CALEB M. GORDON, PhD

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APPOINTMENTS

2025– Postdoctoral Associate, Florida Museum of Natural History, University of Florida

EDUCATION

2025 **PhD**, Earth and Planetary Sciences, Yale University Advisor: Bhart-Anjan Bhullar
Reconstructing the evolutionary histories of aquatic and macrocarnivorous lifestyles in reptiles.

2021 **MPhil**, Earth and Planetary Sciences, Yale University

2016 **BA**, Biology, Bowdoin College (*Cum Laude*) Advisor: William Jackman
Honors Thesis: *Identifying a distinct developmental module in the zebrafish dentition*

GRANTS & ACADEMIC HONORS

Research Grants, Fellowships, and Monetary Awards

2024	$1,000	**Excellence in Teaching Prize** | Yale, Dept. Earth and Planetary Sciences
2022	$4,930	**Doctoral Dissertation Improvement Grant** | Yale Institute for Biospheric Studies
2021	$1,000	**FHVS Student Research Assistance Scheme** | IUCN Crocodile Specialist Group
2020	$102,000	**NSF Graduate Research Fellowship** | National Science Foundation
2019	$3,000	**Doctoral Pilot Grant** | Yale Institute for Biospheric Studies
2018	$2,000	**Bateman Fellowship** | Yale University, Dept. Earth and Planetary Sciences
2017	$3,840	**Life Sciences Fellowship** | Bowdoin College, Dept. Biology

Non-Monetary Awards and Honors

2024	**Best Student Presentation (talk), runner-up** | SECAD 2024, University of Liège
2019	**Earl Ingerson Fellowship** | Yale, Dept. Earth and Planetary Sciences
2018	**GRFP Honorable Mention** | National Science Foundation
2018	**Copeland-Gross Biology Prize** | Bowdoin College, Dept. Biology
2014–2015	**Sarah and James Bowdoin Scholarship Award** | Bowdoin College
2014	**Joshua Chamberlain Scholarship Award** | Bowdoin College
2014	**National Silver Medal, Nonfiction Writing Portfolio** | Scholastic Art & Writing Awards

REFEREED PUBLICATIONS

Google Scholar : 44 citations; h-index = 2; i10-index = 1 *denotes equal contribution; §denotes mentee

In Review/Revision

8. [In revision for *Scientific Reports*.] Jenkins KM, **Gordon CM**, Freisem LS, Griffin CT, Bhullar B-AS. The parietal eye reveals deep convergence between mammals and reptiles.
7. [In revision for *Current Biology*.] **Gordon CM**, Freisem LS, Griffin CT, Gauthier JA, Bhullar B-AS. Limb proportions robustly predict cryptic aquatic habits in extinct amniotes.
6. [In revision for *Philosophy, Theory, and Practice in Biology*.] **Gordon CM**, Dunn CW. Biological things can have essential features within a processual framework.

Journal Articles

5. Treidel LA, Deem KD, Salcedo MK, Dickinson MH, Bruce HS, Darveau CA, Dickerson BH, Ellers O, Glass JR, **Gordon CM**, Harrison JF, Hedrick TL, Johnson MG, Lebenzon JE, Niitepõld K, Sane SP, Sponberg S, Talal S, Williams CM, Wold ES. Insect flight: state of the field and future directions. *Integrative and Comparative Biology* icae106 (2024).
4. Ellers O*, **Gordon CM***, Hukill MT, Kukaj A, Cannell A, Nel A. Induced power scaling alone cannot explain griffenfly gigantism. *Integrative and Comparative Biology* icae046 (2024).
3. Serafini G, **Gordon CM**, Amalfitano J, Wings O, Esteban N, Stokes H, Giusberti L. First evidence of marine turtle gastroliths in a fossil specimen: Paleobiological implications in comparison to modern analogues. *PLOS ONE* 19: e0302889 (2024).
2. Serafini G, **Gordon CM**, Foffa D, Cobianchi M, Giusberti L. Tough to digest: first record of Teleosauroidea (Thalattosuchia) in a regurgitalite from the Upper Jurassic of north-eastern Italy. *Papers in Palaeontology* 8: e1474 (2022).
1. **Gordon CM**, Roach BT, Parker WG, Briggs DEG. Distinguishing regurgitalites and coprolites: A case study using a Triassic bromalite with soft tissue of the pseudosuchian archosaur *Revueltosaurus*. *PALAIOS* 35: 111–121 (2020).

