

Carlos Mauricio Peredo, Ph.D.

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Assistant Professor

Department of Biological Sciences

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EDUCATION

Ph.D., Environmental Science and Policy, George Mason University, Fairfax, VA, **2019**

M.S., Environmental Science and Policy, George Mason University, Fairfax, VA, **2015**

B.S., Biology, Seton Hill University, Greensburg, PA, **2012**

PROFESSIONAL EXPERIENCE

- 2022–present Assistant Professor of Biological Sciences
Miami University, Oxford, OH
- 2019–2022 Assistant Professor & Society of Fellows Postdoctoral Scholar
University of Michigan, Ann Arbor, MI
- 2019–2022 NSF Postdoctoral Fellow in Biology
University of Michigan, Ann Arbor, MI
Texas A&M Galveston, Galveston, TX
- 2018–2019 Predoctoral Fellow: Paleobiology
Smithsonian Institution, Washington D.C.

PEER REVIEWED PUBLICATIONS (19)

* = undergraduate student

19. Medrano, R.A., V.H. Cruz-Escalona, J.A. Payán Alcacio, L.R. de Oliveira, A.O. Vargas, C.J. Hernández-Camacho, and **C.M. Peredo**. 2023. Skull shape and size changes in different populations of *Zalophus californianus* in Mexico. *Journal of Mammalian Evolution*.
18. Nieto-Miranda, J. Jesús, R. Aguilar-Medrano, C.J. Hernández-Camacho, **C.M. Peredo**, V.H. Cruz-Escalona. 2023. Mechanical properties of the California sea lion (*Zalophus californianus*) and northern elephant seal (*Mirounga angustirostris*) lower jaws explain trophic plasticity. *The Anatomical Record* 306: 10, 2598–2609.
17. **Peredo, C.M.**, N.D. Pyenson, and M.D. Uhen. 2022. Lateral palatal foramina do not indicate baleen in fossil whales. *Scientific Reports* 12, 11448.

16. **Peredo, C.M.**, D.N. Ingle, and C.D. Marshall. 2022. Puncture performance tests reveal distinct feeding modes in pinniped teeth. *Journal of Experimental Biology*, 225: 11, jeb244296.
15. **Peredo, C.M.**, and N.D. Pyenson. 2021. Morphological variation of the relictual alveolar structures in the mandibles of baleen whales. *PeerJ* 9, e11890.
14. Groves*, S.L., **C.M. Peredo**, and N.D. Pyenson. 2021. What are the limits to whale ear bones size? Non-isometric scaling of the cetacean bulla. *PeerJ* 9, e10882.
13. Uhen, M.D. and **C.M. Peredo**. 2021. The first possible remingtonocetid from North America. *Acta Palaeontologica Polonica* 66:1, 77–83.
12. Tate-Jones, M.K., **C.M. Peredo**, C.D. Marshall, and S.S.B. Hopkins. 2020. The dawn of Desmatophocidae: a new species of basal desmatophocid seal (Mammalia, Carnivora) from the Miocene of Oregon, USA. *Journal of Vertebrate Paleontology* 40:4, 1–12.
11. Leslie, M.S., **C.M. Peredo**, and N.D. Pyenson. 2019. *Norrisonima miocaena*, a new generic name and redescription of a stem balaenopteroid mysticete (Mammalia, Cetacea) from the Miocene of California. *PeerJ* 7, e7629.
10. Shipp*, B.K., **C.M. Peredo**, and N.D. Pyenson. 2019. *Borealodon osedax*, a new stem mysticete (Mammalia, Cetacea) from the Oligocene of Washington State and its implications for fossil whale-fall communities. *Royal Society Open Science* 6, 182168.
9. **Peredo, C.M.**, N.D. Pyenson, C.D. Marshall and M.D. Uhen. 2018. Tooth loss precedes the origin of filter feeding in whales. *Current Biology* 28, 3992–4000.
8. **Peredo, C.M.**, J.S. Peredo, and N.D. Pyenson. 2018. Convergence on dental simplification in the evolution of whales. *Paleobiology* 44:3, 434–443.
7. **Peredo, C.M.**, and N.D. Pyenson. 2018. *Salishicetus meadi*, a new aetiocetid from the late Oligocene of Washington State and implications for feeding transitions in early mysticete evolution. *Royal Society Open Science* 5, 172336.
6. **Peredo, C.M.**, M.D. Uhen, and M.D. Nelson. 2018. A new kentriodontid (Cetacea: Odontoceti) from the early Miocene Astoria Formation and a revision of the stem delphinidan family Kentriodontidae. *Journal of Vertebrate Paleontology* 38:2, e1411357.
5. Dewaele, L., **C. M. Peredo**, P. Meyvisch, and S. Louwye. 2018. Diversity of late Neogene Monachinae (Carnivora, Phocidae) from the North Atlantic, with the description of two new species. *Royal Society Open Science* 5, 172437.
4. **Peredo, C.M.**, N.D. Pyenson, M.D. Uhen, and C.D. Marshall. 2017. Alveoli, teeth, and tooth loss: Understanding the homology of internal mandibular structures in mysticete cetaceans. *PLoS ONE* 12:5, 1–26.

