

P. David Polly

Robert R. Shrock Professor



Academic Appointments

- 2018-2019 Edward P. Bass Distinguished Visiting Environmental Scholar, Yale Institute for Biospheric Studies, Yale University
- 2013-Present Professor, Department of Earth and Atmospheric Sciences, Indiana University–Bloomington. (Adjunct Professor in Biological Sciences and Anthropology)
- 2017-Present Robert R. Shrock Professorship, Indiana University–Bloomington
- 2017-Present Associate Director, Environmental Resilience Institute at Indiana University and Prepared for Environmental Change grand challenge initiative
- 2013-Present Director, Center for Biological Research Collections, Indiana University–Bloomington
- 2006-Present Research Curator, IU Paleontological Collection
- 2006-2013 Associate Professor, Department of Geological Sciences, Indiana University–Bloomington. (Adjunct Associate Professor 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

- 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 and Developmental Biology, University College London
- 1994-1996 Visiting Research Scientist, Museum of Paleontology, University of Michigan–Ann Arbor
- 1991 Visiting Scholar, Staatliches Museum für Naturkunde, Stuttgart

Education

- PhD 1993, Paleontology, 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: Dr. Timothy Rowe)

Selected Publications (see *Lifetime Publication List* for complete list)

Totals: 117 research articles, 3 edited books or volumes, 4 software packages, 72 book reviews and encyclopedia articles. H-index 36; i10-index 76.

Five highest cited papers

- 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.
- Head, J.J., J.I. Bloch, A.K. Hastings, J.R. Bourque, E. Cadena, F. Herrera, **P.D. Polly**, and C.A. Jaramillo. 2009. Giant boine snake from a Paleocene Neotropical rainforest indicates hotter past equatorial temperatures. *Nature*, **457**: 715-718. doi:10.1038/nature07671
- 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. Doi: 10.1111/j.1469-7998.2009.00620.x
- Gündüz, I, M Jaarola, C. Tez, C. Yenyurt, **P.D. Polly**, and J. B. Searle. 2007. Multigenic and morphometric differentiation of ground squirrels (*Spermophilus*, Scuridae, Rodentia) in Anatolia, with a description of a new species. *Molecular Phylogenetics and Evolution* **43**: 916-935.
- Goswami, A and **P.D. Polly**. 2010. The influence of modularity on cranial morphological disparity in Carnivora and Primates (Mammalia). *PLoS One*, **5**: e9517.

Five high profile papers

- 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.
- 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. (doi: 10.1126/science.aah4787)
- Head, J. J. and **P. D. Polly**. 2015. Conservation of primaxial regionalization in the evolution of the snake body form reveals homoplasy in amniote Hox gene function. *Nature*, **520**: 86-89. doi: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.
- P.D. Polly**, 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. 2019.** Spatial processes and evolutionary models: a critical review. *Palaeontology*, **62**: 175-195 (10.1111/pala.12410).
- Polly, P.D. 2017.** Morphometrics and evolution: the challenge of crossing rugged phenotypic landscapes with straight paths. *Vavilovskii Zhurnal Genetiki I Seleksii (=Vavilov Journal of Genetics and Breeding)*, **21**: 452-461. (doi 10.18699/VJ17.264)
- 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.
- 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. (doi: 10.1080/02724634.2016.1111225).
- 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. (doi: 10.1111/bij.12716).
- Polly, P.D. 2010.** Tiptoeing through the trophics: geographic variation in carnivoran locomotor ecomorphology in relation to environment. Pp. 347-410 in A. Goswami and A. Friscia (eds.), *Carnivoran Evolution: New Views on Phylogeny, Form, and Function*. Cambridge University Press, Cambridge, UK.
- 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.

Grants

- 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. Schimmelman (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. Schieber, Polly, Johnson, 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. 1995-96. (to support PhD student, Alexander Lavrov of the Paleontological Institute of the Russian Academy of Sciences), 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).

Honors, Awards, and Fellowships

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

President, Society of Vertebrate Paleontology, 2016–2018

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

James Philip Holland Award for Exemplary Teaching and Service to Students. 2011. Indiana University.

McCormick Science Grant (with A. Michelle Lawing). 2011. For faculty/graduate student team whose research is judged most creative, visionary, and innovative. College of Arts and Sciences, University of Indiana.

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

Joseph T. Gregory Award. 2001. For outstanding service to the welfare of the Society of Vertebrate Paleontology.

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

Michigan Society Fellowship. 1994–1996. Michigan Society of Fellows, University of Michigan, Ann Arbor. (\$100,000).

Graduate Student Instructor Teaching Excellence Award. 1992. University of California–Berkeley.

NSF Graduate Fellowship. 1988–1993. U.S. National Science Foundation. (\$39,000).

Plan II Honors Program. 1984–87. University of Texas–Austin.

National Merit Scholarship. 1984–1987.

Invited Lectures (since 2010)

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.

Evo-Group Seminar, Department of Ecology and Evolutionary Biology, Cornell University, “Cycles and space: Interactions between evolutionary processes, trait sorting, and environmental change”, 26 April 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 and 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.

Linnean Society of London, Day Meeting on Radiation and Extinction – Investigating clade dynamics in deep time, "Functional traits, environments, and clade dynamics in deep time", 10 November 2014.

Department of Geography, Indiana University Bloomington, "Changing organisms, changing climate: the dynamics of evolution, geography, and traits", 24 October 2014.

Department of Geology and Geophysics, Yale University, "Clasts with minds of their own: new approaches to interactions between organisms and Earth systems", 8 October 2014.

Department of Evolution, Ecology, and Organismal Biology, Ohio State University, Columbus, Ohio, "Changing organisms, changing climate: the dynamics of evolution, geography, and traits", 11 September 2014.

School of Integrative Biology, University of Illinois at Urbana-Champaign, "Changing organisms, changing climate: the dynamics of geography, evolution and traits", 4 March 2014.

Symposium on Digitization in Vertebrate Paleontology, 10th Annual North American Paleontological Convention, University of Florida at Gainesville, "Transforming morphology with mathematics: can morphometric methods model the evolution of complex morphology?" 18 February 2014.

Department of Geophysical Sciences, University of Chicago, "Clasts with minds of their own: new approaches to interactions between organisms and Earth systems", 7 February 2014.

Helsinki University and the Finnish Museum of Natural History, "The Enamel Knot Gets Old: Tooth Development and Evolution on Geological Timescales", presentation in the Enamel Knot at 100 Symposium at the Economicum, Helsinki, Finland, 4 December 2013.

Department of Earth Sciences, University of Minnesota-Minneapolis. "Paleoclimate, paleoenvironment, and paleontology: new approaches to fossil vertebrates and Earth systems". 19 September 2013.

Department of Earth Sciences, University of Minnesota-Minneapolis. "Quaternary climate cycles and speciation: a case study of the *Sorex araneus* group". 20 September 2013.

Center for the Advanced Study of Hominin Paleobiology, George Washington University, Washington, DC. "Mammals and climate: new statistical approaches". 6 February 2013.

Department of Ecology and Evolutionary Biology, University of Michigan-Ann Arbor. "Changing organisms, changing climate: the dynamics of geography, evolution, and traits". 27 September 2012.

Museum of Paleontology, University of Michigan-Ann Arbor. "Quaternary climate cycles and speciation: a case study of the *Sorex araneus* group". 28 September 2012.

Department of Geosciences, University of Iowa. “Changing organisms, changing climate: the dynamics of geography, evolution, and traits”. 24 February 2012.

Society of Systematic Biology Symposium: Unified Approaches for Understanding Patterns of Character Evolution and Diversification. Evolution Meeting, Norman, Oklahoma. “On Morphological Clocks: Why the Phenotype is a Poor Predictor of Time Since Common Ancestry”. 18 June 2011.

Centro de Investigación en Biodiversidad y Conservación, Universidad Autónoma del Estado de Morelos, Cuernavaca, Mexico. “Feet, Ferrets and Phylogeny: Evolution and Ecology of Quantitative Morphological Traits”. 13 May 2011.

Center for Functional Anatomy & Evolution, Johns Hopkins University School of Medicine, Baltimore, Maryland. “Ecometrics of carnivores”. 29 April 2011.

Paleontological Society Short Course, GSA Annual Meeting, Denver, Colorado. “Methods for studying morphological integration and modularity” (with Anjali Goswami). 30 October 2010.

Keynote presentation at 3rd International Paleontology Conference, Palaeontological Data Analysis Symposium, Imperial College, London. “Quantitative approaches to geographic variation: environment, palaeophylogeography, and ecometrics”. 28 June, 2010.

Centro Nacional de Investigación sobre la Evolución Humana, Burgos, Spain. “Quantitative approaches to geographic variation: Environment, palaeophylogeography, and ecometrics”. 17 June 2010.

Department of Theoretical Biology, University of Vienna, Austria. “Feet, Ferrets, and Phylogeny: the Evolution and Ecology of Simple and Complicated Morphometric Traits”. 14 June 2010.

The Neandertal Museum, Mettmann, Germany. Workshop on Pleistocene Databases – Acquisition, Storing, Sharing. “The Ancient Human Occupation of Britain (AHOB) Database”. 11 June 2010.

Department of Ecology and Evolutionary Biology, Brown University, Providence, Rhode Island. “Mammals, Morphology, and Meteorology: Ecometric Approaches to Paleoenvironmental Reconstruction”. 8 February 2010.

Public Outreach Talks (since 2011)

“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.

“Ectotherms in a changing world: reptiles and climate in the past, present, and future”. 29th Midwest Herpetological Symposium, Indianapolis, Indiana. 18 October 2014.

“Hip deep in giant snakes: Titanoboa and temperature in the Paleocene”. Indiana Society of Paleontology, Greenfield, Indiana. 6 September 2014.

“How to be a paleontologist”, National Fossil Day Talk, Monroe County History Society. 15 October 2013.

