# Alex F Wall, PhD

Earth Scientist

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## *Summary statement:*


Interdisciplinary Earth Scientist with expertise in palaeoecology, geochemistry, and sedimentology. Extensive experience in fieldwork, laboratory analysis, and data visualisation. Passionate about big questions and diverse perspectives. Research aimed at uncovering and shaping Earth's story.


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## *Education*

### PhD in Earth and Environmental Sciences

*University of Wollongong, Australia | July 2024*

- Thesis: *Exploring Environmental and Climatic Complexity between Sunda and Sahul: Insights from Wallacea using Multiproxy Speleothem and Lacustrine Records*
- Supervisors: **A/Prof Tim Cohen, Prof Richard "Bert" Roberts, Prof Andy Baker, A/Prof Janelle Stevenson**
- Focus: **Palaeoecology, geochemistry, sedimentology, time-series analysis, and environmental reconstructions**

### Master of Science in Geology

*University of Cincinnati, USA | August 2016*

- Thesis: *Bellwether of the Canaries: Anthropogenic Effects on the Land Snail Fauna of the Canary Islands*
- Supervisors: **Dr Yurena Yanes, Prof Arnold I. Miller**
- Focus: **Malacology, palaeoecology, GIS analysis, statistical modelling**

### Bachelor of Science in Geoscience

*University of Iowa, USA | December 2007*

### Bachelor of Arts in Philosophy

*University of Iowa, USA | December 2007*

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## *Experience*

### Research Officer

*School of Culture, History and Language, Australian National University*
*November 2024–Present*

- Conduct fieldwork across diverse Australian landscapes, collecting **sedimentological** and **palaeoecological samples**.
- Train graduate students in laboratory procedures and analyses.
- Perform **radiocarbon** sample preparation and analysis, including running the line.
- Maintain laboratory equipment and manage research materials, ensuring safe and efficient operations.
- Support collaborative research projects by liaising with interdisciplinary teams, Traditional Custodians, and other stakeholders.
- Contribute to research outputs, assisting in manuscript preparation and data analysis.
- Developed a research-quality 3D printed pollen trap design.

### Postdoctoral Fellow

*School of Culture, History and Language, Australian National University*
*November 2022–November 2024*

- Developed **VegeMap**, a national citizen science initiative monitoring modern Australian pollen dispersal.
- Established a **pollen monitoring network** across Australia, conducting fieldwork from the **Daintree Rainforest to the Strzelecki Desert**.

- Designed and conducted vegetation surveys, collecting, and analysing large datasets using **R** and **GIS**.
- Coordinated laboratory work, developing a **novel method for extracting pollen from a cotton substrate**.
- Co-advised a PhD student on sedimentology (ongoing).
- Engaged in interdisciplinary collaboration with ecologists, geochemists, and archaeologists to investigate past climate-environment interactions.
- Participated in **outreach initiatives**, presenting VegeMap to schools, science festivals, and media platforms.

## PhD Student, Demonstrator, Lab Assistant

*Earth and Environmental Science, University of Wollongong*
*August 2018–June 2024*

- Conducted PhD research reconstructing **Holocene climate and environmental change in eastern Indonesia** using palynological, geochemical, and sedimentological proxies.
- Led **time-series and spectral analyses** on sediment core and speleothem samples.
- Demonstrated and provided instruction in **field and lab-based university courses**, including:
    - *From the Field to the Lab: Producing Your Ultimate Quaternary Record*
    - *Fluvial Geomorphology*
    - *Planet Earth*
- Performed laboratory analyses, including **pollen preparation, stable isotope and uranium-thorium dating, radiocarbon dating**, and microscopy (SEM, transmission, cross-polar).

## Biology Instructor

*Grand View University, Des Moines, IA*
*August 2017–April 2018*

- Taught and demonstrated laboratory sections for **General Biology I** and **How Life Works** courses.
- Designed and implemented **hands-on, inquiry-based learning** activities for students.
- Assisted students in developing **scientific reasoning and laboratory skills**.

## Master's Student, Researcher

*Department of Geology, University of Cincinnati*
*August 2014–August 2016*

- Conducted Master's thesis research on **anthropogenic effects on land snail fauna of the Canary Islands**, published in *Biodiversity and Conservation*.
- Led field sampling at **60 localities**, collecting over **34,000 land snail subfossils** to assess biodiversity shifts.
- Applied **statistical and GIS methods** to analyse ecological patterns.
- Co-led the **Quantitative Methods in R** workshop.
- Served as a **field demonstrator** for courses in **Palaeontology and Stratigraphy**.

