

Curriculum Vitae
ABAGAEI ROSEMARY WEST, Ph.D.

Lecturer
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Research and Teaching Motivations

- Craniodental morphology of extinct and extant herbivorous mammals.
- Biogeography of Gondwanan landmasses from Cretaceous through Paleogene.
- Inquiry-driven learning, responsive classroom, written and illustrated science communication in museums and other public settings.

Professional Appointments

Lecturer, Department of Biological Sciences, University of Pittsburgh. July 2018 – **Present**.
Research Associate, Section of Vertebrate Paleontology, Carnegie Museum of Natural History,
Pittsburgh, PA. December 2018 – **Present**.
Rea Postdoctoral Fellow, Section of Vertebrate Paleontology & Section of Mammals, Carnegie Museum
of Natural History, Pittsburgh, PA. December 2016 – December 2018.
Adjunct Instructor, Bank Street College of Education, New York, NY. June 2014 – August 2014.

Education

Ph.D. Vertebrate Paleontology, Department of Earth and Environmental Sciences, Columbia University,
New York, NY. 2017.
M.Phil. Earth and Environmental Sciences, Columbia University, New York, NY. 2014.
M.A. Earth and Environmental Sciences, Columbia University, New York, NY. 2013.
BA Zoology, University of Cambridge, Cambridge, England. 2010.

Teaching

Department of Biological Sciences, University of Pittsburgh.

BIOSC 0160 Foundations of Biology 2. This course introduces the basic principles of genetics, evolution, and ecology. Emphasis is placed on the experimental and observational basis for our knowledge of these subjects.	Spring 2019, enrollment: 256. Summer 2019, enrollment: 27 (6-week course). Spring 2020.
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BIOSC 1200 Vertebrate Morphology Lecture. A study of the gross anatomy, histology, development, and evolution of the vertebrates.	Fall 2018, enrollment: 92. Fall 2019, enrollment: 90.
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BIOSC 1205 Vertebrate Morphology Lab. Study of vertebrate gross anatomy using various tools, including dissection of specimens, 3D models from CT scans, and histology.	Fall 2019, enrollment: 33.
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BIOSC 1010 Communication in the Biological Sciences. Advanced writing seminar for biology and biological sciences majors.	Spring 2019, enrollment: 15.
BIOSC 1690 Experience in Undergraduate Teaching.	Spring 2019, enrollment: 12.
BIOSC 1903 Undergraduate Research. Co-sponsor.	Fall 2019, enrollment: 3.
BIOSC 1901 Undergraduate Research. Co-sponsor.	Fall 2019, enrollment: 1.
BIOSC 1130 Evolution. This course is an introduction to biological evolution.	Spring 2020.

University of Pittsburgh Summer Institute on Scientific Teaching, July 23 – 25, 2018.

Examine principles of how people learn and apply them to the teaching. Identify assessment strategies to strengthen connections between student learning and course assignments. Identify and refine components of classes that can be made more inclusive.

Adjunct Instructor, Bank Street College of Education, New York, NY.

Kerlin Science Institute. Summer 2014. Designed and taught a course for Kerlin Science Institute, for K-12 science teachers. Presented course outcomes at a professional meeting (West and Ingber, 2016).

Teaching Assistant, Department of Earth and Environmental Sciences, Columbia University, New York, NY. Planet Earth. Spring and Fall 2012. Earth: Origin, Evolution, Processes, Future. 2013. Dinosaur Paleontology. 2014.

Teaching Assistant, Richard Gilder Graduate School, American Museum of Natural History, New York, NY. Vertebrate Paleontology. Fall 2015. Advanced graduate level course.

