

# Jood A. Al Aswad

Palo Alto, CA  
Twitter: [@geojood](https://twitter.com/geojood)

[jalaswad@stanford.edu](mailto:jalaswad@stanford.edu)  
[geojood.com](http://geojood.com)

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## EDUCATION

**Ph.D. in Geological Sciences** **2019 - Present**  
*Stanford University*

*Current and future projects involve the response and recovery of marine organisms to periods of extreme climate change over deep time.*

**M.S. in Geological Sciences** **2019**  
*Cornell University*

*"A stratigraphic and petrophysical study of in-situ geothermal reservoir quality of the Cambro-Ordovician strata in the subsurface at Cornell University, Ithaca, New York."*

**B.S. in Earth Science, concentration in Geology** **2016**  
*George Mason University*

*"The harmonic analysis of geophysical phenomena recorded by borehole strainmeters."*

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## TEACHING AND RESEARCH EXPERIENCE

### Teaching Assistant

*GEOLSCI 169: The Sixth Mass Extinction*

**Winter 2023; Spring 2023**

Assisted in creating a class on mass extinctions with Dr. Jonathan Payne, which included syllabus creation and formation of activities and preparation of lectures. Taught two lectures.

### Guest Lecturer

**Winter 2023**

*Foothill College: Physical Geography*

Developed and taught lecture and activities for *Week 7: Climate Change*, which included a paper-chain of 460 circles representing the age of the Earth, climograph exercises, and a Book Club discussion.

### Teaching Assistant

**Autumn 2022**

*GEOLSCI 4: Coevolution of Life and Earth – Stanford University*

### Mentor for Independent Undergraduate Research

**Summer 2022**

*Stanford SURGE - Summer Undergraduate Research in Geosciences and Engineering  
Payne Paleobiology Lab*

Mentees: Victor Trujillo and Lucy Helms of the SURGE intern research program for underrepresented minorities across the United States.

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Assisted in mentoring Edward Huang of the Bio-X Stanford internship and Kelly Tung, McKenna Sanders, and Sakeena Saber of the Stanford Earth Young Investigators high school internship program.

## **Paleontological and Stratigraphic Field Work** **Spring 2022**

Measured stratigraphic sections and collected 87 samples of invertebrate fossils from the earliest Triassic in Central Saudi Arabia for a project in collaboration with colleagues from the King Fahd University of Petroleum and Minerals.

## **Module in Introduction to Paleobiology** **Summer 2021**

*Friday Harbor Laboratories – University of Washington*

Taught a module introducing the field of paleobiology to a range of undergraduate and graduate students. This module incorporated active participation via the application TopHat.

## **Graduate Research Assistant** **May - August 2018**

*Smith School of Chemical and Biomolecular Engineering (CBE)*

*Principle Investigator: Dr. Jeff Tester*

Obtained, processed, and analyzed stratigraphic, petrophysical and geophysical data from existing wells and their geophysical well logs in Central New York.

## **Independent Geodetic Research** **Spring 2016; Summer 2018- 2020**

*George Mason University, Fairfax, VA*

*Mentor: Dr. Linda A Hinnov*

Geodetic research using borehole strainmeters in Yellowstone, WY and Sequim, WA. High density data with over 1,000,000 data points analyzed on MATLAB to calculate geophysical and statistical data through power spectra estimation and harmonic analyses.

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## **EDUCATIONAL TRAINING**

### **Preparing Future Professors** **2023**

*Mentor: Dr. K. Allison Meezan, Foothill College*

Paired with a professor as a mentor; shadowed classes; attended classes in the PFP geared toward preparing for a career in academia.

### **TEACH Symposium** **2022**

*Stanford University*

Participated in workshops on pedagogy and creating an inclusive atmosphere in the classroom.

### **Marine Invertebrate Zoology** **2021**

*University of Washington – Friday Harbor Laboratories*

Grade: 99/100 | Intensive 9-credit summer course at Friday Harbor, WA. Learned about embryology, reproduction, taxonomic classification, biology and ecology of marine invertebrates.

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## Field Camp

2015

*South Dakota School of Mines and Technology*

Grade: A | Six-week course in South Dakota and Wyoming to train in geological mapping, creation of stratigraphic columns and cross-sections, and creation of reports

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## SELECTED HONORS AND AWARDS

Harriet Benson Fellowship Award for Excellent Research	2022
Full graduate fellowship (Stanford), King Abdullah Scholarship Program	2019 – 2022
Best Scientific Video (Storytelling), BioX	2020
Full graduate fellowship (Cornell), King Abdullah Scholarship Program	2017 –2019
Donovan Family Scholarship	2018
Full Ride Scholarship, King Abdullah Scholarship Program	2011 –2016
Certificate of Highest GPA in Program, George Mason University	2016
Outstanding Senior in Earth Science Award	2016
\$1500 Student Research Grant, URSP George Mason University	2015