3. **Peredo, C.M.**, N.D. Pyenson, and A.T. Boersma. 2017. Decoupling tooth loss from the evolution of baleen in whales. *Frontiers in Marine Science* 4:67, 1–11.
2. **Peredo, C.M.**, and M.D. Uhen. 2016. A new basal chaeomysticete (Mammalia: Cetacea) from the Late Oligocene Pysht Formation of Washington, USA. *Papers in Palaeontology* 2:4, 533–554.
1. **Peredo, C.M.**, and M.D. Uhen. 2016. Exploration of marine mammal paleogeography in the Northern Hemisphere over the Cenozoic using beta diversity. *Palaeogeography, Palaeoclimatology, Palaeoecology* 449:227–235.

CONFERENCE ABSTRACTS (19)

19. Brand, N.A., M.D. Nelson, **C.M. Peredo**, and M.D. Uhen. 2023. Sharing morphospace: using elliptic fourier analysis to (not) identify heterodont cetacean cheek teeth In *Society of Vertebrate Paleontology*, Cincinnati, OH.
18. **Peredo, C.M.**, and M.R. Peredo. 2023. Telling stories and playing games: a narrative-based approach to science education In *AURCO Annual Conference*, Cincinnati, OH.
17. **Peredo, C.M.**, 2022. Are pinnipeds homodont? Shape analyses demonstrate a diversity of pinniped tooth shapes and suggest complex feeding ecologies In *Society of Vertebrate Paleontology*, Toronto, Canada.
16. **Peredo, C.M.**, 2021. Are pinnipeds homodont? Shape analyses demonstrate a diversity of pinniped tooth shapes and suggest complex feeding ecologies In *Secondary Adaptations by Tetrapods to Life in Water*, Online.
15. **Peredo, C.M.**, and N.D. Pyenson. 2020. Palatal foramina in stem whales and artiodactyls obfuscate their potential for inferring baleen in stem mysticetes In *Society of Vertebrate Paleontology*, Online.
14. **Peredo, C.M.**, and C.D. Marshall. 2020. Orientation of the orbit predicts feeding ecology in marine mammals In *Society for Integrative and Comparative Biology*, Austin, TX.
13. C.D. Marshall, L. Riley, and **C.M. Peredo**. 2020. Implications for the antiquity of raptorial biting in pinnipedimorphs: exploring mandible morphology in the *Callorhinus* lineage In *Society for Integrative and Comparative Biology*, Austin, TX.
12. Nelson, M.D., **C.M. Peredo**, and M.D. Uhen. 2019. First known mysticete from the Fairhaven Member of the Calvert Formation In *Society of Vertebrate Paleontology*, Brisbane, Queensland.
11. **Peredo, C.M.**, N.D. Pyenson, C.D. Marshall and M.D. Uhen. 2018. From teeth to baleen: tooth loss precedes the origin of baleen in whales In *Society of Vertebrate Paleontology*, Albuquerque, NM.
10. **Peredo, C.M.**, M.D. Uhen, N.D. Pyenson, and C.D. Marshall. 2017. Alveoli without teeth? Morphology of the mysticete “alveolar gutter” and its implications for the evolution of tooth loss In *Society of Marine Mammalogy*, Halifax, Nova Scotia.
9. **Peredo, C.M.**, M.D. Uhen, and M.D. Nelson. 2017. A new kentriodontid (Odontoceti) from the Pacific Northwest sheds new light on the temporal and geographic range of the enigmatic dolphin family: Kentriodontidae In *Society of Vertebrate Paleontology*, Calgary, Alberta.

