

**MATT FRIEDMAN**  
mfriedm@umich.edu

### APPOINTMENTS

2018-present     Director  
                     Museum of Paleontology  
                     University of Michigan

2016-present     Associate Professor  
                     Department of Earth and Environmental Sciences  
                     Associate Curator  
                     Museum of Paleontology  
                     University of Michigan

2016-2019        Visiting Professor of Palaeobiology  
                     Department of Earth Sciences  
                     University of Oxford

2015-2016        Professor of Palaeobiology  
                     Department of Earth Sciences  
                     University of Oxford

2014-2015        Associate Professor of Palaeobiology  
                     Department of Earth Sciences  
                     University of Oxford  
(tenured [‘appointed to retirement age’] April 2014)

2009-2014        Lecturer in Palaeobiology  
                     Department of Earth Sciences  
                     University of Oxford

2009-2016        Tutor in Earth Sciences  
                     St Hugh’s College

### EDUCATION

2003-2009        Committee on Evolutionary     Ph.D., Evolutionary Biology  
                     Biology  
                     University of Chicago  
                     Chicago, IL

2003-2005        Committee on Evolutionary     S.M., Evolutionary Biology  
                     Biology  
                     University of Chicago  
                     Chicago, IL

2002-2003        Department of Zoology and     M.Phil., Zoology  
                     University Museum of Zoology  
                     University of Cambridge

Cambridge, UK

1998-2002	Department of Earth and Environmental Sciences University of Rochester Rochester, NY	B.S., Geological Sciences (Bio-geology)
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#### GRANTS AND AWARDS

2020	National Science Foundation	NSF Collaborative Research: “Snapshots from the ancient Indo-Pacific: remarkable Eocene fish faunas and their implications for the origin of a modern marine biodiversity hotspot” (\$346,910 to U-M)
2019	Leverhulme Trust	Leverhulme Trust Research Project Grant “How to tuna fish: Drivers of diversity in Pelagiaria (tunas, mackerels and kin)” (co-I with A. Goswami, S. Giles; PI Z. Johanson; £284,912)
2018	College of Literature, Science, and the Arts, University of Michigan	“Fossils in the age of big data: virtual specimens for interactive learning in large-format paleontology courses” (\$12,850)
2018	Andre Dumont Medal	Awarded by Geological Society of Belgium annually to a researcher who “has completed a high-value research work in field of mineral sciences”
2016	Leverhulme Trust	Leverhulme Trust Research Project Grant “Timing the origin of genome doubling in fossil teleosts” (co-I with S. Sanchez, P. Ahlberg; PI R. Benson; £248,425)
2015	Leverhulme Trust	Leverhulme Trust Research Project Grant “The exceptional Early Jurassic fossils of Strawberry Bank, Somerset” (co-I with M. Williams, J. Vinther; PI M. Benton; £240,754)
2013	Palaeontological Association	Hodson Award for notable early contributions to paleontology by a worker under 35 (£1,000)
2012	Synthesys	Travel and accommodation grant for “Unravelling the evolution of pigment and cranial asymmetry in flatfishes (Pleuronectiformes): clues from exceptional material of a new genus of primitive early Eocene pleuronectiform” (total value undisclosed; air travel plus three weeks’

		room and board in Vienna)
2012	Leverhulme Trust	Philip Leverhulme Prize for outstanding contributions to earth, ocean and atmospheric sciences by a researcher under 35 (£70,000)
2012	Natural Environment Research Council	NERC Standard Grant “How do palaeontological data refine our understanding of adaptive radiation and the evolution of modern biodiversity” (with Z. Johanson, T. Near, M. Brazeau; £288,518)
2012	Leverhulme Trust	Leverhulme Trust Research Project Grant: “Reconciling ichthyology and palaeontology with exceptionally preserved fossils” (with Z. Johanson, N. MacLeod, P. Wainwright; £212,663)
2011	Society of Vertebrate Paleontology	Taylor and Francis award for best student paper in <i>Journal of Vertebrate Paleontology</i>
2011	Diamond Light Facility	Two days synchrotron beamline time (with M. D. Brazeau and R. Atwood) (valued at £21,000)
2010	Natural Environmental Research Council	NERC Grant “The evolution of modern marine ecosystems: environmental controls on their structure and function” (£999,222 total [£225,790 to Oxford]; with R. Twitchett, G. Price, C. Trueman)
2010	Diamond Light Facility	Four days synchrotron beamline time (with M. D. Brazeau and R. Atwood) (valued at £42,000)
2010	University of Chicago, Division of Biological Sciences	Best Dissertation Award
2009	John Fell Fund	Project funding for “Capturing form, function and evolution in deep time: a new digital morphology centre for the Department of Earth Sciences” (£47,097)
2009	National Science Foundation	NSF Postdoctoral Research Fellowship in Biology (declined)
2009	The Royal Society and the Natural History Museum	Newton Postdoctoral Fellowship (declined)
2009	Yale Institute for Biospherical Studies	YIBS Donnelley Postdoctoral Fellowship (declined)

2009	National Evolutionary Synthesis Center, Duke University	NESCent Postdoctoral Fellowship (declined)
2008	American Society of Ichthyologists and Herpetologists	Stoye Award (best student talk; general ichthyology)
2008	Society for the Study of Evolution	Hamilton Award (best student talk; second prize)
2006	Paleontological Society	Gould Grant (\$1,000)
2006-2009	Environmental Protection Agency	STAR Graduate Research Fellowship (\$111,000)
2006	University of Chicago Center for Latin American Studies	Field Research Grant (\$800)
2006	Evolving Earth Foundation	Evolving Earth Grant (\$3,000)
2006	University of Chicago Women's Board	Travel Grant (\$500)
2006	Paleontological Society	IPC Travel Grant (\$1,000)
2006	Palaeontological Association	IPC Travel Grant (£500)
2005	American Museum of Natural History	Lerner-Grey Fund for Marine Research (\$2,000)
2005	University of Chicago	Hinds Fund for Research in Evolutionary Biology (\$1,278)
2005	Palaeontological Association	Sylvester-Bradley Award (\$1,500)
2002-2005	National Science Foundation	Graduate Research Fellowship Award Number DGE-0228235 (\$111,500)
2001	National Science Foundation	Research Experiences for Undergraduates Award Number DBI-9820303

#### INVITED SEMINARS AND TALKS

2020	<i>TBD (cancelled due to COVID-19)</i> Comparative Biology Seminar, American Museum of Natural History
2019	<i>Innovation in the fish tree of life: insights from fossils and molecules</i> Geology, University at Buffalo
2019	<i>Innovation in the fish tree of life: insights from fossils and molecules</i> Ecology and Evolutionary Biology, Cornell University

