A., J. B. Smaers, C. Soligo, and **P. D. Polly. 2014.** The macroevolutionary consequences of phenotypic integration: from development to deep time. *Philosophical Transactions of the Royal Society B*, **369:** 20130254.

Caumul, R. and **P. D. Polly. 2005**. Phylogenetic and environmental components of morphological variation: skull, mandible and molar shape in marmots (Marmota, Rodentia). *Evolution*, **59:** 2460-2472.

Polly, P. D. 2007. Limbs in mammalian evolution. Pp. 245-268 in: *Fins into Limbs: Evolution, Development, and Transformation*, Brian K Hall (ed.). University of Chicago Press: Chicago.

Lawing, A.M. and **P.D. Polly. 2010.** Geometric morphometrics: recent applications to the study of evolution and development. *Journal of Zoology*, **280:** 1-7.

High profile papers

Short, R. A., J. L. McGuire, **P. D. Polly,** and A. M. Lawing. **2023**. Trophically integrated ecometric models as tools for demonstrating spatial and temporal functional changes in mammalian communities. *PNAS*, **120(7):** e2201947120.

Jones, K. E., K. D. Angielczyk, **P. D. Polly**, J. J. Head, V. Fernandez, J. Lungmus, S. Tulga, and S. E. Pierce. **2018**. Fossils reveal the complex evolutionary history of the mammalian regionalized spine. *Science*, **361:** 1249-1252.

Head, J. J. and **P. D. Polly. 2015**. Evolution of the snake body form reveals homoplasy in amniote *Hox* gene function. *Nature*, **520:** 86-89 (10.1038/nature14042).

Gómez-Robles, A., J. M. Bermúdez de Castro, J.-L. Arsuaga, E. Carbonell, and **P. D. Polly. 2013.** No known hominin species matches the expected dental morphology of the last common ancestor of Neanderthals and modern humans. *PNAS*, **110:** 18196-18201.

Polly P. D., J.T. Eronen, M. Fred, G. P. Dietl, V. Mosbrugger, C. Scheidegger, D.C. Frank, J. Damuth, N.C. Stenseth, and M. Fortelius. **2011**. History matters: Ecometrics and Integrative Climate Change Biology. *Proceedings of the Royal Society, B*, **278:** 1121-1130.

Favorite first-authored papers

Polly, P. D. 2025 The extended 'common cause': causal links between punctuated evolution and sedimentary processes. *Paleobiology* (doi: 10.1017/pab.2024.30)

Polly, P. D. 2020. Functional tradeoffs carry phenotypes across the valley of the shadow of death. *Integrative and Comparative Biology*, **60:** 1268-1282.

Polly, P. D. 2019. Spatial processes and evolutionary models: a critical review. *Palaeontology*, **62:** 175-195.

Polly, P. D. 2017. Morphometrics and evolution: the challenge of crossing rugged phenotypic landscapes with straight paths. *Vavilov Journal of Genetics and Selection*, **21:** 452-461.

Polly, P. D., C. T. Stayton, E. R. Dumont, S. E. Pierce, E. J. Rayfield, and K. Angielczyk. **2016**. Combining geometric morphometrics and finite element analysis with evolutionary modeling: towards a synthesis. *Journal of Vertebrate Paleontology***, e1111225:** 1-29.

Polly, P. D. 2008. Developmental dynamics and G-matrices: Can morphometric spaces be used to model evolution and development? *Evolutionary Biology***, 35:** 83-96.

Polly, P. D. 2008. Adaptive zones and the pinniped ankle: a 3D quantitative analysis of carnivoran tarsal evolution. Pp. 165-194 in E. Sargis and M. Dagosto (eds.), *Mammalian Evolutionary Morphology: A Tribute to Frederick S. Szalay.* Springer: Dordrecht, The Netherlands.

Polly, P. D. 2001. Paleontology and the comparative method: Ancestral node reconstructions versus observed node values. *American Naturalist*, **157:** 596-609.

Honors, Awards, and Fellowships

F. James Rohlf Medal "*for excellence in morphometric methods and applications*", Rohlf Medal Fund, Stony Brook Foundation, 2025

Leadership Through Chaos Award "*for exceptional leadership through chaotic times, facilitating a time of growth and revitalization, and fostering a culture of mutual respect and*

empathy", Department of Earth & Atmospheric Sciences, Indiana university—Bloomington, 2023

McCormick Science Grant with Anne E. Kort "*for faculty/graduate student team whose research is judged most creative, visionary, and innovative*". College of Arts & Sciences, Indiana University, Bloomington, 2022

Fellow, American Association for the Advancement of Science (AAAS) "*for distinguished contributions to the field of vertebrate paleontology, particularly for original studies in morphometrics, for quantitative analyses in paleobiology, and for innovative studies on mammalian evolution*", November 2021

Clara Jones Langston Centennial Lecturer in Vertebrate Paleontology, Jackson School of Geosciences, December 2019

University of California Museum of Paleontology Award Lecture, 2 April 2019

Edward P. Bass Distinguished Visiting Environmental Scholar, Yale Institute for Biospheric Studies, Yale University, 2018-19

President, Society of Vertebrate Paleontology, 2016-2018

James Philip Holland Award "*for exemplary teaching and service to students",* Indiana University, 2011

McCormick Science Grant with A. Michelle Lawing "*for faculty/graduate student team whose research is judged most creative, visionary, and innovative*". College of Arts & Sciences, Indiana University, Bloomington, 2011

Drapers' Prize for Excellence in Teaching, Queen Mary, University of London, 2004

Joseph T. Gregory Award "*for outstanding service to the welfare of the Society of Vertebrate Paleontology*", 2001

Best Teacher of Biomedical Science (Dentistry), Bart's and the London Medical and Dental Students Association. Queen Mary, University of London, 2001

Michigan Society Fellowship, Michigan Society of Fellows, University of Michigan, Ann Arbor, 1994-1996

Best of the Net Award, for work on the University of California Museum of Paleontology website. O'Reilly and Associates and Global Network Navigator, 1994

Graduate Student Instructor Teaching Excellence Award, University of California, Berkeley, 1992

NSF Graduate Fellowship, U.S. National Science Foundation, 1988-1993

Plan II Honors Program, University of Texas, Austin, 1984-87

National Merit Scholarship, 1984-1987

Grants

European Research Foundation (ERC) Advanced Grant. **Pending.** STATE-SHIFT: Are typical evolutionary processes atypical? P.D. Polly (PI) (€3,246,306).

Kone Foundation (Metsän Puolella competition). **Pending.** Essence of the forest – trait distributions in living and fossil forest communities provide a deep-time perspective to the true natural state of boreal forests and their conservation. J. Saarinen (PI), J Eronen, P.D. Polly (co-PIs). (€375,400)

Dovetail Genomics "Tree of Life" award. **2020-2022**. Sequencing the genome of *Poecilozonites bermudensis*, the Bermudian land snail. A.C. Stone (PI), P.D. Polly (co-PI) ($35,000).

National Science Foundation Research Grant EAR-1338298. **2013-2019**. ELT Collaborative Research: Bayesian Paleoclimate Proxies – Transforming the Vertebrate Fossil Record. P.D. Polly (PI), K. M. Johnson, S. C. Brassell, and A. Schimmelmann (co-PIs), J. J. Head (Collaborative PI, U. Nebraska) ($168,394).

National Science Foundation Research Grant. DBI-1702289. **2017-2019**. Digitization PEN: Paleoniches on the western Cincinnati arch, the Ordovician of Indiana. G. Motz (PI), C. Johnson, and P. D. Polly (co-PIs). ($101,388).

Institute of Museum and Library Services Grant MA-30-16-0458-16. **2016-2018**. ACCESSioning at Indiana University: promoting digital access and (re-)discovery of the IU Paleontology Collection. Gary Motz (PI), P. D. Polly, C. C. Johnson (co-PIs) ($112,505).

National Science Foundation Research Grant EAR-0843935. **2009-2014**. Environmental Sorting of Vertebrate Faunas: Are Guild-Level Locomotor and Dietary Ecomorphology Indicators of Paleoclimate? P.D. Polly (PI) ($274,974).

National Science Foundation Grant DBI-0 0846697. **2009-2013**. Infrastructure upgrade, curation and data basing of Indiana University Collections. L. L. Scheiber (PI), P. D. Polly, C. Johnson, and E. Elswick (Co-PIs). ($475,302).

IU Collaborative Research and Creative Activity Fund. **2011**. The White River Project: A Collaborative Research Proposal between the Department of Geological Sciences and the Glenn A. Black Laboratory for Archaeology. G. William Monaghan (PI), E. Herrmann, P.D. Polly, and P. Sauer (Co-PIs). ($10,000).

Leverhulme Trust Multi-Institution Exceptional Grant F/00 696/Q. **2009-2012**. Dispersals of early humans: adaptations, frontiers and new territories (AHOB3). Co-PIs: C.B. Stringer, N. Ashton, I. Candy, A.P. Currant, T. Higham, S. Lewis, K. Penkman, P.D. Polly, R.C. Preece, W. Roebroeks, and D. Schreve. Programme Directors: C.B. Stringer and N. Ashton. (£1,133,815).

IU Multidisciplinary Ventures and Seminars Fund. **2008**. Natural History Collections in 21st Century Scholarship, Education, and Outreach: An Integrative Seminar across Time and Space. L. L. Schieber, P. D. Polly, C. Johnson, E. Elswick (Co-PIs). ($6,250).

Leverhulme Trust Multi-Institution Research Programme Grant. **2006-2009**. Ancient Britain and its European Context: AHOB2. Chris Stringer, Programme Director. C. B. Stringer, N. Ashton, I. Candy, A. Currant, R. Jacobi, S. Lewis, S. Parfitt, P. D. Polly, J. Rose, D. Schreve, and M. White (co-PIs). (£999,000).

Leverhulme Research Project Grant F/07476/Q. **2003-2007**. Molecular and Fossil Evidence for the Effect of Migration on Bat Evolution. P.D. Polly (PI) (£144,404).

Leverhulme Trust Multi-Institution Research Programme Grant. 2001-2006. Ancient Human Occupation of Britain. Chris Stringer, Programme Director. C. B. Stringer, N. Ashton, A. Currant, R. Jacobi, S. Lewis, S. Parfitt, P. D. Polly, D. Schreve, M. White (co-PIs). (£1,210,000).