## Assistant to the Associate Director for Outreach

*Paleontological Research Institution (PRI), Ithaca, NY*
*February 2011–June 2014*

- **Liaised with Cornell University** on NSF-funded science education initiatives.
- Conducted **professional development workshops** for secondary school Earth science teachers.
- Developed curriculum materials for the *Teacher-Friendly Guides to Geology* series.
- Designed and implemented **Virtual Field Experiences**, digitising Devonian fossil specimens.
- Trained staff and students on the **Institution's Scanning Electron Microscope (SEM)**.
- **Co-led a Geological Society of America (GSA) field trip** along the Rocky Mountain Front Range.
- Organised and convened the **2011 & 2012 PRI Summer Symposiums**.

## Collections Intern

*Paleontological Research Institution (PRI), Ithaca, NY*
*June 2010–February 2011*

- Curated and catalogued historically significant **malacological collections**.
- Assisted with **specimen identification, curation, and database management**.

### Teacher

*Kojen English Language Schools, Taipei, Taiwan*
*June 2008–January 2010*

- Designed lesson plans and **taught English as a second language** to preschool and elementary students.
- Implemented **interactive, immersive language-learning techniques**.

### Collections Assistant

*University of Iowa Paleontology Repository, Iowa City, IA*
*November 2006–May 2008*

- Digitised type specimens and performed **curatorial work** on palaeontological collections.
- Processed **specimen loans** and developed **standard SEM and light photography procedures** for the repository.

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## *Publications*

**Boesl, F; Adhityatama, S; Wall, AF.** (2025). *A submerged landscape at the entrance of Sahul.* In: *West New Guinea: Social, Biological, and Material Histories* (pp. 61-77). ANU Press. https://press-files.anu.edu.au/downloads/press/n13144/pdf/ch07.pdf

**Wall, AF.** (2024). *Pollen and pedagogy: Dispersing knowledge with VegeMap. Quaternary Australasia*, **41**(1), 10-11. https://search.informit.org/doi/abs/10.3316/informit.T202407020001330062364954 7

**Wall, AF; Yanes, Y; Miller, J; Miller, AI.** (2017). *Bellwether of the Canaries: Anthropogenic effects on the land snail fauna of the Canary Islands. Biodiversity and Conservation.* https://doi.org/10.1007/s10531-017-1443-4

**Kissel, RA; Wall, AF.** (2016). *Topography of the Southwestern US.* In: Lucas, MD; Ross, RM; Swaby, AN (eds.), *The Teacher-Friendly Guide to the Earth Science of the Southwestern US.* Paleontological Research Institution, Ithaca, New York. https://geology.teacherfriendlyguide.org/downloads/sw/tfggsw_4_topography_lr.pdf

**Colpaert, C; Nikitenko, B; Khafaeva, S; Wall, AF.** (2016). *The evolution of Late Callovian to Early Kimmeridgian foraminiferal associations from the central part of the Russian Sea (Makar'yev section, Volga River Basin, Russia). Palaeogeography, Palaeoclimatology, Palaeoecology.* https://doi.org/10.1016/j.palaeo.2016.03.014

**Kissel, RA; Wall, AF.** (2015). *Geologic History of the South Central US.* In: Lucas, MD; Ross, RM; Swaby, AN (eds.), *The Teacher-Friendly Guide to the Earth Science of the South Central US.* Paleontological Research Institution, Ithaca, New York. https://geology.teacherfriendlyguide.org/downloads/sc/tfggsc_1_geolhistory.pdf

**McCann, L; Moore, A; Wall, AF; Lewis, G; Parrish, JT.** (2015). *Soils of the Western US.* In: Lucas, MD; Ross, RM; Swaby, AN (eds.), *The Teacher-Friendly Guide to the Earth Science of the Western US.* Paleontological Research Institution, Ithaca, New York. https://geology.teacherfriendlyguide.org/downloads/w/tfggw_8_soils_lr.pdf

**Allmon, WD; Kissel, RA; Wall, AF.** (2015). *Fossils of the South Central US.* In: Lucas, MD; Ross, RM; Swaby, AN (eds.), *The Teacher-Friendly Guide to the Earth Science of the South Central US.* Paleontological Research Institution, Ithaca, New York. https://geology.teacherfriendlyguide.org/downloads/sc/tfggsc_3_fossils.pdf