8. **Peredo, C.M.**, M.D. Uhen, and M.D. Nelson. 2017. A new kentriodontid (Odontoceti) from the Pacific Northwest sheds new light on the temporal and geographic range of the enigmatic dolphin family: Kentriodontidae In *Geobiology Symposium XXV*, Washington DC.
7. **Peredo, C.M.**, N.D. Pyenson, and M.D. Uhen. 2016. Morphological consequences of tooth loss: A comparison of the course of the mandibular canal in mysticete cetaceans using 3D models: In *Society of Vertebrate Paleontology*, Salt Lake City, UT.
6. **Peredo, C.M.**, N.D. Pyenson, and M.D. Uhen. 2016. Morphological consequences of tooth loss: A comparison of the course of the mandibular canal in mysticete cetaceans using 3D models: In *International Congress of Vertebrate Morphology*, Washington DC.
5. **Peredo, C.M.**, N.D. Pyenson, and M.D. Uhen. 2015. Morphological consequences of tooth loss: A comparison of the course of the mandibular canal in mysticete cetaceans using 3D models of the internal anatomy of the mandible: In *Geobiology Symposium XXIV*, Philadelphia, PA.
4. **Peredo, C.M.**, and M.D. Uhen. 2015. Identifying and evaluating the role of paleogeography of marine mammal dispersal across ocean regions using beta diversity metrics: In *Society of Vertebrate Paleontology*, Dallas, TX.
3. **Peredo, C.M.**, and M.D. Uhen. 2015. Identifying and evaluating the role of paleogeography of marine mammal dispersal across ocean regions using beta diversity metrics: In *Ecological Society of America*, Baltimore, MD.
2. **Peredo, C.M.**, and M.D. Uhen. 2015. A statistical analysis of marine mammal dispersal routes across major ocean regions using beta diversity at the generic level: In *Geobiology Symposium XXIII*, Philadelphia, PA.
1. **Peredo, C.M.**, and M.D. Uhen. 2014. A statistical analysis of similarity in generic diversity across major ocean regions: In *Secondary Adaptations of Tetrapods to Life in the Water*, George Mason University.

INVITED TALKS AND SEMINARS (9)

9. Mar **2022**. “Mammals in the water: how a marine environment drives the evolution of mammalian feeding” at *University of North Carolina, Wilmington*, Department of Marine Biology Seminar Series.
8. Mar **2022**. “Mammals in the water: how a marine environment drives the evolution of mammalian feeding” at *Miami University*, Department of Biology Seminar Series.
7. Feb **2022**. “Bones and Cartilage” at *Seton Hill University*, Department of Biology Seminar Series.