NERC Research Grant NER/A/S/1999/00049. **2000-2003**. Morphological markers for mammal populations? Variation in molar shape, its correlation with population structure, and comparative post-glacial recolonization in *Sorex* shrews and marmots. P. D. Polly (PI) (£51,149).

NERC Small Research Grant GR8/03692. **1998-2001**. Development, variability, and evolution. P. D. Polly (PI) (£11,351).

University of London Central Research Fund. **1999**. An eigenshape analysis of snake axial skeletons: evolution, development, and locomotion. P. D. Polly (PI) (£1,000).

A.G. Side Grant, Linnean Society of London. **1998-1999**. Phylogeny of early carnivorans: basicranial anatomy revealed by CT-scanning. P. D. Polly (PI) (£1,200).

Research Investigator Award. **1995-1996**. University of Michigan International Institute. P. D. Polly (PI) ($14,500).

Project Seed Grant. **1995**. (for field research in the North Aral Sea region of Kazakhstan), University of Michigan Office of the Vice President for Research. P. D. Polly (PI) ($2,000).

Collections Study Grant. **1993**. American Museum of Natural History. ($400).

National Science Foundation DIG (DEB-9100925). **1991-1993**. The phylogeny of the Creodonta and a study of their carnivorous adaptations. ($13,092).

NSF International Research Travel Grant. **1991**. U.S. National Science Foundation. ($1,000).

Research Grant, **1991**. Deutscher Akademischer Austauschdienst. (DM 3,980).

Grant-in-Aid of Research. **1991**. Sigma-Xi: the Research Society. ($567).

New species and other taxa

1. *Eurotherium* Polly & Lange-Badré 1993. New genus. Eocene hyaenodontid creodont from Europe.
2. *Gazinocyon* Polly 1996. New genus. Eocene hyaenodontid creodont from western North America.
3. Pterodontinae Polly 1996. New subfamily. Eocene hyaenodontid creodonts from Eurasia and Africa. Junior synonym of Hyainolourinae Ginsberg.
4. *Viverravus rosei* Polly 1997. New species. Early Eocene carnivoran from North America.
5. *Spermophilus taurensis* Gündüz, Jaarola, Tez, Yeniyurt, Polly & Searle 2007. New species. Extant ground squirrel from Anatolia.
6. *Titanoboa cerrejonensis* Head, Bloch, Hastings, Bourque, Cadena, Herrera, Polly & Jaramillo 2009. New genus and species. Paleocene boiine snake from South America.
7. *Talpa hakkariensis* Gündüz, Demitaş, Silsüpür, Özmen, Polly & Bilton 2023. New species. Extant mole from Anatolia and the Middle East.
8. *Talpa davidiana tatvanensis* Gündüz, Demitaş, Silsüpür, Özmen, Polly & Bilton 2023. New subspecies. Extant mole from Anatolia.
9. *Notiosorex carrawayae* Camargo, Polly, Álvarez-Casteñada & Stuhler. 2024. New species. Extant soricine shrew from western North America.

Invited Lectures (last 10 years)

Ecology & Evolution Seminar, “Functional trade-offs carry phenotypes across the valley of the shadow of death”, University of Copenhagen, Denmark, 23 April 2025.

Tangled Bank Seminar, “Continuity and discontinuity: functional trade-offs, mobile adaptive peaks, and paths through morphospace”, Naturhistorisk museum, Universitetet i Oslo, Norway, 20 February 2025.

Bristol Palaeontology Seminar, “Functional trade-offs carry phenotypes across the valley of the shadow of death”, University of Bristol, UK, 31 January 2025.

Evolution, Ecology, and Organismal Biology Seminar, “Phenotypic evolution across populations, clades, and communities”, Ohio State University, 16 January 2025.

Finnish Society of Science and Letters, “Scaling Kurtén: the evolution of paleontology in the 20th and 21st centuries”, Symposium in memory of Björn Kurtén on his 100th Birthday, Helsinki, Finland, 19 November 2024.

Kurtén Club, “Clasts with minds of their own: new approaches to interactions between organisms and Earth systems”, University of Helsinki, Helsinki, Finland, 17 September 2024.

Paleobiology of Carnivorous Mammals Symposium, “Cryptic cats: stem felids and ecometric trait turnovers in the Neogene of North America”, North American Paleontology Congress, Ann Arbor, Michigan, June 20, 2024.

Phi Beta Kappa Induction Banquet, “Fossils, Resilience, and Your Future”, Indiana University, Bloomington, Indiana, April 9, 2024.

31st Annual Animal Behavior Conference Keynote Talk, “Ambush! The evolutionary and ecological origins of cat predatory behaviors in the fossil record”, Bloomington, Indiana, March 30, 2024.

Escalante River Watershed Partnership, “Paleontology of the Grand Staircase-Escalante Region”, Grand Staircase-Escalante Symposium 2023, 16 March 2023.

Helsinki University, Geosciences and Geography Department, “The macroecology of communities: the assembly of North American cat communities, ecometrics and Neogene faunal turnover”, 12 January 2023.

Phylogenetic Symposium 2022, Institute of Evolutionary Biology and Ecology, University of Bonn, Keynote address “Functional tradeoffs carry phenotypes across the valley of the shadow of death: why performance trade-offs may not equate to multiple adaptive peaks,” 18-20 November 2022.

Partnership for Higher Education Reform (PHER), “The Research Support System from the Departmental Perspective”, 26 September 2022.

Royal Tyrrell Museum, “Paleontology and US National Monuments: Implications for Science and Public Lands,” 24 Feb 2022 (online talk).

Université Claude Bernard Lyon 1, “Macroevolution in Paleontology”, Biology and Paleontology MSc program, 24 September 2021 (online talk).

Pennsylvania State University, Department of Geosciences seminar series, “Punctuated equilibrium, Earth systems, and the Common Cause hypothesis extended: A new look at Gould’s Pleistocene snails from Bermuda”, 21 September 2021.

Indiana University Institute for Advanced Study, “Resilience, climate, and species: perspectives from deep time”, Resilience & Memory in Archives, Libraries, and Museums, a Research in Repositories webinar, 16 September 2021 (online talk).

American Society of Mammalogists Annual Meeting, Anchorage, Alaska (virtual), “Ecometric frameworks for studying functional trait change in mammalian communities through space and time”, 18 June 2021.

Virtual symposium: Macroevolution of form and function in the mammalian locomotor system, Humboldt Universität, Berlin, “The landscape of adaptive landscapes: trade-offs between performance surfaces in space and time”, 27 March 2021 (online talk).

Turkana University College, Lodwar, Kenya, “The vertebrate body plan: an overview of vertebrate anatomy”, Vertebrate Paleontology Module. 24 Feb 2021 (online talk).

Integrative Anatomy Program, University of Missouri, “Functional traits, environments, and clades: at the interface of climate, ecology, and evolution”, 28 February 2020.

Society of Integrative and Comparative Biology, Keynote Presentation in the Melding Modeling and Morphology Symposium, Austin, Texas, “The landscape of adaptive landscapes: trade-offs between performance surfaces in space and time”, 7 January 2020.

Clara Jones Langston Centennial Lecture in Vertebrate Paleontology, Jackson School of Geosciences, University of Texas, Austin, “Hip deep in giant snakes climate, environment, and the evolution of the vertebrate body plan”, 5 December 2019.

North American Paleontological Convention, Keynote Presentation in the Environmental Change and Evolution of Form and Function Symposium, University of California, Riverside, “Assessing form-function-environment interactions using ecometric analysis of functional traits”, 22 June 2019.

North American Paleontological Convention, University of California, Riverside, “Paleontology and US National Monuments: Why downsizing Grand Staircase Escalante and Bears Ears is bad for science”, 22 June 2019.

University of California Museum of Paleontology Award Lecture, “Spatial processes and evolutionary models: re-examining Gould’s Pleistocene snail from Bermuda”, 2 April 2019.

New York Regional Primatology Colloquium, New York City University of New York, “Cycles and space: Interactions between evolutionary processes, trait sorting, and environmental change”, 7 March 2019.

Guy F. Atkinson Distinguished Lecture, Geology and Geophysics, University of Utah, “Spatial processes and evolutionary models: re-examining Gould’s Pleistocene snail from Bermuda”, 31 January 2019.

Yale Institute for Biospheric Studies, Yale University, New Haven, CT, “Cycles and space: interactions between evolutionary processes, trait sorting, and environmental change”, 25 January 2019.

Natural Resources Law, Maurer Law School, Indiana University, Bloomington, IN, “Paleontology and US National Monuments: Why downsizing Grand Staircase Escalante and Bears Ears is bad for science”, 7 November 2018.

Earth-Life Transitions Symposium, Geological Society of America Annual Meeting, Indianapolis, IN, “Earth-life transitions, organismal-environmental interactions, and the key role of functional traits”, 5 November 2018.

Geosciences and Ecology and Evolutionary Biology Department, University of Connecticut, “Spatial processes and evolutionary models: re-examining Gould’s Pleistocene snail from Bermuda”, 25 September 2018.

Keynote Symposium, Palaeontological Association Annual Meeting, Imperial College, London, “Evolution and Earth Systems: modelling population level processes on palaeontological scales”, 17 December, 2017.

Department of Biological Sciences, Ohio University, “Functional traits, environments, and clades: at the interface of climate, ecology, and evolution”, 27 November 2017.

Museum of Comparative Zoology, Harvard University. “Functional traits, environments, and clades: at the interface of climate, ecology, and evolution”, 7 September 2017.

Limb Symposium, Society of Vertebrate Paleontology Annual Meeting, Calgary, Alberta. “Macroecology of limbs: ecometrics, community assembly, and clade sorting in limb traits in Neogene Carnivora”. 23 August 2017.

Belyaev Symposium, Russian Academy of Sciences, Novosibirsk, Russia. “Morphometrics and evolution: the challenge of crossing rugged phenotypic landscapes with straight paths”. 7 August 2017.

Florida Museum of Natural History, University of Florida-Gainesville. “Functional traits, environments, and clades: at the interface of climate, ecology, and evolution”. 9 December 2016.

Paleontological Society Short Course, Geological Society of America Annual Meeting, Denver, Colorado. “Patterns and processes in morphospace: geometric morphometrics of three-dimensional objects”. 24 September 2016.