Publications

Peer-Reviewed Papers

- West, AR**, CR Torres, JA Clarke, JA Case, and MC Lamanna. 2019. Description of an avian femur from Vega Island, Antarctic Peninsula: removing the record of cursorial land birds from the Cretaceous of Antarctica. PeerJ 7:e7231 <https://doi.org/10.7717/peerj.7231>
- Tobin, TS, EM Roberts, SP Slotznick, JA Biasi, JA Clarke, PM OConnor, S Skinner, **AR West**, L Snyderman, JL Kirschvink, MC Lamanna. *In press*. New evidence of a Campanian age for the Cretaceous fossil-bearing strata of Cape Marsh, Robertson Island, Antarctica. Cretaceous Research.
- Lamanna, MC, JA Case, EM Roberts, VM Arbour, RC Ely, SW Salisbury, JA Clarke, E Malinzak, **AR West**, and PM O'Connor. 2019. Late Cretaceous non-avian dinosaurs from the James Ross Basin, Antarctica: description of new material, updated synthesis, biostratigraphy, and paleobiogeography. *Advances in Polar Science*. 30(3): 228-250. doi: 10.13679/j.advps.2019.0007
- Geiger, M, SE Marron, **AR West**, and RJ Asher. 2018. Influences of domestication and island evolution

on dental growth in *Ovis*. Journal of Mammalian Evolution p.1-16.

<http://dx.doi.org/10.1007/s10914-018-9452-y>

Wible, JR and **AR West**. 2017. The basicranial axis in the rock hyrax, *Procapra capensis* (Pallas, 1766) (Mammalia, Afrotheria, Hyracoidea): novel structure of the frontal bone. Annals of Carnegie Museum 84(4): 287-300. <https://doi.org/10.2992/007.084.0403>

West, AR 2016. Mitogenome of the extinct helmeted musk ox, *Bootherium bombifrons*. Mitochondrial DNA Part B: Resources 1: 862-863. <https://doi.org/10.1080/23802359.2016.1250136>

Submitted Papers

West, AR, JJ Flynn, DA Croft, AR Wyss. *In revision*. New interatheres (Mammalia: Notoungulata) from Los Queñes, Chile. American Museum Novitates.

Books and Book Reviews

West, AR 2018. Book review: JL Prado and MT Alberdi, 2017, Fossil Horses of South America: Phylogeny, Systematics, and Ecology. Journal of Paleontological Techniques Book Review 2.

Gold, MEL, **AR West**, and AJ Gardiner. 2017. She Found Fossils. CreateSpace Publishing. ISBN: 9781981516544.

Invited Talks and Papers

High-precision calibration of the Paleogene South American Land Mammal ‘Ages’ and a synthetic biochronology for the Latest Cretaceous – Early Paleogene of South America and the Antarctic Peninsula. Colloquium Seminar, Department of Geology and Environmental Science, University of Pittsburgh. September 12, 2019.

Notoungulata, Gondwana, and the origins of placental mammals. R.W. Moriarty Science Seminar Series, Carnegie Museum of Natural History. March 13, 2017

Paleontological fieldwork in Antarctica: goals and challenges. Northeast Regional Vertebrate Evolution Symposium, Adelphi University, Garden City, NY. April 1, 2016

Antarctic Dinosaurs. Metropolitan Society of Natural Historians Annual Symposium, American Museum of Natural History. May 2016

Taxon of the Month: *Ovibos moschatus*, article for the Metropolitan Society of Natural Historians (general audience). August 24, 2016

Published Abstracts

Tobin, TS, EM Roberts, SP Slotznick, JA Biasi, JA Clarke, PM O'Connor, S Skinner, **AR West**, JL Kirschvink, and MC Lamanna. 2019. Biostratigraphic and detrital zircon geochronological age assignment of Late Cretaceous sedimentary exposures on Robertson Island, Antarctica. Geological Society of America Abstracts with Programs. Vol. 51, No. 5., Paper No. 271-17. DOI: 10.1130/Abs/2019am-338048

Gold, MEL and **AR West**. 2018. She Found Fossils: a crowdfunded, multi-lingual, self-published children’s book about women in paleontology. Journal of Vertebrate Paleontology Program and Abstracts, p. 135.

