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Gawain T. Antell, PhD

Education

DPhil, *University of Oxford*, UK. **2017–2021**
Departments of Earth Sciences and Zoology. Defended Jan 2022 with no corrections.

B.S., *Yale University*, USA, *magna cum laude*. **2012–2016**
Ecology & Evolutionary Biology (with distinction) and Geology & Geophysics

PhD thesis

Title: *Macroecological consequences of biotic and abiotic factors in marine communities through time*

Supervisors: Erin Saupe (Earth Sciences) & Tim Coulson (Zoology)

Research interests:
- Biodiversity across spatial, temporal, and taxonomic scales
- Macroecology, marine biology, and invertebrate paleontology
- Inferential statistics on time series and spatial data

Employment

Assistant Professor of Physical Geography, *Geography*, UCLA. **from 2024**

UC President's Postdoctoral Fellowship Program (PPFP), **2022–Present**
Earth & Planetary Sciences, University of California, Riverside.
Independent research fellowship; mentorship as part of the diversifying faculty initiative.

Postdoctoral Research Assistant, *Earth Sciences*, Oxford. **2022**
Grant-funded by UK Natural Environment Research Council to develop analysis software.

Geoscientists-in-the-Parks Intern, *US National Park Service, Geologic Resources Division*, Florissant National Monument, CO. **2016–2017**

Collections Assistant, *Yale Peabody Museum of Natural History, Invertebrate Paleontology Division*, New Haven, CT. **2013–2016**

Publications

[1] R Benson, R Close, **G Antell**, R Whittaker, P Valdes, A Farnsworth, D Lunt, S Shen, J Fan, and E Saupe. "Marine animal diversity across latitudinal and temperature gradients during the Phanerozoic". In: *Palaeontology* (in review).

[2] G Mathes, C Reddin, W Kiessling, **G Antell**, E Saupe, and M Steinbauer. "Spatially heterogeneous responses of planktonic foraminifera assemblages over 700,000 years of climate change". In: *Global Ecology & Biogeography* (in review).

[3] **G Antell**, R Benson, and E Saupe. "Spatial standardization of taxon occurrence data—a call to action". In: *Paleobiology* (2024). DOI: 10.1017/pab.2023.36.

[4] V Makarkin, **G Antell**, and B Archibald. "A revision of Chrysopidae (Neuroptera) from the late Eocene Florissant Formation, Colorado, with description of new species". In: *Zootaxa* (2022). DOI: 10.11646/ZOOTAXA.5133.3.1.

[5] **G Antell** and E Saupe. "Bottom-up controls, ecological revolutions and diversification in the oceans through time". In: *Current Biology* (2021). DOI: 10.1016/j.cub.2021.08.069.

[6] **G Antell**, I Fenton, P Valdes, and E Saupe. "Thermal niches of planktonic foraminifera are static throughout glacial-interglacial climate change". In: *Proceedings of the National Academy of Sciences* (2021). DOI: 10.1073/pnas.2017105118.

[7] S Darroch, M Casey, **G Antell**, A Sweeney, and E Saupe. "High preservation potential of paleogeographic range size distributions in deep time". In: *American Naturalist* (2020). DOI: 10.1086/710176.

[8] **G Antell**, W Kiessling, M Aberhan, and E Saupe. "Marine biodiversity and geographic distributions are independent on large scales". In: *Current Biology* (2020). DOI: 10.1016/j.cub.2019.10.065.

[9] **G Antell**. "Digitization reveals and remediates challenges to research on dispersed museum collections from Florissant fossil beds, Colorado". In: *Geological Society of America Special Volume* (2018). DOI: 10.1130/2018.2535(20).

[10] **G Antell** and J Kathirithamby. "The first twisted-wing parasitoids (Insecta: Strepsiptera) from the early Eocene Green River formation of Colorado". In: *Bulletin of the Peabody Museum of Natural History* (2016). DOI: 10.3374/014.057.0204.

Other writing

(Not peer-reviewed.)

G Antell. "Why I changed my name, according to Latin taxonomy." Transpositions blog, *International Society of Nonbinary Scientists* (2023). isnbs.org/2023/08.

S Greene, **G Antell**, *et al.* "Safety and belonging in the field: a checklist for educators." *EarthArXiv (2021).* DOI: 10.31223/X53P6H.

G Antell. "All colours of pride." Rainbow Research blog series, journal of *Methods in Ecology & Evolution* (2021). URL: methodsblog.com/2021/06/28.

B Fernando and **G Antell**. "Recommendations for improving racial equality, diversity, and inclusion in the Department of Earth Sciences, University of Oxford." Public report (2021). Available at: *https://www.earth.ox.ac.uk/2020/06*.