International Congress of Vertebrate Morphology, Washington, DC. “Ecometric patterning in hind limb morphology of North American carnivorans (Carnivora, Mammalia): community-level functional morphology and evolutionary ecology”. 29 June-3 July, 2016.

Paleobiology Seminar Series, Stony Brook University. “Functional traits, environments, and clades: at the interface of climate, ecology, and evolution”. 5 May 2016.

Anthropological, Environmental, and Geological Interdisciplinary Sciences (AEGIS) seminar series, University of Minnesota, Minneapolis, “Functional traits, environments, and clades: at the interface of climate, ecology, and evolution”. 26 February 2016.

Department of Earth & Atmospheric Sciences, University of Nebraska-Lincoln. “Functional traits and environments”. 3 September 2015.

Comparative Biology Symposium Series, American Museum of Natural History, New York, NY. “Cusps, chromosomes, and clades: micro- and macroevolutionary processes in the geography of morphology”. 8 June 2015

University of California Museum of Paleontology, Department of Integrative Biology, University of California, Berkeley. “Functional traits, environments, and clade dynamics in deep time”. 10 April 2015.

Evolutionary, Ecology, and Behavior Seminar, Department of Biological Sciences, Indiana University. "Functional traits, environments, and clade dynamics in deep time". 6 March 2015.

AAAS Annual Meeting, “Vertebrate Functional Traits as Proxies for Paleoclimate and Paleoenvironment”. San Jose, California, 13 February 2015.

Public Outreach Talks (last 10 years)

“Cave bears”, Tieteiden Yö (Science Night), University of Helsinki, 9 January 2025.

“Paleontology of Indiana: 500 million years of Hoosier History”, IU Alumni Association Lifelong Learning program, 23 March 2023.

“National Monuments in Utah: Dinosaurs, Science, and Politics”, IU Alumni Association Lifelong Learning program, 16 March 2023.

“Conservation Science of Park Paleontology”, Workshop Panel with the National Parks Conservation Association (NPCA). 1 November 2022.

“National Monuments in Utah: Dinosaurs, Science, and Politics”, IU Mini University, Bloomington. 14 June 2022 (online presentation).

“Public lands, repositories, and paleontology”, 500 Earth Sciences Club, Indianapolis. 12 June 2022 (online presentation).

“Science denial and the role of the humanities: a Transatlantic conversation”, a conversation with Christoph Irmscher and Kirsten Twelbeck, part of the IU-Bavarian Talk series sponsored by the Indiana University Europe Gateway in Berlin. 30 November 2021 (online event).

“Resilience, climate, and species: perspectives from deep time”, talk in the Resilience & Memory in Archives, Libraries, and Museums, a Research in Repositories webinar sponsored by the Indiana University Institute for Advanced Studies. 15 September 2021 (online presentation).

"Shrews and marmots", Colorado State University video series on scientific research on small mammals by Tanya Dewey. 1 September 2021 (online recorded talk).

"Tetrapods of the Late Paleozoic: Pioneers of the Land", 500 Earth Sciences Club, Indianapolis, Indiana. 13 June 2021 (online talk).

"A research strategy to examine the taxonomy of the Red Wolf", committee presentation to US Fish & Wildlife. 13 Oct 2020.

"Hip-Deep in giant snakes: *Titanoboa* and temperature in the Paleocene". Saturday Morning Science, Dinosaurs and Cavemen Open House, University of Missouri. 29 February 2020.

"Paleontology and US National Monuments". Shop Talk, Old Professor's Bookshop, Belfast, Maine. 15 June 2019.

"Prepared for Environmental Change". Kokomo Creation Care, Kokomo, Indiana. 11 November 2017.

"Prepared for Environmental Change: a Grand Challenges initiative from Indiana University". Climate Change Leadership Summit, Earth Charter Indiana, Indianapolis, Indiana. 13 September 2017.

"Hip deep in giant snakes: *Titanoboa* and temperature in the Paleocene". Blatchley Nature Study Club, Noblesville, Indiana. 22 January 2015.

University Courses Taught

2025	All about teeth (GEOM 2002, Co-taught with Jukka Jernvall, University of Helsinki)
2025	Dinosaurs and their adaptations to Mesozoic ecosystems (GEOM 2063, University of Helsinki)
2024	Science and Society: Who owns the natural world? Paleontology, Politics, and Public Discourse (HON-H240, Indiana University)
2022	Readings in Species Modeling (EAS-E690, Indiana University)
2019	Relational Databases for Paleobiologists (EAS-E690, Indiana University)
2018	Phylogenetics and Morphometrics (GEOL-G490/G690, Indiana University)
2015-Present	Dinosaurs and their Relatives (EAS-E114, Indiana University)
2015-Present	Vertebrate Paleontology (EAS-E412/E512, Indiana University)
2012	Regional Geology Field Trip, Cenozoic of North America (GEOL-G420, Indiana University)
2011-Present	Paleontology and Geology of Indiana (EAS-E308, Indiana University)
2011-2013	Geobiology (GEOL-G404, Indiana University)
2008-Present	Quantitative Paleontology (EAS-E563, Indiana University)
2007-Present	Geometric Morphometrics (EAS-E562, Indiana University)
2007-2011	Practical Geobiology (GEOL-G600, Indiana University)
2007-2008	Sedimentology and Stratigraphy (GEOL-G334, Indiana University) (co-taught)
2007-2008	Historical Geology (GEOL-G112, Indiana University)
2001-2006	Dental Oral Biology, QM, Univ. London
2001-2006	Anatomy, Development, and Cell Biology, QM, Univ. London
2003-2006	Biomedical Sciences Case Approach to Problem Solving. QM, Univ. London
2001-2003	Integrative Studies in Biological Sciences tutorials, QM, Univ. London

2000-2001	The Skeleton: a functional and comparative view, QM, Univ. London
2000	Human Growth and Development, PBL Tutor, QM, Univ. London
2000	Locomotion, PBL Tutor, QM, Univ. London
1999-2000	Medical Imaging, Fundamentals of Medicine, QM, Univ. London
1999-2006	Occlusion Module, co-convener, QM, Univ. London
1998	Introductory Anatomy and Physiology for MSc., QM, Univ. London
1998-1999	Developmental Biology for BSc., QM, Univ. London
1998-1999	Head and Neck Neuroanatomy, QM, Univ. London
1998-1999	Reproduction and Development, QM, Univ. London
1998-1999	Alimentary and Renal Anatomy, QM, Univ. London
1998	Patients as Partners: Communication and Clinical Skills, QM, Univ. London
1998-1999	Musculoskeletal Anatomy, QM, Univ. London
1998-1999	Head and Neck Anatomy for Dental Students, QM, Univ. London
1997-1999	Respiratory and Cardiovascular Anatomy, QM, Univ. London
1996	Structural and Developmental Human Anatomy, University College London
1995-1996	Evolution and Extinction, UM Ann Arbor
1995	Fossil Record and Evolution of Mammals, UM Ann Arbor
1992-1994	Functional and Evolutionary Anatomy of the Vertebrates. UC Berkeley

Other Courses Taught

Paleontology, Past Life, and Politics: from Bears Ears to Bloomington, IU Lifelong Learning Course. March 2023.

Geometric Morphometrics Workshop, Yale University, 20 graduate students, post-docs, and faculty. Spring 2019.

Geometric Morphometrics, Analytical Paleobiology Workshop, Gainesville, Florida, 15 international students. 6-8 August 2018 (co-taught with Katrina E. Jones).

Geometric Morphometrics, Paleobiology Database Intensive Summer Course in Analytical Paleobiology, Macquarie University, Sydney Australia. 13 students from Europe, US, Canada, and Australia. 20-24 June 2013.

Geometric Morphometrics, Paleobiology Database Intensive Summer Course in Analytical Paleobiology, Macquarie University, Sydney Australia. 12 students from Europe, Mexico, US, Canada, and South America. 11-15 July 2012.

Geometric Morphometrics, Paleobiology Database Intensive Summer Course in Analytical Paleobiology, Macquarie University, Sydney Australia. 12 students from US, New Zealand, Australia, Europe, and Mexico. 27-31 July 2011.

Geometric Morphometrics Intensive Short Course, Departamento de Sistemática y Evolución and theCentro de Investigación en Biodiversidad y Conservación, Universidad Autónoma del Estado Morelos, Cuernavaca, Mexico. 11 students at UAEM and elsewhere in Mexico. 9-12 May 2011.

Geometric Morphometrics, Paleobiology Database Intensive Summer Course in Analytical Paleobiology, NCEAS, Santa Barbara. 29 June-3 July, 2007.

Landmark Morphometrics, MSc in Systematics, The Natural History Museum, London. 1999-2003.

Research Advising

Post-doctoral Fellows

5. Pineda Muñoz, Sílvia. 2020-2023. Paleoecology and evolution of mammals. College of Arts and Sciences, Indiana University. Now Environment Biologist at Federal Energy Regulatory Commission.
4. Goswami, Anjali. 2005-2007. Ontogenetic and evolutionary shape variation and integration in the mammalian skull. NSF International Postdoctoral Fellowship. Now Research Leader at Natural History Museum of London and Fellow of the Royal Society.
3. Head, Jason J. 2002-2005. Morphological phylogeography of erycine snakes: Recovering the historical relationship between fauna and environment. NSF Postdoctoral Fellowship in Biological Informatics. Now Professor at University of Cambridge.
2. Le Comber, Steven C. 2004-2006. Molecular and Fossil Evidence for the Effect of Migration on Bat Evolution. Leverhulme Trust Research Grant. Formerly Lecturer at Queen Mary, University of London but now deceased.
1. Burland, Tamsin. 2003-2004. Molecular and Fossil Evidence for the Effect of Migration on Bat Evolution. Leverhulme Trust Research Grant. Now at JISC (Joint Information Systems Committee, UK Higher Education Funding Councils).