**Wall, AF.** (2014). *Glaciers of the Midwestern US.* In: Lucas, MD; Ross, RM; Swaby, AN (eds.), *The Teacher-Friendly Guide to the Earth Science of the Midwestern US.* Paleontological Research Institution, Ithaca, New York. https://geology.teacherfriendlyguide.org/downloads/mw/tfggmw_6_glaciers_lr.pdf

**Wall, AF.** (2014). *Mineral Resources of the Midwestern US.* In: Lucas, MD; Ross, RM; Swaby, AN (eds.), *The Teacher-Friendly Guide to the Earth Science of the Midwestern US.* Paleontological Research Institution, Ithaca, New York. https://geology.teacherfriendlyguide.org/downloads/mw/tfggmw_5_minres_lr.pdf

**Wall, AF.** (2014). *Topography of the Midwestern US.* In: Lucas, MD; Ross, RM; Swaby, AN (eds.), *The Teacher-Friendly Guide to the Earth Science of the Midwestern US.* Paleontological Research Institution, Ithaca, New York. https://geology.teacherfriendlyguide.org/downloads/mw/tfggmw_4_topography_lr.pdf

**Wall, AF; Allmon, WD.** (2014). *Fossils of the Midwestern US.* In: Lucas, MD; Ross, RM; Swaby, AN (eds.), *The Teacher-Friendly Guide to the Earth Science of the Midwestern US.* Paleontological Research Institution, Ithaca, New York. https://geology.teacherfriendlyguide.org/downloads/mw/tfggmw_3_fossils_lr.pdf

**Wall, AF; Parrish, JT.** (2014). *Climate of the Midwestern US.* In: Lucas, MD; Ross, RM; Swaby, AN (eds.), *The Teacher-Friendly Guide to the Earth Science of the Midwestern US.* Paleontological Research Institution, Ithaca, New York. https://geology.teacherfriendlyguide.org/downloads/mw/tfggmw_9_climate_lr.pdf

**Kissel, RA; Wall, AF.** (2014). *Geologic History of the Midwestern US.* In: Lucas, MD; Ross, RM; Swaby, AN (eds.), *The Teacher-Friendly Guide to the Geology of the Midwestern US.* Paleontological Research Institution, Ithaca, New York. https://geology.teacherfriendlyguide.org/downloads/mw/tfggmw_1_geolhistory_lr.pdf

**Kissel, RA; Wall, AF.** (2014). *Rocks of the Midwestern US.* In: Lucas, MD; Ross, RM; Swaby, AN (eds.), *The Teacher-Friendly Guide to the Geology of the Midwestern US.* Paleontological Research Institution, Ithaca, New York. https://geology.teacherfriendlyguide.org/downloads/mw/tfggmw_2_rocks_lr.pdf

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## *Professional Presentations*

**Wall, AF.** (*2023*). *Introducing VegeMap.* Poster presented at **International Quaternary Association (INQUA) Conference**, 29 Jul; Rome, Italy.

**Wall, AF.** (*2020*). *Late Quaternary palaeoenvironmental records of tropical Australasia.* Talk presented at **Australasian Quaternary Association (AQUA) Conference**, 23 Jul; Virtual.

*(Invited)* **Wall, AF.** (*2020*). *Northern Gateway Flagship.* Talk presented at **CABAH Annual Symposium**, 1 Nov; Virtual.

**Wall, AF.** (*2019*). *Late Quaternary palaeoenvironmental records of tropical Australasia.* Poster presented at **International Quaternary Association (INQUA) Conference**, 29 Jul; Dublin, Ireland.

**Wall, AF.** (*2018*). *Late Quaternary palaeoenvironmental records of tropical Australasia.* Talk presented at **Australasian Quaternary Association (AQUA) Conference**, 11 Dec; Canberra, ACT.

**Wall, AF.** (*2015*). *Taphonomic lag on land: Snail death assemblages show rapid incorporation of synanthropic communities on San Salvador Island, The Bahamas.* Talk presented at **Geological Society of America (GSA) 127th Annual Meeting & Exposition**, 3 Nov; Baltimore, MD.

**Rasmussen, B; Wall, AF.** (*2015*). *A quantitative study of bivalves bioeroded by Cliondidae sponges from San Salvador, Bahamas.* Talk presented at **Geological Society of America (GSA) 127th Annual Meeting & Exposition**, 3 Nov; Baltimore, MD.

**Wall, AF.** (*2015*). *Patchy distribution of tree snails of San Salvador, The Bahamas.* Talk presented at **9th Annual Ohio (River) Valley Unified Malacologists (OVUM) Meeting**, 17 Oct; Pittsburgh, PA.

