

## Haiyang Liam Kehoe

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<b>Research Appointments</b>	<b>U.S. Geological Survey</b> Mendenhall Postdoctoral Fellow Pathways Intern	<b>Golden, CO</b> 2023–2025 2021–2023
<b>Education</b>	<b>University of Arizona</b> <i>Ph.D. Geosciences</i> Advisor: Eric Kiser	<b>Tucson, AZ</b> 2023
	<b>University of California, San Diego</b> <i>B.S. Physics</i>	<b>La Jolla, CA</b> 2017
<b>Publications (in prep.)</b>	<ol style="list-style-type: none"><li>9. <b>Kehoe, H. L.</b>, E. Bozdağ, O. S. Boyd, M. P. Moschetti, E. A. Wirth, &amp; W. J. Stephenson (in prep.). Evaluation of Puget Lowland basin velocity models in Washington State using high-frequency 3D wavefield simulations.</li><li>8. Dingo, H. C.<sup>†</sup>, <b>H. L. Kehoe</b>, &amp; M. P. Moschetti (in prep.). Microtremor and earthquake horizontal-to-vertical spectral ratios in Puerto Rico and the U.S. Virgin Islands.</li><li>7. <b>Kehoe, H. L.</b>, O. S. Boyd, M. P. Moschetti, E. Bozdağ, &amp; E. A. Caylor (in prep.). Geologic controls on seismic hazard across the continental United States using horizontal-to-vertical spectral ratios.</li></ol>	
<b>Publications (in review)</b>	<ol style="list-style-type: none"><li>6. Goldberg, D. E., W. L. Yeck, C. Hanagan, J. Atterholt, <b>H. L. Kehoe</b>, N. G. Reitman, W. D. Barnhart, D. R. Shelly, A. E. Hatem, D. J. Wald, &amp; P. S. Earle (submitted). Ultralong, Supershear Rupture of the 2025 Myanmar Earthquake Reveals Unaccounted Hazard.</li></ol>	
<b>Publications</b>	<ol style="list-style-type: none"><li>5. <b>Kehoe, H. L.</b> &amp; E. D. Kiser (2024). Moment-dependent rupture properties of deep-focus earthquakes in the Izu-Bonin subduction zone. <i>Geophysical Journal International</i>, 237 (2), 663–678. <a href="https://doi.org/10.1093/gji/ggae062">https://doi.org/10.1093/gji/ggae062</a></li><li>4. Kiser, E. D. &amp; <b>H. L. Kehoe</b> (2021). The hazard of coseismic gaps: the 2021 Fukushima earthquake. <i>Geophysical Journal International</i>, 227 (1), 54–57. <a href="https://doi.org/10.1093/gji/ggab208">https://doi.org/10.1093/gji/ggab208</a></li><li>3. Kiser, E. D., <b>H. L. Kehoe</b>, M. Chen, &amp; A. N. Hughes (2021). Lower Mantle Seismicity Following the 2015 M<sub>w</sub> 7.9 Bonin Islands Deep-Focus Earthquake. <i>Geophysical Research Letters</i>, 48 (13), e2021GL093111. <a href="https://doi.org/10.1029/2021GL093111">https://doi.org/10.1029/2021GL093111</a></li><li>2. <b>Kehoe, H. L.</b> &amp; E. D. Kiser (2020). Evidence of a Supershear Transition Across a Fault Stepover. <i>Geophysical Research Letters</i>, 47 (10), e2020GL087400. <a href="https://doi.org/10.1029/2020GL087400">https://doi.org/10.1029/2020GL087400</a></li><li>1. <b>Kehoe, H. L.</b>, E. D. Kiser, &amp; P. G. Okubo (2019). The Rupture Process of the 2018 M<sub>w</sub> 6.9 Hawai'i Earthquake as Imaged by a Genetic Algorithm-Based Back-Projection Technique. <i>Geophysical Research Letters</i>, 46 (5), 2467–2474. <a href="https://doi.org/10.1029/2018GL080397">https://doi.org/10.1029/2018GL080397</a></li></ol>	

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<sup>†</sup>Student

## Other Publications

3. **Kehoe, H. L.**, O. S. Boyd, A. M. Dunham, E. Bozdağ, M. P. Moschetti, E. A. Wirth, & W.J. Stephenson (2025). Improving seismic hazard estimates with ground-motion simulations. Newsletter at the Computational Infrastructure for Geodynamics. <https://geodynamics.org/highlight-may2025>
2. Stamps, D. S., Z. Eilon, W. Fan, C. Lynner, **H. L. Kehoe**, H. A. Ford, S. Wei, C. Rollins, C. G. Barcheck, N. J. Lindsey, M. R. Siegfried, & S. Naif (2020). An Early Career Investigator Community Vision for the Future NSF Geophysical Facility: Instrumentation Services Needs. White Paper. <https://doi.org/10.6084/m9.figshare.12398288.v1>
1. Ford, H. A., M. Floyd, D. S. Stamps, M. Mendoza, E. Bozdağ, D. Bowden, J. Byrnes, W. Fan, **H. L. Kehoe**, E. Chaussard, N. J. Lindsey, S. Wei, G. Barcheck, T. S. de Smet, H. Janiszewski, E. Lindsey, J. K. MacCarthy, K. Materna, S. Naif, D. Portner, D. Trugman, & I. Wang (2020). An Early Career Investigator Community Vision for the Future NSF Geophysical Facility: Data Services Needs. White Paper. <https://doi.org/10.6084/m9.figshare.12398321.v1>