Graduate Students

Chair, Research Committee

23. Smith, Quentin, Indiana University, Earth & Atmospheric Sciences, PhD, 2024-present. Dissertation topic: evolutionary ecology and environmental change in the Quaternary.
22. Sestrick,Kat, Indiana University, Biological Sciences, PhD, 2023-present. Dissertation title: “The effects of developmental constraints and functional complexity on evolvabilty of mammalian post-canine dentition”.
21. Bormet, Allison K. Indiana University, Earth & Atmospheric Sciences, PhD. 2010-present. Dissertation title: “Form, function, and ungual variation in the Ruminantia (Class Mammalia, Order Artiodactyla): a quantitative ecomorphological approach”.
20. Lopezalles, Sierra, Indiana University, Biological Sciences, PhD, 2020-2025. Dissertation title: “Quantitative functional morphology of the mammalian humerus and its implications for estimating body mass and maximum running speed”.
19. Ely, Ricardo. Indiana University, Earth & Atmospheric Sciences, PhD, 2019-2025. Dissertation title: “Introducing the early-high disparity phylogenetic comparative model”.
18. Salcido, Charles, Indiana University, Earth & Atmospheric Sciences, PhD, 2019-2024. Dissertation title: “Evolutionary lag and the evolution of carnivory in Cenozoic carnivorous mammals”.
17. Pearson, Alannah. Australian National University, School of Archaeology and Anthropology, PhD, 2014-2024. Dissertation title: “Inside and Out: Using virtual imaging to investigate the evolution of the cranial and cerebral temporal region in fossil and living primates”.
16. Kort, Anne E. Indiana University, Earth & Atmospheric Sciences, PhD, 2019-2023. Dissertation title: “Lumbar vertebrae and diversification of locomotion in Paleogene mammals”.
15. Fulghum, Henry, Indiana University, Earth & Atmospheric Sciences, Masters, 2021-2023. Thesis title: “Dietary indicators in the tribosphenic dentition and their implications for the early diversification of therian mammals”.

14. Nelson, Allison, Indiana University, Earth & Atmospheric Sciences, Masters, 2020-2023. Thesis title: “An exploration of the *Canis lupus* and *Canis rufus* species boundary via morphometrics.”
13. Ascari, Silvia. Indiana University, Earth & Atmospheric Sciences, PhD, 2015-2021. Dissertation title: “Functional morphology of extinct organisms: using shape analyses to decode the function of deinonychosaurid killer claw”.
12. Hellert, Spencer M. Indiana University, Earth & Atmospheric Sciences, PhD, 2014-2019. Dissertation title: “Locomotion transitions and sexual dimorphism: Understanding the sources of phenotypic integration patterns”.
11. Kort, Anne E. Indiana University, Earth & Atmospheric Sciences, Masters, 2017-2019. Thesis title: “The paleoecology of *Patriofelis ulta* (Mammalia, Creodonta)”.
10. Ely, Ricardo. Indiana University, Earth & Atmospheric Sciences, Masters, 2017-2019. Thesis title: “Dietary Ecomorphological Dispersion and Phenotypic Integration in Felidae and Mustelidae (Mammalia; Carnivora)”.
9. Smith, Michael R. Indiana University, Geological Sciences, PhD, 2009-2017. Dissertation title: “Faunal dynamics in response to Quaternary climate cycling: a physiographic regional approach”.
8. Hensley-Marschand, Blaire. Indiana University, Geological Sciences, PhD, 2007-2017 (dual major: Anthropology-Geology, expected completion May 2017). Dissertation title: “*Homo erectus* in China: paleoclimate, paleoenvironment, and subsistence near their northeastern range limit”.
7. Vermillion, Wesley. Indiana University, Geological Sciences, Masters, 2011-2016. Thesis title: “The effects of climate change of the evolution of members of the *Chrysemys* complex”.
6. Bykowski, Richard J. D. Indiana University, Geological Sciences, PhD, 2009-2014. Dissertation title: “Using trait-based approaches to analyze the factors affecting theropod paleoecology in the Mesozoic”.
5. Grossnickle, David M. Indiana University, Geological Sciences, Masters, 2012 2013 (co-advised with Jackson Njau). Thesis title: “Implications of the angiosperm radiation on morphological disparity and taxonomic diversity of Mesozoic mammals”.
4. Lawing, A. Michelle. Indiana University, Geological Sciences, PhD, 2007-2012. Dissertation title: “The geographic and morphologic response of species and communities to their climate and environment”.
3. Bose, Rituparna. Indiana University, Geological Sciences, PhD, 2006-2011. Dissertation title: “Evolution of Paleozoic brachiopods: a geometric morphometric approach”.
2. Smith, Michael. Indiana University, Geological Sciences, Masters, 2007-2010. Thesis title: “The Harrodsburg crevice fauna: reanalysis and synthesis”.
1. Gabriel, Stefan N. Queen Mary, University of London, PhD, 2002-2007. Thesis title: “Morphological integration and phylogenetic signal in morphometric data: a case study using geometric morphometrics of the skull of Lipotyphla *sensu lato*”.

Member, Research Committee

40. Brabson, Bristol. Indiana University, Earth & Atmospheric Sciences, 2024-present.
39. Hartzell, Samantha. Indiana University, Earth & Atmospheric Sciences, 2024-present. Dissertation title: “Scleractiniamorphs: Clarifying potential Paleozoic origins of modern Scleractinia.”

38. Koelbel, Matthew. Indiana University, Earth & Atmospheric Sciences, Masters, 2023-2024. Thesis title: “Temporal trends in hominin dentognathic morphology and size: a magnitudinal and morphometric analysis of dental arcade shape and tooth dimensions.“
37. Terry, Hal, Indiana University, Biological Sciences, Ph.D., 2023-present. Dissertation title: “Evolutionary consequences of early life conditions.”
36. Bogner, Emily. University of California Berkeley, Integrative Biology, Ph.D., 2022-present. Dissertation title: “Coevolution of the carnivoran appendicular and cranial skeleton.”
35. LaBarge, Thomas. Indiana University, Earth & Atmospheric Sciences, Ph.D., 2022-present. Dissertation title: “Uncovering the Evolution of the Serengeti Ecosystem through Stable Isotope Analysis: Insights into African Plio-Pleistocene Paleoecology and Human Origins.”
34. Chandroth, Anupama. Indiana University, Earth & Atmospheric Sciences, Ph.D., 2021-present. Dissertation title: “Evolution of hermatypic coral morpho- functional groups and their role in developing and maintaining ecosystem stability.”
33. Reed, Susan. Indiana University, Biological Sciences, MS, 2022-2024. Thesis title: “Latitudinal variation in migratory distance, reproductive timing, and energy utilization in male and female American robins.”
32. LaBarge, Thomas. Indiana University, Earth & Atmospheric Sciences, MS, 2020-2022. Thesis title: “Taphonomy and ichnology of Nile Crocodile feeding behavior.”
31. Peltier-Thompson, Danielle. Indiana University, Earth & Atmospheric Sciences, PhD, 2018-present. Dissertation title: “the impact of East African rift system processes on paleoecology and hominin evolution.”
30. Valenza, Jeffery. Indiana University, Earth & Atmospheric Sciences, PhD, 2018-2021. Thesis title: “Controls on river avulsion style and stratigraphy in foreland basins”.
29. Burtt, Amanda. Indiana University, Anthropology, PhD, 2013-2021.
28. Thorpe, Emily. Indiana University, Earth & Atmospheric Sciences, Masters, 2018-2020. Thesis title: “Taxonomy and Paleoecology of Rudist Bivalves from the Barrancas, Río Matón, and Aguas Buenas Limestone Members, middle Cretaceous, Puerto Rico”.
27. Camargo-Perez, Issac. Centro de Investigaciones Biológicas del Noroeste, La Paz, Baja California Sur, Mexico, PhD, 2017-2021. Dissertation title: “Filogenia y filogeografía de las musarañas desérticas del genero *Notiosorex* (Mammalia:Soricomorpha)”.
26. Zimmerman, Alex. Indiana University, Department of Earth & Atmospheric Sciences, PhD, 2014-2020. Dissertation title: “The importance of biodiversity in understanding evolutionary paleoecology”.
25. Farrugia, Paul. Indiana University, Department of Earth & Atmospheric Sciences, PhD, 2012-2024. Dissertation title: “Crocodylian craniodental ecomorphology and ecological niche modeling: a new approach for reconstructing hominin paleoecology in the East African rift system”.
24. Mirza, Ali. Indiana University, Department of History and Philosophy of Science and Medicine, PhD, 2016-2020. Dissertation title: “Living in Stone: The History and Philosophy of Behavior, Morphology, and Traces in the Fossil Record”.
23. Dickson, Blake V. Harvard University, Museum of Comparative Zoology, PhD, 2016-2020. Dissertation title: “A three-dimensional analysis of tetrapod humerus shape and function across water-land transitions: an evolutionary and ontogenetic perspective”.
22. Kearney, John. Indiana University, Earth & Atmospheric Sciences, PhD, 2018-2020. Thesis title: “Using phenocryst compositions from reworked tephra to enhance chronostratigraphic resolution of Bed III and Bed IV, Olduvai Gorge, Tanzania”.