**Wall, AF; Dietl, GP.** (*2014*). *Marginal damage, major consequences: The effects of sublethal damage on the hard clam Mercenaria mercenaria.* Talk presented at **8th Annual Ohio (River) Valley Unified Malacologists (OVUM) Meeting**, 27 Sept; Cincinnati, OH.

**Wall, AF; Dietl, GP.** (*2013*). *Marginal damage, major consequences: The effects of sublethal damage on the hard clam Mercenaria mercenaria.* Talk presented at **Geological Society of America (GSA) 125th Anniversary Annual Meeting & Exposition**, 27 Oct; Denver, CO.

## *Competencies*

**Data Analysis & Programming:** R programming language, Bayesian modelling, data visualisation, data management

**Geospatial & Remote Sensing:** ArcGIS, drone operation (RPA certified)

**Field & Laboratory Expertise:** Field operations, sediment coring, radiocarbon dating, palynology, sedimentology

**Outreach & Education:** Field courses, lab courses, virtual field trips, school visits, media appearances, informal education, curriculum development

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## *Professional Development*

**Short Courses & Workshops:**

- *Indigenous Community Engagement in a Field Setting: Working on Country*
- *Species Distribution Modelling 101*
- *Introduction to Radiocarbon Dating & Bayesian Modelling*
- *Unconscious Bias Training*
- *ARMS Masterclass: Fundamentals of Project Management*
- *Neotoma/Octopus & Pollen Data Analysis*

**Certifications:**

- *Wilderness First Aid*
- *Remote First Aid*
- *Four-Wheel Drive Training* (SISODRV001 & RIIVEH305F)
- *Fundamentals of Deep Learning* (NVIDIA)

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## *Service and Leadership*

**Academic & Professional Service:**

- **Australasian Quaternary Association**, Secretary (*2018–2022*)
- **ARC Centre of Excellence for Biodiversity and Heritage**, Early Career Researcher Representative (*2023–2024*)
- **GeoQuEST**, Seminar Organiser (*2020–2021*)

**Community & Volunteer Work:**

- **The Freedom Hub**, Volunteer (*2020–Present*)
- **American Civil Liberties Union (ACLU)**, Volunteer (*2017–2018*)
- **Nechama Disaster Response**, Volunteer (*2016*)

**Event & Project Management:**

- **Cornell University & PRI Darwin Days**, Project Manager (*2013*)
- **PRI Summer Symposium**, Convener (*2011, 2012*)

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## *Funding, Awards, and Honours*

**Postdoctoral Fellowship, Australian National University**, 2022–2024
*Funded postdoctoral research on palaeoecology and citizen science, developing the VegeMap project and establishing a national pollen monitoring network.*

**Australian Research Council (ARC) Centre of Excellence for Biodiversity and Heritage (CABAH) PhD Scholarship**, 2018–2024
*Funded PhD research on palaeoecology and Quaternary environments.*

**Geological Society of America Research Grant**, 2015 ($1,875 USD)
*Funded Master's research on anthropogenic effects on land snail fauna in the Canary Islands.*

**Society for Sedimentary Geology Student Research Grant**, 2015 ($800 USD)
*Supported sedimentological analyses in Master's research.*

**Conchologists of America Academic Grant**, 2015 ($2,290 USD)
*Funded fieldwork on land snail subfossil assemblages in the Canary Islands.*

**The Paleontological Society Scholarship**, 2015 ($900 USD)
*Recognised for contributions to palaeontology research.*

**National Science Foundation (NSF) – Contributor to Successful Grant Proposals**, 2011–2014
*Contributed to the writing and editing of NSF grant proposals securing funding for multiple Earth science education and research projects.*

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## *Public Outreach and Media*

***Australian National Botanic Gardens*** *(2024) – Speaker at Friends of the Australian National Botanic Garden (https://friendsanbg.org.au/node/2043)*

***Costa Georgiadis' YouTube Channel*** *(2024) – Featured guest on pollen monitoring, ecosystem health, and the contributions of botanic gardens. (https://www.youtube.com/live/jJJ-yOgLGOU?si=tvBaSKTq9TCyqY0K)*

***ABC Radio Alice Springs*** *(2024) – Interviewed on VegeMap and pollen trapping.*

***ABC Radio Canberra*** *(2024) – Interviewed on palynology and environmental history.*

***ABC News Breakfast*** *(2023) – Discussed VegeMap and citizen (science.https://www.abc.net.au/news/2023-09-19/pollen-used-to-decipher-areas-biological-history/102874494)*