Invited talks

Palaeoverse Lecture Series: Online *July 2024*

North American Paleontological Convention: Plenary *June 2024*

Stanford: Dept. of Geological Sciences *Apr 2023*

UC Riverside: Environmental Dynamics and GeoEcology Institute *Mar 2023*

U. of Southern California: Paleo/Environmental seminar series *Jan 2023*

UC Riverside: Dept. of Earth & Planetary Sciences *Jan 2023*

UC Los Angeles: Dept. of Earth, Planetary & Space Science *Sep 2022*

Sheffield University: Ecology & Conservation series *Oct 2021*

Yale: Earth and Planetary Sciences *May 2021*

Harvard: MCZ and Dept. Organismic & Evo. Bio. paleobiology labs *Nov 2020*

EDI talk: "Decolonizing ecology and conservation science," Zoological Society of London (Feb 2021) and Oxford Zoology Dept. (July 2020).

Oxford Museum of Natural History: Public research lecture *Jan 2020*

Oxford Geology Group: Student speaker at annual symposium *Mar 2019*

Awards

Scholarships

President's Postdoctoral Fellowship, U. of California	*2022–2024*
Clarendon Fund Scholarship	*2017–2021*
St John's College Alumni Scholarship	*2017–2021*
NSF Graduate Research Fellowship Program (declined)	*2017*
Jerry (1953) and Jackie Inskeep Scholarship Fund	*2013–2016*
Summer Environmental Fellowship, Yale	*2014*
US National Merit Scholarship	*2012*

Grants

Burdett-Coutts Grant, Earth Sciences, of Oxford (£1,650)	*2019*
Postgraduate Special Grant, St John's College (£1,250)	*2018*
Travel Grant, Palaeontological Association (£300)	*2018*
Ernst Mayr travel grant for animal systematics, Museum of Comparative Zoology, Harvard University ($1,100)	*2016*
Yale Science Center Int'l Fellowship ($3,870; $4,300)	*2014, 2015*
Yale Freshmen Summer STEM Research Fellowship ($4,300)	*2013*

Awards

Winifred Goldring Award for outstanding paleontology PhD student; conferred by Association for Women Geoscientists and Paleontological Society	*2021*
1st-place student talk in Geobiology & Geomicrobiology, GSA meeting	*2020*
Oxford Earth Sciences award for equality, diversity, & inclusion	*2020*
1st-place student talk, North American Paleontological Convention	*2019*
D. E. Chantler Award for "the Yale Senior who has best exemplified qualities of courage, strength of character, and high moral purpose"	*2016*
W. R. Belknap Prize for excellence in a biology thesis, Yale	*2016*
1st-place student speed talk, Connecticut Entomological Society	*2015*

Software

divvy: Developed an R package to spatially subsample biodiversity data, for fair comparisons through time and across environments (Antell *et al.* 2020, 2024).

kerneval: Developed an R package for kernel density estimation that corrects density curves for biased observation/sampling (Antell *et al.* 2021).

Install at: cran.r-project.org/package=divvy; github.com/GawainAntell/kerneval

Conference talks

[1] G Antell. "Wavelet analysis determines the synchronicity and periodicity of ecological and environmental change in the Santa Barbara Basin, California, throughout the Common Era". In: *North American Paleontological Convention*. Ann Arbor, MI, 2024.

[2] G Antell. "Time-series relationships across trophic levels and temporal scales in the Santa Barbara Basin, California". In: *Ocean Sciences Meeting*. New Orleans, LA, 2024.

[3] G Antell, R Benson, and E Saupe. "A new R package to spatially subsample taxon occurrences for fair comparisons of biodiversity across time, clades, and environments". In: *6th International Palaeontological Congress*. Khon Kaen, Thailand, 2022.

[4] G Antell, R Benson, and E Saupe. "Spatial standardization tools for fair comparisons of biodiversity across time, clades, and environments". In: *Geological Society of America*. Denver, CO, 2022.

[5] G Antell and E Saupe. "Rate and mode of thermal niche evolution across and within lineages of Cenozoic planktonic foraminifera". In: *Geological Society of America*. Portland, OR, 2021.

[6] G Antell, I Fenton, P Valdes, and E Saupe. "Planktonic foraminifera conserved environmental niches across 700,000 years of glacial–interglacial climate change". In: *Crossing the Palaeontology-Ecology Gap*. Berlin (virtual), 2021.

[7] G Antell, I Fenton, P Valdes, and E Saupe. "Thermal niches of planktonic foraminifera are static throughout glacial-interglacial climate change". In: *Geological Society of America,* **1st-place student talk**. Online, 2020.