CONFERENCE PRESENTATIONS

§denotes mentee

15. Ahmad-Rizal A§, Johnson E, Briggs DEG, **Gordon CM**. Is crushing a-peel-ing? Characterizing predatory shell breaking shapes using 2D geometric morphometrics. *International Meeting on the Secondary Adaptation of Tetrapods to Life in Water (SECAD)*. *Geological Society of America (GSA) Connects*. Anaheim, CA, USA. In: Recent Advances in Paleoecology/Taphonomy. Poster (2024).
14. **Gordon CM**, Griffin CT, Gauthier JA, Bhullar B-AS. Reconstructing the aquatic habits of Triassic marine reptiles and mosasaurs—results from predictive models based on extant amniote limb morphometry. *International Meeting on the Secondary Adaptation of Tetrapods to Life in Water (SECAD)*. Liège, Belgium. Oral Presentation (2024).
13. **Gordon CM**, Griffin CT, Gauthier JA, Bhullar B-AS. Aquatic amniote limbs converge on a common morphology beyond terrestrial morphospace. *Society of Integrative and Comparative Biology (SICB) Annual Meeting*. Seattle, Washington, USA. In: Adaptation and ecomorphology in fluids. Oral Presentation (2024).
12. **Gordon CM**, Griffin CT, Gauthier JA, Bhullar B-AS. Limb proportions predict aquatic habits in extinct tetrapods: a case study for assessing predictive model accuracy in paleontology. *Geological Society of America (GSA) Connects*. Pittsburgh, PA, USA. In: Phylogenetic and Computational Approaches in Paleobiology and Paleoecology. Oral Presentation (2023).
11. Jenkins KM, **Gordon CM**, Gauthier JA, Bhullar B-AS. Changes in the parietal foramen track major events in amniote evolution. *Society of Vertebrate Paleontology (SVP) 83rd Annual Meeting*. Minneapolis, MS, USA. Poster (2023).
10. Jenkins KM, **Gordon CM**, Gauthier JA, Bhullar B-AS. Visualizing an elusive holotype: the cranial osteology of *Bolosaurus major* (Parareptilia: Bolosauridae). *Society of Vertebrate Paleontology (SVP) 82nd Annual Meeting*. Toronto, Canada. Oral Presentation (2022).
9. **Gordon CM**, Gauthier JA, Bhullar B-AS. Validating osteological correlates of interdigital webbing and flipper form in extinct aquatic amniotes. *Society of Vertebrate Paleontology (SVP) 82nd Annual Meeting*. Toronto, Canada. Oral Presentation (2022).
8. Nand L, Carley E, **Gordon CM**, Ader N, Sadeeshkumar H, Gu Y, Singh M. Yale Science Communication – A Graduate Student Organization: Communicating science, igniting scientific engagement, and training science communicators. *Science Public Engagement Partnership (SciPEP)*. In virtual symposium: Communicating the Future: Engaging the Public in Basic Science. Poster (2021).