- 2018 *Scales of phenotypic diversification: from living fossils to adaptive radiations*  
Biological Sciences, University of Cincinnati
- 2017 *Scales of phenotypic diversification: from living fossils to adaptive radiations*  
Evolutionary Morphology Seminar Series, University of Chicago
- 2016 *Scales of phenotypic diversification: from living fossils to adaptive radiations*  
Institute of Vertebrate Palaeontology and Palaeoanthropology, Beijing
- 2015 *Beyond the 'Age of Fishes': assembling the other half of vertebrate diversity*  
Ludwig Maximilians University, Munich
- 2015 *Scales of phenotypic diversification: from living fossils to adaptive radiations*  
University of Zurich, evolutionary biology graduate student retreat
- 2015 *Beyond the 'Age of Fishes': assembling the other half of vertebrate diversity*  
University of Zurich, Paleontological Museum and Institute
- 2015 *Beyond the 'Age of Fishes': assembling the other half of vertebrate diversity*  
University of Cambridge, Department of Earth Sciences
- 2014 *Beyond the 'Age of Fishes': assembling modern teleost biodiversity*  
Radiation and Extinction—Investigating Clade Dynamics in Deep Time  
The Linnean Society of London
- 2014 *The origin of modern fish diversity: perspectives from deep time*  
University of Vienna
- 2014 *The biogeography of Madagascar, a Gondwanan island*  
University of Oxford Alumni Weekend Lecture Series
- 2014 *Beyond the 'Age of Fishes': assembling the other half of the vertebrate tree of life*  
Imperial College London, Silwood Park Campus
- 2014 *What Woodward did not see*  
Arthur Smith Woodward 150 Symposium
- 2014 *Beyond the 'Age of Fishes': assembling the other half of the vertebrate tree of life*  
University of Michigan
- 2014 *Beyond the 'Age of Fishes': assembling the other half of the vertebrate tree of life*  
University of Leeds
- 2013 *Darwin's fishes: evolutionary controversies in the fossil record*  
University of Oxford Alumni Weekend Lecture Series
- 2013 *Holzmaden: a Jurassic marine park*  
Abingdon Anglo-German Club

- 2013 *The evolution and diversification of Percomorpha: a deep-time perspective*  
University of Bristol
- 2013 *Jaws: the evolutionary assembly of modern backboned animals*  
Ashmolean Natural History Society
- 2013 *Beyond the 'Age of Fishes': assembling the other half of the vertebrate tree of life*  
University of Oxford (Department of Zoology)
- 2012 *Beyond the 'Age of Fishes': assembling the other half of the vertebrate tree of life*  
University College London
- 2012 *Beyond the 'Age of Fishes': assembling the other half of the vertebrate tree of life*  
University of Sheffield
- 2012 *The coelacanth: living fossil or specialized survivor?*  
Mary Anning lecture series, Lyme Regis
- 2012 *Great transformations: illuminating the origins of modern fish diversity*  
Netherlands Centre for Biodiversity Naturalis
- 2012 *The origin of modern jawed vertebrates: anatomical, palaeontological, and ecological perspectives*  
The Natural History Museum, London
- 2011 *The origin of modern jawed vertebrates: anatomical, palaeontological and ecological perspectives*  
Universität Zürich
- 2011 *Taking a bite out of jawed vertebrate origins*  
Leicester Literary and Philosophical Society
- 2011 *'Whales' during the age of dinosaurs: new insights from old fossils*  
Oxford Geology Group
- 2010 *Patterns of marine vertebrate turnover during the end-Cretaceous event: linking ecology and extinction*  
Department of Geology and Geophysics, Yale University
- 2010 *Extinction, diversification and innovation: assembling the other half of the vertebrate tree of life*  
Department of Geology and Geophysics, Yale University
- 2010 *Incumbency, extinction, and innovation: macroevolutionary patterns from the fossil record of fishes*  
Department of Earth Sciences, University of Bristol
- 2009 *Fins, fingers, and faces: the role of fossils in documenting the assembly of modern bodyplans*  
Department of Zoology, University of Cambridge
- 2009 *Assembling modern biodiversity: palaeontological evidence from an exceptional vertebrate radiation*  
Department of Geography, Earth and Environmental Sciences, University of Birmingham

- 2009 *Assembling modern vertebrate diversity: insights from the fossil record*  
Department of Paleobiology, National Museum of Natural History  
(job interview)
- 2009 *Assembling modern vertebrate diversity: perspectives from deep time*  
Center for Population Biology, University of California at Davis  
(CPB postdoc interview)
- 2009 *Darwin's fishes: Controversies in the mode and tempo of evolution*  
Department of Biological Sciences, Chicago State University
- 2009 *Assembling modern vertebrate diversity: perspectives from deep time*  
Department of Earth Sciences, University of Oxford  
(job interview)
- 2008 *The diversity of fishes: Evolutionary perspectives from deep time*  
Department of Ecology and Evolutionary Biology, Yale University
- 2008 *Salmon, lungfishes, and coys: Assembling modern vertebrate biodiversity*  
Department of Ecology and Evolutionary Biology, University of Michigan
- 2007 *Devonian fish fossils of the Elgin area: old specimens and new analytical approaches*  
Elgin Museum and Moray Society, Elgin, Scotland (with M. I. Coates)
- 2006 *The forgotten diversification event: The evolutionary radiation of the acanthomorph teleosts*  
University of Copenhagen and Mineralogisk Museum, Copenhagen

## CITATION METRICS

Total citations: 5,905  
*h*-index: 39  
*i*10 index: 79  
 (Google Scholar, accessed 3 May, 2021)

## PUBLICATIONS (\*student-led, \*\*undergraduate-led)

- In review J. Hartung, M. Sander, **M. Friedman**, T. Wintrich  
*First record of mawsoniid coelacanth (Actinistia, Sarcopterygii) from the marine Rhaetian (Upper Triassic) of Bonenburg, Germany*  
 Journal of Vertebrate Paleontology
- In revision D. Davesne, **M. Friedman**, A. D. Schmitt, V. Fernandez, G. Carnevale, P. E. Ahlberg, S. Sanchez, R. B. J. Benson  
*Fossilized cell structures identify an ancient origin for the teleost whole-genome duplication*  
 PNAS

- In press S. El-Sayed, **M. Friedman**, T. Anan, M. A. Faris, H. Sallam  
*Diverse marine fish assemblages inhabited the paleotropics during the Paleocene-Eocene thermal maximum*  
Geology
- Early view R. Harrington, **M. Friedman**, M. Miya, T. J. Near, M. A. Campbell  
*Phylogenomic resolution of the monotypic and enigmatic Amarsipus, the Bagless Glassfish (Teleostei, Amarsipidae)*  
Zoologica Scripta
- 2021 K. M. Evans, O. Larouche, S.-J. Watson, S. C. Farina, H. L. Habegger, **M. Friedman**  
*Integration drives rapid phenotypic evolution in flatfishes*  
PNAS 118: e2101330118
- 2021 R. Figueroa, L. C. Weinschütz, **M. Friedman**  
*The oldest Devonian circumpolar ray-finned fish?*  
Biology Letters rsbl.2020.0766
- 2021 M. Castiello, A. Jerve, M. G. Burton, **M. Friedman**, M. Brazeau  
*Endocranial morphology of the petalichthyid placoderm Ellopetalichthys scheii from the Middle Devonian of Arctic Canada, with remarks on the inner ear and neck joint morphology of placoderms*  
Canadian Journal of Earth Sciences 58: 93-104
- 2020 \*A. Capobianco, H. T. Beckett, E. Steurbaut, P. D. Gingerich, G. Carnevale, **M. Friedman**  
*Large-bodied sabre-toothed anchovies reveal unanticipated ecological diversity in early Palaeogene teleosts*  
Royal Society Open Science 192260
- 2020 J. Mondejar-Fernandez, **M. Friedman**, S. Giles  
*Redescription of the cranial skeleton of the Early Devonian (Emsian) sarcopterygian Durialepis edentatus Otto 2007 (Dipnoi: Porolepiformes)*  
Papers in Palaeontology spp2.1315
- 2019 \*A. Capobianco, E. Foreman, **M. Friedman**  
*A Paleocene (Danian) osteoglossid (Teleostei: Osteoglossomorpha) from the Nuussuaq Basin of Greenland, with a brief review of Palaeogene marine bonytongue fishes*  
Papers in Palaeontology spp2.1291
- 2019 \*C. Dobson, S. Giles, Z. Johanson, J. Liston, **M. Friedman**  
*Cranial osteology of the Middle Jurassic (Callovian) Martillichthys renwickae (Neopterygii: Pachycormiformes), with comments on the evolution and ecology and of edentulous pachycormiforms*  
Papers in Palaeontology spp2.1276
- 2019 \*R. Figueroa, **M. Friedman**, V. Gallo  
*Cranial anatomy of Brazilichthys macrognathus from the Permian (Cisuralian) Pedra de Fogo Formation, Parnaíba Basin, Brazil*  
Journal of Vertebrate Paleontology e1639722



