Stanford



Adrian A. Wackett

Ph.D. Student in Geological Sciences, admitted Autumn 2022

Curriculum Vitae available Online

Bio

BIO

Adrian A. Wackett was born and raised in Saint Paul, Minnesota (unceded Wahpekute/Dakota lands). He double majored in Chemistry and Geosciences at Trinity University (TX) before returning to Saint Paul and completing his MS degree in Land & Atmospheric Sciences (specifically pedology/ biogeochemistry) at the University of Minnesota-Twin Cities, where he studied global w'o'rming. Before coming to Stanford as an NSF GRFP Fellow he traveled extensively through Latin America and SE Asia (by bike) and worked as an independent researcher affiliated with the Department of Ecology and Environmental Sciences at Umeå University and the Climate Impacts Research Centre in Abisko, Sweden. He's passionate about exploring the interconnectedness of Earth's systems through his research and is equally passionate about looking beyond academia to cultivate enduring relationships with the lands and peoples he works with.Previous topics of inquiry include coupling ant bioturbation to the erosion and weathering of hillslope soils in SE Australia, exploring earthworm invasions and their deterministic effects on soil carbon dynamics in Fennoscandian and Alaskan forests, and examining the biogeochemical diversity of 'black smoker' plume particles at deep-sea hydrothermal vents. His dissertation focuses on applying an array of isotopic tracers and synchrotron-based X-ray approaches to explore how landscapes record and respond to a diverse set of disturbances, from biological invasions in Earth's northern biomes to extreme storm events in Puerto Rico to cultural burning and wildfires in California.

HONORS AND AWARDS

- Fellow, NSF GRFP (2022-2027)
- Fellow, ARCS Northern California Chapter (2024-2025)
- Awardee, Fulbright US Student Program - New Zealand (2021-2022)
- Fellow, American-Scandinavian Foundation (2020-2021)
- Fellow, Wilford R. Gardner Fellowship, International Union of Soil Sciences (2018)
- Fellow, Allmaras-Howe Fellowship, University of Minnesota - Twin Cities (2015-2016)

PROFESSIONAL AFFILIATIONS AND ACTIVITIES

- Member, Geochemical Society (2022 - present)
- Member, Geological Society of America (2022 - present)
- Member, American Geophysical Union (2022 - present)
- Member, Soil Science Society of America (2023 - present)

EDUCATION AND CERTIFICATIONS

- MS, University of Minnesota - Twin Cities , Land and Atmospheric Sciences (2018)
- BS, Trinity University (TX) , Chemistry; Geosciences (2014)

Publications

PUBLICATIONS

- **Non-Native Earthworms Alter Carbon Sequestration in Arctic Tundra Ecosystems** *JOURNAL OF GEOPHYSICAL RESEARCH-BIOGEOSCIENCES*
  Jonsson, H., Blume-Werry, G., Wackett, A. A., Olofsson, J., Arvidsson, E., Sparrman, T., Klaminder, J.
  2025; 130 (4)

- **New geochemical and geochronological insights on forearc magmatism across the Sanak-Baranof belt, southern Alaska A tale of two belts** *GEOSPHERE*
  Wackett, A. A., Smith, D. R., Davidson, C., Garver, J. I.
  2024

- **Quantifying erosion rates and weathering pathways that maximize soil organic carbon storage** *BIOGEOCHEMISTRY*
  Roering, J. J., Hunter, B. D., Ferrier, K. L., Chadwick, O. A., Yoo, K., Wackett, A. A., Almond, P. C., Silva, L., Jellinek, A.
  2023

- **Non-native species change the tune of tundra soils: Novel access to soundscapes of the Arctic earthworm invasion.** *The Science of the total environment*
  Keen, S. C., Wackett, A. A., Willenbring, J., Yoo, K., Jonsson, H., Clow, T., Klaminder, J.
  2022: 155976

- **Consistent mineral-associated organic carbon chemistry with variable erosion rates in a mountainous landscape** *GEODERMA*
  Wang, X., Wackett, A. A., Toner, B. M., Yoo, K.
  2022; 405

- **Global data on earthworm abundance, biomass, diversity and corresponding environmental properties** *SCIENTIFIC DATA*
  Phillips, H. R. P., Bach, E. M., Bartz, M. L. C., Bennett, J. M., Beugnon, R., Briones, M. J. I., Brown, G. G., Ferlian, O., Gongalsky, K. B., Guerra, C. A., Koenig-Ries, B., Krebs, J. J., Orgiazzi, et al
  2021; 8 (1): 136

- **Global distribution of earthworm diversity** *SCIENCE*
  Phillips, H. R. P., Guerra, C. A., Bartz, M. L. C., Briones, M. J. I., Brown, G., Crowther, T. W., Ferlian, O., Gongalsky, K. B., van den Hoogen, J., Krebs, J., Orgiazzi, A., Routh, D., Schwarz, et al
  2019; 366 (6464): 480-+

- **Soil organic carbon and mineral interactions on climatically different hillslopes** *GEODERMA*
  Wang, X., Yoo, K., Wackett, A. A., Gutknecht, J., Amundson, R., Heimsath, A.
  2018; 322: 71-80

- **Climate controls on coupled processes of chemical weathering, bioturbation, and sediment transport across hillslopes** *EARTH SURFACE PROCESSES AND LANDFORMS*
  Wackett, A. A., Yoo, K., Amundson, R., Heimsath, A. M., Jelinski, N. A.
  2018; 43 (8): 1575-1590

- **Human-mediated introduction of geoengineering earthworms in the Fennoscandian arctic** *BIOLOGICAL INVASIONS*
  Wackett, A. A., Yoo, K., Olofsson, J., Klaminder, J.
  2018; 20 (6): 1377-1386