# Amy Williamson

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## Positions Held

### University of California, Berkeley
*Berkeley, CA*

Assistant Research Scientist, Berkeley Seismological Laboratory — *September 2024 – Present*
Postdoctoral Scholar, Berkeley Seismological Laboratory — *November 2021 – September 2024*

- Earthquake early warning algorithm development

### National Tsunami Warning Center
*Palmer, AK*

Duty Scientist — *August 2020 – October 2021*

- monitor and issue tsunami warning products to Federal, State, and National Weather Service partners
- Conduct geophysical analysis tsunami hazards using geodetic, seismic, and ocean data sets

### University of Oregon
*Eugene, OR*

Postdoctoral Scholar, Department of Earth Sciences — *June 2018 – July 2020*

- Tested rapid GNSS earthquake source modules for viability as a near-field tsunami forecasting tool
- Elastic fault and surface deformation modeling using GNSS, InSAR, and satellite imagery

### Georgia Institute of Technology
*Atlanta, GA*

Graduate Research Assistant, School of Earth and Atmospheric Sciences — *August 2013 – May 2018*

- Earthquake characterization using DART, coastal GNSS, and InSAR observations
- Investigated capability of near-field tsunami forecasting capabilities using offshore data sets

## Education

### Georgia Institute of Technology
*Atlanta, GA*

Doctor of Philosophy (Ph.D.), Geophysics-Geodesy — *May 2018*

School of Earth and Atmospheric Sciences
Dissertation: *Improved understanding of extent of tsunamigenic earthquakes through geodetic and tsunami datasets*

### Denison University
*Granville, OH*

Bachelor of Science (B.S.), Geoscience — *May 2013*

Department of Geoscience

## Peer-reviewed Publications

9 first-authored, peer-reviewed publications (13 in total)  |  247 citations  |  h-index 8

**Williamson, A.L.**, Allen, R. (2023), Improving Efficacy of Tsunami Warnings along the West Coast of the United States, *Pure and Applied Geophysics*, 180 (5), 1661-1678, doi:10.1007/s00024-023-03277-z.

**Williamson, A.L.**, Lux A., Allen, R. (2023), Improving Out of Network Earthquake Locations Using Prior Seismicity for Use in Earthquake Early Warning, *Bulletin of the Seismological Society of America*, 113(2), 664-675, doi:10.1785/0120220159.

Rimando J.M., **Williamson, A.L.**, Mendoza R.B., Hobbs, T.E. (2022), Source Model and Characteristics of the 27 July 2022 Mw 7.0 Northwestern Luzon Earthquake, Philippines, *Seismica*, 1(1), doi:10.26443/seismica.v1i1.217.

**Williamson, A.L.**, Rim R., Adams, L., Melgar, D., Gonzalez, F.I. (2020), A Source Clustering Approach for Efficient Inundation Modeling and Regional Scale Probabilistic Tsunami Hazard Assessment, *Frontiers in Earth Science*, 8, doi:10.3389/feart.2020.591663.

**Williamson, A.L.**, D. Melgar, B. Crowell, D. Arcas, T. Melbourne, Y. Wei, K. Kwong (2020), Toward Near-Field Tsunami Forecasting Along the Cascadia Subduction Zone Using Rapid GNSS Source Models, *Journal of Geophysical Research (Solid Earth)*, 125(8), doi:e2020JB019636.

**Williamson, A.L.**, D. Melgar, X. Xu, C. Milliner (2020),The 2018 Palu Tsunami: Coeval Landslide and Coseismic Sources, *Seismological Research Letters*, 91 (6), 3148-3160, doi:10.1785/0220200009.

Inchin, P.A., J.B. Snively, **A.L. Williamson**, D. Melgar, J. Aguilar Guerrero, M.D. Zettergren (2020), Mesosphere airglow disturbances driven by nonlinear infrasonic waves after large earthquakes, *Journal of Geophysical Research (Space Physics)*, 125 (6), doi:e2019JA027628.

**Williamson, A.L.**, D. Melgar, D. Rim (2019), The effect of earthquake kinematics on tsunami propagation, *Journal of Geophysical research (Solid Earth)*, 124 (11), 11639-11650, doi:10.1029/2019JB017522.

Mulia, I. E., A.R. Gusman, **A.L. Williamson**, K. Satake (2019), An optimized array configuration of tsunami observation network off Southern Java, Indonesia, *Journal of Geophysical Research (Solid Earth)*, 124 (9), 9622-9637, doi:10.1029/2019JB017600.