- 2019 M. Friedman, H. T. Beckett, K. L. Feilich, M. E. Alfaro, B. C. Faircloth, D. Černý, M. Miya, T. J. Near, R. C. Harrington  
*A phylogenomic framework for pelagiarian fishes (Acanthomorpha: Percomorpha) highlights mosaic radiation in the open ocean*  
Proceedings of the Royal Society B **286**: 20191502
- 2019 D. Davesne, F. J. Meunier, A. D. Schmitt, **M. Friedman**, O. Otero, R. B. J. Benson  
*The phylogenetic origin and evolution of acellular bone in teleost fishes: insights into osteocyte function in bone metabolism*  
Biological Reviews **94**: 1338-1363.
- 2019 **M. Friedman**, S. Pierce, M. Coates, S. Giles  
*Feeding structures in the ray-finned fish Eurynotus crenatus (Actinopterygii: Eurynotiformes): implications for trophic diversification among Carboniferous actinopterygians*  
Earth and Environmental Science Transactions of the Royal Society of Edinburgh **109**: 33-47.
- 2019 \*G. Benevento, R. Benson, **M. Friedman**  
*Patterns of mammalian jaw ecomorphological disparity during the Mesozoic/Cenozoic Transition*  
Proceedings of the Royal Society B **286**: 20190347.
- 2019 \*A. Capobianco, **M. Friedman**  
*Vicariance and dispersal in southern hemisphere freshwater fish clades: a palaeontological perspective*  
Biological Reviews **94**: 662-699
- 2018 J. D. DiBattista, M. E. Alfaro, L. Sorenson, J. H. Choat, J.-P. A. Hobbs, T. H. Sinclair-Taylor, L. A. Rocha, J. Chang, O. J. Luiz, P. F. Cowman, **M. Friedman**, M. L. Berumen  
*Ice ages and butterflyfishes: Phylogenomics elucidates the ecological and evolutionary history of reef fishes in an endemism hotspot*  
Ecology and Evolution **22**: 10989-11008
- 2018 E. Sibert, **M. Friedman**, P. Hull, G. Hunt, R. Norris  
*Two pulses of morphological diversification in Pacific pelagic fishes following the Cretaceous-Palaeogene mass extinction*  
Proceedings of the Royal Society B **285**: 20181194
- 2018 D. Rabosky, J. Chang, P. Title, P. Cowman, L. Sallan, **M. Friedman**, K. Kaschner, C. Garilao, T. Near, M. Alfaro.  
*An inverse latitudinal diversity gradient in speciation rate for marine fishes*  
Nature **559**: 392-395
- 2018 **M. Friedman**, G. Carnevale  
*The Bolca Lagerstätten: shallow marine life in the Eocene*  
Journal of the Geological Society **175**: 569-579
- 2018 D. Davesne, F. J. Meunier, **M. Friedman**, R. B. J. Benson, O. Otero  
*Histology of the endothermic opah (Lampris sp.) suggests a new structure-function relationship*

*in teleost bone*  
Biology Letters **14**:20180270

- 2018 T. Argyriou, S. Giles, **M. Friedman**, C. Romano, I. Kogan, M. Sanchez-Villagra  
*Internal cranial anatomy of Early Triassic species of †Saurichthys (Actinopterygii: †Saurichthyiformes): implications for the phylogenetic placement of †saurichthyiforms*  
BMC Evolutionary Biology **18**: 161
- 2018 \*H. Beckett, S. Giles, Z. Johanson, **M. Friedman**  
*Morphology and phylogenetic relationships of fossil snake mackerels and cutlassfishes (Trichiuroidea) from the Eocene (Ypresian) London Clay Formation*  
Papers in Palaeontology **4**: 577-603
- 2018 \*J. T. Clarke, **M. Friedman**  
*Body-shape diversity in Triassic-Early Cretaceous neopterygian fishes: sustained holostean disparity and predominantly gradual increases in teleost phenotypic variety*  
Paleobiology **44**: 402-434
- 2018 W. Schwarzhans, \*H. Beckett, J. Schein, **M. Friedman**  
*Computed tomography as a tool for linking the skeletal and otolith-based fossil records of teleost fishes*  
Palaeontology **61**: 511-541
- 2018 \*H. Beckett, S. Giles, **M. Friedman**  
*Comparative anatomy of the gill skeleton of fossil Aulopiformes (Teleostei: Eurypterygii)*  
Journal of Systematic Palaeontology **16**: 1221-1245
- 2018 M. Alfaro, B. Faircloth, R. Harrington, L. Sorenson, **M. Friedman**, C. Thacker, T. Near  
*Explosive diversification of marine fishes at the Cretaceous-Paleogene boundary*  
Nature Ecology & Evolution **2**: 688-696
- 2017 J. Lu, S. Giles, **M. Friedman**, M. Zhu  
*A new stem sarcopterygian illuminates patterns of character evolution in early bony fishes*  
Nature Communications **8**: 1932
- 2017 S. Giles, G.-H. Xu, T. Near, **M. Friedman**  
*Early members of a 'living fossil' lineage and the later origin of modern ray-finned fishes*  
Nature **549**: 265-268
- 2017 M. D. Brazeau, **M. Friedman**, A. Jerve, R. C. Atwood  
*A three-dimensional placoderm (stem-group gnathostome) pharyngeal skeleton and its implication for primitive gnathostome pharyngeal architecture*  
Journal of Morphology **278**: 1220-1228
- 2017 T. G. Davies et al. (44 additional authors)  
*Open data and digital morphology*  
Proceedings of the Royal Society B **284**: 1852.
- 2017 J.S. Adolfssen, **M. Friedman**, J. Milàn  
*Review of the Danian vertebrate fauna of southern Scandinavia*  
Bulletin of the Geological Society of Denmark **65**: 1-23.