- “How to be a paleontologist”, National Fossil Day Talk, Indiana Geological Survey and Department of Geological Sciences, Indiana University. 24 October 2012.
- “Mapping rattlesnakes and climate change”, Open Data Visualization Brownbag, Wells Library, Indiana University. 24 October 2012.
- “Prehistoric climate and life in southern Indiana: 500 million years of Hoosier history”, Lawrence County History Museum, Bedford, Indiana. 8 October 2012.
- “Hip deep in giant snakes: Titanoboa and temperature in the Paleocene”. Hoosier Herpetological Society, Indianapolis, Indiana. 19 September 2012.
- “Paleontology of Indiana: 500 Million Years of Hoosier History”. Mini-course to alumni at IU Mini University. 21 June 2012.
- "Hip deep in giant snakes: Titanoboa and temperature in the Paleocene". Invited talk in the Night at the Museum series, University of Iowa Museum of Natural History, Iowa City, Iowa. 23 February 2012.
- “Crinoids: from Cambrian to Crawfordsville”. 12 February 2012, invited talk to the Indy 500 Earth Sciences Club, Indianapolis, Indiana.
- "Climate through time at the Falls", 17 August 2011, invited presentation at the annual Falls Fossil Festival, sponsored by the Falls of the Ohio Foundation and hosted by the Falls of the Ohio State Park, Clarksville, Indiana.
- "The Radiation of Mammals", 23 October 2011, presentation in the "Origins: the evolution of the universe, the earth, life, and the human species" symposium. Co-sponsored by the Stone Age Institute, Office of the Provost, Office of the Vice Provost for Research, College of Arts and Sciences, and the CRAFT research center.
- “Mammals, Evolution and Climate”. Talk and discussion at Café Inquiry. 1 March 2011, Center for Inquiry, Indianapolis, Indiana.

University Courses Taught

2018	Phylogenetics and Morphometrics (GEOL-G490/G690)
2007-Present	Geometric Morphometrics (EAS-G562).
2008-Present	Quantitative Paleontology (EAS-G563).
2015-Present	Dinosaurs and their Relatives (EAS-G114).
2015-Present	Vertebrate Paleontology (EAS-G412/G512).
2011-Present	Paleontology and Geology of Indiana (GEOL-G308).
2012	Regional Geology Field Trip, Cenozoic of North America (GEOL-G420).
2011-2013	Geobiology (GEOL-G404).
2007-2011	Practical Geobiology (GEOL-G600).
2007-2008	Sedimentology and Stratigraphy (GEOL-G334). (co-taught).
2007-2008	Historical Geology (GEOL-G112).
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.

Professional Courses Taught

- 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 the Centro 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 Supervision

Post-doctoral Fellows

4. Goswami, Anjali. 2005-2007. Ontogenetic and evolutionary shape variation and integration in the mammalian skull. NSF International Postdoctoral Fellowship.
3. Head, Jason J. 2002-2005. Morphological phylogeography of ercine snakes: Recovering the historical relationship between fauna and environment. NSF Postdoctoral Fellowship in Biological Informatics.
2. Le Comber, Steven C. 2004-2006. Molecular and Fossil Evidence for the Effect of Migration on Bat Evolution. Leverhulme Trust Research Grant.
1. Burland, Tamsin. 2003-2004. Molecular and Fossil Evidence for the Effect of Migration on Bat Evolution. Leverhulme Trust Research Grant.

Graduate Students

Chair, Research Committee

13. Kort, Anne. Indiana University, Masters, 2017-present (expected completion May 2019). Thesis title: "The paleoecology of *Patriofelis ulta* (Mammalia, Creodonta)".
12. Ely, Ricardo. Indiana University, Masters, 2017-present (expected completion May 2019).
11. Ascari, Silvia. Indiana University, PhD, 2015-present (expected completion May 2019). Dissertation working title: "Functional morphology of theropod dinosaurs"
10. Hellert, Spencer M. Indiana University, PhD, 2014-present (expected completion August 2018). Dissertation title: "Locomotion transitions and sexual dimorphism: Understanding the sources of phenotypic integration patterns".
9. Bormet, Allison K. Indiana University, PhD. 2010-present. (expected completion September 2017). Dissertation title: "Form, function, and ungual variation in the Ruminantia (Class Mammalia, Order Artiodactyla): a quantitative ecomorphological approach".
8. Smith, Michael R. Indiana University, PhD, 2009-2017. Dissertation title: "Faunal dynamics in response to Quaternary climate cycling: a physiographic regional approach".
7. Hensley-Marschand, Blaire. Indiana University, 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".
6. Vermillion, Wesley. Indiana University, Masters, 2011-2016. Thesis title: "The effects of climate change of the evolution of members of the *Chrysemys* complex".
5. Bykowski, Richard J. D. Indiana University, PhD, 2009-2014. Dissertation title: "Using trait-based approaches to analyze the factors affecting theropod paleoecology in the Mesozoic".
4. Lawing, A. Michelle. Indiana University, PhD, 2007-2012. Dissertation title: "The geographic and morphologic response of species and communities to their climate and environment".
3. Bose, Rituparna. Indiana University, PhD, 2006-2011. Dissertation title: "Evolution of Paleozoic brachiopods: a geometric morphometric approach".
2. Smith, Michael. Indiana University, 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

33. Danielle Peltier-Thompson. Indiana University, PhD, 2018-present.
32. Emily Thorpe. Indiana University, Masters, 2018-present.
31. Kearney, John. Indiana University, PhD, 2018-present. Thesis title: "Sedimentology of Olduvai Gorge, Tanzania".
30. Valenza, Jeffery. Indiana University, PhD, 2018-present. Thesis title: "Fluvial avulsions".
29. Camargo-Perez, Issac. Centro de Investigaciones Biológicas del Noroeste, La Paz, Baja California Sur, Mexico, PhD, 2017-present. Dissertation title: "Filogenia y filogeografía de las musarañas desérticas del genero *Notiosorex* (Mammalia: Soricomorpha)".
28. Dickson, Blake V. Harvard University, Museum of Comparative Zoology, PhD, 2016-present. Dissertation title: "A three-dimensional analysis of tetrapod humerus shape and function across water-land transitions: an evolutionary and ontogenetic perspective".
27. Pearson, Alannah. Australian National University, School of Archaeology and Anthropology, PhD, 2014-Present. Dissertation title: "Inside and Out: Using virtual imaging to investigate the evolution of the cranial and cerebral temporal region in fossil and living primates".
26. Swartz, Sarah. Indiana University, Department of Earth and Atmospheric Sciences, Masters, 2014-Present. Dissertation title: "Photogrammetry and field digitization of fossil specimens".
25. Zimmerman, Alex. Indiana University, Department of Earth and Atmospheric Sciences, PhD, 2014-Present. Dissertation title: "Phylogeny and paleoecology of Late Cretaceous rudist bivalves, US Gulf Coast and Caribbean Provinces".
24. Farrugia, Paul. Indiana University, Department of Earth and Atmospheric Sciences, PhD, 2012-Present. Dissertation title: "Crocodylian craniodental ecomorphology and ecological niche modeling: a new approach for reconstructing hominin paleoecology in the East African rift system".
23. Fuentes Gonzales, Jesualdo. Indiana University, Department of Biology, PhD, 2011-Present. Dissertation title: "Phylogenies and the comparative method in morphometrics".
22. Sacks, Lita. Indiana University, Department of Anthropology, PhD, current student.
21. Nold, Katie. Indiana University, Department of Earth and Atmospheric Sciences, PhD, 2009-2018. Dissertation title: "Caribbean coastal ecosystems and the people who utilized them: A geoarchaeological approach to the Caribbean past".
20. Mongle, Carrie. Stony Brook University, Interdepartmental Doctoral Program in Anthropological Sciences, PhD, 2015-Present. Dissertation title: "Modeling hominin variability: the alpha taxonomy of '*Australopithecus africanus*'"
19. Griffin, Patrick. Indiana University, Department of Earth and Atmospheric Sciences, PhD, 2012-Present. Dissertation title: "Stable isotopes and amino acids".
18. Smits, Peter. University of Chicago, Committee on Evolutionary Biology, PhD, 2012-2017. Dissertation title: "Bayesian approaches to trait evolution in the fossil record".

17. 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".
16. 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)".
15. Topalov, Katarina. Indiana University, Department of Geological Sciences, PhD, 2008-2016. Dissertation title: "Environmental, trophic, and ecological factors influencing bone collagen δ^{2H} values".
14. 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".
13. Kirchner-Smith, Mackenzie. Hays State University, Kansas MS, 2015.
12. Rudolf, Katie J. Indiana University, Department of Anthropology, PhD, 2015.
11. Ascari, Silvia. Indiana University, Department of Geological Sciences, Masters, 2015.
10. Parzer, Harald F. Indiana University, Department of Biology, PhD, 2013.
9. Herrmann, Edward. Indiana University, Department of Anthropology, PhD, 2013.
8. Grossnickle, David. Indiana University, Department of Geological Sciences, MS, 2013.
7. Muir, Chris. Indiana University, Department of Biology, PhD, 2013.
6. Green, Robin. Indiana University, Department of Geological Sciences, MS, 2013.
5. Costa, August. Indiana University, Department of Anthropology, PhD, 2012.
4. Puchalski, Stephaney. Indiana University, Department of Geological Sciences, PhD, 2011.
3. Morgenthien, James N. Indiana University, Department of Geological Sciences, Masters, 2011.
2. Uhen, Mark D. University of Michigan–Ann Arbor, Department of Geological Sciences, PhD, 1996.
1. Bloch, Jonathan I. University of Michigan–Ann Arbor, Department of Geological Sciences, MS, 1995.

Examiner, PhD Dissertations

20. Thomas Clarke, Macquarie University, Department of Biological Sciences, M.Sc., 2017 (external examiner). Thesis title: "Drivers of spider body plans: time, geography, or climate?"
19. Heather Ahrens, Johns Hopkins University, School of Medicine, Ph.D., 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, Ph.D., 2011-2017 (external examiner). Dissertation title: "Late Cenozoic evolution of the macropodoid dentition".
17. Sílvia Pineda-Munoz, 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).
15. Francois Gould, Johns Hopkins University, PhD 2012 (external reader).

