JULIA KELSON
Curriculum Vitae
jrkelson@umich.edu

EDUCATION

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

RESEARCH & PROFESSIONAL EXPERIENCE

NSF EAR Postdoctoral Fellow, University of Michigan, 2019-present
Clumped and triple oxygen isotopes, terrestrial paleoclimate.

NSF Fellow and Research Assistant, University of Washington, 2013-2019
Terrestrial paleoclimate and clumped isotope geochemistry.

NSF Graduate Research Intern, US Geological Survey, Portland OR, May-July 2017
Identifying phosphorous-rich sediment sources in the Sprague River, OR

Staff Geologist, **ENGEO Incorporated,** San Ramon CA, 2012 –2013
Geologic mapping, drilling, and characterization of natural hazards

High Honors Senior Thesis, Dartmouth College, Hanover NH, 2012
'Temporal and Spatial Snow Accumulation Patterns near Summit, Greenland.'

PEER-REVIEWED PUBLICATIONS

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 others. Effects of Improved ^{17}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 (Δ_{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.,** Saenger, C., & Huntington, K. W. (2016). Choice of ^{17}O correction affects clumped isotope (Δ47) values of CO_2 measured with mass spectrometry. *Rapid Communications in Mass Spectrometry*, *30*(24), 2607-2616. doi: 10.1002/rcm.7743

PUBLICATIONS IN REVIEW & IN PREP

Kelson, J.R., Huntington, K.W., Burgener, L.K., Petersen, S.V., Breecker, D.O., Gallagher, TJ., and Hoke, G. Seasonality of soil carbonate accumulation and the interpretation of terrestrial paleoclimate records: insights from a synthesis of modern-Holocene clumped isotope data. *Quaternary Science Reviews* (in review).

Schenk, Liam N., Harden, Tessa, **Kelson, Julia.** Differentiating sediment sources in the Sprague River basin, Oregon, using sediment fingerprinting techniques. United States Geological Survey Open File Report (OFR) (in review at USGS).

Kelson, J.R., Huntington, K.W., Breecker, D.O., Gallagher, T. Formation of soil carbonates by Storm Events predicted by HYDRUS. In preparation for submission to *Earth and Planetary Science Letters.*

RESEARCH GRANTS

NSF-EAR Postdoctoral Fellowship, Awarded February 2019 ($174,000).
Clumped and Triple Oxygen Isotopes of Terrestrial Carbonates: New Tools to Estimate Aridity and Precipitation in California During Past Greenhouse Climates

Inquisitive Graduate Student Support Fund, Departmental Research Grant, 2018 ($2050)
Soil respiration and atmospheric CO_2 in the early Paleogene: Exploring the role of soil carbon during ancient carbon cycle perturbations

NSF Graduate Research Internship Program, Additional Funding to GRF, 2017 ($5000)
Fingerprinting phosphorous-rich sediment sources in the Klamath River Basin, OR

Quaternary Research Center, University of Washington, Research Grant, 2016 ($6420)
Quantifying climate change during the PETM in continental North America

NSF Graduate Research Fellow, Awarded Spring 2015 ($138,000)

Bourgeois Graduate Student Support Fund, Departmental Research Grant, 2015 ($2386)
Early Eocene stratigraphy and climate in Big Bend National Park, Texas, USA

Geological Society of America Research Grant, 2014 and 2015 ($1800)
Uplift of the Altiplano constrained by carbonate clumped isotope paleothermometry
Fluid migration in a geothermal basin from carbonate clumped isotope thermometry

Northern Studies Internship Grant, Dartmouth College, 2011 ($3500)
Snow depths and densities in NH and VT: internship with the USGS in Burlington, VT.

AWARDS

Johnston Award for Research Excellence, UW Earth & Space Sciences, 2019
Best Geochemistry Talk, UW ESS Research Gala, 2019
Best Storyteller/Paleoclimate Talk, UW ESS Research Gala, 2018
American Geophysical Union Outstanding Student Paper Award, 2015
College of the Environment Individual Student Travel Award, 2015 & 2018
Graduate School Fund for Excellence and Innovation Travel Award, 2015 & 2018
University of Washington Top Scholar Research Fellowship, (stipend & tuition), 2013
Rufus Choate Scholar (top 5% of graduating class, Dartmouth College), 2012
Earle Lenker Award for Excellence in Field Work, Dartmouth College, 2011

PROFESSIONAL SERVICE

Peer-reviewed papers >5 papers for Nature, Nature Communications, Geology, Rapid Communications in Mass Spectrometry, ACS Earth and Space Chemistry

Board of Directors, Engage Science Communication, 2016-2018
UW graduate student-run organization that teaches science communication.