- 2017 D. Davesne, G. Carnevale & **M. Friedman**.  
*Bajaichthys elegans from the Eocene of Bolca (Italy) and the overlooked morphological diversity of Zeiformes (Teleostei, Acanthomorpha)*  
 Palaeontology **60**: 255-268.
- 2017 \*L. Soul, **M. Friedman**  
*Bias in phylogenetic measurements of extinction and a case study of end-Permian tetrapods*  
 Paleontology **60**: 169-185.
- 2106 **M. Friedman**, S. Giles  
*Actinopterygians: the ray-finned fishes—an explosion of diversity*  
 33 pp in J. A. Clack *et al.* (eds.), *Evolution of the Vertebrate Ear—Evidence from the Fossil Record*, Handbook of Auditory Research **59**: 17-49.
- 2016 \*\*S. Giles, M. Rogers, **M. Friedman**.  
*Bony labyrinth morphology in early neopterygian fishes (Actinopterygii: Neopterygii)*  
 Journal of Morphology
- 2016 \*J. T. Clarke, G. T. Lloyd, **M. Friedman**.  
*Little evidence for enhanced phenotypic evolution in early teleosts relative to their living fossil sister group*  
 Proceedings of the National Academy of Sciences of the USA **113**: 11531-11536.
- 2016 R. Close, Z. Johanson, J. C. Tyler, R. C. Harrington, **M. Friedman**.  
*Mosaicism in a new Eocene pufferfish highlights rapid morphological innovation near the origin of crown tetraodontiforms*  
 Palaeontology **59**: 499-514.
- 2016 G. T. Lloyd, D. Bapst, **M. Friedman**, K. E. Davis  
 Probabilistic divergence time estimation without branch lengths: dating the origin of dinosaurs, avian flight and crown birds  
 Biology Letters **12**: 20160609.
- 2016 J. Lu, S. Giles, **M. Friedman**, J. L. Den Blaauwen, M. Zhu  
*The oldest actinopterygian highlights the cryptic early history of the hyperdiverse ray-finned fishes*  
 Current Biology **26**: 1602-1608.
- 2016 R. C. Harrington, B. C. Faircloth, R. I. Eytan, W. Leo Smith, T. J. Near, M. E. Alfaro, **M. Friedman**  
*Phylogenomic analysis of carangimorph fishes reveals flatfish asymmetry arise in a blink of the evolutionary eye*  
 BMC Evolutionary Biology **16**: 224.
- 2016 V. Fischer, N. Bardet, R. B. J. Benson, M. S. Arkhangelsky, **M. Friedman**  
*Extinction of fish-shaped marine reptiles associated with reduced evolutionary rates and global environmental volatility*  
 Nature Communications **7**: 10825.
- 2016 \*D. Delbarre, D. Davesne, **M. Friedman**  
*Anatomy and relationships of †Aipichthys pretiosus and †Aipichthys nuchalis*

*(Acanthomorpha: Lampridomorpha), early Late Cretaceous relatives of oarfishes and their allies*  
Journal of Systematic Palaeontology **14**: 545-567.

- 2016 \*H. T. Beckett, **M. Friedman**  
*The one that got away from Smith Woodward: cranial anatomy of Micrornatus (Acanthomorpha: Scombridae) revealed using computed tomography*  
Arthur Smith Woodward: His Life and Contribution to Modern Vertebrate Palaeontology (Geological Society of London Special Publication) **430**: 337-353.
- 2016 **M. Friedman**, H. T. Beckett, R. C. Close, Z. Johanson  
*The English Chalk and London Clay: two remarkable British bony fish Lagerstätten*  
Arthur Smith Woodward: His Life and Contribution to Modern Vertebrate Palaeontology **430**: 165-200.
- 2015 S. Giles, L. Darras, G. Clément, A. Blicek, **M. Friedman**  
*An exceptionally preserved Late Devonian actinopterygian provides a new model for primitive cranial anatomy in ray-finned fishes*  
Proceedings of the Royal Society B **282**: 20151485.
- 2015 D. R. Bellwood, C. H. R. Goatley, O. Bellwood, D. J. Delbarre, **M. Friedman**  
The rise of jaw protrusion in spiny-rayed fishes closes the gap on elusive prey  
Current Biology **25**: 2696-2700.
- 2015 \*S. Giles, M.I. Coates, R.J. Garwood, M.D. Brazeau, R. Atwood, Z. Johanson, **M. Friedman**  
*Endoskeletal structure in Cheirolepis (Osteichthyes, Actinopterygii), the earliest ray-finned fish*  
Palaeontology **58**: 849-870.
- 2015 A. Dornburg, **M. Friedman**, T. J. Near  
*Phylogenetic analysis of molecular and morphological data highlights uncertainty in the relationships of fossil and living species of Elopomorpha (Actinopterygii: Teleostei)*  
Molecular Phylogenetics and Evolution **89**: 205-218.
- 2015 \*L. Soul, **M. Friedman**  
*Taxonomy and phylogeny can yield comparable results in macroevolutionary palaeontological analyses*  
Systematic Biology **64**: 608-620.
- 2105 R. Close, **M. Friedman**, G. T. Lloyd, R. Benson  
*Elevated morphological rates and high disparity support a mid-Jurassic adaptive radiation of mammals*  
Current Biology **25**: 2137-2142.
- 2015 M. Brazeau, **M. Friedman**  
*The origin and early phylogenetic history of jawed vertebrates*  
Nature **520**: 490-497.
- 2015 M. J. Benton, P. C. J. Donoghue, R. J. Asher, **M. Friedman**, T. J. Near, J. Vinther  
*Constraints on the timescale of animal evolutionary history*  
Palaeontologia Electronica **18.1.1FC**.
- 2015 \*S. Giles, **M. Friedman** and M. D. Brazeau

- Osteichthyan-like cranial conditions in an Early Devonian stem gnathostome*  
Nature **520**: 82-85.
- 2015 **M. Friedman**  
*The early evolution of ray-finned fishes*  
Palaeontology **58**: 213-228.
- 2014 D. Davesne, **M. Friedman**, C. Gallut, V. Barriol, G. Lecointre, P. Janvier, O. Otero  
*Early fossils illuminate character evolution and interrelationships of Lampridiformes (Teleostei, Acanthomorpha)*  
Zoological Journal of the Linnean Society **172**: 475-498.
- 2014 T. J. Near, A. Dornburg and **M. Friedman**  
*Phylogenetic relationships and timing of diversification in gonorynchiform fishes inferred using nuclear DNA sequences (Teleostei: Ostariophysii)*  
Molecular Phylogenetics and Evolution **80**: 297-307.
- 2014 \*\*F. Jones, J. A. Dunlop, **M. Friedman** and R. J. Garwood  
*Trigonotarbus johnsoni Pocock, 1911 revealed by X-ray computed tomography, with a cladistic analysis of the extinct trigonotarbid arachnids*  
Zoological Journal of the Linnean Society **172**: 49-70.
- 2014 **M. Friedman**, Z. Johanson, R. C. Harrington, T. J. Near, M. R. Graham  
*On fossils, phylogenies, and sequences of evolutionary change*  
Proceedings of the Royal Society B **281**: 20140115.
- 2014 A. Dornburg, J. P. Townsend, **M. Friedman** and T. J. Near  
*Phylogenetic informativeness reconciles ray-finned fish molecular divergence times*  
BMC Evolutionary Biology **14**: 169.
- 2014 \*\*E. Jude, Z. Johanson, A. Kearsley and **M. Friedman**  
*Early evolution of the lungfish pectoral-fin endoskeleton: evidence from the Middle Devonian (Givetian) Pentlandia macroptera*  
Frontiers in Earth Science **2**: 18
- 2014 \*\*M. Parfitt, Z. Johanson, S. Giles and **M. Friedman**  
*A large, anatomically primitive tristichopterid lobe-finned fish (Sarcopterygii: Tetrapodomorpha) from the Late Devonian (Frasnian) Alves Beds, Upper Old Red Sandstone, Moray, Scotland*  
Scottish Journal of Geology **50**: 79-85.
- 2014 \*S. Giles and **M. Friedman**  
*Virtual reconstruction of endocast anatomy in early ray-finned fishes (Osteichthyes: Actinopterygii)*  
Journal of Paleontology **88**: 636-651.
- 2014 S. A. Price, L. Schmitz, C. E. Oufiero, R. I. Eytan, A. Dornburg, W. L. Smith, **M. Friedman**, T. J. Near and P. C. Wainwright  
*Two waves of colonization straddling the K-Pg boundary formed the modern reef fish fauna*  
Proceedings of the Royal Society B **281**: 20140321.
- 2014 M. D. Brazeau and **M. Friedman**