6. Mar **2021**. “Feeding in the water: how do marine environments alter the mammalian dentition?” at *Calvin College*, Biology Department Seminar Series.
5. Nov **2020**. “Mammals in the water: how a marine environment drives the evolution of mammalian feeding.” at *University of Chicago*, Evolutionary Morphology Seminar Series.
4. Oct **2020**. “The origin of baleen in whales: inferring soft tissue from bony structures.” at *University of Michigan*, Society of Fellows Seminar Series.
3. Mar **2020**. “The origin of baleen in whales: inferring soft tissue from bony structures.” at *University of Michigan*, Department of Ecology and Evolutionary Biology.
2. Feb **2019**. “Decoupling tooth loss from the origin of baleen in whales.” at *University of Michigan*, Department of Earth and Environmental Science.
1. Feb **2019**. “Decoupling tooth loss from the origin of baleen in whales.” at *University of California Berkeley*, Department of Integrative Biology.

FUNDED GRANTS AND AWARDS (\$435,036)

External Research Fellowships

2019–23	University of Michigan Society of Fellows Postdoctoral Fellowship	\$130,500
2021–22	NSF PRFB Award #1906181 Competitive Extension	\$69,000
2019–21	NSF Postdoctoral Research Fellowship in Biology (Award #1906181)	\$138,000
2018–19	Smithsonian Institution Predoctoral Fellowship	\$38,200
2018	Provost Summer Research Fellowship	\$7,000
2017–18	Smithsonian Marine Mammal Research Fellowship (cont.)	\$5,000
2016–17	Smithsonian Marine Mammal Research Fellowship (cont.)	\$5,000
2016	Smithsonian Marine Mammal Research Fellowship	\$5,000
2015–16	Smithsonian Education Public Outreach Project	\$2,000
2015	Smithsonian Graduate Student Research Fellowship	\$7,000
2014	Encyclopedia of Life—Service to the Smithsonian Institution	\$5,000
2009	Hispanic Scholarship Fund—Research at Smithsonian Institution	\$7,000
2008	Hispanic Scholarship Fund—Research at Smithsonian Institution	\$7,000
TOTAL		\$425,700

Honors, Grants, and Travel Awards

2019	Dean’s Graduate Award for Excellence	\$1,000
2019	ESP Exceptional PhD Dissertation Award	\$100
2017	Dean’s Graduate Award for Excellence	\$1,000
2017	Collections Study Grant—Burke Museum of Natural History	\$2,000
2016	Collections Study Grant—Burke Museum of Natural History	\$2,000
2015	OSCAR Student Research Grant—George Mason University	\$1,236

2015	Collections Study Grant—Burke Museum of Natural History	\$2,000
	TOTAL	\$9,336

Other Awards

AY 2022	Seton Hill Distinguished Alumnus Leadership Award
AY 2018–19	Recognition from the provost for excellent teaching
AY 2017–18	Recognition from the provost for excellent teaching
AY 2016–17	Recognition from the provost for excellent teaching
AY 2015–16	Recognition from the provost for excellent teaching
AY 2014–15	Recognition from the provost for excellent teaching
SP 2014	Recognition from the provost for excellent teaching

NEW TAXA NAMED (9)

9. *Eodesmus condoni*—[Tate-Jones et. al. 2020.](#)
8. *Norrisanima miocaena*—[Leslie et. al. 2019.](#)
7. *Borealodon osedax*—[Shipps et. al. 2019.](#)
6. *Maiabalaena nesbittae*—[Peredo et. al. 2018.](#)
5. *Salishicetus meadi*—[Peredo and Pyenson 2018.](#)
4. *Wimahl chinookensis*—[Peredo et. al. 2018.](#)
3. *Virginiaphoca magurai*—[Dewaele et. al. 2018.](#)
2. *Auroraphoca atlantica*—[Dewaele et. al. 2018.](#)
1. *Sitsqwayk cornishorum*—[Peredo and Uhen 2016.](#)

TEACHING AND MENTORING

Courses Taught

Greatest Hits in Vertebrate Evolution:

University of Michigan Math & Science Scholars Program (grades 9–12)

Vertebrate Paleontology Lab: GEOL 334, GEOL 534, BIOL 334

Physical Geology Lab: GEOL 101

Historical Geology Lab: GEOL 102 (traditional and “flipped classroom” sessions)

Students Mentored

2019–2020: Bri Groves—Allometric growth in whale ear bones

Published Groves et al. 2021 in *PeerJ*.