14. Pedro Cordiero Estrela de Andrade Pinto, Université Paris VI-Pierre et Marie Curie, PhD, 2005 (Rapporteur).
13. Annette Mahon, Cambridge University, PhD, 2004 (external examiner).
12. Simon Harris, Bristol University, PhD, 2004 (external examiner).
11. Amal M. Al-Hassawi, University College London, PhD, 2004 (internal examiner).
10. Hilary Markham, Guy's Hospital, PhD, 2002 (internal examiner).
9. Julia Boughner, University College London, PhD, 2002 (internal examiner).
8. Will Harcourt-Smith, University College London, PhD, 2002 (internal examiner).
7. Dilshat Hewzulla, University of East London, PhD, 2001 (external examiner).
6. Sam Cobb, University College London, PhD, 2001 (internal examiner).
5. Andrea Webster, Imperial College London, PhD, 2001 (internal examiner).
4. Helen J. Chatterjee, University College London, PhD, 2000 (internal examiner).
3. Julia J. Day, University College London, PhD, 2000 (internal examiner).
2. Naoko Egi, Johns Hopkins University, PhD, 1998 (external reader).
1. Bryony Green, University College London, PhD, 1998 (internal examiner).

Undergraduate Students

Advisor, Research Programs

2. Deutsch, Michol. Individualized Major in "Paleontology", Indiana University, 2017-Present.
1. Reinke, Beth. Individualized Major in "Zoology", Indiana University, 2009-2012.

Advisor, Undergraduate Research Projects

42. Michol Deutsch, Indiana University, 2017-current
41. Daniel Rhoda, Indiana University, 2017-current
40. Andrew Reese, Indiana University, 2015-current
39. Kimberly Cook, Indiana University, 2015-17
38. Alexander Beyl, Indiana University, 2015-17
37. Charisse Mitchell, Charles Tindley School, Indianapolis, 2014-15
36. Alyssa Ruthkay, Indiana University, 2013-14
35. Mackenzie Kirchner-Smith, Indiana University, 2012-13
34. Beth Reinke, Indiana University, 2009-11
33. Georgina Adams, Queen Mary, University of London, 2005-6
32. Anup Gupta, Queen Mary, University of London, 2005-6
31. Shruti Karia, Queen Mary, University of London, 2005-6
30. Komal Khan, Queen Mary, University of London, 2005-6
29. Nicola MacGregor, Queen Mary, University of London, 2005-6
28. Rekha Sharma, Queen Mary, University of London, 2005-6
27. Lisa Wilson, Queen Mary, University of London, 2005-6
26. Rayhana Yasmin, Queen Mary, University of London, 2005-6
25. Angelina Ansah, Queen Mary, University of London, 2004-5

24. Kamaljit Attariwala, Queen Mary, University of London, 2004-5
23. Sabrina Campbell, Queen Mary, University of London, 2004-5
22. Simon Cyrus, Queen Mary, University of London, 2004-5
21. Kirran Khalid, Queen Mary, University of London, 2004-5
20. Lauren Morris, Queen Mary, University of London, 2004-5
19. David O'Milegan, Queen Mary, University of London, 2004-5
18. Elaine Wong, Queen Mary, University of London, 2004-5
17. Radhekshmi Caumul, Queen Mary, University of London, 2003-4
16. Alana George, Queen Mary, University of London, 2003-4
15. Cynthia Kanagasundaram, Queen Mary, University of London, 2003-4
14. Naz Qureshi, Queen Mary, University of London, 2003-4
13. Mohammed Ajmal, Queen Mary, University of London, 2002-3
12. Adwoa Asare, Queen Mary, University of London, 2002-3
11. Neha Bhardwaj, Queen Mary, University of London, 2002-3
10. Linh Hy, Queen Mary, University of London, 2002-3
9. Gengiz Gursoy, Queen Mary, University of London, 2001-2
8. Cherry Smith, Queen Mary, University of London, 2001-2
7. Christopher Strowbridge, Queen Mary, University of London, 2001-2
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, 1998-9
2. Georgina E. Hirschler, University of Michigan, 1995-6
1. David T. Cohen, University of Michigan, 1995-6

Professional Society Memberships

American Association for the Advancement of Science (AAAS), American Society of Naturalists, Center for the Integrative Study of Animal Behavior (CISAB, IU), Indiana Academy of Sciences, Indiana Society of Paleontology, Palaeontological Association, Paleontological Society, Sigma Xi, Society for the Study of Evolution, Society for the Study of Mammalian Evolution, Society of Systematic Biology, Society of Vertebrate Paleontology

Professional Service

Editorships

2017-Present	Editorial Board, <i>Peer Community in Paleontology</i>
2017-2018	Guest Editor, <i>Historical Biology</i> , special issue in honor of Percy M. Butler
2004-Present	Editorial Board, <i>Systematic Biology</i>
2007-Present	Editorial Board, "Cambridge Studies in Morphology and Molecules: New Paradigms in Evolutionary Biology", Russell Ciochon and Gregg Gunnell, editors

2015-2016	Special Handling Editor, <i>Proceedings of the National Academy of Sciences (PNAS)</i>
2012-2015	Editorial Board, <i>Palaeontology</i>
2012-2015	Associate Editor, <i>Evolution</i>
2003-2015	Executive Editor, <i>Palaeontologia Electronica</i>
2002-2012	Associate Editor, <i>Palaeontology</i>
2007	Associate Editor, <i>Acta Theriologica</i>
2005	Guest Editor, <i>Journal of Mammalian Evolution</i> , special issue on mammalian paleobiology in honor of William Clemens.
2001-2003	Associate Editor, <i>Journal of Paleontology</i>
1999-2003	Senior Editor, <i>SVP Online</i> , Society of Vertebrate Paleontology
1996-2003	Associate Editor, <i>Palaeontologia Electronica</i>
1992-93	Senior Editor, <i>PaleoBios</i> , UC Berkeley
1991-92	Assistant Editor, <i>PaleoBios</i> , UC Berkeley

Consultations

2018-present	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

Professional Committee Service

2018-2020	Immediate Past President, Society of Vertebrate Paleontology
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
2016-2018	President, Society of Vertebrate Paleontology
2014-2016	President Elect, Society of Vertebrate Paleontology
2016-Present	Panel Member, Ecosystems Working Group, Indiana Climate Change Impact Assessment

- 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
- 2012-2015 Co-chair, iCCB (Integrative Climate Change Biology) program, International Union of Biological Sciences
- 2012 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.
- 2008-2011 Member, Advisory Board of Acta Theriologica. Polish Academy of Sciences, Białowieża
- 2008-2012 Steering Group, iCCB (Integrative Climate Change Biology) program, International Union of Biological Sciences
- 2005-2008 Member-at-Large of the Executive Committee of the Society of Vertebrate Paleontology
- 2007-2014 Evaluation Committee, Paleobiology Database Summer Intensive Course
- 2005-2013 Member of the International Sorex araneus Cytogenetics Committee (ISACC)
- 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
- 2002-2003 Treasurer, Coquina Press (publisher of Palaeontologia Electronica)
- 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 for The Natural History Museum (London)
- 1994-2011 Member, Information Management Committee, Society of Vertebrate Paleontology
- 1993-1994 Web administrator for the University of California Museum of Paleontology

Campus and University Service

- 2017-Present Associate Director, Environmental Resilience Institute at Indiana University and Prepared for Environmental Change grand challenges initiative
- 2013-Present Director, College Center for Biological Research Collections, College of Arts and Sciences and Office for the Vice President for Research, Indiana University–Bloomington
- 2017-Present Chair, Faculty Misconduct Review Committee, Bloomington Faculty Council, Indiana University

2017-Present	Member, Mather's Museum advisory committee for "800 Seasons: Bloomington through Continuity and Change" exhibit, Indiana University
2016-Present	Advisory Board Member, Glenn Black Laboratory for Archaeology. Office of the Vice Provost for Research, Indiana University
2018	Chair, McCalla Museum Committee, 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
2013-2016	Chair, Advisory Board, Glenn Black Laboratory for Archaeology. Office of the Vice Provost for Research, Indiana University
2015-2016	Member, Dean of Students Advisory Committee
2014-present	Member, Wells Scholarship Evaluation Panel, Indiana University
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	Member, OVPR Center and Institute Pooled Fund for Excellence proposal review committee, 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
2011	Member, Indiana University-Bloomington Advisory Committee on Human Remains, Office of the Vice Provost for Research, Indiana University
2011-2012	Member, Research Activities Committee, Bloomington Faculty Council, Indiana University
2011-2014	Member, Patten Foundation Committee, 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
2005-2006	Student Development Committee, Queen Mary, University of London
2003-2006	External Examiner, Anatomy and Developmental Biology, UCL
2000	Team member, Teaching Quality Assessment of Learning Resources, Queen Mary, University of London
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
- 2001-2006 Licensed Instructor of Anatomy, under the UK Anatomy Act, University of London
- 1990 Dean's Academic Advisory Committee, UC Berkeley

Department Service

- 2006-Present Research Curator, IU Paleontological Collection, Dept. of Earth and Atmospheric Sciences
- 2017-2018 Elected Member, Policy/Executive Committee, Dept. of Earth and Atmospheric Sciences, Indiana University
- 2017-2018 Member, IU Geological Field Station faculty oversight committee, Dept. of Earth and Atmospheric Sciences, Indiana University
- 2017-2018 Chair, IU Paleontology Collection Manager / CBRC project coordinator search, Dept. of Earth and Atmospheric Sciences
- 2017-2018 Chair, Atmospheric Sciences Search, Dept. of Earth and Atmospheric Sciences
- 2017-2018 Member, Geography Search Committee, Dept. Geography
- 2016-2018 Member, Undergraduate Committee, Dept. of Earth and Atmospheric Sciences
- 2017 Chair, Promotion Committee, Department of Earth and Atmospheric Sciences, Indiana University
- 2016-2017 Owen Award Committee, Dept. of Geol. Sciences
- 2011-2016 Elected Member, Policy/Executive Committee, Dept. of Geol. Sciences
- 2014-2016 Member, Curriculum Revision Committee
- 2013-2015 Member, College Undergraduate Curriculum Assessment Committee
- 2011-2015 Member, IT Committee, Dept. of Geol. Sciences
- 2013-2014 Member, IU Geologic Field Station Advisory 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
- 2011-2016 Computing Committee, Dept. of Geol. Sciences
- 2010-2011 Undergraduate Committee, Dept. of Geol. Sciences
- 2008-2010 Space Committee, Dept. of Geol. 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: Russian, Spanish. Translation: French, German, Arabic, Old English, Middle Welsh. Computer: Mathematica, PERL, (Visual)Basic, C++, Pascal, php, R, SQL

Erdős Number: 5

P. David Polly

Lifetime Publication List

⊕ undergraduate student coauthor; ✧ graduate student coauthor; ✨ postdoc coauthor