*The characters of Palaeozoic jawed vertebrates*  
Zoological Journal of the Linnean Society **170**: 779-821.

- 2014 T. J. Near, A. Dornburg, M. Tokita, D. Suzuki, M. C. Brandley and **M. Friedman**  
*Boom and bust: ancient and recent diversification in bicbers and ropefish (Polypteridae: Actinopterygii), a relictual lineage of ray-finned fishes*  
Evolution **68**: 1014-1026.
- 2013 **M. Friedman** and M. D. Brazeau  
*News & Views: A jaw-dropping fossil fish*  
Nature **502**: 175-177.
- 2013 **M. Friedman**, B. P. Keck, A. Dornburg, R. I. Eytan, C. H. Martin, C. D. Hulsey, P. C. Wainwright and T. J. Near  
*Molecular and fossil evidence place the origin of cichlid fishes long after Gondwanan rifting*  
Proceedings of the Royal Society B **280**: 20131733.
- 2013 M. Miya, **M. Friedman**, T. P. Satoh, H. Takeshima, T. Sado, W. Iwasaki, Y. Yamanoue, Y. Nakatani, M. Nakatani, K. Mabuchi, J. G. Inoue, J. Y. Poulsen, T. Fukunaga, Y. Sato and M. Nishida.  
*Evolutionary origin of the Scombridae (tunas and mackerels): members of a Paleogene adaptive radiation with 14 other pelagic fish families*  
PLoS ONE **8**: e73535.
- 2013 **M. Friedman**, Z. Johanson, R. C. Harrington, T. J. Near and M. R. Graham  
*An early fossil remora (Echeneoidea) reveals the evolutionary assembly of the adhesion disc*  
Proceedings of the Royal Society B **280**: 20131200.
- 2013 T. J. Near, A. Dornburg, R. I. Eytan, B. P. Keck, W. L. Smith, K. L. Kuhn, J. A. Moore, S. A. Price, F. T. Burbrink, **M. Friedman** and P. C. Wainwright  
*Phylogeny and tempo of diversification in the superradiation of spiny-rayed fishes*  
Proceedings of the National Academy of Sciences of the USA **110**: 12738-12743.
- 2013 P. S. L. Anderson, **M. Friedman** and M. Ruta  
*Late to the table: diversification of tetrapod mandibular mechanics lagged behind the evolution of terrestriality.*  
Integrative and Comparative Biology **53**: 197-208.
- 2013 G. T. Lloyd and **M. Friedman**  
*A survey of palaeontological sampling biases in fishes based on the Phanerozoic record of Great Britain*  
Palaeogeography, Palaeoclimatology, Palaeoecology **372**: 5-17.
- 2013 **M. Friedman**, K. Shimada, M. Everhart, B. S. Grandstaff, K. Irwin and J. D. Stewart.  
*Geographic and stratigraphic distribution of the Late Cretaceous suspension-feeding bony fish Bonnerichthys gladius (Teleostei: Pachycormiformes)*  
Journal of Vertebrate Paleontology **33**: 35-47.
- 2012 P. S. L. Anderson and **M. Friedman**  
*Using cladistic characters to predict functional variety: experiments using early gnathostomes*  
Journal of Vertebrate Paleontology **32**: 1254-1270.

- 2012 T. J. Near, R. I. Eytan, A. Dornburg, K. L. Kuhn, J. A. Moore, M. P. Davis, P. C. Wainwright, **M. Friedman** and W. L. Smith  
*Resolution of ray-finned fish phylogeny and timing of diversification*  
PNAS **109**: 13698-13703.
- 2012 **M. Friedman** and Z. Johanson  
*†Opisthomyzon glaronensis (Wettstein, 1886) (Acanthomorpha: Echeineidae), a junior synonym of †Uropteryx elongatus Agassiz, 1844*  
Journal of Vertebrate Paleontology **32**: 1202-1206.
- 2012 **M. Friedman** and L. C. Sallan  
*500-million years of extinction and recovery: a Phanerozoic survey of large-scale diversity patterns in fishes*  
Palaeontology **55**: 707-742. [invited article]
- 2012 **M. Friedman**  
*Osteology of †Heteronectes chaneti (Acanthomorpha: Pleuronectiformes), an Eocene stem flatfish, with a discussion of flatfish sister-group relationships*  
Journal of Vertebrate Paleontology **32**: 735-756. [cover article]
- 2012 L. C. Sallan and **M. Friedman**  
*Heads or tails: staged diversification in vertebrate evolutionary radiations*  
Proceedings of the Royal Society B **279**: 2025-2032
- 2012 **M. Friedman**  
*Ray-finned fishes (Actinopterygii) from the Maastrichtian, the Netherlands and Belgium*  
Fossils of the Type Maastrichtian, Scripta Geologica Special Issue **8**: 113-142.
- 2012 **M. Friedman**  
*Parallel evolutionary trajectories underlie the origin of giant suspension-feeding whales and bony fishes*  
Proceedings of the Royal Society B **279**: 944-951
- 2011 P. S. L. Anderson, **M. Friedman**, E. J. Rayfield and M. D. Brazeau  
*Initial radiation of jaws demonstrated stability despite faunal and environmental change*  
Nature **476**: 206-209.
- 2011 **M. Friedman** and M. D. Brazeau  
*Sequences, stratigraphy, and scenarios: what can we say about the fossil record of the earliest tetrapods?*  
Proceedings of the Royal Society B **278**: 432-439.
- 2010 **M. Friedman**  
*Postcranial evolution in early lungfishes (Dipnoi: Sarcopterygii): new insights from Soederberghia groenlandica*  
Fossil Fishes and Related Biota: Morphology, Phylogeny and Palaeobiogeography—in Honor of Meemann Chang  
Elliott, D. K., Maisey, J. G., Yu, X. & Miao, D. (eds), pp. 299-324.
- 2010 M. I. Coates and **M. Friedman**  
*Litoptychus bryanti and the characteristics of stem tetrapod neurocrania*

Fossil Fishes and Related Biota: Morphology, Phylogeny and Palaeobiogeography—in Honor of Meemann Chang  
Elliott, D. K., Maisey, J. G., Yu, X. & Miao, D. (eds), pp. 389-416.

