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Gwen S. 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

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.

Graduate teaching assistant, *Earth Sciences*, Oxford. **2017–2021**
Labs, discussion sections, and field courses on evolution and past environments

Geoscientists-in-the-Parks Intern, *US National Park Service*, **2016–2017**
Geologic Resources Division, Florissant National Monument, CO.
Published independent research, assisted exhibit design, and surveyed geoheritage resources.

Collections Assistant, *Yale Peabody Museum of Natural History*, **2013–2016**
Invertebrate Paleontology Division, New Haven, CT.
Described new fossil species, cataloged specimens, and hosted public tours.

Leadership

Divisional Equality, Diversity, & Inclusion Fellow: serving the STEM division EDI Steering Group and contributing to Oxford's 3-year strategic plan, 2020–2021.

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

Representative for graduate students: Equality Committee, Earth Sciences Dept., Oxford, 2017–Present. Changed policies and liaised with students.

Representative for Earth Sciences: Divisional Joint Consultative Committee, representing graduate student interests, 2018–2020.

President: St John's College, Middle Common Room Committee (graduate student body), 2018–2019; **Disabled students' officer** 2017–2018.

Women's Leadership Forum facilitator: St John's College grad. students, 2018.

Publications

- [1] G Mathes, C Reddin, W Kiessling, **G Antell**, E Saupe, and M Steinbauer. "Spatially heterogenous responses of planktonic foraminifera assemblages over 700,000 years of climate change". In: *Global Ecology & Biogeography* (in review).
- [2] 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.
- [3] **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.
- [4] **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.
- [5] 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.
- [6] **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.
- [7] **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).
- [8] **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.)

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: <https://methodsblog.com/2021/06/28>.

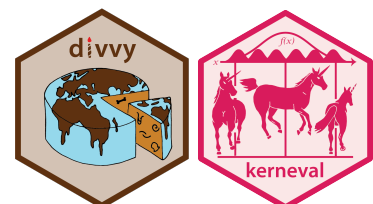
B Fernando and **G Antell**. "Recommendations for improving racial equality, diversity, and inclusion in the Department of Earth Sciences, University of Oxford." Public report (2021). Available at: <https://www.earth.ox.ac.uk/2020/06>.

Software

divvy: Developed and actively maintaining an R package for spatial subsampling of biodiversity data, to facilitate fair comparisons of ecological metrics through time, between clades, or across environments (Antell *et al.* 2020).

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

Install at: github.com/GwenAntell/divvy; github.com/GwenAntell/kerneval



Awards

Scholarships

President's Postdoctoral Fellowship, U. of California	2022–
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

Invited talks

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
Oxford Museum of Natural History: Public research lecture	Jan 2020
Oxford Geology Group: Student speaker at annual symposium	Mar 2019

Conference talks

- [1] 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.
- [2] 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.
- [3] 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.
- [4] 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.
- [5] 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.
- [6] 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.
- [7] 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.
- [8] 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.
- [9] 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.
- [10] 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.
- [11] 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.
- [12] 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.
- [13] 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

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

Discussion seminar: guest taught papers discussion on extinction 2021

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

NB: Oxford disallows graduate students from assistant teaching lecture courses

Service

Peer reviewer: *Science Advances*, *The American Naturalist*, and *Palaeontology*

Session chair: Geological Society of America, 2022; Palaeo. Association, 2020.

Awards judge: Paleontological Society adjudicator of student posters at the 2022 Geological Society of America meeting. 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.

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.

Outreach & advocacy

Social media visibility: Contributed personal profile for compilations of highlighted LGBTQIA+ researchers by the Palaeontological Association, Oxford Earth Sciences, Aces In STEM, and 500 Queer Scientists.

Panelist: Increasing Black, Asian, & Minority Ethnic Representation & Inclusion in Geosciences. UK virtual event by Oxford Earth Sciences, 2020. [Press release]

Biology LGBTQ+ Network: Co-organiser for 2020 LGBT STEM Day symposium at Oxford (cancelled due to COVID-19). £1,000 in grant funding acquired.

Activity leader: Super Science Saturday, Oxford University Museum of Natural History, 9 March 2019. Ran activity booth with estimated 3,600 attendees.

Instructor: UNIQ summer school, Oxford broadening access program; 2018, 2019. Designed classroom activities and assistant taught a local geology field-course.

Edinburgh Marathon: £750 raised for the Juvenile Diabetes Research Foundation, as an athlete with juvenile (type 1) diabetes. Sub 4-hour finishing time. May 2019.

March For Science: Activity leader for the CU Boulder Museum of Natural History, Denver 2017. Support of the American Geophysical Union, London 2018.

Tough Mudder: \$1,200 raised for American Diabetes Assoc. Sacramento 2017.