PDFs of publications available at: <https://pollylab.indiana.edu/publications/>

Citation data available at: <http://scholar.google.com/citations?hl=en&user=aPOrK60AAAAJ>

Peer-Reviewed Articles

121. Fuentes-Gonzalez, J. A., **P. D. Polly**, and E. P. Martins. **In review**. Uncertainty and modern phylogenetic comparative methods: a Bayesian phylogenetic ANCOVA. *Evolution*.
120. **Polly, P. D.** **In review**. The assembly of cat communities in the New World: ecometrics and Neogene faunal turnover. *Geodiversitas*.
119. Pearson, A., **P. D. Polly**, E. Bruner. **In review**. Predicting temporal lobe volume from the middle cranial fossil in extant and fossil anthropoids. *Journal of Human Evolution*.
118. ✧ Topalov, K., A. Schimmelmann, **P. D. Polly**, P. E. Sauer, and S. Viswanathan. **Accepted**. 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*.
117. Searle, J. B., J. Zima, and **P. D. Polly**. **Accepted**. Shrews, chromosomes, and speciation. Pp. XX-XX in J. B. Searle, J. Zima, and P. D. Polly (eds.), *Shrews, Chromosomes and Speciation*. Cambridge University Press: Cambridge, United Kingdom.
116. **Polly, P. D.** **Accepted**. Climate, diversification, and refugia in the common shrew: evidence from the fossil record. Pp. XX-XX in J. B. Searle, J. Zima, and P. D. Polly (eds.), *Shrews, Chromosomes and Speciation*. Cambridge University Press: Cambridge, United Kingdom.
115. **Polly, P.D.** and J. M. Wojcik. **Accepted**. Morphological divergence between chromosome races. Pp. XX-XX in J. B. Searle, J. Zima, and P. D. Polly (eds.), *Shrews, Chromosomes and Speciation*. Cambridge University Press: Cambridge, United Kingdom.
114. 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.
113. Phillips, R. P. L. Brandt, **P. D. Polly**, P. Zollner, M. R. Saunders, K. Clay, L. Iverson, S. Fei. **2019**. Towards an improved understanding of the ecological consequences of climate change for Indiana forests. *Climate Change*. (10.1007/s10584-018-2326-8).
112. **Polly, P. D.** **2019**. Spatial processes and evolutionary models: a critical review. *Palaeontology*, **62**: 175-195 (10.1111/pala.12410).

111. ✧ 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).
110. ✧ 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 Paleocology: Reconstructing Cenozoic Terrestrial Environments and Ecological Communities*. Springer, Dordrecht.
109. ✧ 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.
108. **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).
107. 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)
106. ✧ 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).
105. **Polly, P. D.** and O. B. Mock. 2018. Heritability: the link between development and the microevolution of molar tooth form. *Historical Biology*, **30**: 53-63. (10.1080/08912963.2017.1337760).
104. **Polly P.D.** 2017. Morphometrics and evolution: the challenge of crossing rugged phenotypic landscapes with straight paths. *Vavilovskii Zhurnal Genetiki i Seleksii (=Vavilov Journal of Genetics and Breeding)*, 21: 452-461. (10.18699/VJ17.264)
103. **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.
102. 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. (doi: 10.1126/science.aah4787)

101. 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.
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. Gómez-Robles, A., J. B. Smaers, R. L. Holloway, **P. D. Polly**, and B. Wood. **2017**. Brain enlargement and dental reduction were not linked in hominin evolution. *PNAS*, **114**: 468-473. (doi: 10.1073/pnas.1608798114).
98. Lawing, A. M., **P. D. Polly**, D. K. Hews, and E. P. Martins. **2016**. Including fossils in phylogenetic climate reconstructions: a deep time perspective on the climatic niche evolution and diversification of Spiny Lizards (*Sceloporus*). *American Naturalist*, **188**: 133-148. (doi: 10.1086/687202).
97. 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 (doi: 10.1093/icb/icw039).
96. Lawing, A. M., J. T. Eronen, J. L. Blois, C. Graham, and **P. D. Polly**. **2016**. Community functional trait composition and the effects of non-ecological processes. *Ecography*, **39**: 1-13. (doi: 10.1111/ecog.01986).
95. **Polly, P. D.** **2016**. Quantitative genetics provides predictive power for paleontological studies of morphological evolution. *PNAS*, **113**: 9142-9144. (doi: 10.1073/pnas.1610454113)
94. **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. (doi: 10.1080/02724634.2016.1111225).
93. **Polly, P. D.** **2016**. Quantitative genetics and macroevolution. In R. M. Kliman (ed.), *Encyclopedia of Evolutionary Biology*. Elsevier/Academic Press, Amsterdam. Pp. 409-417.
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. (doi: 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.
88. Ksepka, D. T., J. F. Parham, J. F. Allman, M. J. Benton, M. T. Carrano, K. A. Cranston, P. C. J. Donoghue, J. J. Head, E. J. Hermsen, R. B. Irmis, W. G. Joyce, M. Kohli, K. S. Lamm, D. Leehr, J. S. L. Patané, **P. D. Polly**, M. J. Phillips, N. A. Smith, N. D. Smith, M. Van Tuinen, J.L. Ware, and R.C.M. Warnock. **2015**. The Fossil Calibration Database, a new resource for divergence dating. *Systematic Biology*, 64: 853-859.
87. **Polly, P.D.** **2015**. Gene networks, occlusal clocks, and functional patches: new understanding of pattern and process in the evolution of the dentition. *Odontology*, **103**: 117-125. (doi: 10.1007/s10266-015-0208-3)
86. Cardini, A., **P.D. Polly**, R. Dawson, and N. Milne. **2015**. Why the long face? Kangaroos and wallabies follow the same 'rule' of cranial evolutionary allometry (CREA) as placentals. *Evolutionary Biology*, **42**: 169-176. (doi:10.1007/s11692-015-9308-9)
85. 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. (doi:10.1038/nature14042)
84. 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. (doi: 10.1098/rstb.2013.0254)
83. **Polly, P.D.** and S. Sarwar. **2014**. Extinction, extirpation, and exotics: effects on the correlation between traits and environment at the continental level. *Annales Zoologici Fennici*, **51**: 209-226.
82. **Polly, P. D.** **2014**. Trait-based extinction catches the Red Queen napping during the Cambrian. *PNAS*, **111(46)**: 16240-16241 (doi:10.1073/pnas.1419138111).
81. **Polly, P. D.** **2014**. Issues in Paleobiology. In: M. Sánchez-Villagra and N. MacLeod (eds), *Issues in Paleobiology*. Scidinge Hall Verlag: Zürich, Switzerland.
80. 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. *Proceedings of the National Academy of Sciences, USA*, **110**: 18196-18201. (doi:10.1073/pnas.1302653110)
79. ✧ Rödder, D., A.M. Lawing, M. Flecks, F. Ahmadzadeh, J. Dambach, J. O. Engler, J. C. Habel, T. Hartmann, D. Hörnes, F. Ihlow, K. Schidelko, D. Stiels, and **P.D. Polly**. **2013**. Evaluating the significance of paleophylogeographic species distribution models in reconstructing Quaternary range-shifts of nearctic chelonians. *PLoS One*, **8(10)**: e72855. (doi:10.1371/journal.pone.0072855).

78. ✧ Grossnickle, D. and **P.D. Polly**. 2013. Mammal diversity decreases during the Cretaceous angiosperm radiation. *Proceedings of the Royal Society B*, **280**: 20132110 (doi: 10.1098/rspb.2013.2110).
77. Cardini, A. and **P. D. Polly**. 2013. Larger mammals have longer faces because of size-related constraints on skull form. *Nature Communications*, **4**, art. **2458**: 1-7.
76. **Polly, P.D.**, A.V. Polyakov, V.B. Ilyashenko, S.S. Onischenko, T.A. White, N.A. Shchipanov, N.S. Bulatova, S. Pavlova, P.M. Borodin, and J.B. Searle. 2013. Phenotypic variation across chromosomal hybrid zones of the Common shrew (*Sorex araneus*) indicates reduced gene flow. *PLoS One*, **8(7)**: e67455. (doi:10.1371/journal.pone.0067455).
75. ✧ ✧ **Polly, P. D.**, A. M. Lawing, A.-C. Fabre, and A. Goswami. 2013. Phylogenetic principal components analysis and geometric morphometrics. *Hystrix*, **24**: 33-41.
74. ✧ Smith, M.R. and **P.D. Polly**. 2013. A reevaluation of the Harrodsburg Crevice Fauna (Late Pleistocene of Indiana, USA) and the climatic implication of its mammals. *Journal of Vertebrate Paleontology*, **33**: 410-420.
73. Uhen, M.D., A.D. Barnosky, B. Bills, J. Blois, M.T. Carrano, M.A. Carrasco, G.M. Erickson, J.T. Eronen, M. Fortelius, R.W. Graham, E.C. Grimm, M.A. O'Leary, A. Mast, W.H. Piel, **P.D. Polly**, and L.K. Säilä. 2013. From card catalogs to computers: databases in vertebrate paleontology. *Journal of Vertebrate Paleontology*, **33**: 13-28.
72. **Polly, P. D.** 2013. Evolution: Stuck between the teeth. *Nature*, **497**: 325–326. (doi:10.1038/nature12099)
71. ✧ Topalov, K., A. Schimmelmann, **P.D. Polly**, P.E. Sauer, and M. Lowry. 2013. Environmental, trophic, and ecological factors influencing bone collagen $\delta^2\text{H}$. *Geochimica et Cosmochimica Acta*, **111**: 88-104. doi:10.1016/j.gca.2012.11.017
70. ✧ Topalov, K., A. Schimmelmann, **P.D. Polly**, and P.E. Sauer. 2012. Stable isotopes applications in bone collagen, with emphasis on deuterium/hydrogen ratios. Pp. 141-162 in C.J.R. Verbeek (ed), *Products and Applications of Biopolymers*. InTech: Rijeka, Croatia.
69. ✧ Goswami, A., **P.D. Polly**, O.B. Mock, and M.R. Sánchez Villagra. 2012. Shape, variance, and integration during craniogenesis: contrasting marsupial and placental mammals. *Journal of Evolutionary Biology*, **25**: 862-872. (doi: 10.1111/j.1420-9101.2012.02477.x).
68. ✧ Lawing, A. M., J. M. Meik, and **P.D. Polly**. 2012. Climate and competition shape species borders: a study of Panamint (*Crotalus stephensi*) and Speckled (*Crotalus mitchellii*) Rattlesnakes. *ISRN Zoology*, **528745**: 1-6.
67. ✧ Lawing, A.M., J.J. Head, and **P.D. Polly**. 2012. The ecology of morphology: the ecometrics of locomotion and macroenvironment in North American snakes. Pp. 117-146 in J. Louys (ed), *Paleontology in Ecology and Conservation*. Springer-Verlag, Berlin and Heidelberg (doi: 10.1007/978-3-642-25038-5_7).