- 2010 **M. Friedman**, K. Shimada, L. Martin, J. Liston, M. Everhart, M. Triebold, A. Maltese  
*100-million-year dynasty of giant planktivorous bony fishes in Mesozoic marine ecosystems*  
Science **327**: 990-993. [*Discover* magazine ‘top 100’ discoveries of 2010]
- 2010 **M. Friedman**  
*Explosive diversification of spiny finned teleosts in the aftermath of the end-Cretaceous extinction*  
Proceedings of the Royal Society, Series B **277**: 1675-1683.
- 2010 **M. Friedman** and M. D. Brazeau  
*A reappraisal of the origin and basal radiation of Osteichthyes*  
Journal of Vertebrate Paleontology **30**: 36-56. [Taylor & Francis Award winner]
- 2009 **M. Friedman**  
*Emerging on to a tangled bank*  
Science **324**: 341-342.
- 2009 **M. Friedman**  
*Ecomorphological selectivity among marine teleost fishes during the end-Cretaceous extinction*  
Proceedings of the National Academy of Sciences of the USA **106**: 5218-5223.
- 2009 M. I. Coates, M. Ruta and **M. Friedman**  
*Ever since Owen: changing perspectives on the early evolution of tetrapods*  
Annual Review of Ecology, Evolution & Systematics **39**: 571-592.
- 2008 **M. Friedman**  
*The evolutionary origin of flatfish asymmetry*  
Nature **454**: 209-212.
- 2007 **M. Friedman**  
*Cranial structure in the Devonian lungfish *Soederberghia groenlandica* and its implications for the interrelationships of ‘rhyndodipterids’*  
Transactions of the Royal Society of Edinburgh: Earth Sciences **98**: 178-198.
- 2007 **M. Friedman**  
*The interrelationships of Devonian lungfishes (Sarcopterygii: Dipnoi) as inferred from neurocranial evidence and new data from the genus *Soederberghia* Lehman, 1959*  
Zoological Journal of the Linnean Society **151**: 115-171.
- 2007 **M. Friedman**  
*Styloichthys as the oldest coelacanth: implications for early sarcopterygian interrelationships*  
Journal of Systematic Palaeontology **5**: 289-343.
- 2007 **M. Friedman**, M. I. Coates, and P. Anderson.  
*First discovery of a primitive coelacanth fin fills a major gap in the evolution of paired fins and limbs*  
Evolution & Development **9**: 329-337. [cover article]



- 2007 H. Blom, J. A. Clack, P. E. Ahlberg, and **M. Friedman**  
*Devonian vertebrates from East Greenland: a review of faunal composition and distribution*  
*Geodiversitas* **29**: 119-141.
- 2007 Hurley, I. A., R. Lockridge Mueller, K. A. Dunn, E. J. Schmidt, **M. Friedman**, R. K. Ho, V. E. Prince, Z. Yang, M. G. Thomas, and M. I. Coates  
*A new time-scale for ray-finned fish evolution*  
*Proceedings of the Royal Society, Series B* **274**: 489-498. [cover article]
- 2006 **M. Friedman** and H. Blom  
*A new actinopterygian from the Famennian of East Greenland and the relationships of Devonian ray-finned fishes*  
*Journal of Paleontology* **80**: 1186-1204
- 2006 **M. Friedman** and E. B. Daeschler  
*Late Devonian (Famennian) lungfishes from the Catskill Formation of Pennsylvania, USA*  
*Palaeontology* **49**: 1167-1183.
- 2006 **M. Friedman** and M. I. Coates  
*A newly recognized coelacanth highlights the early morphological diversification of the clade*  
*Proceedings of the Royal Society, Series B* **273**: 245-250.
- 2005 **M. Friedman** and G. D. Johnson  
*A new species of Mene (Perciformes: Menidae) from the Paleocene of South America, with notes on paleoenvironment and a brief review of menid fishes*  
*Journal of Vertebrate Paleontology* **25**: 770-783. [cover article]
- 2005 P. E. Ahlberg, **M. Friedman**, and H. Blom  
*New light on the earliest known tetrapod jaw*  
*Journal of Vertebrate Paleontology* **25**: 720-724.
- 2003 **M. Friedman**, J. A. Tarduno, and D. B. Brinkman  
*Fossil fishes from the high Canadian Arctic: further paleobiological evidence for extreme climatic warmth during the Late Cretaceous (Turonian-Coniacian)*  
*Cretaceous Research* **24**: 615-632.

#### BOOK REVIEWS, POPULAR ARTICLES AND COMMENTS

- 2014 **M. Friedman**  
*The living coelacanth*  
*Discoveries in Modern Science: Exploration, Invention, Technology*  
Trefil, J. (ed.), pp. 621-624.
- 2014 **M. Friedman**  
*Review: Mesozoic Fishes 5—Global Diversity and Evolution*  
*Copeia* **2014**: 411-415.
- 2009 **M. Friedman**  
*A palaeontologist ponders how biodiversity is spread across the vertebrate tree of life*  
*Nature* **462**: 255.

- 2008 **M. Friedman** and M. Brazeau  
*Comment: placoderm muscles and chordate interrelationships*  
Biology Letters **4**: 103.
- 2005 **M. Friedman** and M. I. Coates  
*The last word on a lost world?*  
*The Dinosauria, Second Edition*  
Weishampel *et al.*, eds.  
Trends in Ecology and Evolution **20**: 425-426.
- 2005 M. I. Coates and **M. Friedman**  
*Recent Advances in the Origin and Early Radiation of Vertebrates* Arratia *et al.*, eds.  
The Palaeontological Association Newsletter **58**: 82-85.

#### PEER COVERAGE OF RESEARCH

- 2018 C. Pimiento  
Perspectives: Our shallow-water roots  
Science **362**: 402-403.  
(review of Sallan *et al.* 2018)
- 2018 A. O. Mooers, D. A. Greenburg  
News & Views: Speciation far from the madding crowd  
Nature **559**: 341-342.  
(review of Rabosky *et al.* 2018)
- 2017 M. Coates  
News & Views: Palaeontology: Plenty of fish in the tree  
Nature **549**: 167-169.  
(review of Giles *et al.* 2017)
- 2016 E. Pennisi  
Evolutionary biology: Fossil fishes challenge ‘urban legend’ of evolution  
Science **353**: 1483.  
(review of Clarke *et al.* 2016)
- 2015 L. Ferry  
Functional morphology: ‘point and shoot’ prey capture in fishes  
Current Biology **25**: R982-R984.  
(review of Bellwood *et al.* 2015)
- 2015 M. S. Y. Lee and R. D. Beck  
*Mammalian evolution: a Jurassic spark*  
Current Biology **25**: R759-R761.  
(review of Close *et al.* 2015)
- 2013 Anonymous  
*Early cichlids traversed the world’s oceans*  
Science **341**: 1326.  
(review of Friedman *et al.* 2013)