21. Fuentes Gonzales, Jesualdo. Indiana University, Department of Biology, PhD, 2011-2018. Dissertation title: “Phylogenies and the comparative method in morphometrics”.
20. Sacks, Lita. Indiana University, Department of Anthropology, PhD, 2014-2019. Dissertation title: “Temporal use of Koster Mounds: functional morphology, mortuary practices, and paleopathology in the prehistoric lower Illinois River valley”.
19. Nold, Katie. Indiana University, Department of Earth & Atmospheric Sciences, PhD, 2009-2018. Dissertation title: “Caribbean coastal ecosystems and the people who utilized them: A geoarchaeological approach to the Caribbean past”.
18. Mongle, Carrie. Stony Brook University, Interdepartmental Doctoral Program in Anthropological Sciences, PhD, 2015-2019. Dissertation title: “Modeling hominin variability: the alpha taxonomy of ‘*Australopithecus africanus*’”
17. Smits, Peter. University of Chicago, Committee on Evolutionary Biology, PhD, 2012-2017. Dissertation title: “Bayesian approaches to trait evolution in the fossil record”.
16. Kufeldt, Chrisandra. George Washington University, Center for Advanced Study of Human Paleobiology, PhD, 2011-2017. Dissertation title: “Trees from teeth? Exploring the role of dental microstructure in the reconstruction of hominin relationships”.
15. Kuhn, William. Rutgers University, Department of Biological Sciences, PhD, 2011-2016. Dissertation title: “Three approaches to automating taxonomy, with emphasis on the Odonata (dragonflies and damselflies)”.
14. Topalov, Katarina. Indiana University, Department of Geological Sciences, PhD, 2008-2016. Dissertation title: “Environmental, trophic, and ecological factors influencing bone collagen δ2H values”.
13. Nava Garcia, Elizabeth. Universidad Autónoma del Estado de Morelos, PhD, 2010-2015. Dissertation title: “Sistemática de *Reithrodontomys megalotis* con base en datos moleculares y morfológicos”.
12. Kirchner-Smith, Mackenzie. Hays State University, Kansas MS, 2015. Thesis title: “3D geometric morphometrics in modern and extinct foot-propelled diving birds: an evaluation of the tarsometatarsus for species identification”.
11. Rudolf, Katie J. Indiana University, Department of Anthropology, PhD, 2015. Dissertation title: “An investigation of Late Woodland and Mississippian biological relationships using odontometric and discrete trait analyses”.
10. Ascari, Silvia. Indiana University, Department of Geological Sciences, Masters, 2015. Thesis title: “Isotopic analyses of fossil bones and teeth of herbivores and crocodiles from Upper Bed I, Lower Bed II, and Upper Bed II of the Olduvai Gorge, Tanzania”.
9. Parzer, Harald F. Indiana University, Department of Biology, PhD, 2013. Dissertation title: “Causes and consequences of insect genital divergence: A case study in *Onthophagus* dung beetles”.
8. Herrmann, Edward. Indiana University, Department of Anthropology, PhD, 2013. Dissertation title: “Geoarchaeology of Paleoindian and Early Archaic site distributions in the White River Valley, Indiana”.
7. Muir, Chris. Indiana University, Department of Biology, PhD, 2013. Dissertation title: “Ecophysiology and genetics of phenotypic diversification in *Solanum*”.
6. Green, Robin. Indiana University, Department of Geological Sciences, MS, 2013. Thesis title: “Analysis of coral reef variation in Bonaire”.
5. Costa, August. Indiana University, Department of Anthropology, PhD, 2012. Thesis title: “A Pleistocene passage to India: The paleoanthropology of early human settlement in coastal western India”.

4. Puchalski, Stephaney. Indiana University, Department of Geological Sciences, PhD, 2011. Dissertation title: “Taphonomic approaches to interpretation of the fossil record of chitons (Mollusca, Polyplacophora)”.
3. Morgenthien, James N. Indiana University, Department of Geological Sciences, Masters, 2011. Thesis title: “Taphonomic approaches to interpretation of the fossil record of chitons (Mollusca, Polyplacophora)”.
2. Uhen, Mark D. University of Michigan, Ann Arbor, Department of Geological Sciences, PhD, 1996. Dissertation title: “*Dorudon atrox* (Mammalia, Cetacea): Form, function, and phylogenetic relationships of an archaeocete from the late middle Eocene of Egypt”
1. Bloch, Jonathan I. University of Michigan, Ann Arbor, Department of Geological Sciences, MS, 1995. Thesis title: “New Species of *Batodonoides* (Lipotyphla, Geolabididae) from the Early Eocene of Wyoming: Smallest Known Mammal?”.

Examiner, Graduate Dissertations and Theses

27. Tim Shuurman de Boer, Universidad de Burgos, PhD, 2024 (external examiner). Thesis title: “Network analysis: Applications in craniocerebral topology & human evolution”.
26. Ben Carter, Macquarie University, PhD, 2024 (external examiner). Thesis title: “Impacts of Pleistocene extinctions on local mammal assemblages from across the globe”.
25. Paige dePolo, University of Edinburgh, PhD, 2023 (external examiner). Dissertation title: “A pandemonium of pantodonts: the anatomy of *Pantolambda* with notes on body size and behaviour”.
24. Inessa Voet, Muséum national d’Histoire naturelle, PhD, 2023 (rapporteur). Dissertation title: “The evolution and phylogeography of crocidurine shrews”.
23. Lisandro Milocco, Helsinki University, PhD, 2022 (external examiner). Dissertation title: “Quantitative genetics in nonlinear genotype-phenotype maps”.
22. Abigail Parker, Cambridge University, PhD, 2022 (external examiner). Thesis title: “Body size histories in Cenozoic reptiles from global to community scales”.
21. Amy Tims, Macquarie University, Department of Biological Sciences, PhD, 2021 (external examiner). Thesis title: “Macroecology and conservation biology of Australian freshwater fishes: a big data approach”.
20. Thomas Clarke, Macquarie University, Department of Biological Sciences, MSc, 2017 (external examiner). Thesis title: “Drivers of spider body plans: time, geography, or climate?”
19. Heather Ahrens, Johns Hopkins University, School of Medicine, PhD, 2017 (external examiner). Dissertation title: “Phylogeny and locomotor ecomorphology of Oxyaenidae and macroevolutionary patterns in North American “Creodonta” (Mammalia, Placentalia)”.
18. Aidan Couzens, Flinders University, School of Biological Sciences, PhD, 2011-2017 (external examiner). Dissertation title: “Late Cenozoic evolution of the macropodoid dentition”.
17. Sílvia Pineda-Muñoz, Macquarie University, PhD, 2011-2016 (external examiner). Dissertation title: “Diet, ecology and dental morphology in terrestrial mammals”.
16. Juha Saarinen, Helsinki University, PhD 2014 (external pre-examiner). Thesis title: “Ecometrics of large herbivorous land mammals in relation to climatic and environmental changes during the Pleistocene”.
15. Francois Gould, Johns Hopkins University, PhD 2012 (external reader). Dissertation title: “The morphology of the distal femoral articular surface and the evolution of cursoriality in ungulates”.

14. Pedro Cordeiro Estrela de Andrade Pinto, Université Paris VI-Pierre et Marie Curie, PhD. 2005 (Rapporteur). Thesis title: “Systématique et evolution morphologique du genre *Calomys* Waterhouse 1837 (Rodentia, Cricetidae, Sigmodontidae, Phyllotini): Applications de methods de morphométrie géometrique, de reconnaissances de patrons et de reconstructions phylogénétiques en systématique évolutive”.
13. Annette Mahon, Cambridge University, PhD, 2004 (external examiner). Dissertation title: “Mammalian body size and phylogeny”.
12. Simon Harris, Bristol University, PhD, 2004 (external examiner). Thesis title: “Character construction in phylogenetic systematics, and the affinities of turtles”.
11. Amal M. Al-Hassawi, University College London, PhD, 2004 (internal examiner). Dissertation title: “The osteology and myology of the craniocervical region in squamate reptile: A comparative study”.
10. Hilary Markham, Guy’s Hospital, PhD, 2002 (internal examiner). Thesis title: “The Role of Fibroblast Growth Factor Receptors in Mammalian Odontogenesis”.
9. Julia Boughner, University College London, PhD, 2002 (internal examiner). Dissertation title: “Dental and mandibular growth in *Papio* and *Pan*”.
8. Will Harcourt-Smith, University College London, PhD, 2002 (internal examiner). Dissertation title: “Form and function in the hominoid tarsal skeleton”.
7. Dilshat Hewzulla, University of East London, PhD, 2001 (external examiner). Thesis title: “Deriving mathematical significance in palaeontological data from large-scale database technologies”.
6. Sam Cobb, University College London, PhD, 2001 (internal examiner). Thesis title: “Form variation in the postnatal facial skeleton of African apes”.
5. Andrea Webster, Imperial College London, PhD, 2001(internal examiner). Thesis title: “Ancestral body size and the evolutionary ecology of phyletic dwarfs”.
4. Helen J. Chatterjee, University College London, PhD, 2000 (internal examiner). Thesis title: “Phylogeny and biogeography of gibbons, genus *Hylobates*”.
3. Julia J. Day, University College London, PhD, 2000 (internal examiner). Thesis title: "The comparative morphology and evolutionary relationships of the Sparidae (Teleostei: Percoidea)".
2. Naoko Egi, Johns Hopkins University, PhD, 1998 (external reader). Dissertation title: “Functional morphology of the limb bones in recent carnivores and its application to North American hyaenodontid Creodonta”.
1. Bryony Green, University College London, PhD, 1998 (internal examiner). Thesis title: “Fossil lizard assemblages from the Hampshire Basin (Palaeogene) of southern England”.

Undergraduate Students

Advisor, Research Programs

2. Deutsch, Michol. Individualized Major in “Paleontology”, Indiana University, 2017-2019.
1. Reinke, Beth. Individualized Major in “Zoology”, Indiana University, 2009-2012.

Advisor, Research Projects

43. Jessica Mo, Vanderbilt University, 2020-2022
42. Daniel Rhoda, Indiana University, 2017-2020
41. Michol Deutsch, Indiana University, 2017-2019
40. Andrew Reese, Indiana University, 2015-2017

39. Kimberly Cook, Indiana University, 2015-2017
38. Alexander Beyl, Indiana University, 2015-2017
37. Charisse Mitchell, Charles Tindley School, Indianapolis, 2014-2015
36. Alyssa Ruthkay, Indiana University, 2013-2014
35. Mackenzie Kirchner-Smith, Indiana University, 2012-2013
34. Beth Reinke, Indiana University, 2009-2011
33. Georgina Adams, Queen Mary, University of London, 2005-2006
32. Anup Gupta, Queen Mary, University of London, 2005-2006
31. Shruti Karia, Queen Mary, University of London, 2005-2006
30. Komal Khan, Queen Mary, University of London, 2005-2006
29. Nicola MacGregor, Queen Mary, University of London, 2005-2006
28. Rekha Sharma, Queen Mary, University of London, 2005-2006
27. Lisa Wilson, Queen Mary, University of London, 2005-2006
26. Rayhana Yasmin, Queen Mary, University of London, 2005-2006
25. Angelina Ansah, Queen Mary, University of London, 2004-2005
24. Kamaljit Attariwala, Queen Mary, University of London, 2004-2005
23. Sabrina Campbell, Queen Mary, University of London, 2004-2005
22. Simon Cyrus, Queen Mary, University of London, 2004-2005
21. Kirran Khalid, Queen Mary, University of London, 2004-2005
20. Lauren Morris, Queen Mary, University of London, 2004-2005
19. David O'Milegan, Queen Mary, University of London, 2004-2005
18. Elaine Wong, Queen Mary, University of London, 2004-2005
17. Radhekshmi Caumul, Queen Mary, University of London, 2003-2004
16. Alana George, Queen Mary, University of London, 2003-2004
15. Cynthia Kanagasundaram, Queen Mary, University of London, 2003-2004
14. Naz Qureshi, Queen Mary, University of London, 2003-2004
13. Mohammed Ajmal, Queen Mary, University of London, 2002-2003
12. Adwoa Asare, Queen Mary, University of London, 2002-2003
11. Neha Bhardwaj, Queen Mary, University of London, 2002-2003
10. Linh Hy, Queen Mary, University of London, 2002-2003
9. Gengiz Gursoy, Queen Mary, University of London, 2001-2002
8. Cherry Smith, Queen Mary, University of London, 2001-2002
7. Christopher Strowbridge, Queen Mary, University of London, 2001-2002
6. Helen Melvill, Queen Mary, University of London, 1999-2000
5. Ebitare Sawacha, Queen Mary, University of London, 1999-2000
4. Claire Sutton, Queen Mary, University of London, 1999-2000
3. Ajay K. Mathur, Queen Mary, University of London, 1998-1999
2. Georgina E. Hirschler, University of Michigan, 1995-1996
1. David T. Cohen, University of Michigan, 1995-1996