66. ✧ Gómez-Robles, A. and **P.D. Polly**. **2012**. Morphological integration in the hominin dentition: evolutionary, developmental, and functional factors. *Evolution*, **66**: 1024-1043. doi: 10.1111/j.1558-5646.2011.01508.x
65. **Polly, P. D.** **2012**. Movement adds bite to the evolutionary morphology of mammalian teeth. *BMC Evolutionary Biology*, **10**: 69, 1-3.
64. **Polly, P.D.** **2012**. A new way of measuring the evolution of body size in mammals. *PNAS*, **109**: 4027-4028. doi: 10.1073/pnas.1201030109
63. ✧ Lawing, A. M. and **P.D. Polly**. **2011**. Pleistocene climate, phylogeny, and climate envelope models: an integrative approach to better understand species' response to climate change. *PLoS ONE*, **16**: e28554
62. ✧ Bose, R., C.L. Schneider, L.R. Leighton, and **P.D. Polly**. **2011**. Influence of atrypid morphological shape on Devonian episkeletobiont assemblages from the Lower Genshaw Formation of the Traverse Group of Michigan: a geometric morphometric approach. *Palaeogeography, Palaeoclimatology, Palaeoecology*, **310**: 427-441. doi: 10.1016/j.palaeo.2011.08.004.
61. Johnson, L.J., J.A. Cotton, C.P. Lichtenstein, G.S. Elgar, R.A. Nichols, **P.D. Polly**, and S.C. Le Comber. **2011**. Stops making sense: translational trade-offs and stop codon reassignment. *BMC Evolutionary Biology*, **11**: 227. doi: 10.1186/1471-2148-11-227
60. ✧ **Polly, P.D.**, L. Killick, M. Ruddy. **2011**. Using left-right asymmetry to estimate non-genetic variability in vole teeth (Arvicolinae, Muridae, Rodentia). *Palaeontologia Electronica*, 14.3.41A: 1-12.
59. **Polly, P.D.** and J.T. Eronen. **2011**. Mammal associations in the Pleistocene of Britain: implications of ecological niche modelling and a method for reconstructing palaeoclimate. In N. Ashton, S. Lewis, and C. Stringer (eds.), *The Ancient Human Occupation of Britain. Developments in Quaternary Science*, **14**: 279-304. ISBN 978-0-444-53597-9
58. **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. doi:10.1098/rspb.2010.2233
57. **Polly, P.D.** and C.B. Stringer. **2011**. The Ancient Human Occupation of Britain (AHOB) Database. In R. Macchiarelli and G-C. Weniger (ed.) *Pleistocene Databases: Acquisition, Storing, Sharing*. *Wissenschaftliche Schriften des Neanderthal Museums*, 4: 51-60.
56. ✧ Ksepka, D.T., M.J. Benton, M.T. Carrano, M.A. Gandolfo, J.J. Head, E.J. Hermsen, W.G. Joyce, K.S. Lamm, J.S.L. Patané, M.J. Phillips, P.D. Polly, J.L. Ware, R.C.M. Warnock, M. van Tuinen, and J.F. Parham. **2011**. Synthesizing and databasing fossil calibrations: divergence dating and beyond. *Biology Letters*, **7**: 801-803. doi: 10.1098/rsbl.2011.0356.

55. ✎ Goswami, A. and **P.D. Polly**. 2010. Methods for studying morphological integration, modularity and covariance evolution. Pp. 213-243 in J. Alroy and G. Hunt (eds.), *Quantitative Methods in Paleobiology*. Paleontological Society Short Course, October 30th, 2010. *The Paleontological Society Papers*, Volume 16.
54. ✎ Goswami, A. and **P. D. Polly**. 2010. The influence of modularity on cranial morphological disparity in Carnivora and Primates (Mammalia). *PLoS One*, **5**, e9517: 1-8.
53. Poroshin, E.A., **P. D. Polly**, and J.M. Wójcik. 2010. Climate and morphological change on decadal scales: Multiannual variation in the common shrew (*Sorex araneus* L.) in northeast Russia. *Acta Theriologica*, **55**: 193-202.
52. Cardini, A., S. Elton, J.A.F. Diniz-Filho, and **P. D. Polly**. 2010. Spatial data analysis and ecomorphology using geometric morphometrics: clines in skull size and shape in a widespread African arboreal monkey. Pp. 191-217 in A.M.T. Elewa (ed), *Morphometrics for Nonmorphometricians, Lecture Notes in Earth Sciences*, Volume 124. Springer: Dordrecht, The Netherlands.
51. ✧ Bose, R., C. Schneider, **P. D. Polly**, and M. M. Yacobucci. 2010. Ecological Interactions between *Rhipidomella* (Orthides, Brachiopoda) and its endoskeletobionts and predators in the Middle Devonian Dundee Formation of Ohio, USA. *Palaios*, **25**: 196-208.
50. Eronen, J. T., **P. D. Polly**, M. Fred, J. Damuth, D. C. Frank, V. Mosbrugger, C. Scheidegger, N. C. Stenseth, and M. Fortelius. 2010. Ecometrics: the traits that bind the past and present together. *Integrative Zoology*, **5**: 88-101.
49. **Polly, P.D.** 2010. Tiptoeing through the trophics: geographic variation in carnivoran locomotor ecomorphology in relation to environment. Pp. 347-410 in A. Goswami and A. Friscia (eds.), *Carnivoran Evolution: New Views on Phylogeny, Form, and Function*. Cambridge University Press, Cambridge, UK.
48. ✎ Goswami, A. and **P.D. Polly**. 2010. The influence of character correlations on phylogenetic analyses: a case study of the carnivoran cranium. Pp. 141-164 in A. Goswami and A. Friscia (eds.), *Carnivoran Evolution: New Views on Phylogeny, Form, and Function*. Cambridge University Press.
47. ✧ 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. Doi: 10.1111/j.1469-7998.2009.00620.x
46. Cardini, A., D. Nagorsen, P. O'Higgins, **P.D. Polly**, R. W. Thorington, Jr., and P. Tongiorgi. 2009. Detecting biological distinctiveness using geometric morphometrics: an example case from the Vancouver Island marmot. *Ethology, Ecology & Evolution*, **21**: 209-223.
45. ✎ Head, J.J., J.I. Bloch, A.K. Hastings, J.R. Bourque, E. Cadena, F. Herrera, **P.D. Polly**, and C.A. Jaramillo. 2009. Giant boine snake from a Paleocene Neotropical rainforest indicates hotter past equatorial temperatures. *Nature*, **457**: 715-718. doi:10.1038/nature07671

44. ✧ Schutz, H., **P.D. Polly**, J.D. Krieger and R.P. Guralnick. **2009**. Differential sexual dimorphism of body regions: a case study examining the cranium and pelvis of Gray foxes (*Urocyon*). *Biological Journal of the Linnean Society*, 96: 339-353.
43. **Polly, P.D.** **2008**. Developmental dynamics and G-matrices: Can morphometric spaces be used to model evolution and development? *Evolutionary Biology*, **35**: 83-96.
42. **Polly, P.D.** and N. MacLeod. **2008**. Locomotion in fossil Carnivora: an application of eigensurface analysis for morphometric analysis of 3D surfaces. *Palaeontologia Electronica*, **11.2.8A**. http://palaeo-electronica.org/2008_2/135/index.html
41. # ✧ Atar, M., R. Yasmin, R. Sharma, S.C. Le Comber, P. Verry, and **P.D. Polly**. **2008**. Of mice and mutations: phenotypic effects of the diabetic db/db and ob/ob mutations on the skull and teeth of mice. *European Archives of Paediatric Dentistry*, **9**: 37-40.
40. **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.
39. Gündüz, İ, M Jaarola, C. Tez, C. Yenyurt, **P.D. Polly**, and J. B. Searle. **2007**. *Spermophilus taurensis* Günduz *et al.* 2007 and *S. torosensis* Özkurt *et al.*, 2007 (Sciuridae, Rodentia) are synonyms for the same species of Ground squirrel from the Taurus Mountains of southern Turkey. *Zootaxa*, **1663**: 67-68.
38. Cardini, A., R.W. Thorington, Jr., and **P.D. Polly**. **2007**. Evolutionary acceleration in the most endangered mammal of Canada: speciation and divergence in the Vancouver Island marmot (Rodentia, Sciuridae). *Journal of Evolutionary Biology*, **20**: 1833-1846.
37. ✧ Head, J.J. and **P.D. Polly**. **2007**. Dissociation of somatic growth from segmentation drives gigantism in snakes. *Biology Letters*, **3**: 296-298.
36. Gündüz, I, M Jaarola, C. Tez, C. Yenyurt, **P.D. Polly**, and J. B. Searle. **2007**. Multigenic and morphometric differentiation of ground squirrels (*Spermophilus*, Sciuridae, Rodentia) in Anatolia, with a description of a new species. *Molecular Phylogenetics and Evolution* **43**: 916-935.
35. **Polly, P. D.** **2007**. Phylogeographic differentiation in *Sorex araneus*: morphology in relation to geography and karyotype. *Russian Journal of Theriology*, **6**: 73-84.
34. Wójcik, J. M., **P. D. Polly**, A. M. Wójcik, and M. D. Sikorski. **2007**. Epigenetic variation of the common shrew, *Sorex araneus*, in different habitats. *Russian Journal of Theriology*, **6**: 43-49.
33. **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.