- 2013 E. Pennisi  
*Eating was tough for early tetrapods*  
Science **339**: 390-391.  
(SICB meeting report on collaborative work with P.S.L. Anderson and M. Ruta)
- 2010 M. Alfaro and F. Santini  
*News & Views: A flourishing of fish forms*  
Nature **464**: 840-841.  
(review of Friedman 2010)
- 2010 L. Cavin  
*Perspectives: On giant filter feeders*  
Science **327**: 968-969.  
(review of Friedman *et al.* 2010)
- 2008 P. Janvier  
*News & Views: Squint of the fossil flatfish*  
Nature **454**: 169-170.  
(review of Friedman 2008)

#### REFEREED MANSUCRIPTS, BOOKS AND GRANT APPLICATIONS

Referee for: Acta Palaeontologica Polonica, Acta Zoologica, Alcheringa, Bollettino della Società Paleontologica Italiana, Canadian Journal of Earth Sciences, Comptes Rendus Palevol, Cretaceous Research, Earth and Environmental Science Transactions of the Royal Society of Edinburgh, Evolution, Evolution & Development, Evolution: Education and Outreach, Fishery Bulletin, Geodiversitas, Geological Magazine, International Journal of Developmental Biology, Journal of Experimental Zoology Series B, Journal of Paleontology, Journal of Systematic Palaeontology, Journal of Vertebrate Paleontology, Methods in Ecology and Evolution, Nature, Nature Communications, Nature Geosciences, Nature Scientific Reports, Naturwissenschaften, New Zealand Journal of Geology and Geophysics, Paläontologische Zeitschrift, Palaeontology, Palaeontologica Electronica, Paleobiology, PLoS ONE, PNAS, Proceedings of the Royal Society Series B, Science, Systematic Biology, Zoological Journal of the Linnean Society

Biology, 8<sup>th</sup> Edition, Campbell *et al.* (chapters 22-23)

Austrian Science Fund, Deutsche Forschungsgemeinschaft, Estonian Research Council, European Research Council, National Geographic Society, National Science Foundation, National Museum of Natural History Science Programs, Natural Environment Research Council, Swiss National Science Foundation

#### POSTDOCTORAL SCHOLARS SUPERVISED/SPONSORED

- 2020-present M. Kolmann (University of Michigan LSA)
- 2019-present J. Berv (Michigan Life Sciences Fellow; co-supervised with D. Rabosky, S. Smith, B. Winger, University of Michigan)

2019-present	C. Peredo (NSF PRFB award to C. Peredo; co-supervised with C. Marshall, Texas A&M)
2017-2020	K. Feilich (University of Michigan LSA; NSF award to K. Feilich; now postdoctoral fellow, University of Chicago)
2016-2019	D. Davesne (Leverhulme; co-supervised with R. Benson; now postdoctoral fellow, Museum für Naturkunde, Berlin)
2015	V. Fischer (Royal Society Newton Fellowship; now faculty, University of Liege)
2013-2015	R. Harrington (NERC; now postdoctoral researcher, Yale University)
	R. Close (Leverhulme; now visiting research fellow, University of Oxford)
2011-2013	G. Lloyd (NERC; now lecturer, University of Leeds)

### THESES SUPERVISED

2019-present	R. Rivero, title TBD (PhD, Department of Earth and Environmental Science, University of Michigan)
	R. Figueroa, title TBD (PhD, Department of Earth and Environmental Science, University of Michigan)
2018-present	J. Andrews, title TBD (PhD, Department of Earth and Environmental Science, University of Michigan)
2016-present	A. Capobianco, “Integration of paleontological and neontological data reveals unexpected evolutionary histories: bonytongue fishes (Teleostei: Osteoglossomorpha) as a case study (PhD, Department of Earth and Environmental Science, University of Michigan)
2016-2019	C. Dobson, “Morphology, systematics, and palaeoecology of pachycormid fishes” (DPhil, Department of Earth Sciences, Oxford; now editor, Oxford University Press)
2015-2019	C. Espinoza Campuzano, “Bird fitness landscape evolution” (DPhil, Department of Earth Sciences, Oxford)
2015-2018	H. Beckett, “Pelagia (Teleostei: Acanthomorpha) as a non-analogue adaptive radiation” (DPhil, Department of Earth Sciences, Oxford; now teacher, the King’s High School)
	G. Benevento, “How did mammals evolve into their ecological niches through time? Quantitative tests of classic macroevolutionary hypotheses” (DPhil, Department of Earth Sciences, Oxford; now research assistant, University of Birmingham)

- 2014-2015 A. Tims, “Extinction selectivity during the early evolution of vertebrates” (MESc, Department of Earth Sciences, Oxford; now PhD student, Macquarie University)
- 2013-2017 D. Delbarre, “The interrelationships of early spiny-rayed fishes”, (DPhil, Department of Earth Sciences, Oxford; now data wrangler)
- 2013-2014 H. Beckett, “Evolution of the Aulopiformes (lizardfishes and kin): new insights from the London Clay and English Chalk”, (MESc, Department of Earth Sciences, Oxford)
- 2012-2013 S. Cook, “The halecomorph fish *Lophiostomus* from the English Chalk”, (MESc, Department of Earth Sciences, Oxford)
- P. Russell, “Body-size evolution in early tetrapods: pattern and process”, (MESc, Department of Earth Sciences, Oxford; co-supervised with R. Benson; now PhD student, University of Bath).
- F. Walker, “Assessing bias in the record of British fossil tetrapods”, (MESc, Department of Earth Sciences, Oxford; co-supervised with G. Lloyd; now PhD student, University of Bristol).
- 2011-2015 S. Giles, “How to build a bony vertebrate in evolutionary time” (DPhil, Department of Earth Sciences Oxford; now faculty, University of Birmingham).
- L. Soul, “A tree grows in the fossil record: how does phylogeny impact interpretations of extinction in deep time?”(DPhil, Department of Earth Sciences Oxford; now ETE Postdoctoral Fellow, Smithsonian).
- 2011-2012 E. Jude, “Using exceptionally preserved fossil material to unravel the evolutionary transformation of fish fins into tetrapod limbs” (MESc, Department of Earth Sciences, Oxford).
- M. Parfitt, “Reconstructing the jaw of a tetrapodomorph fish from the Late Devonian of Scotland using computed tomography” (MESc, Department of Earth Sciences, Oxford).
- M. Wooley, “The mode and tempo of evolutionary change in living fossils” (MESc, Department of Earth Sciences, Oxford).
- 2010-2014 J. Clarke, “Evolutionary patterns underlying extreme contrasts in richness and disparity within the vertebrate tree of life” (DPhil, Department of Earth Sciences Oxford; now postdoctoral researcher, University of Tartu).
- 2010-2011 S. Woodward-Vukcevic, “Building modern vertebrate diversity: new fossil data from a classic locality” (MESc, Department of Earth Sciences, Oxford).

