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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, Geologic Resources Division*, Florissant National Monument, CO. **2016–2017**
Published independent research, assisted exhibit design, and surveyed geoheritage resources.

Collections Assistant, *Yale Peabody Museum of Natural History, Invertebrate Paleontology Division*, New Haven, CT. **2013–2016**
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. "Nowhere to run: Lagged responses of tropical and polar planktonic foraminifera 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.