32. **Polly, P.D. 2007.** Development with a Bite. News & Views. *Nature*, **449**: 413-415.
31. Wójcik, A. M., **P. D. Polly**, M. D. Sikorski, and J. M. Wójcik. **2006.** Selection in a cycling population: differential response among skeletal traits. *Evolution*, **60**: 1925-1935.
30. Rychlik, L., G. Ramalhinho, and **P. D. Polly. 2006.** Response to competition and environmental factors: skull, mandible, and tooth shape in Polish Water shrews (*Neomys*, Soricidae, Mammalia). *Journal of Zoological Systematics and Evolutionary Research*, **44**: 339-351.
29. **Polly, P. D.**, G. D. Wesley-Hunt, R. E. Heinrich, G. Davis, and P. Houde. **2006.** Earliest known carnivoran auditory bulla and support for a recent origin of crown-group Carnivora (Eutheria, Mammalia). *Palaeontology*, **49**: 1019-1027.
28. **Polly, P.D. 2006.** Genetics, development, and palaeontology interlock. *Heredity*, **96**: 206-207.
27. † 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.
26. **Polly, P.D. 2005.** Development and phenotypic correlations: the evolution of tooth shape in *Sorex araneus*. *Evolution and Development*, **7(1)**: 29-41.
25. † **Polly, P.D.**, S.C. Le Comber, and T.M. Burland. **2005.** On the occlusal fit of tribosphenic molars: Are we underestimating species diversity in the Mesozoic? *Journal of Mammalian Evolution*, **12**: 285-301.
24. **Polly, P. D. 2004.** On the simulation of the evolution of morphological shape: multivariate shape under selection and drift. *Palaeontologia Electronica*, **7.2.7A**: 28pp, 2.3MB. http://palaeo-electronica.org/paleo/2004_2/evo/issue2_04.htm
23. **Polly, P. D.** and J. J. Head. **2004.** Maximum-likelihood identification of fossils: taxonomic identification of Quaternary marmots (Rodentia, Mammalia) and identification of vertebral position in the pipesnake *Cylindrophis* (Serpentes, Reptilia). In: Elewa A. M. T. (ed.): *Morphometrics-Applications in Biology and Paleontology*. Springer-Verlag: Heidelberg, Germany. Pp. 197-222.
22. **Polly, P. D. 2003.** Paleophylogeography of *Sorex araneus*: molar shape as a morphological marker for fossil shrews. *Mammalia*, **68**: 233-243.
21. **Polly, P. D. 2003.** Paleophylogeography: the tempo of geographic differentiation in marmots (*Marmota*). *Journal of Mammalogy*, **84**: 369-384.
20. **Polly, P. D. 2002.** Phylogenetic tests for differences in shape and the importance of divergence times: Eldredge's enigma explored. In: N. MacLeod and P. Forey (eds.), *Morphology, Shape, and Phylogenetics*, Taylor and Francis, Inc., pp. 220-246.
19. **Polly, P. D.** and R. L. Spang. **2002.** History of paleontology. Pp. 69-97 in B. S. Baigrie (ed.), *History of Modern Science and Mathematics, Vol. 4*, Charles Scribner's Sons, New York.

18. **Polly, P. D. 2001.** Paleontology and the comparative method: Ancestral node reconstructions versus observed node values. *American Naturalist*, **157**: 596-609.
17. **Polly, P. D. 2001.** On morphological clocks and paleophylogeography: Towards a timescale for *Sorex* hybrid zones. In: A. P. Hendry and M. T. Kinnison (eds.), *Microevolution: Rate, Pattern, Process. Contemporary Issues in Genetics and Evolution*. Kluwer, Dordrecht. Pp. 339-357. [Reprint of #14].
16. **Polly, P. D. 2001.** On morphological clocks and paleophylogeography: Towards a timescale for *Sorex* hybrid zones. *Genetica*, **112/113**: 339-357.
15. ♣ **Polly, P. D.**, J. J. Head, and M. J. Cohn. **2001.** Testing modularity and dissociation: the evolution of regional proportions in snakes (Serpentes, Vertebrata), pp. 305-335 in: M. Zelditch (ed.), *Beyond Heterochrony: The Evolution of Development*. John Wiley & Sons.
14. Kordikova, E. G., **P. D. Polly**, V. A. Alifanov, Z. Roček, G. F. Gunnell, and A. O. Averianov. **2001.** Late Cretaceous and early Tertiary microvertebrates from the North Eastern Aral Sea Region of Kazakhstan. *Journal of Paleontology*, **75**: 390-400.
13. ♣ Mathur, A. K. and **P. D. Polly**. **2000.** The evolution of enamel microstructure: How important is amelogenin? *Journal of Mammalian Evolution*, **7**: 23-42.
12. **Polly, P. D. 2000.** Development and evolution occlude: evolution of development in mammalian teeth. *Proceedings of the National Academy of Science*, **97**: 14019-14021.
11. **Polly, P. D. 1998.** Variability, selection, and constraints: development and evolution in viverravid (Carnivora, Mammalia) molar morphology. *Paleobiology*, **24**: 409-429.
10. **Polly, P. D. 1998.** Variability in mammalian dentitions: size-related bias in the coefficient of variation. *Biological Journal of the Linnean Society*, **64**: 83-99.
9. **Polly, P. D. 1998.** Cope's Rule. *Science*, **282(5386)**: 50-51.
8. **Polly, P. D. 1997.** Cross-domain database searching at The Natural History Museum. *ASLIB Handbook of Special Librarianship and Information Work*, 7th Edition, pp. 441-448.
7. **Polly, P. D. 1997.** Ancestry and species definition in paleontology: a stratocladistic analysis of Viverravidae (Carnivora, Mammalia) from Wyoming. *Contributions from the Museum of Paleontology, University of Michigan*. **30**: 1-53.
6. **Polly, P. D. 1996.** The skeleton of *Gazinocyon vulpeculus* n. gen. and comb. (Hyaenodontidae, Creodonta) and the cladistic relationships of Hyaenodontidae (Eutheria, Mammalia). *Journal of Vertebrate Paleontology*, **16**: 303-319.
5. Holroyd, P. A., E. L. Simons, T. M. Bown, **P. D. Polly**, and M. J. Krause. **1996.** New Records of Terrestrial Mammals from the Upper Eocene Qasr El Sagha Formation, Fayum Depression, Egypt. *Palaeovertebrata*, **25**: 175-192.

4. Padian, K., D. Lindberg, and **P. D. Polly**. **1994**. Cladistics and the fossil record: the uses of history. *Annual Review of Earth and Planetary Sciences*, **22**: 63-91.
3. **Polly, P. D.** and B. Lange-Badré. **1993**. A new genus *Eurotherium* (Mammalia, Creodonta) in reference to taxonomic problems with some Eocene hyaenodontids from Eurasia. *Comptes Rendus de l'Academie des Sciences (Paris), série II*, **317**: 991-996.
2. **Polly, P. D.** **1993**. Hyaenodontidae (Creodonta, Mammalia) from the early Eocene Four Mile Fauna and their biostratigraphic implications. *PaleoBios*, **14(4)**: 1-10.
1. **Polly, P. D.** **1993**. Hyaenodontidae (Creodonta, Mammalia) and the Position of Systematics in Evolutionary Biology. Ph.D. Dissertation. University of California at Berkeley.

Edited Books and Volumes

3. Searle, J. B., J. Zima, and **P. D. Polly** (eds). **Accepted**. *Shrews, Chromosomes and Speciation*. Cambridge University Press: Cambridge, United Kingdom.
2. Gunnell, G. J. Hooker, and **P. D. Polly** (eds.). **2018**. *Tooth development, genetics, and evolution - papers honoring the 80 year career of Percy M. Butler*. *Historical Biology*, 30 (issues 1-2).
1. **P. D. Polly**, J. J. Head, and D. L. Fox (eds). **2015**. *Earth-Life Transitions: Paleobiology in the Context of Earth System Evolution*. The Paleontological Society Papers 21. Yale Press, New Haven, CT.

Software Packages

4. **Polly, P. D.** **2012-Present**. Geometric Morphometrics for Mathematica (current version: 12.2). Department of Geological Sciences, Indiana University: Bloomington, Indiana. <http://mypage.iu.edu/~pdpolly/Software.html>
3. **Polly, P. D.** **2012-Present**. Phylogenetics for Mathematica (current version: 6.2). Department of Geological Sciences, Indiana University: Bloomington, Indiana. <http://mypage.iu.edu/~pdpolly/Software.html>
2. **Polly, P. D.** **2010-Present**. Quantitative Paleontology for Mathematica (current version: 5.0). Department of Geological Sciences, Indiana University: Bloomington, Indiana. <http://mypage.iu.edu/~pdpolly/Software.html>
1. ✉ **Polly, P. D.** and A. Goswami. **2010**. Modularity for Mathematica (current version: 2.0). IU ScholarWorks, Indiana University: Bloomington, Indiana. <http://hdl.handle.net/2022/14541>

Popular Articles

3. **Polly, P. D.** **2018**. Shrinking the Grand Staircase-Escalante National Monument is a disaster for paleontology. *The Conversation*. 21 September, 2018.
2. **Polly, P. D.** **2017**. Grand Staircase, Home to Countless Dinosaur Fossils, Could Be Destroyed by Mining (Op-Ed). *LiveScience*. 30 November, 2017.