#### THESES EXAMINED

- 2021 M. Bazzi, “100 million years of shark macroevolution: A morphometric dive into tooth shape diversity” (PhD, Department of Organismal Biology, Evolution and Developmental Biology, University of Uppsala; opponent)

- 2020 L. B. Bean, “The morphological revisions of freshwater fish from Late Jurassic-Early Cretaceous sites in Australia and other Gondwanan continents leads to a new hypotheses of phylogenetic hypotheses of relationships among stem teleosts” (PhD, Research School of Earth Sciences, Australian National University)
- 2018 B. King, “The early evolution of jawed vertebrates (gnathostomes), with a special focus on sensory systems and the application of Bayesian phylogenetic methods” (PhD, College of Science and Engineering, Flinders University)
- 2015 R. Hoekzema, “Mathematical studies of morphology in early life palaeobiology” (DPhil, Department of Earth Sciences, Oxford; internal examiner)
- D. Davesne, “La phylogénie des téléostéens acanthomorphes : approches paléontologique et moléculaire” (PhD, Museum national d’Histoire naturelle, jury member)
- 2012 L. Battison, “Exceptional preservation of cells in phosphate and the early evolution of the biosphere” (DPhil, Department of Earth Sciences, Oxford; internal examiner).
- L. Darras, “The evolution and macroecological consequences of grazing and shell-crushing in fishes” (PhD, Department of Geology, University of Leicester; external examiner).
- A. Al-Sulwadi, “A southern hemisphere record of the Toarcian oceanic anoxic event from the Neuquén Basin, Argentina” (DPhil, Department of Earth Sciences, Oxford; internal examiner).
- E. Barrow, “Systematics and functional anatomy of fossil and extant Hyracoidea” (DPhil, Department of Earth Sciences, Oxford; internal examiner).
- 2011 A. Liu, “Understanding the Ediacaran assemblages of Avalonia: a palaeoenvironmental, taphonomic and ontogenetic study” (DPhil, Department of Earth Sciences, Oxford; internal examiner).
- 2010 F. Li, “Prebiotic evolution of amino acids and peptides and implications for origins of biological homochirality” (DPhil, Department of Earth Sciences, Oxford; internal examiner).
- H. M. Sallam, “Late Eocene Rodents from the Fauyum Depression, Egypt: Taxonomic, Phylogenetic, and Biogeographic Implications” (DPhil, Department of Earth Sciences, Oxford; internal examiner).

### TEACHING EXPERIENCE

- |              |  |   |
|--------------|--|---|
| 2017-present | Department of Earth and Environmental Sciences<br>University of Michigan<br>Ann Arbor, USA | Course co-instructor, EARTH 444:<br>Analytical Paleobiology |
| 2016-present | Department of Earth and  | Course instructor, EARTH 103: Dinosaurs                     |

	Environmental Science University of Michigan Ann Arbor, USA	and Other Failures
2016-present	Department of Earth and Environmental Sciences University of Michigan Ann Arbor, USA	Course co-instructor, EARTH 437: Evolution of Vertebrates
2015-2016	Department of Earth Sciences University of Oxford Oxford, UK	Course developer and instructor: Building a Habitable Planet (1 <sup>st</sup> year course)
2012-2016	Department of Earth Sciences University of Oxford Oxford, UK	Course developer and instructor: Vertebrate Palaeobiology (3 <sup>rd</sup> year course)
2011-2016	Department of Earth Sciences University of Oxford Oxford, UK	Course developer and instructor: Evolution (2 <sup>nd</sup> year course)  Course co-developer and instructor: Fossil Records (2 <sup>nd</sup> year course)
2011	Evolutionary Biology Centre University of Uppsala Uppsala, Sweden	Guest lecturer: Introduction to Paleobiology (estimating evolutionary timescales)
2010	Department of Ecology and Evolutionary Biology Yale University New Haven, CT	Guest lecturer: Ichthyology (the origin of bony fishes)
2010-2016	Department of Zoology University of Cambridge Cambridge, UK	Guest lecturer: Part II Zoology (third year course: origin of bony fishes; evolution of ray-finned and lobe-finned fishes)
2010-2016	Department of Earth Sciences University of Oxford Oxford, UK	Course co-developer and instructor: Controversies in Palaeobiology (4 <sup>th</sup> year course)  Course and instructor: Quantitative Reasoning in the Earth Sciences (2 <sup>nd</sup> year course)
2008	Physical Sciences Division Department of Geophysical Sciences University of Chicago Chicago, IL	Guest lecturer: Environmental History of the Earth (non-majors undergraduate course)
2007	Biological Sciences Division	Guest lecturer: Key Issues in Early

	University of Chicago Chicago, IL	Vertebrate Evolution (graduate course)
2004-2008	Biological Sciences Division University of Chicago Chicago, IL	Teaching assistant/lab supervisor: Chordate Evolutionary Biology (undergraduate course)
2005	Biological Sciences Division University of Chicago Chicago, IL	Teaching assistant/lab supervisor: Systematic Biology (undergraduate/graduate course)
2002	Department of Earth and Environmental Sciences University of Rochester Rochester, NY	Research assistant
2001-2002	Department of Earth and Environmental Sciences University of Rochester Rochester, NY	Teaching assistant: Evolution of the Earth (undergraduate course)
2001	Department of Biology University of Rochester Rochester, NY	Teaching assistant: Animal Behavior (undergraduate course)
2000	Department of Biology University of Rochester Rochester, NY	Teaching assistant: Genetics (undergraduate course)
2000	Department of Chemistry University of Rochester Rochester, NY	Workshop leader: Organic Chemistry I (undergraduate course)

#### **ACADEMIC AND DEPARTMENTAL SERVICE**

2020-present	Nominations committee, Paleontological Society
2020-present	<i>Paleobiology</i> , associate editor
2020	Tenure review panel chair, Department of Earth and Environmental Sciences
2018-2020	Graduate admissions committee, Department of Earth and Environmental Sciences
2017-2018	DEI committee, Department of Earth and Environmental Sciences, University of Michigan
2016-present	Student awards committee, Department of Earth and Environmental Sciences, University of Michigan
2016-present	<i>Systematic Biology</i> , associate editor



2015-2018 *Evolution*, associate editor  
2013-2018 *PLoS ONE*, subject editor  
2013-2016 Undergraduate Advisor, Department of Earth Sciences, University of Oxford  
2012-2016 Natural Environment Research Council, Peer Review College  
2011-2014 *Journal of Vertebrate Paleontology*, subject editor  
2011-2014 Palaeontographical Society, council member  
2010-2012 Undergraduate admissions coordinator, Department of Earth Sciences, University of Oxford

#### **ORGANIZED SYMPOSIA AND CONFERENCES**

2015 *Comparative approaches to the origin of biodiversity* (co-organizer C. Hughes)  
Systematics Association Biennial Meeting, Oxford  
2015 *Rooted in deep time* (co-organizers R. Benson and P. Smith)  
Systematics Association Biennial Meeting, Oxford  
2012 60<sup>th</sup> Annual Symposium of Vertebrate Palaeontology and Comparative Anatomy,  
University of Oxford; principal convener and organizer  
2008 *The Cleveland Shale and beyond: early vertebrate form, function and phylogeny* (co-organizers: M. Coates and P. Anderson)  
Society of Vertebrate Paleontology, Annual Meeting, Cleveland, OH