Professional Society Memberships

American Association for the Advancement of Science (AAAS), American Society of Mammalogists, American Society of Naturalists, Geological Society of America (GSA), Linnean Society of London, Palaeontological Association, Paleontological Society, Sigma Xi, Society for the Study of Evolution, Society of Systematic Biology, Society of Vertebrate Paleontology (SVP)

Professional Service

Editorships

2025-Present	Associate Editor, *Evolution*
2023-Present	Associate Editor, *Evolutionary Journal of the Linnean Society*
2017-Present	Editorial Board, *Peer Community in Paleontology*
2013-Present	Associate Editor, *Rocky Mountain Geology*
2004-Present	Editorial Board, *Systematic Biology*
2007-Present	Editorial Board, "Cambridge Studies in Morphology and Molecules: New Paradigms in Evolutionary Biology", Russell Ciochon and Gregg Gunnell, editors
2017-2018	Guest Editor, *Historical Biology*, special issue in honor of Percy M. Butler
2015-2016	Special Handling Editor, *Proceedings of the National Academy of Sciences (PNAS)*
2012-2015	Editorial Board, *Palaeontology*
2012-2015	Associate Editor, *Evolution*
2003-2015	Executive Editor, *Palaeontologia Electronica*
2002-2012	Associate Editor, *Palaeontology*
2007	Associate Editor, *Acta Theriologica*
2005	Guest Editor, *Journal of Mammalian Evolution*, special issue on mammalian paleobiology in honor of William Clemens.
2001-2003	Associate Editor, *Journal of Paleontology*
1999-2003	Senior Editor, *SVP Online*, Society of Vertebrate Paleontology
1996-2003	Associate Editor, *Palaeontologia Electronica*
1992-93	Senior Editor, *PaleoBios*, UC Berkeley
1991-92	Assistant Editor, *PaleoBios*, UC Berkeley

Consultations

2023	Data analysis, Bureau of Land Management, Department of Interior, Washington, DC
2018-2019	Exhibit consultant, Museum at Prairiefire, Overland Park, KS
2007	Organizing group, PaleoAnthPortal (paleoanthportal.org)
2007	External member, Vertebrate Paleontology Search Committee, Department of Paleobiology, Smithsonian Institution, Washington, DC
2001-2006	Hunterian Museum Project Consultation Group, The Hunterian Museum, The Royal College of Surgeons of England, London
2003	External member, Evolutionary Developmental Biology Search Committee, Department of Palaeontology, The Natural History Museum, London

1996-1997	Advisory Committee, UK Web Focus, UK Office for Library and Information Networking, Joint Information Systems Committee, Higher Education Funding Councils
1994	Consultant for GenenTech, Inc., South San Francisco, CA
1992	Consultant for Bay Area Prep/Dinocards, San Francisco, CA
1991	Consultant for California Academy of Sciences, San Francisco
1990	Consultant for Marine World Africa USA, Vallejo, CA

Executive and Advisory Boards

2024-Present	Advisory Board Member, Climate Ages (son-profit educational organization).
2023-Present	Advisory Board Member, Midwest Center for Biodiversity, Indiana University
2022-Present	Advisory Board Member, Institute of Advanced Study, Indiana University
2020-Present	Advisory Board Member, Indiana Geological and Water Survey (state agency)
2017-2018	Member, Mather's Museum advisory committee for "800 Seasons: Bloomington through Continuity and Change" exhibit, Indiana University
2015-present	Member, Advisory Board of *Mammal Research*, Polish Academy of Sciences, Białowieża
2013-2018	Advisory Board Member, Glenn Black Laboratory for Archaeology. Office of the Vice Provost for Research, Indiana University (Chair, 2013-2016)
2011	Member, Indiana University, Bloomington Advisory Committee on Human Remains, Office of the Vice Provost for Research, Indiana University
2008-2015	Member, Advisory Board of Acta Theriologica. Polish Academy of Sciences, Białowieża
2005-2008	Executive Committee Member, Society of Vertebrate Paleontology, Member-at-Large
2005	International Scientific Advisor. Centre of Excellence in Biodiversity Conservation and Mammal Research in European Terrestrial Ecosystems – BIOTER. Polish Academy of Sciences, Białowieża, Poland. EVK2-2002-00505-BIOTER
2002-2007	Member of Council, Palaeontological Association

Professional Committee Service

2025-present	Member, Romer-Simpson Medal Committee, Society of Vertebrate Paleontology
2021-present	Chair, Nominating Committee, Society of Vertebrate Paleontology
2021	Member, NSF Panel, Division of Biological Infrastructure, "Capacity: Biological Collections"
2020-present	Member, Government Affairs Committee, Society of Vertebrate Paleontology
2019-2020	Member, US National Academy of Sciences Committee on "Assistance to the US Fish and Wildlife Service on Taxonomic Studies of the Red Wolf: A Review of Applications to Carry Out Research and Development of a Research Strategy."
2019	Witness, US House of Representatives Natural Resources Committee hearing on "Forgotten Voices: The Inadequate Review and Improper Alteration of Our National Monuments", 13 March 2019.

2019	Member, AGI Ian Campbell Medal Nominating Committee, American Geosciences Institute
2018-2020	Immediate Past President, Society of Vertebrate Paleontology
2016-2019	Panel Member, Ecosystems Working Group, Indiana Climate Change Impact Assessment
2016-2018	President, Society of Vertebrate Paleontology
2015-2017	Board Member, STEPPE (Sedimentary Geology, Time, Environment, Paleontology, Paleoclimatology, Energy) consortium to promote research and education on Earth's deep-time sedimentary crust
2014-2016	President Elect, Society of Vertebrate Paleontology
2012-2015	Co-chair, iCCB (Integrative Climate Change Biology) program, International Union of Biological Sciences
2012-present	Proposal Reviewer, American Philosophical Society Lewis and Clark Fund for Exploration and Field Research and Franklin Research Grant programs
2011-2013	Member, Paleontology Society Medal Committee, the Paleontological Society
2009-2011	Student Grant Committee, The Paleontological Society.
2008-2012	Steering Group, iCCB (Integrative Climate Change Biology) program, International Union of Biological Sciences
2007-2014	Evaluation Committee, Paleobiology Database Summer Intensive Course
2002-2003	Treasurer, Coquina Press (publisher of Palaeontologia Electronica)
2001-2013	Member of the International *Sorex araneus* Cytogenetics Committee (ISACC) (chair 2008-2013)
1998-2002	Chair, Information Management Committee, Society of Vertebrate Paleontology
1998-2002	Publications Committee (ex officio member), Society of Vertebrate Paleontology
1998-2002	Program Committee (ex officio member), Society of Vertebrate Paleontology
1996-1997	Web administrator, The Natural History Museum (London)
1994-2011	Member, Information Management Committee, Society of Vertebrate Paleontology
1993-1994	Web administrator, University of California Museum of Paleontology

Campus and University Service

2023-2024	Member, Long Range Planning Committee, Bloomington Faculty Council, Indiana University, Bloomington
2023-2024	Member, College of Arts & Sciences Scenario Planning, External Engagement Group, Indiana University
2021-2023	Member, University Faculty Council Budgetary Affairs Committee, Indiana University
2021-2024	Member, Standing Committee for Research Misconduct, Indiana University
2022-2023	Member, Research (Improving Technological and Physical Infrastructure for Research) Working Group, IUB 2030 Strategic Planning Commission, Indiana University
2022	Member (ad hoc), Faculty Board of Review, Indiana University, Bloomington

2021	Member, search committee for Zooarchaeology, Anthropology, Indiana University, Bloomington
2021	Member, search committee for Multidisciplinary Sciences Building II building manager, College of Arts & Sciences, Indiana University, Bloomington
2020-Present	Space committee, Multidisciplinary Sciences Building II, Indiana University, Bloomington
2020-2023	Association of American Universities (AAU) PhD Education Initiative working group, Indiana University, Bloomington
2019-2020	Steering Committee, Environmental Resilience Institute at Indiana University and Prepared for Environmental Change grand challenges initiative
2019	Interim Director, Center for Biological Research Collections, College of Arts and Sciences and Office for the Vice President for Research, Indiana University, Bloomington
2018	Chair, McCalla Museum Committee, Indiana University
2017-2018	Associate Director, Environmental Resilience Institute at Indiana University and Prepared for Environmental Change grand challenges initiative
2017-2018	Chair, Faculty Misconduct Review Committee, Bloomington Faculty Council, Indiana University
2017-2018	Chair, search committees for Environmental Resilience Institute Fellows in stable isotope ecology and species distribution modeling, Indiana University
2017-2018	Member, search committees for Environmental Resilience Institute Fellows in migration patterns and migration processes, Indiana University
2017-2018	Member, search committees for implementation manager, administrative and project coordinator, and finance manager, Environmental Resilience Institute, Indiana University
2015-2017	Chair, Faculty Board of Review, Bloomington Faculty Council, Indiana University
2015-2016	Member, Dean of Students Advisory Committee, Indiana University
2014-present	Member, Wells Scholarship Evaluation Panel, Indiana University
2013-2019	Director, College Center for Biological Research Collections, College of Arts and Sciences and Office for the Vice President for Research, Indiana University, Bloomington
2013-2014	Member, Faculty Board of Review, Bloomington Faculty Council, Indiana University
2013	Member, Task Force on the Future of Graduate Science Education at Indiana University, College of Arts and Sciences
2012-2013	Member, OVPR Search Committee for NAGPRA Project Director, Office of the Vice Provost for Research, Indiana University
2012-2013	Member, James Holland Teaching Award review committee, College of Arts and Sciences, Indiana University
2012	Member, OVPR Center and Institute Pooled Fund for Excellence proposal review committee, Office of the Vice Provost for Research, Indiana University
2011-2014	Member, Patten Foundation Committee, Indiana University
2011-2012	Member, Research Activities Committee, Bloomington Faculty Council, Indiana University