1. **Polly, P. D. 2017.** From the President: why SVP cares about the Grand Staircase. *Old Bones*, Society of Vertebrate Paleontology. 6 November, 2017

Book Reviews, Editorials, and Short Encyclopedia Reviews

72. **Polly, P. D. 2018.** Geometric morphometrics. In S. López-Varela (ed.), *The SAS Encyclopedia of Archaeological Sciences*. Wiley-Blackwell: Oxford, UK. (10.1002/9781119188230.saseas0258).
71. Phillips, R. P., Fei, S., Brandt, L., **Polly, P. D.**, Zollner, P., Saunders, M. R., Clay, K., Iverson, L., Widhalm, M., and J. S. Dukes. **2018.** *Indiana's Future Forests: A Report from the Indiana Climate Change Impacts Assessment*. Purdue Climate Change Research Center. West Lafayette, Indiana.
70. **Polly, P. D. 2015.** The antecedents of punctuated equilibrium. Review of *Eternal Ephemera* by Niles Eldredge. *Evolution*, 69: 3021-3022.
- 56-69. **Polly, P.D. 2013.** 5 short articles for *Encyclopaedia Britannica*. *Batodonoides*, *Icadyptes*, *Lystrosaurus*, *Phoberomys*, and *Protungulatum*.
- 59-64. **Polly, P.D. 2013.** 6 short articles for *Encyclopaedia Britannica*. *Basilosaurids*, *Titanoboa*, *Diprotodon*, gomphotheres, *Llanocetus*, and *Simocetus*.
58. **Polly, P.D. 2013.** The Red Queen. Pp. 119-124 in N. Macleod (ed.), *Grzimek's Animal Life Encyclopedia Extinction*. Gale: Farmington Hills, Michigan.
57. **Polly, P.D. 2013.** Morphometrics in paleontology. *McGraw-Hill Yearbook of Science and Technology 2013*. McGraw Hill: New York. Pp. 249-251.
56. **Polly, P.D. 2012.** Review of *Extinction and Radiation: How the Fall of Dinosaurs Led to the Rise of Mammals* by J. David Archibald. *Reports of the National Center for Science Education*, **32.3.11**, 4 pp.
- 49-55. **Polly, P.D. 2011.** 7 short articles for *Encyclopaedia Britannica*. *Morganucodon*, *Ambondro*, *Castorocauda*, *Enaliarctos*, *Pakicetus*, oreodont, entelodont.
48. **Polly, P. D. 2010.** Review of *Evolution of Tertiary Mammals of North America Volume 2* by C.M. Janis, G.F. Gunnell and M.D. Uhen (eds). *Palaeontologia Electronica*, **13.3**.
47. **Polly, P. D. 2009.** People are like their dogs. Review of *Dog Behaviour, Evolution, And Cognition*. by Ádám Miklósi. Oxford: Oxford University Press. 2009. 267 pp., £29.95 (paperback). ISBN: 978-0-19-954566-7 and *Dogs: Their Fossil Relatives And Evolutionary History*. by Xiaoming Wang and Richard H. Tedford (Illustrations by Mauricio Antón). New York: Columbia University Press. 2008. 219 pp., \$29.95 (cloth). ISBN-10: 0-231-13528-9. *Journal of Mammalian Evolution*, **17**: 141. **Doi:** 10.1007/s10914-009-9120-3
46. **Polly, P. D. 2009.** Review of *What is Biodiversity?* by James MacLaurin and Kim Sterelny. *Evolution and Development*, **11**: 244-245.
45. ✧ ✨ Head, J.J., J.I. Bloch, A.K. Hastings, J.R. Bourque, E. Cadena, F. Herrera, **P.D. Polly**, and C.A. Jaramillo. **2009.** Head *et al.* reply to J.M.K, Sniderman; A.M. Makarieva, V.G. Gorshkov & B.-L. Li; M.W. Denny, B. L. Lockwood & G. N. Somero *Nature* (2009). *Nature*, **460**: E4-E5.

- 16-44. **Polly, P. D. 2008.** 28 short articles for *Encyclopaedia Britannica, 16th Edition*: *Condylarthra*, *Creodonta*, *Dawn Horse*, *Deltatheridium*, *Docodon*, *Eohippus*, *Glyptodon*, *Hyaenodon*, *Litoptern*, *Miacis*, *Miohippus*, *Moeritherium*, *Multituberculate*, *Mylodon*, *Notharctus*, *Notoungulata*, *Phenacodus*, *Pliohippus*, *Ptilodus*, *Sabre-toothed Cat*, *Smilodon*, *Spalacotherium*, *Taeniodont*, *Thylacosmilus*, *Titanothera*, *Toxodon*, *Triconodon*, *Uintatherium*, *Woolly rhinoceros*.
15. **Polly, P.D. 2007.** Foreword. In: A. M. T. Elewa (ed.), *Mass Extinction: The Danger Around Us*. Springer-Verlag: Berlin.
14. **Polly, P. D. 2007.** Review of “*Paleontological Data Analysis* by Øyvind Hammer and David Harper”. *Journal of Quaternary Science*, **22**: 652
13. Reidel, W.R., **P.D. Polly**, and J.W. Hagadorn. **2006.** Coming of Age: ISI & Googling. *Palaeontologia Electronica* 9(1): Art. No. 1E 2006.
12. **Polly, P. D. 2006.** Preface. In: Ashraf M. T. Elewa (ed.) *Migration in Organisms: Climate, Geography, Ecology*. Springer-Verlag: Berlin.
11. **Polly, P. D.**, J. A. Lillegraven, and Z. Luo. **2005.** Introduction: Paleomammalogy in honor of Professor Emeritus William Alvin Clemens, Jr. *Journal of Mammalian Evolution*, **12**: 3-8.
10. **Polly, P. D. 2004.** Review of “*Late Cretaceous and Cenozoic Mammals of North America*. Edited by Michael O. Woodburne. 2004. Columbia University Press, New York. 391 pp. Cloth: 0-231-13040-6. \$95.00.” *Cretaceous Research*, **25**: 969-970.
9. **Polly, P. D. 2002.** Creodonta. In: *The McGraw-Hill Encyclopedia of Science & Technology*, 9th Edition.
8. **Polly, P. D. 1999.** Selection. In: R. Springer (ed.), *Encyclopedia of Paleontology*. Fitzroy Dearborn Publishers, Chicago, pp. 1084-1086.
7. **Polly, P. D. 1999.** Ivan F. Schmalhausen. In: R. Springer (ed.), *Encyclopedia of Paleontology*. Fitzroy Dearborn Publishers, Chicago, pp. 1068-1069.
6. **Polly, P. D. 1999.** Ivan I. Schmalhausen. In: R. Springer (ed.), *Encyclopedia of Paleontology*. Fitzroy Dearborn Publishers, Chicago, pp. 1069-1070.
5. **Polly, P. D. 1999.** Creodonta. In: R. Springer (ed.), *Encyclopedia of Paleontology*. Fitzroy Dearborn Publishers, Chicago, pp. 316-317.
4. **Polly, P. D. 1999.** Alpheus Hyatt. In: R. Springer (ed.), *Encyclopedia of Paleontology*. Fitzroy Dearborn Publishers, Chicago, pp. 591-592.
3. **Polly, P. D. 1998.** Who reads *Palaeontologia Electronica* anyway? *Palaeontologia Electronica*, **1(2)**: 2pp.
2. **Polly, P. D. 1998.** Functional Morphology in Vertebrate Paleontology edited by J. J. Thomason. (Book Review). *Biological Journal of the Linnean Society*. **65**: 367-368.
1. **Polly, P. D. 1998.** Evolutionary Quantitative Genetics by Derek A. Roff. (Book review). *Palaeontologia Electronica*, **1(2)**: 4 pp.

Published Abstracts

60. **Polly, P. D.**, J. Schnitzler, A. M. Lawing, and J. T. Eronen. **2013**. Morphological adaptation, range shifts, or extinction? Modeling of morphological responses of species and communities to environmental change in a geographically and temporally explicit context. *Journal of Vertebrate Paleontology*, **33**: S192.
59. Grossnickle, D., **P. D. Polly**, and Z.-X. Luo. **2013**. Morphological disparity of Mesozoic mammals through time. *Journal of Vertebrate Paleontology*, **33**: S137.
58. **Polly, P. D.** **2012**. Dr Jester and Mr Queen: speciation in mammals with large geographic ranges is a biotic and abiotic process that requires many glacial-interglacial cycles. *Journal of Vertebrate Paleontology*, **32**: 157A.
57. Parham, J. F., D. T. Ksepka, **P. D. Polly**, M. Van Tuinen, and M. J. Benton. **2012**. The fossil calibration database: a bioinformatic tool for dating divergences of extant lineages. *Journal of Vertebrate Paleontology*, **32**: 154A.
56. Vermillion, W. A. and **P. D. Polly**. **2012**. Species delimitation based on the limits of climate and morphology in paleontology: a geometric morphometric analysis of *Chrysemys picta* plastrons. *Journal of Vertebrate Paleontology*, **32**: 188A.
55. Smith, M. and **P. D. Polly**. **2012**. Regional patterns of modern sympatry in North American Quaternary mammal faunas. *Journal of Vertebrate Paleontology*, **32**: 174A.
54. **Polly, P.D.**, R. G. Dundas, and A.M. Lawing. 2011. Standing up to climate change: community locomotor ecomorphology and paleoenvironment in the Plio-Pleistocene. *Journal of Vertebrate Paleontology*, **31**.
53. **Polly, P.D.**, A.M. Lawing and J.J. Head. **2010**. Comparative evolutionary ecological morphology of locomotion in terrestrial vertebrate carnivores. *Journal of Vertebrate Paleontology*, **30**: 146A-147A.
52. Lawing, A.M. and **P.D. Polly**. **2010**. Modelling effects of Pleistocene climate cycles on species' distributions: implications for the near future. *Journal of Vertebrate Paleontology*, **30**: 120A.
51. Bykowski, R.J.D., R.M. Green, A.M. Lawing, K.H. O'Donnell, M.R. Smith and **P.D. Polly**. **2010**. Discriminating fossils are not static: an assessment of the DFA method for testing stasis. *Journal of Vertebrate Paleontology*, **30**: 68A.
50. **Polly, P.D.** and J.T. Eronen. **2009**. Pleistocene mammal associations: Implications of ecological niche modelling and a method for reconstructing palaeoclimate. *Journal of Vertebrate Paleontology*, **29**: 165A.
49. Head, J., **P.D. Polly**, J.I. Bloch, E. and E. Cadena. **2009**. Body size, physiology, and ecology: paleothermometric estimates from the fossil record of reptiles. *Journal of Vertebrate Paleontology*, **29**: 112A.
48. Lawing, A.M., **P.D. Polly**, and J.J. Head. **2009**. Ecomorphology as a predictor of environment in snakes. *Journal of Vertebrate Paleontology*, **29**: 133A.

