

## **EDUCATION**

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University of Washington, Seattle WA, Earth & Space Sciences, PhD 2019  
Dartmouth College, Hanover NH, Earth Sciences (Magna Cum Laude), BA 2012

## **RESEARCH & PROFESSIONAL APPOINTMENTS**

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Postdoctoral Research Fellow, Univ of Michigan, Ann Arbor, MI, 2022 – present  
NSF Earth Sciences Postdoctoral Fellow, Univ of Michigan, Ann Arbor, MI, 2019 – 2022  
NSF Graduate Fellow and Research Assistant, Univ of Washington, Seattle, WA, 2013 – 2019  
NSF Graduate Research Intern, US Geological Survey, Portland OR, May – July 2017  
Staff Geologist, ENGEIO Incorporated, San Ramon CA, 2012 – 2013

## **MAJOR RESEARCH FUNDING (IN USD)** (total \$744,367)

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NSF-EAR Geobiology and Low Temperature Geochemistry, Awarded 2021 (\$360,667)  
*Designed and wrote proposal with PI N. Levin*  
NSF-EAR Postdoctoral Fellowship Supplement, Awarded 2021 (\$71,700)  
NSF-EAR Postdoctoral Fellowship, Awarded 2019 (\$174,000)  
NSF Graduate Research Fellowship, Awarded Spring 2015 (\$138,000)

## **HONORS, AWARDS, & SMALL GRANTS** (total \$22,156)

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Highlight in Elsevier International Women's Day Special Issue for highly cited paper, 2020  
Johnston Award for Research Excellence, UW Earth & Space Sciences, 2019  
Best Geochemistry Talk, UW ESS Research Gala, 2019  
Best Paleoclimate Talk, UW ESS Research Gala, 2018  
Inquisitive Graduate Student Fund, UW ESS Research Grant, 2018 (\$2,050)  
NSF Graduate Research Internship Program, Additional Funding to GRF, 2017 (\$5,000)  
Quaternary Research Center, University of Washington, Research Grant, 2016 (\$6,420)  
Bourgeois Graduate Student Fund, UW ESS Research Grant, 2015 (\$2,386)  
American Geophysical Union Outstanding Student Paper Award, 2015  
Geological Society of America Research Grant, 2014 & 2015 (\$1,800)  
College of the Environment Individual Student Travel Award, 2015 & 2018  
Graduate School Fund for Excellence and Innovation Travel Award, 2015 & 2018  
NSF Graduate Research Fellow Honorable Mention 2014 (Successful Award in 2015)  
Univ. of Washington Top Scholar Research Fellowship, 2013 – stipend & tuition  
Rufus Choate Scholar, Dartmouth College, 2012  
High Honors Senior Thesis, Dartmouth College, Hanover NH, 2012  
Northern Studies Internship Grant for Research, Dartmouth College, 2011 (\$3,500)  
Earle Lenker Award for Excellence in Field Work, Dartmouth College, 2011