## Invited Presentations

7. **Kehoe, H. L.** (2025). Geologic controls on low-frequency seismic site response across the Central and Eastern United States. Invited oral presentation at the *U.S. Geological Survey Central and Eastern U.S. and Coastal Plains Amplification Working Group*, Golden, CO
6. **Kehoe, H. L.** (2025). Earthquake Ground Shaking, Hazards, and Resilience in Subduction Zones and Beyond. Invited oral presentation at the *University of Oregon*, Eugene, OR
5. **Kehoe, H. L.** (2024). Automated Microtremor Horizontal-to-Vertical Spectral Ratio (HVSr) measurements across the continental United States. Invited oral presentation at the *University of California, Los Angeles HVSr Meeting*, Los Angeles, CA.
4. **Kehoe, H. L.** (2024). Source, path, and site effects and their roles on earthquake ground motions. Invited oral presentation at the *Colorado School of Mines Heiland Lecture*, Golden, CO.
3. **Kehoe, H. L.** (2024). Source, path, and site effects and their roles on earthquake ground motions. Invited oral presentation at the *U.S. Geological Survey Earthquake Science Center Seminar*, Moffett Field, CA.
2. **Kehoe, H. L.** (2022). Improved constraints on back-projection source models using algorithmic seismic array design. Invited oral presentation at the *University of Utah SeismoTea Seminar*, Salt Lake City, UT.
1. **Kehoe, H. L.** (2022). Improved constraints on back-projection source models using algorithmic seismic array design. Invited oral presentation at the *Lawrence Livermore National Laboratory*, Livermore, CA.

## Presentations

19. **Kehoe, H. L.**, O. S. Boyd, M. P. Moschetti, E. Bozdağ, & E. A. Caylor (2025). Subsurface Geologic Controls on Seismic Site Response Across the Continental United States. Oral presentation at the *Seismological Society of America Annual Meeting*, Baltimore, MD
18. Boyd, O. S., E. Bozdağ, **H. L. Kehoe**, & M. P. Moschetti (2025). Sensitivity of Focal Mechanism and Depth of the 2024 M4.8 Tewksbury Earthquake to Seismic Velocity Model and the Impacts on Earthquake Ground Motions. Poster presentation at the *Seismological Society of America Annual Meeting*, Baltimore, MD

17. Aagaard, B. T., A. Baltay, M. P. Moschetti, E. M. Thompson, N. Luco, O. S. Boyd, A. Grant, R. Graves, E. Hirakawa, S. E. Hough, **H. L. Kehoe**, A. J. Makdisi, G. A. Parker, M. D. Petersen, P. M. Powers, S. Rezaeian, W. J. Stephenson, I. Stone, D. J. Wald, E. A. Wirth, K. B. Withers, & A. Yong (2025). Research, Development and Implementation Priorities for Ground-motion Characterization in USGS Earthquake Hazards Program Hazard, Risk Assessment and Forecast Products. Oral presentation at the *Seismological Society of America Annual Meeting*, Baltimore, MD
16. Boyd, O. S., **H. L. Kehoe**, M. P. Moschetti, R. W. Graves, E. T. Hirakawa, & E. Bozdağ (2025). Improving Estimates of Earthquake Ground Motions With Three-Dimensional Simulations. Oral presentation at the *Geologic Mapping Forum*, Virtual
15. **Kehoe, H. L.**, E. Bozdağ, O. S. Boyd, E. A. Wirth, W. J. Stephenson, & M. P. Moschetti (2024). Selection of a Starting Model for Adjoint Tomography of the Pacific Northwest. Oral presentation at the *American Geophysical Union Annual Meeting*, Washington, DC.
14. Boyd, O. S., E. Bozdağ, **H. L. Kehoe**, & M. P. Moschetti (2024). Earthquake simulations of the 2024 M4.8 Tewksbury, New Jersey earthquake. Presentation at the *Eastern Section-Seismological Society of America Annual Meeting*, Atlanta, GA.
13. Dingo, H. C.<sup>†</sup>, **H. L. Kehoe**, & M. P. Moschetti (2024). Microtremor and Earthquake Horizontal-to-Vertical Spectral Ratio Measurements in Puerto Rico and the U.S. Virgin Islands. Oral presentation at the *2025 Puerto Rico and U.S. Virgin Islands National Seismic Hazard Model Update & Beyond Workshop*, San Juan, PR.
12. **Kehoe, H. L.**, E. Bozdağ, O. S. Boyd, E. A. Wirth, W. J. Stephenson, & M. P. Moschetti (2024). Selection of a Starting Model for Adjoint Tomography of the Pacific Northwest. Poster presentation at the *Seismological Society of America Annual Meeting*, Anchorage, AK.
11. Ahdi, S. K., **H. L. Kehoe**, W. J. Stephenson, O. S. Boyd, M. P. Moschetti, N. S. Lindberg, & T. L. Pratt (2023). Assessing Site Characterization in Puerto Rico: Towards the 2025 Update of the Puerto Rico and Virgin Islands Portion of the USGS National Seismic Hazard Model. Oral presentation at the *Seismological Society of America Annual Meeting*, San Juan, PR.
10. **Kehoe, H. L.** & E. D. Kiser (2021). Source Imaging Constraints on Deep Earthquake Mechanisms. Poster presentation at the *American Geophysical Union Fall Meeting*, New Orleans, LA.
9. Chen, M., Z. Xi, E. D. Kiser, & **H. L. Kehoe** (2021). Slab Morphology at the Source Region of the 2015 Mw 7.9 Bonin Earthquake Imaged by Full Waveform Inversion. Oral presentation at the *Seismological Society of America Annual Meeting*, Virtual.
8. Kiser, E. D., **H. L. Kehoe**, M. Chen, & A. N. Hughes (2020). Conjugate Faulting, Lower Mantle Seismicity, and Slab Settling Associated with the 2015 Bonin Islands Deep-Focus Earthquake. Poster presentation at the *American Geophysical Union Fall Meeting*, Virtual.
7. **Kehoe, H. L.**, E. D. Kiser, & M. Chen (2020). Four-Dimensional Rupture Processes of Deep-Focus Earthquakes Near Japan. Poster presentation at the *American Geophysical Union Fall Meeting*, Virtual.
6. Chen, M., Z. Xi, E. D. Kiser, & **H. L. Kehoe** (2020). Slab morphology at the source region of the 2015 Mw 7.9 Bonin earthquake imaged by full waveform inversion. Poster presentation at the *American Geophysical Union Fall Meeting*, Virtual.
5. **Kehoe, H. L.** & E. D. Kiser (2019). A Genetic Algorithm-Based Back-Projection Method Reveals the Bilateral and Supershear Rupture of the 2017 Mw 7.8 Komandorsky Islands Earthquake. Poster presentation at the *American Geophysical Union Fall Meeting*, San Francisco, CA.