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## PUBLICATIONS

1. **Al Aswad, J.**, Monarrezz, P.M., Penn, J., Deutsch, C., and Payne, J., Physiologically driven homogenization of marine ecosystems after the end-Permian mass extinction. (In review).
2. Monarrez, P.M., **Al Aswad, J.**, Heim, N.A., Sperlin, E.A., Payne, J.L., Hyperthermal events have a greater effect on body size origination selectivity than extinction (In prep.)
3. Payne, J.L., **Al Aswad, J.**, Deutsch, C., Monarrez, P.M., Penn, J.L., and Singh, P. (April 2023). Selectivity of mass extinctions: Patterns, processes, and future directions. Cambridge Prisms: Extinction, Vol.1
4. Tester, J., Beyers, S., Gustafson, J.O., Jordan, T.E., Smith, J.D., **Al Aswad, J.A.**, Beckers, K.F., Allmendinger, R., Brown, L., Horowitz, F., May, D., Khan, T.M., and Pritchard, M., District geothermal heating using EGS technology to meet carbon neutrality goals: A case study of Earth Source Heat for the Cornell University campus, Proceedings World Geothermal Congress (May 2020).
5. J. Olaf Gustafson, Jared D. Smith, Stephen M. Beyers, **Jood A. Al Aswad**, Teresa E. Jordan, Jefferson W. Tester, and Tasnuva Ming Khan. (2019). Risk Reduction in Geothermal Deep Direct-Use Development for District Heating: A Cornell University Case Study, 2019 Stanford Geothermal Workshop. Direct Use I Session, Stanford University, CA, Feb. 11.

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6. Gustafson, J.O., Smith, J.D., Beyers, S.M., **Al Aswad, J.A.**, Jordan, T.E., and Tester, J.W., Earth Source Heat: Feasibility of deep direct use of geothermal energy on the Cornell campus, GRC Transactions, Vol. 42. (2018).

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### SELECTED PRESENTATIONS AND CONFERENCE PROCEEDINGS

1. **Al Aswad, J.A.**, Penn, J.L., Monarrez, P.M., Deutsch, C., and Payne, J., 2023, *Physiology of marine invertebrates explains broadened biogeography after end-Permian extinction*, Annual Meeting, Pittsburgh, PA, October 2023
2. **Al Aswad, J.A.**, Penn, J.L., Monarrez, P.M., Deutsch, C., and Payne, J., 2023, *Physiology of marine invertebrates explains broadened biogeography after end-Permian extinction*, University of Lausanne, Switzerland, August 2023
3. Monarrez, P., **Al Aswad, J.A.**, Heim, N.A., Sperling, E.A., and Payne, J.L., 2023, *Hyperthermal events have a greater effect on body size origination selectivity than extinction*, EGU Annual Meeting, Vienna, Austria 2023.
4. **Al Aswad, J.A.**, Deutsch, C., Monarrez, P., Penn, J.L., and Payne, J.L., 2022, *Taxonomic Homogenization after the end-Permian mass extinction*, GSA Annual Meeting poster session, 2022, Denver, CO.
5. Trujillo, V., Helms, L., **Al Aswad, J.A.**, Monarrez, P., and Payne, J.L., 2022, *Biogeographic stability of benthic marine mollusks across the end-cretaceous mass extinction*, GSA Annual Meeting 2022, Denver, CO.
6. Tung, K., Anderson, M., Saber, S., Monarrez, P.M., **Al Aswad, J.A.**, and Payne, J.L., 2022, *Comparing the latitudinal ranges of genera of Mollusca and arthropoda before and after the end-Permian mass extinction*, to be presented at 2021 Fall Meeting, American Geophysical Union, Washington D.C.
7. Jordan, T.E., Smith, J.D., **Al Aswad, J.A.**, Gustafson, J.O., Tester, J.W., and Beyers, S.M., 2018, *The Geothermal Heating Resource for Cornell University, Tompkins County, New York: Exploiting and Analyzing Available Geological and Geophysical Data Sets for Pre-Drill Site Characterization*, AGU Annual Meeting, Washington, D.C. (poster).
8. **Al Aswad, J.A.**, Jordan, T.E., Smith, J.D., and Gustafson, J.O., 2018, *Porosity, permeability, and paleotopographic analysis: A geological interpretation of in-situ geothermal reservoir quality at Cornell University, Ithaca, New York*, GSA Annual Meeting 2018, Indianapolis, IN (talk: Hydrogeology and Energy).
9. **Al Aswad, J.A.**, and Hinnov, L.A.,\* 2018, *Estimating solid Earth tidal constituents from*

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*PBO station borehole strainmeters*, AGU Annual Meeting 2018, Washington, D.C., (poster: Geodetic Measurements of the Earth's Elastic Response to Surface Mass Variability)

10. **Al Aswad, J.A.**, Jordan, T.E., and Smith, J.D., 2018, *Earth Source Heat: Exploring the subsurface at Cornell for potential reservoirs for an Enhanced Geothermal System* (talk), Paleontological Research Institute Summer Symposium, Museum of the Earth, Ithaca, NY,
11. **Al Aswad, J.A.**, and Hinnov, L.A., 2016, *The harmonic analysis of geophysical phenomena recorded by borehole strainmeters*:
  - a. Presented at American Geophysical Union Undergraduate Virtual Poster Showcase, 2016; OSCAR Students as Scholars Symposium (talk), 2016;

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### LEADERSHIP AND EXPERIENCE

Committee member, Paleontological Society Diversity & Inclusion	2021 - present
DEEP Diversity Award Creator and Committee Leader	2022 - 2023
Student representative, Paleontological Society Council	2021 - 2023
DEI Liaison - Stanford School of Sustainability	2022 - 2023
Program coordinator, Science Teaching Through Art – Stanford	2021 – 2022
Committee member, North California Paleontological Conference	2020
Coordinator, Stanford University Geological Sciences graduate seminar series	2019 - 2022
Peer advisor, Bay Area Graduate Pathways in STEM	2019 - 2020
President, American Association of Petroleum Geologists – Cornell	2017 - 2019
Volunteer for 100+ hours, Alpha Phi Omega	2013 - 2016
Founding Member/ Vice President, George Mason Geology Club	2014 - 2016