Melgar, D., **A.L. Williamson**, E.F. Salazar-Monroy, (2019), Differences between heterogenous and homogenous slip in regional tsunami hazards modelling, *Geophysical Journal International, 219(1)*, 553-562, doi:10.1093/gji/ggz299.

**Williamson, A.L.**, A.V. Newman (2019), Suitability of open-ocean instrumentation for use in near-field tsunami early warning along seismically active subduction zones, *Pure and Applied Geophysics, 176(7)*, 3247-3262, doi:10.1007/s00024-018-1898-6.

**Williamson, A.L.**, A.V. Newman (2018), Resolution testing and limitations of geodetic and tsunami datasets for finite fault inversions along subduction zones, *Journal of Geophysical Research (Solid Earth), 123(10)*, 9033-9048, doi:/10.1029/2018JB016091.

**Williamson, A.L.**, A.V. Newman, and P. Cummins (2017), Reconstruction of coseismic slip from the 2015 Illapel earthquake using combined geodetic and tsunami waveform data, *Journal of Geophysical Research (Solid Earth), 122(3)*, 2119-2130, doi:10.1002/2016JB013883.

## External Funding

## First-Authored Presentations

[T] INDICATES A CONTRIBUTED TALK | [P] INDICATES A CONTRIBUTED POSTER | [I] INDICATES AN INVITED TALK

[T]Combining earthquake and tsunami early warnings along the west coast of the United States. USGS Earthquake Science Center Seminar Series, 07/2024.

[T]Revising Magnitude Scaling Relationships in EPIC with an Expanded Global Dataset. American Geophysical Union Fall Meeting, San Francisco, California, 12/2023.

[P]Expedited tsunami warning alerts along the US West Coast using earthquake early warning tools. Seismological Society of America Meeting, San Juan, Puerto Rico, 03/2023.

[P]Evaluating the impact of location errors on magnitude estimates through EPIC. Seismological Society of America Meeting, San Juan, Puerto Rico, 03/2023.

[I]Earthquake Early Warning along the US West Coast: Improving Detection and Characterization of Offshore Events with Limited Data. GAGE/SAGE 2023 Community Science Workshop, Pasadena, California, 03/2023.

[T]Evaluating uncertainties in EPIC magnitude estimates using recent catalog events. ShakeAlert R&D Workshop, Seattle, Washington, 01/2023.

[T]Improving Timely Earthquake Early Warning Locations For Edge-of-Network Seismicity. American Geophysical Union Fall Meeting, Chicago, Illinois, 12/2022.

[I]Impact of Megathrust Earthquake Rupture Characteristics on Near-Field and Regional Tsunami Hazards. SEG-AGU Geophysics of Convergent Margins, Seattle, Washington, 07/2022.

[I]Earthquake and tsunami early warning across the west coast of the United States. University of Oxford Seismology Seminar, Remote, 06/2022.

[I]From Shaking to Action: Earthquake and Tsunami Early Warning Across the Western United States. Graduate Student Symposium Keynote, Georgia Institute of Technology, Atlanta, Georgia, 04/2022.

[P]Earthquake Location Performance of ShakeAlert's EPIC Algorithm For Recent Offshore Events Near Cape Mendocino, California. Seismological Society of America Annual Meeting, Belleview, Washington, 04/2022.

[I]Improving Timely Earthquake Early Warning Accuracy for Offshore Seismicity. Bay Area Geophysical Society Seminar, Berkeley, California, 10/2021.

[T]Assessment of rapid earthquake source characterizations for local tsunami forecasting along the Cascadia subduction zone. American Geophysical Fall Meeting, San Francisco, California, 12/2019.

[I]Coseismic or Landslide? The Source of the 2018 Mw 7.5 Palu Tsunami. Berkeley Seismological Laboratory, University of California, Berkeley, California, 10/2019.

[I]Near-Field Tsunami Forecasting with GNSS Earthquake Source Products. International Union of Geodesy and Geophysics Meeting, Montreal, Quebec, Canada, 07/2019.

[I]The Effect of Kinematic Earthquake Rupture on Tsunami Hazards Along Subduction Zones. Seismological Society of America Meeting, Seattle, Washington, 04/2019.

[P]Tsunami generation from coseismic deformation during the 2018 $M_w$ 7.5 Palu Earthquake. Seismological Society of America Meeting, Seattle, Washington, 04/2019.

[I]The Effect of Kinematic Earthquake Rupture on Near-Field Hazards Along the Cascadia Subduction Zone. American Geophysical Union Fall Meeting, San Francisco, California, 12/2018.