Gold, MEL, **AR West**, and AJ Gardiner. 2018. She Found Fossils: A kids’ book about women in paleontology. Society for Integrative and Comparative Biology Annual Meeting.

West, AR 2017. Resolving the affinities of Notoungulata: character selection, taxon sampling, and the

- influence of ancient molecular data. *Journal of Vertebrate Paleontology Program and Abstracts*, p. 63.
- Torres, CR, SN Davis, RDE MacPhee, J Meng, JV Proffitt, LT English, **AR West**, and JA Clarke. 2017. New fossils from the La Meseta Formation of Seymour Island, Antarctica expand our understanding of middle-late Eocene Antarctic fauna. *Journal of Vertebrate Paleontology Program and Abstracts*, p. 71.
- West, AR** and J Ingber. 2016. Learners as researchers: teaching concepts of stability and change in natural systems through project-based exploration of paleontology. *Journal of Vertebrate Paleontology Program and Abstracts*, p. 248.
- West, AR** 2015. Ancient DNA from Alaska's extinct Pleistocene musk oxen: phylogenetics and population dynamics reveal a unique paleoenvironmental history. *Geological Society of America Program with Abstracts*, 47:7, p. 237.
- West, AR** and JJ Flynn. 2015. Chronologic calibration and cross-continental correlation of the South American Land Mammal 'Ages': Update 2015. *Journal of Vertebrate Paleontology Program and Abstracts*, p.235.
- Lee, V, A Balcarcel, and **AR West**. 2015. Comparison of quantitative assessment methods for polymer consolidant penetration on rock and fossil substrates. *Journal of Vertebrate Paleontology Program and Abstracts*, p.162.
- West, AR**, R Pian, R Charrier, JJ Flynn, and AR Wyss. 2014. New high precision $^{40}\text{Ar}/^{39}\text{Ar}$ geochronology of fossil-bearing strata of the Cachapoal Valley, Andean Main Range, Chile. *Journal of Vertebrate Paleontology, Program and Abstracts*, p. 254.
- West, AR**, JJ Flynn, DA Croft, AR Wyss. 2013. A quantitative model for morphological evolution in the Interatheriidae (Typotheria, Notoungulata, Mammalia) as a response to climatic and tectonic changes. *Journal of Vertebrate Paleontology, Program and Abstracts*, p. 236.

Research Grants, Fellowships, and Awards

Federal Funding

- National Science Foundation (Co-PIs: L Holbrook, B Beatty, DA Croft, **AR West**). "Phylogenetic Relationships of Desmostylians and South American Native Ungulates: Testing Perissodactyl Affinities and Their Biogeographic and Temporal Implications," *to be submitted 2019*.
- National Science Foundation Graduate Research Fellowship. "Fossils, mummies, and DNA: the life and legacy of South America's endemic mammals," \$126,000, March 2013 – September 2017.
- Participant support, NSF grant #1142052 (PI: RDE MacPhee). "Collaborative Research: Late Cretaceous-Paleogene Vertebrates from Antarctica: Implications for Paleobiogeography, Paleoenvironment, and Extinction in Polar Gondwana." Fieldwork travel and salary, February 2016 – December 2016.

Research Grants

- Ross Research Award, Geological Society of America, to **AR West**, "Extinct musk-ox DNA and carbon dates shed light on megafaunal population dynamics in Pleistocene Beringia," \$3,922, April 2015.
- Chevron Student Initiative Award, Lamont-Doherty Earth Observatory, to **AR West**, "Ancient DNA and carbon dates from extinct giant musk-ox: population dynamics, climate history and human influence in Pleistocene Beringia," \$2,440.07, March 2015.

Travel Grants

American Museum of Natural History Division of Vertebrate Paleontology, Frick Fund. Travel support to present original research. \$1,042.09, November 2013; \$1,573.18, December 2014; \$1,377.44, November 2015; \$1,193.70, November 2016.