2017: Brenlee K. Shipps—Evolution of toothed baleen whales internship

Published Shipps et al. 2019 in *Royal Society Open Science*

Presented abstract for Society of Vertebrate Paleontology annual meeting 2018
2016: Brenlee K. Shipps—Fossil baleen whale depositional environments
Dean's Award for Undergraduate Research: Earth Science, 3rd Place
2016: Cristina Robinson—Paleontology of marine mammals intern
2015: Jaimie Porta—Student teacher completing earth science lab practicum
2014: Laura Hauser—Student teacher completing earth science lab practicum

SERVICE TO INSTITUTIONS

Service to the University of Michigan

- Served on the search committee for incoming Society of Fellows (2019–2020)
- Translated exhibit and educational materials of the University of Michigan Museum of Paleontology into Spanish
- Serve as a scientific contributor and content reviewer for virtual reality museum exhibits on whale evolution

Service to George Mason University

Curriculum design for the following Lab Courses:

- Vertebrate Paleontology
- Historical Geology

Assistance in design and execution of a “flipped classroom” for the following Lab Courses:

- Historical Geology

Served as a judge for Undergraduate Research competition

Service to the Smithsonian Museum of Natural History

- Creation of new storage jackets for several holotype specimens
- Creation of 3D datasets for over 40 specimens, including current and future holotypes
- Creation of educational materials for teaching how diet is inferred from fossil teeth for volunteers to engage with the public in exhibit spaces

SERVICE TO THE FIELD

Journals Reviewed For (10)

PLOS One

Journal of Vertebrate Paleontology

PeerJ

Proceedings of the Royal Society B: Biological Sciences

Smithsonian Contributions to Paleontology

Proceedings of the Royal Society: Open Science

Systematic Biology

Geological Society of America Book Series

Biological Journal of the Linnean Society

Journal of South American Earth Sciences

Geobios

Current Biology

The Anatomical Record

Translations Available in Polyglot Paleontologist

Original citation: Buscalioni, A. D. & J. L. Sanz. 1984. Los arcosaurios (Reptilia) del Jurásico Superior – Cretácico Inferior de Galve (Teruel, España). Teruel 71:9–30.

Translated by Carlos Peredo, Seton Hill University, 2011.

Available on [Polyglot Paleontologist](#)

Original citation: Tapia, A. 1918. Una mandibula de Dinosaurio procedente de Patagonia. Physis 4:369– 370.

Translated by Carlos Peredo, Seton Hill University, October 2011.

Available on [Polyglot Paleontologist](#)

Encyclopedia of Life Article Entries

[Champsosaurus sp.](#)

[Pezosiren portelli](#)

[Polyglyphanodon sternbergi](#)

[Aulacephalodon sp.](#)

[Didelphodon vorax](#)

[Edaphosaurus boanerges](#)

[Koskinodon perfectus](#)

[Mesohippus bairdi](#)

[Platygonus pearcei](#)

[Miniochoerus gracilis](#)

[Conoryctes comma](#)

[Wiwaxia corrugata](#)

[Squalodon calvertensis](#)

[Hesperocyon gregarius](#)

[Hyptertragalus calcaratus](#)

[Stangerochampsa mccabei](#)

[Paleosyops paludosus](#)

[Stenomylus hitchcocki](#)

[Trigonias osborni](#)

[Dicynodon leoniceps](#)

[Metaxytherium floridanum](#)

[Equus simplicidens](#)

[Glyptotherium arizonae](#)

[Diatryma gigantea](#)

[Orohippus pumilus](#)

[Smilodon fatalis](#)