2010-2011	Member, Dissertation Year Fellowships Committee, College of Arts and Sciences, Indiana University
2010-2011	Search Committee Member, Evolution of Human Behavior, College of Arts and Sciences, Indiana University
2001-2006	Licensed Instructor of Anatomy, under the UK Anatomy Act, University of London
2005-2006	Student Development Committee, Queen Mary, University of London
2003-2006	External Examiner, Anatomy and Developmental Biology, UCL
2002-2005	College Academic Board, Member, Queen Mary, University of London
2002-2003	External Examiner, Human Biology, Science and Engineering Foundation Course, The London College, University College Kensington
2000	Team member, Teaching Quality Assessment of Learning Resources, Queen Mary, University of London
1990	Dean's Academic Advisory Committee, UC Berkeley

Department Service

2021	Chair, conversion committee for Assistant Professor in Metal Isotopes, Earth & Atmospheric Sciences, Indiana University, Bloomington
2021	Chair, search committee for Lecturer in Earth Sciences, Earth & Atmospheric Sciences, Indiana University, Bloomington
2020-Present	Department Chair, Earth & Atmospheric Sciences, Indiana University, Bloomington
2019-2020	Chair, tenure and promotion committee, Department of Earth & Atmospheric Sciences, Indiana University, Bloomington
2019-2020	Member, promotion committee Department of Earth & Atmospheric Sciences, Indiana University, Bloomington
2019-2020	Chair, Tenure and Promotion Committee, Dept. of Earth & Atmospheric Sciences
2019-2020	Member, Promotion Committee, Dept. of Earth & Atmospheric Sciences
2017-2018	Elected Member, Policy/Executive Committee, Dept. of Earth & Atmospheric Sciences, Indiana University
2017-2018	Member, IU Geological Field Station faculty oversight committee, Dept. of Earth & Atmospheric Sciences, Indiana University
2017-2018	Chair, IU Paleontology Collection Manager / CBRC project coordinator search, Dept. of Earth & Atmospheric Sciences
2017-2018	Chair, Atmospheric Sciences Search, Dept. of Earth & Atmospheric Sciences
2017-2018	Member, Geography Search Committee, Dept. Geography
2017	Chair, Promotion Committee, Department of Earth & Atmospheric Sciences, Indiana University
2016-2018	Member, Undergraduate Committee, Dept. of Earth & Atmospheric Sciences
2016-2017	Owen Award Committee, Dept. of Geol. Sciences
2014-2016	Member, Curriculum Revision Committee, Dept. of Geol. Sciences
2013-2015	Member, College Undergraduate Curriculum Assessment Committee, Indiana University

2013-2014	Member, IU Geologic Field Station Advisory Committee, Dept. of Geol. Sciences
2011-2016	Computing Committee, Dept. of Geol. Sciences
2011-2016	Elected Member, Policy/Executive Committee, Dept. of Geol. Sciences
2011-2015	Member, IT Committee, Dept. of Geol. Sciences
2011-2012	News Coordinator, Dept. of Geol. Sciences
2011-2012	Chair, Search Committee, Shrock Professorship in Sedimentary Geology, Dept. of Geol. Sciences
2011	Chair, Search Committee, Visiting Assistant Professor in Sedimentary Geology, Dept. of Geol. Sciences
2010-2011	Undergraduate Committee, Dept. of Geol. Sciences
2008-2010	Space Committee, Dept. of Geol. Sciences
2006-Present	Research Curator, IU Paleontological Collection, Dept. of Earth & Atmospheric Sciences
2006-2007	Honors Undergraduate Co-advisor, Dept. of Geol. Sciences
2003-2006	Admissions Tutor for Biomedical Science and Bioinformatics, Queen Mary, University of London
2001-2003	Admissions Tutor for Molecular Biology and Biochemistry, Queen Mary, University of London
2000-2006	Board of Examiners, Bachelor of Dental Science Part 1, Queen Mary, University of London
2000-2001	Board of Examiners, MBBS Part 1, Queen Mary, University of London
1998-2001	Fire Marshall, 2nd Floor BMS Building, Queen Mary, University of London

Other

Languages

Reading and Speaking: (B1 level) Russian, Spanish; (A1 level) Finnish, German, French, Arabic. Translation: Old English, Middle Welsh. Computer: Mathematica, PERL, (Visual)Basic, C^{++}, Pascal, php, R, SQL

Erdős Number: 5

Lifetime Publication List

P. David Polly

⌗ undergraduate student coauthor; ✧ graduate student coauthor; ⌑ postdoc coauthor
PDFs of publications available at: https://pollylab.org/publications/
Citation data available at: http://scholar.google.com/citations?hl=en&user=aPOrK60AAAAJ

Peer-Reviewed Articles

155. B. Wood and **P.D. Polly**. **In prep.** Differences of outlook? Evolution in paleoanthropology and paleontology. *Frontiers in Mammal Science.*

154. Bartoszek, K., B. Brahmantio, J. Muñoz-Durán, J. Fuentes-Gonzales, J. Pienaar, and **P.D. Polly. Submitted.** Computational singularities in phylogenetic comparative methods. *Mathematica Applicanda*.

153. Pavlov, V, **P.D. Polly**, K. Rose, M. Ogle, M. Kuroda, R. Sabin, A. Brossard, B. Halaska. **Submitted.** Phenotypic variation and the cost of locomotion in cetaceans: a new framework for bioenergetic assessments. *Nature Communications.*

152. Winingear, S., M. Outerbridge, G. Garcia, A. Stone, M. Wilson, **P.D. Polly**. **Accepted.** Genome Report: *De novo* genome assembly of the greater Bermuda land snail, *Poecilozonites bermudensis* (Mollusca: Gastropoda), confirms ancestral genome duplication. *Genes, Genomes, and Genetics* (preprint doi: 10.1101/2025.08.21.671598).

151. Salcido, C. J. and **P. D. Polly**. **2025.** Parallelism of mandibular function in therian carnivores: a morphometric, phylogenetic, and finite element analysis. *Paleobiology*. (doi: 10.1017/pab.2025.10068).

150. Salcido, C. J. and **P. D. Polly. 2025.** The relationship between form and function of the carnivore mandible. *Anatomical Record*. (doi: 10.1002/ar.25678).

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147. Smith-Pardo, A. H., M. Altamiranda-Saavedra, and **P. D. Polly. 2024.** The oriental hornet, *Vespa orientalis* Linnaeus, 1771 (Hymenoptera, Vespidae): diagnosis, potential distribution, and geometric morphometrics across its natural distribution range. *Frontiers in Insect Science*, 4: 1384598 (doi: 10.3389/finsc.2024.1384598).

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144. ✧ Camargo, I., **P. D. Polly**, T. Alvarez, J. D. Stuhler. **2024**. Paleophylogeography of *Notiosorex* desert shrews with description of a new species. *Journal of Mammalogy.* (doi: 10.1093/jmammal/gyae049).

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138. **Polly, P. D. 2023.** Extinction and morphospace occupation: a critical review. *Cambridge Prisms: Extinctions*, **1 e17:** 1-19. (doi: 10.1017/ext.2023.16)

137. ✧ Pearson, A. and **P. D. Polly. 2023.** Temporal lobe evolution in extant and fossil Cercopithecoidea. *Journal of Mammalian Evolution*, **30:** 683-694. (doi: 10.1007/s10914-023-09664-6)

136. ✧ Pearson, A., **P. D. Polly**, E. Brunner. **2023**. Updated imaging and phylogenetic comparative methods reassess relative temporal lobe size in anthropoids and modern humans. *American Journal of Physical Anthropology*, **180:** 768-776 (doi: 10.1002/ajpa.24712)

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130. O'Keefe, R., J. Meachen, and **P. D. Polly. 2022.** On information rank deficiency in phenotypic covariance matrices. *Systematic Biology*, **71:** 810-822 (10.1093/sysbio/syab088).

129. ⌗ Mo, J. and **P. D. Polly. 2022.** The role of dispersal, selection intensity, and extirpation risk in resilience to climate change: a trait-based modeling approach. *Global Ecology and Biogeography*, **31:** 1184-1193 (10.1111/geb.13495).

128. ✧ Pearson, A., **P. D. Polly**, and E. Bruner. **2021**. Temporal lobe evolution in Javanese *Homo erectus* and African *Homo ergaster*: inferences from the cranial base. *Quaternary International*, **603:** 5-21 (10.1016/j.quaint.2020.07.048).

127. ✧ Franco-Moreno, R. A., **P. D. Polly**, V. Toro-Ibacache, G. Hernández-Carmona, R. Aguilar-Medrano, E. Marín-Enríquez, and V. H. Cruz-Escalano. **2021.** Bite force in four pinniped species from the west coast of Baja California, Mexico, in relation to diet, feeding strategy, and niche differentiation. *Journal of Mammalian Evolution*, **28:** 307-321 (10.1007/s10914-020-09524-7).

126. Cardini, A., S. Elton, K.F. Kovarovic, U.S. Viðarsdóttir, and **P.D. Polly. 2021.** Impact of sampling error on the assessment of morphospecies using geometric morphometrics in primates and other mammals. *Evolutionary Biology*, **48:** 190-220 (10.1007/s11692-021-09531-3).

125. ⌗ Rhoda, D., **P. D. Polly**, and M. Segall. **2021**. Morphological integration and modularity in the hyperkinetic feeding system of aquatic-foraging snakes. *Evolution*, **75:** 56-72 (10.1111/evo.14130).