Carnegie Museum of Natural History Section of Vertebrate Paleontology. Travel grants to visit University of Texas at Austin, American Museum of Natural History. \$178, January 2018; \$312, February 2018; \$204, June 2018.

Internal Fellowships

Rea Postdoctoral Fellowship, Carnegie Museum of Natural History. “Implications of the affinities of Notoungulata (Mammalia, Placentalia) for Gondwanan biogeography,” \$84,000, December 2016 – December 2018.

Graduate Fellowship, Theodore Roosevelt Memorial Fund: North American Terrestrial Fauna. Richard Gilder Graduate School, American Museum of Natural History. August 2011 – May 2016.

Faculty Fellowship, Department of Earth and Environmental Sciences, Columbia University, New York, NY. August 2011 – March 2013.

Other

Honorable Mention, National Science Foundation Graduate Research Fellowship. “Eighty Million Years of Solitude: life and legacy of South America’s endemic mammals,” March 2012.

“She Found Fossils” crowd-funding campaign, February – April 2017. \$11,945 (over 300% of our initial goal) raised for illustration, translation into Spanish and Mandarin, and initial print run of 234 copies.

Service

Institutions and Professional Societies

Undergraduate Challenges and Opportunities Committee, Department of Biological Sciences, University of Pittsburgh. **2019 – Present.**

Organizing Committee, Three Rivers Evolution Event, 2018.

Diversity and Inclusion Committee, Three Rivers Evolution Event, 2018.

Cenozoic Hall (permanent exhibit of fossil mammals and environments) Renovation. Carnegie Museum of Natural History. August 2017 – April 2018.

Loan of Antarctic specimens from Carnegie Museum of Natural History to the Field Museum, Chicago, IL. July 2017 – April 2018.

Session Moderator, Society of Vertebrate Paleontology Annual Meeting 2017.

Student and Postdoc Roundtable Forum Expert, Society of Vertebrate Paleontology Annual Meeting 2016 & 2017.

Co-Chair, North East Regional Vertebrate Evolution Symposium 2013-2015.

Peer Review

Journal of Mammalian Evolution

Palaeontologia Electronica

Geological Society of America Bulletin

Mammalian Biology

Mentoring

University of Pittsburgh

- Undergraduate Research Co-Sponsor, Department of Biological Sciences. **Fall 2019:** Alison Bouet-Willaumez, Shourya Mukherjee, Saumya Shetty, Shriya Shetty.
- Experience in Undergraduate Teaching, Department of Biological Sciences. January 2019 – **Present.** Mentoring subjects include lesson planning, speaking to a large audience of students, rubric development, and promoting diversity.

Carnegie Museum of Natural History

- Lucia Snyderman, 12th grade, The Ellis School, Pittsburgh, PA. “Invertebrate paleontology of Cape Marsh, Robertson Island, Antarctica,” July 2017 – May 2018. Lucia presented this project for the Pennsylvania Junior Academy of Sciences competition and won 2nd Place. “New paleobotanical material from the James Ross Island Group,” May 2018 – **Present.**

American Museum of Natural History

- Alice Fornari, University of Rochester. “Investigating the morphological support for superordinal affinities of Notoungulata (Mammalia: Placentalia) using a large total-evidence dataset,” December 2014 – December 2016. Currently a researcher at California Academy of Sciences.

Columbia University, Department of Earth and Environmental Sciences. Graduate Student Peer Mentor: Asna Ansari, 2012; Rebecca Pian, 2013.

Selected Recent Educational Outreach

Scientist, Super Science Saturdays at Carnegie Museum of Natural History. 2017 – **Present.**

Panelist: Teaching career paths. Howard Hughes Medical Institute Undergraduate Fellowship Program, Department of Biological Sciences, University of Pittsburgh. June 28, 2019.