**PEER-REVIEWED PUBLICATIONS** (n=4 first author, n = 13 total)

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- Kelson, J.R.**, Petersen, S.V., Niemi, N.A., Passey, B.H., Curley, A.N. (2022). Looking upstream with clumped and triple oxygen isotopes of estuarine oyster shells in the early Eocene of California. *Geology*. doi: 10.1130/G49634.1
- Jimenez-Rodriguez, S., Quade, J., Dettinger, M., Huntington, K., **Kelson, J.R.** (2022). Comparing isotopic estimates of paleoelevation from carbonates and volcanic glass from the Miocene-age Chucal Formation in northern Chile. *Chemical Geology*, 596. doi: 10.1016/j.chemgeo.2022.120798
- Lehmann, S.B., Levin, N.E., Passey, B.H., Hu, H., Cerling, T.E., Miller, J.H., Arppe, L.E., Beverly, E.J. Huth, T.E., **Kelson, J.R.**, Hoppe, K.A.; Luyt, J., Sealy, J. (2022). Triple oxygen isotope distribution in modern mammal teeth and potential geologic applications. *Geochimica et Cosmochimica Acta*. doi: 10.1016/j.gca.2022.04.033
- Licht, A, **Kelson, J.R.**, Bergel, S., Schauer, A., Petersen, S.V., Capirala, A., Huntington, K.W., Dupont-Nivet, G., Zaw Win, and Day Wa Aung (2022). Dynamics of pedogenic carbonate growth in the monsoonal tropical domain. *Geochemistry, Geophysics, Geosystems*. doi: 10.1029/2021GC009929
- Bernasconi, S.M., Daeron, M., Bergmann, K.D., Bonifacie, M., Meckler, A.N., and 55 coauthors including **Kelson, J.R.** (2021). InterCarb: A community effort to improve inter-laboratory standardization of the carbonate clumped isotope thermometer using carbonate standards. *Geochemistry, Geophysics, Geosystems*. doi: 10.1029/2020GC009588.
- Anderson, N.T., **Kelson, J.R.**, Kele, S., Daeron, M., Bonifacie, M., Horita, J., Mackey, T.J., John, C.M., Kluge, T., Petschnig, P., Jost, A.B., Huntington, K.W., Bernasconi, S.M., Bergmann, K.D. (2021). A unified clumped isotope thermometer calibration (0.5-1100 °C) using carbonate-based standardization. *Geophysical Research Letters*. doi: 10.1029/2020GL092069
- Kelson, J.R.**, Huntington, K.W., Breecker, D.O., Burgener, L.K., Gallagher, T.J., Hoke, G.D., and Petersen, S.V. (2020). A proxy for all seasons? A synthesis of clumped isotope data from Holocene soil carbonates. *Quaternary Science Reviews* 234. doi: 10.1016/j.quascirev.2020.106259.
- Schenk, L.N., Harden, T.M., and **Kelson, J.R.** (2019). Differentiating sediment sources using sediment fingerprinting techniques, in the Sprague River Basin, south-central Oregon: U.S. Geological Survey Open-File Report 2019-1120. doi: 10.3133/ofr20191120.
- Petersen S.V., Defliese W.F., Saenger C., Daëron M., John C.M., Bernasconi S.M., Colman A.S., Huntington K.W., **Kelson J.R.**, and 21 coauthors. (2019). Effects of Improved <sup>17</sup>O Correction on Inter-laboratory Clumped Isotopes Calibrations, Estimates of Mineral Specific Offsets, and Acid Fraction Factors. *Geochemistry, Geophysics, Geosystems* 20. doi: 10.1029/2018GC008127
- Burgener, L., Hyland, E., Huntington, K. W., **Kelson, J.R.**, Sewall, J. O. (2019). Revisiting the Equable Climate Problem During the Late Cretaceous Greenhouse Using Paleosol Carbonate Clumped Isotope Temperatures from the Campanian Western Interior Basin.

Palaeogeography, Palaeoclimatology, Palaeoecology, 516, 244-267. doi: 10.1016/j.palaeo.2018.12.004

**Kelson, J.R.**, Watford, D., Bataille, C., Huntington, K.W., Hyland, E., Bowen, G.J. (2018). Warm terrestrial subtropics during the Paleocene and Eocene: Carbonate clumped isotope ( $\Delta_{47}$ ) evidence from the Tornillo Basin, Texas (USA). *Paleoceanography and Paleoclimatology*, 33(11), 1230-1249. doi: 10.1029/2018PA003391

**Kelson, J. R.**, Huntington, K. W., Schauer, A. J., Saenger, C., & Lechler, A. R. (2017). Toward a universal carbonate clumped isotope calibration: Diverse synthesis and preparatory methods suggest a single temperature relationship. *Geochimica et Cosmochimica Acta*, 197, 104-131. doi: 10.1016/j.gca.2016.10.010

Schauer, A. J., **Kelson, J.R.**, Saenger, C., & Huntington, K. W. (2016). Choice of  $^{17}\text{O}$  correction affects clumped isotope ( $\Delta_{47}$ ) values of  $\text{CO}_2$  measured with mass spectrometry. *Rapid Communications in Mass Spectrometry*, 30(24), 2607-2616. doi: 10.1002/rcm.7743

## **PUBLICATIONS IN PREPARATION**

**Kelson, J.R.**, Huntington, K.W., Breecker, D.O., Gallagher, T.M., Hoke, G.D. The Sensitivity of the Preserved Isotope Geochemistry of Soil Carbonates to Rainfall, Plant Activity, and Dissolution in Numerical Modeling. (in revision for *Geochemistry, Geophysics, Geosystems*, available upon request)