124. ✧ ⌗ Singh, D., S. Reed, A. Kimmitt, K. Alford, C. Stricker, **P.D. Polly**, and E. Ketterson. **2021.** Breeding at higher latitude is associated with higher photoperiod threshold and delayed reproductive development in a songbird. *Hormones and Behavior*, **128:** 104907 (10.1016/j.yhbeh.2020.104907).

123. **Polly, P. D. 2020.** Functional tradeoffs carry phenotypes across the valley of the shadow of death. *Integrative and Comparative Biology*, **60:** 1268-1282 (10.1093/icb/icaa092).

122. **Polly, P. D. 2020.** Ecometrics and Neogene faunal turnover: the roles of cats and hindlimb morphology in the assembly of carnivoran communities in the New World. *Geodiversitas*, **42:** 259-306 (10.5252/geodiversitas2020v42a17).

121. ✧Pearson, A., **P. D. Polly**, E. Bruner. **2020.** Is the middle cranial fossa a reliable predictor of temporal lobe volume in extant and fossil anthropoids? *American Journal of Physical Anthropology*, **172:** 698-713 (10.1002/ajpa.24053).

120. Cardini, A. and P. D. Polly. **2020**. Cross-validated between group PCA scatterplots: a solution to spurious group separation? *Evolutionary Biology*, **47:** 85-95 (10.1007/s11692-020-09494-x).

119. Phillips, R. P. L. Brandt, **P. D. Polly**, P. Zollner, M. R. Saunders, K. Clay, L. Iverson, S. Fei. **2020.** Towards an improved understanding of the ecological consequences of climate change for Indiana forests. *Climate Change* **163:** 1917-1931 (10.1007/s10584-018-2326-8).

118. ✧Fuentes-Gonzalez, J. A., **P. D. Polly**, and E. P. Martins. **2020.** A Bayesian extension of phylogenetic generalized least squares (PGLS): incorporating uncertainty in the comparative study of trait relationships and evolutionary rates. *Evolution*, **74:** 311-325 (10.1111/evo.13899).

117.✧⌑Goswami, A., A. Watanabe, R. N. Felice, C. Bardua, A.-C. Fabre, and **P. D. Polly**. **2019.** High-density morphometric analysis of shape and integration: the good, the bad, and the not-really-a-problem. *Integrative and Comparative Biology*, **59:** 669-683 (10.1093/icb/icz120).

116. ✧ Topalov, K., A. Schimmelmann, **P. D. Polly**, P. E. Sauer, and S. Viswanathan. **2019.** Stable isotopes of H, C and N in mice bone collagen as a reflection of isotopically controlled food and water intake. *Isotopes in Environmental and Health Studies*, **55:** 129-149 (10.1080/10256016.2019.1580279).

115. Searle, J. B., J. Zima, and **P. D. Polly. 2019**. Shrews, chromosomes, and speciation. Pp. 455-462 *in* J. B. Searle, J. Zima, and P. D. Polly (eds.), *Shrews, Chromosomes and Speciation*. Cambridge University Press: Cambridge, United Kingdom (10.1017/9780511895531.015).

114. **Polly, P. D. 2019**. Climate, diversification, and refugia in the common shrew: evidence from the fossil record. Pp. 407-454 *in* J. B. Searle, J. Zima, and P. D. Polly (eds.), *Shrews, Chromosomes and Speciation*. Cambridge University Press: Cambridge, United Kingdom (10.1017/9780511895531.014).

113. **Polly, P.D.** and J. M. Wojcik. **2019**. Geometric morphometric tests for phenotypic divergence between chromosome races. Pp. 336-364 *in* J. B. Searle, J. Zima, and P. D. Polly (eds.), *Shrews, Chromosomes and Speciation*. Cambridge University Press: Cambridge, United Kingdom (10.1017/9780511895531.011).

112.✧ Lintulaakso, K., J. Eronen, and **P. D. Polly**. **2019.** Land mammals form eight functionally and climatically distinct faunas in North America but none in Europe. *Journal of Biogeography*, **46:** 185-195.

111. **Polly, P. D. 2019.** Spatial processes and evolutionary models: a critical review. *Palaeontology*, **62:** 175-195 (10.1111/pala.12410).

110. ✧ Zimmerman, A. N., C. C. Johnson, and **P. D. Polly**. **2018**. Analyzing morphological change of Pennsylvanian conodonts in the Illinois Basin. *Paleobiology*, **44:** 660-683 (10.1017/pab.2018.28).

109. ✧ Vermillion, W. A., **P. D. Polly**, J. J. Head, J. T. Eronen, and A. M. Lawing. **2018**. Ecometrics: a trait-based approach to paleoclimate and paleoenvironment reconstruction. Pp. 373-394 *in* D.A. Croft, S.W. Simpson, and D.F. Su (eds.), *Methods in Paleoecology: Reconstructing Cenozoic Terrestrial Environments and Ecological Communities*. Springer, Dordrecht.

108. ✧ Ascari, S., **P. D. Polly**, J. K. Njau, P. E. Sauer, and Y. Peng. **2018**. Fossil herbivores and crocodiles as paleoclimatic indicators of environmental shifts from Bed I and Bed II times of the Olduvai Gorge, Tanzania. *Palaeogeography, Palaeoclimatology, Palaeoecology*, **511:** 550-557.

107. **Polly, P. D. 2018.** Marsupial responses to global aridification: tooth evolution in Australian kangaroos was a late response to climate change in the Neogene. *Science*, **362:** 25-26 (10.1126/science.aav1602).

106. ⌑ ✧ Jones, K. E., K. D. Angielczyk, **P. D. Polly**, J. J. Head, V. Fernandez, J. Lungmus, S. Tulga, and S. E. Pierce. **2018**. Fossils reveal the complex evolutionary history of the mammalian regionalized spine. *Science*, **361:** 1249-1252 (10.1126/science.aar3126)

105. ✧ Parzer, H., **P. D. Polly**, and A. P. Moczek. **2018**. The evolution of trait size and shape: insights from the genitalia of dung beetles. *Development, Genes, and Evolution*, **228:** 83-93 *(*10.1007/s00427-018-0602-2).

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103. **Polly P.D. 2017.** Morphometrics and evolution: the challenge of crossing rugged phenotypic landscapes with straight paths. *Vavilovskii Zhurnal Genetiki I Selektsii* (=*Vavilov Journal of Genetics and Breeding),* 21: 452-461 (10.18699/VJ17.264).

102. **Polly, P. D.** and G. J. Motz. **2017**. Patterns and processes in morphospace: geometric morphometrics of three-dimensional objects. In: L. Tapanila and I. Rahman (eds.), *Virtual Paleontology*. The Paleontological Society Papers 22: 71-99. Cambridge University Press, Cambridge, United Kingdom.

101. Barnosky, A. D., E. A. Hadly, P. Gonzalez, J. J. Head, **P. D. Polly**, A. M. Lawing, J. T. Eronen, D. Ackerly, K. Alex, E. Biber, J. Blois, J. Brashares, G. Ceballos, E. Davis, G.Dietl, R. Dirzo, H. Doremus, M. Fortelius, H. Greene, J. Hellmann, T. Hickler, S. T. Jackson, M. Kemp, P. Koch, C. Kremen, E. Lindsey, C. Looy, C. R. Marshall, C. Mendenhall, A. Mulch, A. Mychajliw, C. Nowak, U. Ramakrishnan, J. Schnitzler, K. Das Shrestha, K. Solari, L. Stegner, M. A. Stegner, N. C. Stenseth, M. H. Wake, and Z. Zhang. **2017.** Merging paleontology with conservation biology to guide the future of terrestrial ecosystems. *Science*, **355:** eaah4787 (10.1126/science.aah4787).

100. ✧ **Polly, P. D.,** J. Fuentes-Gonzales, A. M. Lawing, A. K. Bormet, and R. G. Dundas. **2017.** Clade sorting has a greater effect than local adaptation on ecometric patterns in Carnivora. *Evolutionary Ecology Research*, **18:** 61-95.

99. ✧ ⌗ Schnitzler, J., C. Theis, **P. D. Polly**, and J. T. Eronen. **2017.** Fossils matter - understanding modes and rates of trait evolution in Musteloidea (Carnivora). *Evolutionary Ecology Research*, **18:** 187-200.

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95. ✧ ⌑ Goswami, A., M. Randau, **P. D. Polly**, V. Weisbecker, C. V. Bennett, L. Hautier, and M. R. Sánchez-Villagra. **2016.** Do developmental constraints and high integration limit the evolution of the marsupial oral apparatus? *Integrative and Comparative Biology*, **56:** 369-372 (10.1093/icb/icw039).

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93. **Polly, P. D.,** C. T. Stayton, E. R. Dumont, S. E. Pierce, E. J. Rayfield, and K. Angielczyk. **2016**. Combining geometric morphometrics and finite element analysis with evolutionary modeling: towards a synthesis. *Journal of Vertebrate Paleontology*, e1111225: 1-29. (10.1080/02724634.2016.1111225).

92. **Polly, P. D**., J. T. Eronen, A. M. Lawing, and J. Schnitzler. **2016**. Processes of ecometric patterning: modelling functional traits, environments, and clade dynamics in deep time. *Biological Journal of the Linnean Society*, **118:** 39-63. (10.1111/bij.12716).

91. ✧ Aguilar-Medrano, R., H. Reyes-Bonilla, and **P. D. Polly**. **2015**. Adaptive radiation of damselfish (Perciformes, Pomacentridae) in the eastern Pacific. *Marine Biology*, **162:** 2291-2303.

90. **Polly, P. D.** and J. J. Head. **2015**. Measuring Earth-life transitions: ecometric analysis of functional traits from late Cenozoic vertebrates. *In* P. D. Polly, J. J. Head, and D. L. Fox (eds.), *Earth-Life Transitions: Paleobiology in the Context of Earth System Evolution*. *The Paleontological Society Papers* **21:** 21-46. Yale Press, New Haven, CT.

89. **Polly, P. D.,** A. Cardini, E. B. Davis, and S. Steppan. **2015**. Marmot evolution and global change in the past 10 million years. Pp. 246-276 *in* P. G. Cox and L. Hautier (eds.), *Evolution of the Rodents: Advances in Phylogeny, Palaeontology and Functional Morphology.* Cambridge University Press, Cambridge.

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