Ask A Scientist, Carnegie Museum of Natural History, November 2018. “Why do we study barren places like Antarctica?” <https://www.youtube.com/watch?v=GIuVdh0iT3I>

Science Careers Presenter and Panelist, Student Observers from Intel International Science and Engineering Fair. Carnegie Museum of Natural History, May 16, 2018.

Presenter, Jurassic Park After Dark. Carnegie Museum of Natural History, April 13, 2018.

“Expedition Antarctica,” short documentary and presenter-led activity at Carnegie Museum of Natural History. 2018 – 2019. Featured in film and presentation. Contributed scientific material and design advice during development.

Carnegie Museum of Natural History Pub Talk, “Fossil Hunting in Antarctica.” October 12, 2017.

Society of Vertebrate Paleontology Annual Meeting, Student and Postdoc Roundtable Forum

- Postdoctoral Study Expert, August 24, 2017.
- Adobe Illustrator Expert, October 27, 2016.

Technical Skills and Competencies

Computing

Education and Communications: Box, Coursera, CourseWeb, Dropbox, GoogleDrive, HTML, LaunchPad, OpenLearning, Prezi, Slack, SlideShare, TopHat

Image Generation and Processing: 3D Slicer, Adobe Creative Suite, Avizo, Camera Control Pro, Dragonfly, Fiji, Google Earth Pro, Leica Application Suite, Mimics

Databases: DigiMorph, EndNote, Microsoft Excel, MorphoBank, NCBI GenBank, Paleobiology Database

Phylogenetic Systematics: BEAST (including BEAUti, DensiTree, Tracer, TreeAnnotator), FigTree,

GARLI, JModelTest, Mesquite, MrBayes, PAUP*, RAxML, TNT, Winclada
Bioinformatics and Programming: Bash, BLAST, Blast2GO, Clustal, Geneious, MAFFT, Matlab,
Mauve, MUSCLE, Primer3, R, Tablet, TextWrangler

Laboratory

Imaging: CT scanning – osteology specimen mounting and parameter setup.

Osteology and Paleontology: Mechanical preparation, polymer consolidant chemistry, conservation and housing, wet and dry screening, plaster jacketing, field conservation, museum collections conservation, osteological preparation

Cell Biology: DNA extraction (DNeasy, GENECLAN, phenol-chloroform), PCR, gel electrophoresis, histology (clearing, embedding, sectioning, immunofluorescence, H&E), vertebrate dissection

Sequencing: Agilent 2100 Bioanalyzer, NanoDrop, 454 library prep, BigDye cycle sequencing, ancient DNA clean lab protocols

Geochemistry: TIMS and LA-ICP-MS sample prep, X-ray fluorescence elemental analysis, radiocarbon collagen sample preparation.

Fieldwork

Section of Paleontology, Carnegie Museum of Natural History.

- Under-studied latest Cretaceous localities of the American West. **Ongoing.**

NSF and US Antarctic Program supported paleontological expedition, James Ross Island Group, Antarctic Peninsula. 2016.

Division of Vertebrate Paleontology, American Museum of Natural History, 2015-2016.

Department of Functional Anatomy and Evolution, Johns Hopkins University. 2010.

University of Cambridge Department of Geology, 2009-2010.

Press

Carnegie Museum of Natural History. Ask A Scientist Video Series, “Why do we study barren places like Antarctica?” <https://www.youtube.com/watch?v=GIuVdh0iT3I> November 2018.

Duke School Magazine, Alumni Feature, September 2018.

American Museum of Natural History Rotunda Magazine: Summer 2016, “Fossil Hunting at the Bottom of the World;” Spring 2017, “Time Capsule: Ancient specimens may hold clues scientists are just starting to unlock”

Forbes, “Ancient Fossils Unearthed on Trek to Antarctica” by Shaena Montanari, May 18, 2016.

Professional Memberships

Society of Vertebrate Paleontology

Geological Society of America