4. **Kehoe, H. L.**, E. D. Kiser, & P. G. Okubo (2018). The Rupture Process of the 2018 Mw 6.9 Hawai'i Earthquake as Revealed by a Genetic Algorithm-Based Source Imaging Technique. Oral presentation at the *American Geophysical Union Fall Meeting*, Washington, DC.
3. **Kehoe, H. L.** & E. D. Kiser (2018). Back-Projection Results of the 4 May 2018 Hawai'i Earthquake using a Genetically Optimized Sub-Array Selection Scheme. Poster presentation at the *IRIS Workshop*, Albuquerque, NM.
2. **Kehoe, H. L.**, S. Chakraborty, T. L. C. Pham, E. Alvarado, & M. H. Thiemens (2016).  $\Delta^{17}\text{O}$  Trends of Collected Atmospheric  $\text{CO}_2$  Resulting from Seasonal Changes in the Biosphere. Poster presentation at the *American Geophysical Union Fall Meeting*, San Francisco, CA.
1. Chakraborty S., **H. L. Kehoe**, & M. H. Thiemens (2016). New Experimental Evidence of Silicate Formation with Meteorite Like Oxygen Isotopes on a Dust Surface Analog. Oral Presentation at the *Lunar Planetary Science Conference XXXXVII*, Houston, TX.

<b>Awarded Grants</b>	1. <b>U.S. Geological Survey Mendenhall Postdoctoral Fellowship:</b> Applications of full-waveform inversion for high-resolution seismic velocity models and site response in support of earthquake ground motion investigations (\$224,000, 2023–2025, PI: <b>H. L. Kehoe</b> )
<b>Teaching Experience</b>	<p><b>Guest Lecturer (Colorado School of Mines)</b> GPGN 498: Geohazards Spring 2025</p> <p><b>Graduate Teaching Assistant (University of Arizona)</b> GEOS 322: Introduction to Geophysics Spring 2018 GEOS 212: Introduction to Oceanography Fall 2017</p>
<b>Field Experience</b>	<p>IRIS PASSCAL Training 2020</p> <p>Lassen Volcanic National Park Nodal Experiment 2019</p> <p>White Wolf Fault Active Source Nodal Experiment 2019</p> <p>Grand Teton National Park Nodal Experiment 2018</p> <p>Raton, New Mexico Nodal Experiment 2018</p> <p>Joshua Tree National Park Nodal Experiment 2017</p>
<b>Service</b>	<p><b>Grant Reviewer:</b> <i>National Science Foundation</i></p> <p><b>Journal Reviewer:</b> <i>Science Advances, Geophysical Research Letters, Geophysical Journal International, Seismological Research Letters</i></p> <p><b>Session Convener:</b> <i>AGU Fall Meeting</i> (2020)</p>

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(Current as of 14 July 2025)