47. Morlo, M., **P.D. Polly**, and G.F. Gunnell. **2009**. What, if not nothing, is a creodont? Phylogeny and classification of Hyaenodontida and other former creodonts. *Journal of Vertebrate Paleontology*, **29**: 152A.
46. Topalov, K., A. Schimmelmann, **P. D. Polly**, P. E. Sauer, and M. Lowry. **2009**. D/H of bone collagen as environmental and trophic indicator. *Geochimica et Cosmochimica Acta*, **73**: A1340.
45. Topalov, K., A. Schimmelmann, **P. D. Polly**, P. E. Sauer, and M. Lowry. **2009**. D/H of bone collagen as environmental and trophic indicator. *Proceedings of the 2009 Pacific Climate Workshop*, p. 38.
44. Cardini, A., Nagorsen, P. O'Higgins, **P.D. Polly**, R. Thorington, and P. Tongiorgi. **2008**. Accelerated morphological evolution in insular mammals: is it true or not? The case of the Vancouver Island marmot. *Proceedings of the VI International Conference on the genus "Marmota": Marmot in a changing world: research and action*.
43. **Polly, P.D.** **2008**. Locomotion and Climate – Community-Level Structure of Digitigrady in North American Mammalian Carnivores. *Journal of Vertebrate Paleontology*, **28**: 128A.
42. Lawing, A.M., J.M. Meik, and **P.D. Polly**. **2008**. Using ecological niche models to explore paleobiogeographic patterns. *Journal of Vertebrate Paleontology*, **28**: 104A.
41. Topalov, K., A. Schimmelmann, **P. D. Polly**, and P. E. Sauer. **2008**. Improved on-line measurement of non-exchangeable hydrogen in bone collagen as forensic environmental indicator. GSA North-Central Section, 42nd Annual Meeting.
40. Johnson, C.C., E.R. Elswick, M. Dalkilic, **P. D. Polly**, and A. Enneking. **2007**. Preservation and Development of Paleontology Collections for Research and Education. *GSA Abstracts*. Paper 56-8.
39. **Polly, P. D.** **2007**. Tiptoeing through the trophics: measuring digitigrady in Carnivora for palaeoenvironmental inference. *Journal of Vertebrate Palaeontology*, **27**: 130A.
38. Hooker, J. J., D. Dashzeveg, and **P. D. Polly**. **2007**. Lambdotheriid perissodactyls: evidence of an origin and modest radiation in Asia. *Journal of Vertebrate Palaeontology*, **27**: 92A.
37. Head, J. J. and **P. D. Polly**. **2007**. Snake vertebral morphology is not more homogenous than lizards: morphometry of vertebrae in snakes: and implications for developmental origins of the group. *Journal of Morphology*, **268**: 1081.
36. Head, J. J. and **P. D. Polly**. **2006**. Developmental mechanisms in the evolution of the postcranial skeleton in snakes. *Journal of Vertebrate Paleontology*, **26**: 73A-74A.
35. **Polly, P. D.** and N. MacLeod. **2006**. Characterization and comparison of 3D shapes using Eigensurface Analysis: Locomotion in Tertiary Carnivora. *Journal of Vertebrate Paleontology*, **26**: 111A.

34. MacLeod, N. and **P. D. Polly**. 2005. A New Eigenshape-based Morphometric Method for Analyzing 3D Patterns of Shape Variation for Surfaces and Discrete Objects. *Palaeontological Association Newsletter*, **60**: 23.
33. **Polly, P. D.** 2005. Aetosaur plates and whale teeth: on recognizing character correlation in cladistic character state distributions. *Journal of Vertebrate Paleontology*, **25**: 101A.
32. Gabriel, S. N. and **P. D. Polly**. 2005. Monophyly, dichotomy or neither: investigating 'lipotyphlan' phylogeny using geometric morphometrics. *Journal of Vertebrate Paleontology*, **25**: 61A.
31. Head, J. J. and **P. D. Polly**. 2004. They might be giants: morphometric methods for reconstructing body size in the world's largest snakes. *Journal of Vertebrate Paleontology*, **24**: 68A.
30. **Polly, P.D.**, S. C. Le Comber and T. M. Burland. 2004. The analysis of intraspecific relationships among fossil taxa using quantitative data. P. 209 in: L. C. Maul and R.-D. Kahlke (eds.), *Late Neogene and Quaternary Biodiversity and Evolution: Regional Developments and Interregional Correlations: 18th International Senckenberg Conference*. Alfred-Wegener-Stiftung, Berlin.
29. **Polly, P.D.** 2004. Variability and morphogenesis in mammalian teeth. *Journal of Morphology*, **260**: 319.
28. Gabriel, S.N. and **P.D. Polly**. 2004. Non-masticatory functional complexes and their effect on the morphology of the insectivoran glenoid. *Journal of Morphology*, **260**: 293.
27. **Polly, P. D.**, J. J. Head, T. M. Burland, and S. C. Le Comber. 2003. Paleophylogeography: phylogenetic and geographic analysis at and below the species level. *Palaeontological Association Newsletter*, **54**: 149.
26. **Polly, P.D.** 2003. Palaeophylogeography of *Sorex araneus*: Southern Refugia Versus East-West Pulses. P. 192 in: M. Macholán, J. Bryja, and J. Zima (eds), *European Mammalogy, 2003: 4th European Congress of Mammalogy*. Institute of Vertebrate Biology, Brno, Czech Republic.
25. **Polly, P. D.** 2003. Simulating evolution of shape over palaeontological timescales. *Palaeontological Association Newsletter*, **54**: 184-185
24. Gabriel, S. N. and **P. D. Polly**. 2003. The influence of non-masticatory functional complexes on lipotyphlan glenoid morphology. *Palaeontological Association Newsletter*, **54**: 132-133.
23. **Polly, P. D.** 2003. Paleophylogeography and phylogenetic reconstruction. *Journal of Vertebrate Paleontology*, **23(3)**: 88A.
22. **Polly, P. D.** 2003. Review of *Australia's Lost World: Riversleigh, World Heritage Site* by Michael Archer, Suzanne J. Hand, and Henk Godthelp. *Palaeontological Association Newsletter*, **53**: 97-99.
21. **Polly, P. D.** 2002. A paleontological approach to the problem of covariance matrix evolution. *Journal of Vertebrate Paleontology*, **22(3)**: 91A.

20. **Polly, P. D. 2001.** Within- and among-population variance in mammal molars: phylogenetics, geography, and population structure in shrews and marmots. *Journal of Vertebrate Paleontology*, **21(3)**: 90A.
19. **Polly P.D. 2001.** Morphological markers for mammal populations: Towards a palaeophylogeography. *Journal of Morphology*, **248**: 271.
18. **Polly, P. D. 2000.** Molar shape, population structure, and post-glacial recolonization in British *Sorex araneus* (Lipotyphla, Eutheria): towards a palaeophylogeography. *Journal of Vertebrate Paleontology*, **20**: 69A.
17. **Polly, P. D. 2000.** Molar shape, population structure, and post-glacial recolonization in British *Sorex araneus* (Lipotyphla, Eutheria): towards a palaeophylogeography. *The Palaeontological Association Newsletter*, **45**: 37.
16. **Polly, P. D. 1999.** Testing macroevolutionary patterns using squared-change parsimony. *Journal of Vertebrate Paleontology*, **19**: 69A.
15. Kordikova, E. G., P. V. Shilin, G. F. Gunnell, and **P. D. Polly. 1999.** Biotic change in the Turonian-Campanian of the northeast Aral Sea region, south Kazakhstan. VII International Symposium on Mesozoic Terrestrial Ecosystems, 33.
14. **Polly, P. D. 1998.** Clio's revenge: using historical data to test tree-based historical reconstructions. *Journal of Vertebrate Paleontology*, **18**: 70A.
13. **Polly, P. D. 1998.** Clio's revenge: using historical data to test tree-based historical reconstructions. *Palaeontological Association Newsletter*, **39**: 20.
12. **Polly, P. D. 1997.** Variability profiles and morphological integration in carnivore dentitions: implications for developmental field hypotheses. *Journal of Vertebrate Paleontology*, **17(3)**: 70A.
11. **Polly, P. D. 1997.** Variability and correlation in mammalian dentitions: the effect of error on previous hypotheses about evolutionary mechanisms. *Journal of Morphology*, **232(3)**: 308.
10. **Polly, P. D. 1997.** Testing the evolutionary role of developmental constraints using the fossil record: Paleogene viverravid carnivorans from Wyoming. *Journal of Vertebrate Paleontology*, **17(3)**: 70A.
9. Kordikova, E. G., V. R. Alifanov, **P. D. Polly**, and G. F. Gunnell. **1997.** First known occurrence of varanoid and scincomorph lizards in the Upper Cretaceous of South-Western Kazakhstan. In: Roček, Z. and Hart, S. (eds) *Herpetology '97, Abstracts of the 3rd World Congress of Herpetology*, 249. Prague.
8. Kordikova, E. G., G. F. Gunnell, **P. D. Polly**, and Y. B. Kovrizhnykh. **1996.** Late Cretaceous and Paleocene vertebrate paleontology and stratigraphy in the northeastern Aral Sea region, Kazakhstan. *Journal of Vertebrate Paleontology*, **16(3)**: 46A.
7. **Polly, P. D.**, G. E. Hirschler, and D. T. Cohen. **1996.** Variability, phylogenetics, and species concepts: Viverravidae (Carnivora, Mammalia) from Wyoming. *Journal of Vertebrate Paleontology*, **16(3)**: 58A.

6. **Polly, P. D. 1995.** Diphyly of the Hyaenodontinae (Hyaenodontidae, Eutheria) and the evolution of molar function in Hyaenodontidae (Eutheria, Mammalia). *Journal of Vertebrate Paleontology*, **15(3)**: 48A.
5. **Polly, P. D. 1994.** What, if anything, is a creodont? *Journal of Vertebrate Paleontology*, **14(3)**: 42A.
4. **Polly, P. D. 1994.** Revolution and evolution in classification: mammalian classification before and after Darwin. *Journal of Vertebrate Paleontology*, **14(3)**: 42A.
3. **Polly, P. D. 1993.** Default developmental pathways and functional constraints in the evolution of mammalian molars. *Journal of Vertebrate Paleontology*, **13(3)**: 53A.
2. **Polly, P. D. 1992.** Postcranial morphology of *Prototomus vulpeculus* (Creodonta, Mammalia) and some phylogenetic implications. *Journal of Vertebrate Paleontology*, **13(3)**: 48A.
1. **Polly, P. D. 1991.** A preliminary description and interpretation of a partial skeleton of *Prototomus vulpeculus* (Matthew, 1915) (Hyaenodontidae: Creodonta) from the Eocene (Lostcabinian: Wasatchian) of Wyoming. *PaleoBios*, **13(50)**: 7.