7. **Gordon CM**, Planavsky NJ. Phosphorus levels predict genomic novelty production in the Neoproterozoic: a preliminary mathematical model. *Geological Society of America (GSA) Connects*. In: Life's Innovations from the Early Earth to the Search on Modern Mars: Honoring the Career of Andrew H. Knoll. Portland, Oregon, USA. Poster (2021).
6. **Gordon CM**. Investigating the developmental evolution of the limb and skull in aquatic reptiles. *Max Planck-Yale Mini-Conference*. Max Planck-Yale Center for Biodiversity Movement and Global Change, virtual. Oral Presentation (2021).
5. **Gordon CM**, Roach BT, Parker WG, Briggs DEG. Distinguishing regurgitalites and coprolites: A case study using a Triassic bromalite containing soft tissue from *Revueltosaurus*. *Society of Vertebrate Paleontology (SVP) 79th Annual Meeting*. Queensland, Australia. Oral Presentation (2019).
4. **Gordon CM**, Roach BT, Briggs DEG. A regurgitalite containing *Revueltosaurus* muscle tissue from the Upper Triassic Chinle Formation of Arizona. *Northeast Regional Geobiology Symposium*. Amherst College, MA, USA. Poster (2019).
3. Jackman WR, **Gordon CM**, Rock A. Analysis of gene function during zebrafish tooth development using "reporting" knockouts. *13th International Zebrafish Conference*. WI, USA. Poster (2018).
2. **Gordon CM**, Jackman WR. Identifying a distinct developmental module in the zebrafish pharynx. *Annual Maine Biological and Biomedical Sciences Symposium*. MDI Biological Laboratory, ME, USA. Poster (2018).
1. **Gordon CM**, Jackman WR. Determining the cellular mechanisms associated with tooth module dissociation in the ventral pharyngeal dentition of zebrafish (*Danio rerio*). *President's Summer Research Symposium*. Bowdoin College, ME, USA. Poster (2018).

TEACHING & MENTORSHIP

Certificates

In progress Certificate of College Teaching Preparation, Poorvu Center, Yale University

University Teaching Positions

Term	School	Course Title	Role	Students Enrolled	Mean Evaluation
Fall 2023	Yale University	Vertebrate Paleontology	Laboratory and Lecture TA	1	5.00/5 (n=1)
Spring 2020	Yale University	Comparative Developmental Anatomy of Vertebrates	Lecture TA	21	Not collected for TAs
Spring 2019	Yale University	History of Life	Laboratory and Lecture TA	38	4.70/5 (n=9)
Spring 2015	Bowdoin College	Scientific Reasoning in Biology	Lecture TA	Pending	Not collected for TAs

Guest Lectures

2025 Pan-Archosauria and Euryapsida. Invited 2-hour guest lecture on the major subclades of Archosauromorpha and their disputed connections to euryapsid marine reptiles, for annual *Vertebrate Paleontology* course (Yale University, Department of Earth and Planetary Sciences).

Non-University Teaching and Mentorship

2016–2018 Consultant, MILRD Education — Designed course content for MILRD's Virtual Training Projects.

2016 Project Mentor, MILRD Education — Mentored summer research intern on leukemia project in the Department of Computational Biomedicine at Weill Cornell Medical College

2013 Biology Teacher, ArtWorks for Youth — Taught original two-week biology curriculum to students at a public school in the Joe Slovo township in Port Elizabeth, South Africa.

SCIENCE COMMUNICATION & OUTREACH

Invited Public Lectures

2025 Searching Through Time for Hidden Sea Monsters. Invited speaker for *YPM Speakers Bureau*, Schiller Shoreline Institute for Lifelong Learning. New Haven, CT, USA.

2024 The Sea Before Time: Diving into the Mysterious Origins of Ancient Marine Reptiles. Invited speaker for *Research Spotlight*, Yale Peabody Museum. New Haven, CT, USA.

2019 Flesh, Blood, and Bone: Unraveling the Mysteries of Evolution. Invited speaker for Yale *Science in the News* program at multiple local libraries and community centers. New Haven, CT, USA.

Museum Exhibit Contributions (showing dates of public display)

2024– **Tetrapod Locomotion Kiosk**, Yale Peabody Museum
- Advised on content and animations for interactive digital kiosk on *Araeoscelis*.

2019–2021 **T. rex: The Ultimate Predator**, American Museum of Natural History
- Segmented and produced panoramic videos of *T. rex* coprolite for interactive kiosk.