[T]Identifying Trends in Tsunami Coastal Hazards Along the Cascadia Subduction Zone Through Synthetic Testing. American Geophysical Union Fall Meeting, Washington, District of Columbia, 12/2018.

[P]Tsunami Generation From Coseismic Deformation During the 2018 $M_w$ 7.5 Palu Earthquake. American Geophysical Union Fall Meeting, Washington, District of Columbia, 12/2018.

[T]Resolution testing and limitations of geodetic and tsunami datasets for finite fault inversions along subduction zones. American Geophysical Union Fall Meeting, New Orleans, Louisiana, 12/2017.

[P]From Trench to coast: estimates of coseismic slip through sub-aerial geodetic-tsunami joint inversions. International Tsunami Symposium, Bali, Indonesia, 08/2017.

[T]Efficiency of DART gauge locations for tsunami early warning along seismically active subduction zones. International Tsunami Symposium, Bali, Indonesia, 08/2017.

[T]Spatial GNSS/DART Requirements for Real-Time Local Tsunami Warning using Joint Source Inversions. GNSS Tsunami Early Warning Systems Workshop, Sendai, Japan, 07/2017.

<sup>P</sup>Incorporation of Multiple Datasets in Earthquake Source Inversions: Case Study for the 2015 Illapel Earthquake. American Geophysical Union Fall Meeting, San Francisco, California, 12/2016.

<sup>P</sup>Detection and Modeling of the Tsunami Generated by 2013 Okhotsk Deep Focus Earthquake. American Geophysical Union Fall Meeting, San Francisco, California, 12/2015.

<sup>P</sup>Temporal Feasibility of Rapid Joint Inversions in Response to Tsunamis Triggered by Megathrust Earthquakes. American Geophysical Union Fall Meeting, San Francisco, California, 12/2014.

## Awards, Honors, and Recognition

Apr. 2017 **Georgia Tech,** EAS Graduate Student Symposium Best Oral Presentation *Atlanta, GA*
Dec. 2014 **American Geophysical Union,** Outstanding Student Presentation Award *San Francisco, CA*

## Teaching Experience

Earth Processes (Co-Instructor) *Georgia Institute of Technology*
DESIGNED AND TAUGHT LABORATORY CURRICULA FOR UNDERGRADUATE DECLARED MAJORS *Spring 2018*

Earth Processes (Teaching Assistant) *Georgia Institute of Technology*
SURVEY COURSE ON PHYSICAL GEOLOGY FOR UNDERGRADUATE MAJORS AND NON-MAJORS *Spring 2014 – Summer 2017*

Structural Geology (Teaching Assistant) *Georgia Institute of Technology*
COURSE ON STRUCTURAL GEOLOGY USING FIELD MEASUREMENTS AND COMPUTATIONAL MODELS *Spring 2017*

Introductory Geology (Teaching Assistant) *Denison University*
SURVEY COURSE ON PHYSICAL GEOLOGY. *2012 – 2013*

## Short Courses and Workshops

Northern California Earthquake Hazards Workshop *Virtual*
USGS-LED WORKSHOP ON HAZARDS IN NORTHERN CALIFORNIA. *January, 2022*

Megathrust Modeling Workshop *Eugene, Oregon*
FACILITATED BY THE SUBDUCTION ZONE IN 4-D (SC4D) COMMITTEE. *October, 2019*

Re-examining our Grand Challenges in Geodesy *East Lansing, Michigan*
EARTHSCOPE-LED WORKSHOP TO IDENTIFY RESEARCH PRIORITIES IN GEODESY. *November 2018*

Advanced InSAR Processing *Boulder, Colorado*
UNAVCO-LED SHORT-COURSE FOCUSING ON INSAR PROCESSING USING GIANT. *June 2015*

Cascadia Initiative Expedition Team: RV Oceanus *Off Oregon and Washington Coasts*
SCIENCE TEAM MEMBER ONBOARD RV OCEANUS RETRIEVING OCEAN-BOTTOM SENSORS. *June 2014*

Black Hills Geology Field Camp: Kent State University *Black Hills, South Dakota*
FIELD TRAINING COURSE FOCUSED ON GEOLOGIC MAPPING. *Summer 2013*

## Professional and Community Involvement

Reviewer: NOAA Hollings Scholarship program *2020*

Science content editor for the novel *The Disaster Days* by Rebecca Behrens *2019*

Georgia Tech Undergraduate Research Symposium Judge *Spring 2017*

Georgia Tech President's Undergrad Research Award proposal reviewer *2013 –2018*

Science Olympiad Event Supervisor, Center for Education Integrating Science, Mathematics, and Computing (CEISMIC) *2015 –2017*