Graduate Student Representative to the Faculty, 2016-2018
Liaison between graduate students and the faculty; work to implement policies that improve the inclusivity and diversity of the department.

Organizer, UW Earth and Space Sciences Research Gala, 2015
Organized research gala for graduate and undergraduate students to present their research (talks and posters) to the department.

TEACHING EXPERIENCE & UNDERGRADUATE MENTORING

Teaching Assistant, University of Washington, 2013-present.
Physical Processes of the Earth (structural geology & geomorphology), Fall 2018
Geoscience Communication, Winter 2015 & 2014

Field Geology in Dillon, Montana, Summer 2014 & 2015
Physical Geology, Fall 2014 & Winter 2019

Mentoring Undergraduate Research

Shana Edouard (2019):
Synthetic carbonate precipitation for laser spectroscopy calibrations

Nicole Sarieddine (2017-2019):
Last Glacial Maximum temperatures estimated with carbonate clumped isotopes
Predicting soil carbonate formation with remotely-sensed soil moisture data

Adrienne Scott and Paul Tosello (2014):
Grain size estimates of synthetic carbonate samples using SEM imagery

Rebecca Smith (2014):
Synthetic carbonate precipitation experiments

Guest Lecture, Geoscience Communication (ESS 410), University of Washington, 2019

Guest Lecture, Physical Geology (ESS 210), University of Washington, 2016

Italian Instructor, Dartmouth College, Hanover, NH, Winter & Spring 2012
Led Rassias-method drill sections, fast-paced grammar instruction.

Director's Assistant, Dartmouth College Off Campus Programs, Rome, Italy, Fall 2011
Instructed grammar, led excursions in Rome, and performed administrative tasks for an undergraduate language immersion program.

EDUCATIONAL OUTREACH

Speaker, Seattle Town Hall Talk, June 1, 2016.
Public presentation on my paleoclimate research and modern climate change.

Curriculum Developer and Instructor, UW IsoLab Paleoclimate Field Trip, 2014-2017
Planned & executed a field trip for 120 high school students to visit IsoLab. Field trip occurred three consecutive years.

Volunteer, Rockin' Out, University of Washington, 2013-2019
Participated in k-12 outreach activities: planning and executing field trips to local parks with schools and teaching geology in classrooms and at science nights.

Inspiring Girls Expeditions, Application Reviewer, 2018 & 2019
Reviewed >20 applications for a wilderness science program each year

CONFERENCE PRESENTATIONS (first author only)

Kelson, J.R., Huntington, K.W., Gallagher, T.M., Breecker, D.O., Hoke, G.D., Burgener L.K. (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, planned).*

Kelson, J.R., Huntington, K.W., Gallagher, T.M., Breecker, D.O., Hoke, G.D., Burgener L.K. (2019). They're Not Always Hot: Varied Seasonal Biases in $T\Delta_{47}$ 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., Huntington, K.W., Breecker, D.O., Hoke, G.J., Burgener, L., and Gallagher, T. (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., Huntington, K.W., Hyland, E. G., Saenger, C. (2017). Hot Summers on Land in the Early Eocene Subtropics. GSA Annual Meeting, Seattle, WA, 22-25 Oct. *(Poster).*

Kelson, J.R., Schauer, A.J., Huntington, K.W., Saenger, C.S., Lechler, A.R. (2016). Choice of ^{17}O Abundance Correction Affects Δ_{47} and Thus Calibrations for Paleothermometry. Abstract V43B-3153 at 2016 Fall Meeting, AGU, San Francisco, 12-16 Dec. *(Poster).*

Kelson, J. R., Huntington, K.W., Hyland, E. (2016). Quantifying Climate Change During the Eocene in North America. 10th Annual Graduate Climate Conference, Pack Forest, WA., 28-30 Oct. *(Poster).*

Kelson, J. R., Huntington, K.W., Schauer, A.J., Saenger, C., Lechler, A.R. (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., Lechler, A.R., Huntington, K.W., Schauer, A.J., Smith, R. (2014). Influence of dissolved inorganic carbon species equilibrium on clumped isotope values of synthetic calcite. 4th International Workshop on Clumped Isotopes, ETH Zürich, Switzerland, 24-27 Aug. 2014. *(Oral presentation).*