Science Outreach Activity

2022–2025 **Yearly Guest Speaker**, Brooklyn Prospect Charter School, 2nd- and 3rd-grade classes
- Gave talk and answered student questions about how to become a paleontologist.

2024 **Graduate Museum Educator**, Yale Peabody Museum
- Created and taught original museum programming to visiting elementary school groups during the spring and summer of 2024 as part of the museum's education department.

2023–2024 **Regular Guest Mentor/Lecturer**, Yale Peabody Museum EVOLUTIONS After School Program
- Mentored high-school EVOLUTIONS students with adaptation projects; led workshops on aquatic adaptations in reptiles.

2019, 2022 **Peabody Special Events Volunteer**, Yale Peabody Museum ¡Fiesta Latina! event
- Designed interactive paleontology station for K–12 kids at annual ¡Fiesta Latina! and Meet the Scientist events; recorded videos for Yale Peabody Museum exhibit engagement.

2020–2022 **Communications Director**, Yale Science Communication - A Graduate Student Organization
- Onboarded new speakers, coordinated original multi-speaker presentations to public audiences, and developed or revamped all digital media platforms (the Yale Sci-Comm website, LinkedIn, Facebook, and YouTube).

2019–2020 **Talk Coordinator**, Yale Science Communication - A Graduate Student Organization
- Coordinated original multi-speaker presentations to public audiences in New York and Connecticut and established new venues for routine Yale SciComm outreach.

Media Coverage

2020 Gordon et al., 2020 *PALAIOS* featured on *Gizmodo*.
2020 NSF GRFP reception covered by the *Yale EPS Dept.* and *The Berkeley Carroll School*.
2019 Undergraduate Honors Thesis work featured by the *Bowdoin College Biology Dept.*

SERVICE TO PROFESSION

Yale EPS = Yale University Department of Earth and Planetary Sciences

2021– PhyloPic silhouette contributor (18 taxon silhouettes generated for research use), PhyloPic.org.
2023–2025 Regular Presenter at Department Events for New or Admitted Students, Yale EPS
2024 Paleontology Tour Guide for the Fellows of Berkeley College, Yale EPS
2023 Philosophy of Geology Reading Group Organizer, Yale EPS
2023 Best Student Poster Competition Judge, Yale Intercollegiate Research Symposium, Yale University
2023 Student Volunteer, Geological Society of America (GSA) Annual Meeting
2022–2023 Alumni Volunteer, Bowdoin Career Sophomore Networking Bootcamp
2022 BioRender Brand Ambassador, Department of Earth and Planetary Sciences, Yale University
2021–2023 Graduate Student Mentor, Yale EPS
2021 Student Member of Ad-Hoc Committee on Advising Guidelines, Yale EPS
2020–2022 Contributing Quiz-Question Writer, Peabody Paleo-Knowledge Bowl, Yale Peabody Museum

Peer Reviewer for: *Frontiers in Earth Science*
Historical Biology
International Journal of Osteoarchaeology
PALAIOS

AFFILIATIONS

2025– Sigma Xi Scientific Honors Society
2023– Society for Integrative and Comparative Biology
2021– Geological Society of America; Society for the Study of Evolution
2018– Society of Vertebrate Paleontology

KEY RESEARCH SKILLS

- **Vertebrate morphology:** Comparative osteology, embryology, and systematics of vertebrates
- **3D data processing and visualization:** µ-CT scanning, segmentation, and mesh manipulation
  - Key software: Autodesk Maya, Geomagic, MeshLab, Slicer, VG Studio Max.
- **Morphometrics:** Linear and landmark-based (geometric morphometrics on large datasets
  - 3 projects, > 1700 specimens measured or landmarked.
  - Key software: ImageJ/Fiji, Past4, R [*geomorph*], Slicer
- **Phylogenetic machine learning:** Phylogenetic analysis, predictive GLMs, and ROC curve analysis
  - Key software: Mesquite, R [*ape*, *phylolm*, *phytools*, custom functions], TNT