**Kelson, J.R.**, Huth, T.E., Levin, N.E., Passey, B.H, et al. Triple oxygen isotopes in globally distributed Quaternary pedogenic carbonates reveal evaporation in parent soil waters. (in preparation for *Geochimica et Cosmochimica Acta*, available upon request)

## **MENTORING**

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Mentor and Supervisor for Undergraduate Research (field & laboratory)

Matthew Salinas, Univ. of Michigan, (2021-present)  
Miriam Bartleson, Univ. of Michigan, (2021-present)  
Kirsten Andrews, Univ. of Michigan, (2021-2022)  
Margaret Rudnick, Univ. of Michigan, (2020-2022)  
Elise Pelletier, Univ. of Michigan, (2020)  
Ziwei Xiang, Univ. of Michigan, (2019-2020)  
Shana Edouard, Univ. of Washington, (2019)  
Nicole Saredidine, Univ. of Washington, (2017-2019)  
Adrienne Scott, Univ. of Washington, (2014)  
Paul Tosello, Univ. of Washington, (2014)  
Rebecca Smith, Univ. of Washington, (2014)

Mentor for High School Research, Headwaters Science Institute, Truckee, CA 2020  
Resulting in a paper in a young-scientist journal

Association for Women in Science (AWIS), Univ. Michigan, Lead Mentor, 2020-2021  
Peer mentoring circles for graduate students and postdocs in STEM.

## **TEACHING**

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Able to teach sedimentology & stratigraphy, field geology, physical geology, earth history, paleoclimate, climate change, stable isotopes, geochemistry

Lecturer (Instructor of Record), University of Michigan, Camp Davis, Jackson Hole, WY 2022  
EARTH 450: Ecosystems of the Rocky Mountains

Teaching Assistant, University of Washington, 2013-2019  
ESS 211 Physical Processes of the Earth (structural geology, geomorphology), Fall 2018  
ESS 418 Geoscience Communication, Winter 2015 & 2014  
ESS 400 Field Geology in Dillon, Montana, Summer 2014 & 2015  
ESS 210 Physical Geology, Fall 2014 & Winter 2019

Guest Lecturer, Stratigraphy and Basins (EARTH 467), University of Michigan, 2021  
Guest Lecturer, Geoscience Communication (ESS 410), University of Washington, 2019  
Guest Lecturer, Physical Geology (ESS 210), University of Washington, 2016  
Italian Instructor, Dartmouth College, Hanover, NH, Winter 2011 & Spring 2012  
Director's Assistant, Dartmouth College Off Campus Programs, Rome, Italy, Fall 2011

## **OUTREACH ACTIVITIES**

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Headwaters Science Institute, Speaker for Lunch with a Scientist, 2020-2021  
Inspiring Girls Expeditions, Application Reviewer 2018 & 2019  
Seattle Town Hall, Public Speaker on climate change, 2016.  
UW IsoLab Paleoclimate Field Trip, Developer and Instructor, 2014-2017  
Rockin' Out, University of Washington, Volunteer, 2013-2019

## **PROFESSIONAL SERVICE**

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Peer reviewer for publications and agencies including *Nature* / *Nature Communications* / *Nature Geoscience* / *Geochimica et Cosmochimica Acta* / *Geology* / *Rapid Communications in Mass Spectrometry* / *Paleoceanography and Paleoclimatology* / *Journal of Paleolimnology* / *Chemical Geology* / *ACS Earth and Space Chemistry* / *AGU Advances* / *Frontiers in Earth Sciences* / *Geosphere* / *Global and Planetary Change* / *Hungary's National Research, Development & Innovation Office* / *Agence Nationale de la Recherche (France)*  
Advisory Board, Paleo Analysis of Terrestrial Climate and Hydrology (PATCH) database  
Judge for Outstanding Student Presentations, AGU Fall Meeting, December 2019  
Board of Directors Member, Engage Science Communication, 2016-2018  
Graduate Student Representative to the Faculty, 2016-2018  
Organizer, UW Earth and Space Sciences Research Gala, 2015

## **PROFESSIONAL DEVELOPMENT**

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Enhancing Critical Zone Research Workshop, Golden CO, July 18-21, 2022  
Unlearning Racism in the GEosciences (URGE) – pod at Univ. of Michigan, 2021-present  
College STEM Teaching – Course for Postdoctoral Fellows at Univ. Michigan, Fall 2020  
Engage Science Communication – peer-led course on public communication, UW, 2015