[8] G Antell, W Kiessling, M Aberhan, and E Saupe. "No patterns of ecological release in brachiopod and bivalve distributions over the Phanerozoic". In: *North American Paleontological Convention,* **1st-place student talk**. Riverside, CA, 2019.

[9] G Antell, W Kiessling, M Aberhan, and E Saupe. "Geographic distributions of benthic invertebrate species are diversity-dependent across the Phanerozoic". In: *Crossing the Palaeontology-Ecology Gap,* **commended student talk**. Leeds, UK, 2018.

[10] G Antell, Kiessling, Aberhan, and Saupe. "Geographic distributions of benthic invertebrate species are diversity-dependent across the Phanerozoic". In: *Int'l Palaeontological Congress*. Paris, 2018.

[11] G Antell and H Meyer. "Fossils from the frontier: Decades of museum influence on the paleontology of the Florissant fossil beds, Colorado". In: *Geological Society of America*. Denver, CO, 2016.

[12] G Antell and K Mertes. "Niche partitioning in East African Hornbills along behavioral, dietary, movement, and habitat axes". In: *Ecological Society of America*. Ft. Lauderdale, FL, 2016.

[13] Gwen S Antell. "Exoskeletons in the closet: new fossil insect species from the drawers of the Yale Peabody Museum". In: *Yale Peabody Museum Anniversary Symposium,* **invited alumna**. 2016.

[14] G Antell. "An old twist on a new problem: Inferring the paleodistribution of the parasite *Caenocholax* (Strepsiptera) from a new fossil discovery". In: *Geological Society of America*. Baltimore, MD, 2015.

[15] G Antell. "Stone flies and rock crawlers: Fossil insects from the Eocene". In: *Connecticut Entomological Society,* **1st-place student speed talk**. New Haven, CT, 2015.

Certifications & training

Faculty Success Program: National Center for Faculty Diversity & Development 12-week "bootcamp" program for minoritized faculty. Remote, 2023.

Teaching certification: SEDA Supporting Learning award in higher education (Descriptor 1 of UK Professional Standards Framework), 2020.

Science communication and science policy: "Reclaiming STEM" 4-part workshop series, run by and for minorities in STEM. Held remotely, 2020.

Wilderness First Responder: 80-hour emergency medicine certification with wilderness upgrade, maintained valid 2017–Present.

Science communication for children; STEM Ambassador training; University teaching: Individual workshops, University of Oxford, Jan–Feb 2019.

Stratigraphic paleobiology: Paleo. Society 2-wk grad field course. MT, 2017.

Teaching

Undergraduate lecture course: guest lecturer for unit on climate change, 300 students, University of California, Riverside *2023*

1st-yr Invertebrate Paleontology: laboratory teaching assistant *2017–2020*

2nd-yr Invertebrate Paleontology: laboratory teaching assistant *2019, 2021*

2nd-yr Past Environments: laboratory teaching assistant *2018, 2020*

3rd-yr Quantitative Paleontology: developed data analysis exercise *2019*

Tutorials (small-class discussions): developed and led 4-part paleontology unit for 1st-yr students, St Peter's College. Assigned and assessed work. *2019*

Field instructor: Earth Sciences undergraduate field course. Isle of Arran, UK. 1 week, 2019 (2020 cancelled due to COVID-19). Graded student maps.

Field instructor: Earth Sciences undergraduate course. Dorset, UK. 1 week, 2018, 2019, 2020 (virtual). Intro to sedimentary field skills; graded field notebooks.

Field instructor: Day course to local outcrops in South East England. 2019, 2022

Service

Peer reviewer: *Global Ecology & Biogeography, Science Advances, Paleobiology, Palaeontology, Am. Naturalist, Am. J. Botany, Royal Society and Nature families*

Session chair: Ocean Sciences Meeting, 2024, co-convener; Geological Society of America, 2022; Palaeontological Association, 2020.

Membership: Paleontological Society, Geological Society of America, International Association for Diversity in Geoscience, International Society of Nonbinary Scientists

Student adjudicator: Ocean Sciences Meeting, 2024. Geological Society of America meeting, 2022; reformed the scoring rubric for equity.

Divisional EDI Fellow: Inaugural fellow for Earth Sciences. Co-wrote strategic plan for EDI in Oxford division of Maths, Physical, & Life Sciences, 2020-2021.

Working group: Co-chair for racial diversity and inclusion in Earth Sciences, Oxford, 2019–2020. Co-authored report of 42 action item recommendations.

Graduate student representative: Divisional committee for Graduates, 2018–2020. Dept. committees for Equality, Graduate Students, and Teaching, 2017–2021. Graduate President serving 9 committees of St John's College, 2017–2018.