## **INVITED SEMINARS**

University of Michigan – Earth and Environmental Sciences Smith Lecture, November 2022  
University of Texas at El Paso – Drylands Critical Zone Network, October 2021  
Purdue University – Geology and Geophysics, October 2021  
University of Utah – Geology and Geophysics, April 2021  
University of Michigan – Paleoclimate, October 2019  
University of Texas at Austin – Water, Climate and Environment, Sept 2018  
University of Washington – Biology Department Paleo, January 2018

## **CONFERENCE PRESENTATIONS (FIRST AUTHOR ONLY)**

Kelson, J.R., et al., (2022) Triple Oxygen Isotopes of Pedogenic Carbonates Reveal the Varied Role of Evaporation in Western US Drylands. Submitted to Fall Meeting, AGU, Chicago, 12-16 Dec 2022.

\*Kelson, J.R., et al., (2021) Using Triple Oxygen Isotopes of Pedogenic Carbonate to Identify Ancient Evaporation: First Steps from Modern Soils. In session: Novel and quantitative methods for reconstructing continental palaeoenvironments and palaeohydrology. Virtual European Geosciences Union, 19-30 Apr. (\*invited presentation).

\*Kelson, J.R., et al., (2020). Advancing terrestrial paleoclimate with a process-based understanding of the seasonal bias of the clumped and stable isotopic composition of soil carbonates. Geological Society of America Connects Online, 26-30 Oct. (\*invited presentation).

Kelson, J.R., et al., (2020). Deltas in an estuary: clumped and triple oxygen isotope analyses reveal isotopically depleted headwaters in the early Eocene of Southern CA. Abstract 702522 at 2020 Fall Meeting, AGU, Online.

Kelson, J.R., et al., (2020). Fingerprinting Soil Water Evaporation with Triple Oxygen Isotopes of Pedogenic Carbonates. Goldschmidt Virtual 2020, 21-26 Jun.  
[https://jrkelson.github.io/project/goldschmidt\\_2020/](https://jrkelson.github.io/project/goldschmidt_2020/)

Kelson, J.R., et al., (2019). Season's greetings or annual averages from paleosol carbonates? Findings from numerical simulations of soil carbonate formation. Abstract PP44B-05 at 2019 Fall Meeting, AGU, San Francisco, 9-13 Dec. (Oral presentation).

Kelson, J.R., et al., (2019). They're Not Always Hot: Varied Seasonal Biases in  $\Delta_{47}$  of Soil Carbonates Explored Through Numerical Modeling. Presentation at the International Clumped Isotope Workshop, Long Beach Harbor, CA, 25-28 Jan. (Oral presentation).

Kelson, J.R., et al., (2018). A synthesis of existing clumped isotope data reveals varied seasonal biases in soil carbonate accumulation. Geological Society of America Annual Meeting, Indianapolis, IN., 4-7 Nov. (Oral presentation).

Kelson, J.R., et al., (2017). Hot Summers on Land in the Early Eocene Subtropics. GSA Annual Meeting, Seattle, WA, 22-25 Oct. (Poster).

Kelson, J.R., et al., (2016). Choice of  $^{17}\text{O}$  Abundance Correction Affects  $\Delta_{47}$  and Thus Calibrations for Paleothermometry. Abstract V43B-3153 at 2016 Fall Meeting, AGU, San Francisco, 12-16 Dec. (Poster).

Kelson, J. R., et al., (2016). Quantifying Climate Change During the Eocene in North America. 10<sup>th</sup> Annual Graduate Climate Conference, Pack Forest, WA., 28-30 Oct. (Poster).

Kelson, J. R., et al., (2015). Reconciling Empirical Carbonate Clumped Isotope Calibrations: A Comparison of Calcite Precipitation and Acid Digestion Methods. Abstract PP23D-02 presented at 2015 Fall Meeting, AGU, San Francisco, 14-18 Dec. (Oral presentation).

Kelson, J.R., et al., (2014). Influence of dissolved inorganic carbon species equilibrium on clumped isotope values of synthetic calcite. 4<sup>th</sup> International Workshop on Clumped Isotopes, ETH Zürich, Switzerland, 24-27 Aug. (Oral presentation).