Amy Williamson

Postdoctoral Scholar, University of California, Berkeley
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Positions Held

Berkeley Seismology Laboratory, UC Berkeley *Berkeley, CA*
Postdoctoral Scholar *November 2022 - present*

- Offshore earthquake detection for use in earthquake early warning algorithms

National Tsunami Warning Center *Palmer, AK*
Duty Scientist August *2020 – October 2022*

- Solve and assess tsunami hazard for earthquakes globally under a life and property mission
- Conduct geophysical analysis of potential tsunami hazards using geodetic, seismic, and ocean datasets

University of Oregon *Eugene, OR*
Postdoctoral Scholar *June 2018 - July 2020*

- Tested rapid GNSS earthquake source modules for viability as a near-field tsunami forecasting tool
- Investigated the impact of earthquake rupture processes and slip characterization on tsunami propagation models at near and far-field distances
- Surface deformation modeling using GNSS, InSAR, and satellite imagery

Georgia Institute of Technology *Atlanta, GA*
Graduate Research Assistant *August 2013 – May 2018*

- Characterized slip patterns of submarine earthquakes using offshore tsunami pressure data coupled with coastal geodetic observations
- Investigated capability of near-field tsunami forecasting capabilities using offshore datasets

Education

Georgia Institute of Technology *Atlanta, GA*
Doctor of Philosophy (Ph.D.), Geophysics *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 (BS), Geoscience *May 2013*
Department of Geoscience
Area of Concentration: Geology & Petrology

Peer-reviewed Publications

Williamson, A.L., Lux, A., Allen, R (in prep) Improved Rapid Earthquake Source Solutions Along Northern California Wsing Pattern Seismicity

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*

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. *JGR: Solid Earth*

Williamson, A.L., D. Melgar, X. Xu, C. Milliner (*2020*), The 2018 Palu Tsunami: Coeval Landslide and Coseismic Sources. *Seismological Society of America*

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. *JGR: Space*

Williamson, A.L., D. Melgar, D. Rim (2019), The effect of earthquake kinematics on tsunami propagation, *J. Geophys. Res. Solid Earth*

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*.

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.

Williamson, A.L., A. Newman (2019*)*, Tsunami Early Warning Along Active Subduction Zones. *Pure and Applied Geophysics, 176*(7), 3247-3262.

Williamson, A.L., A.V. Newman (2018), Resolution testing and limitations of geodetic and tsunami datasets for finite fault inversions along subduction zones, J. *Geophys. Res. Solid Earth*, doi:/10.1029/2018JB016091

Williamson, A.L., A. Newman, and P. Cummins (2017), Reconstruction of coseismic slip from the 2015 Illapel earthquake using combined geodetic and tsunami waveform data, J. *Geophys. Res. Solid Earth*, 122, doi:10.1002/2016JB013883.

Conference & Seminar Presentations

Williamson, A.L., A. Lux, R Allen*,* “Earthquake Location Performance of ShakeAlert’s EPIC Algorithm For Recent Offshore Events Near Cape Mendocino, California.” *2022 Seismological Society of America Annual Meeting*

Williamson, A.L., “From Shaking to Action: Earthquake and Tsunami Early Warning Across the Western United States.” Georgia Tech Department of Earth Sciences Graduate Symposium, Keynote Presentation

Williamson, A.L., D. Melgar, B. Crowell, D. Arcas, T. Melbourne, Y. Wei *et al.,* “Assessment of rapid earthquake source characterizations for local tsunami forecasting along the Cascadia subduction zone.” *2019 AGU Fall Meeting*

Williamson, A.L., D. Melgar, X. Xu, C. Milliner. “Coseismic or Landslide? The Source of the 2018 M_w 7.5 Palu Tsunami.” UC *Berekely Seismo Lab Seminar, Fall 2019*

Williamson, A.L., D. Melgar, B. Crowell, T. Melbourne, D. Arcas. “Near-Field Tsunami Forecasting with GNSS Earrthquake Source Products.” *2019 IUGG meeting (invited)*

Williamson, A.L., D. Melgar, B. Crowell, D. Arcas. “Identifying Trends in Tsunami Coastal Hazards Along the Cascadia Subduction Zone Through Synthetic Testing.” *2018 AGU Fall Meeting*

Williamson, A.L., D. Melgar, D. Rim, R. LeVeque. “The Effect of Kinematic Earthquake Rupture on Near-Field Hazards Along the Cascadia Subduction Zone.” *2018 AGU Fall Meeting (invited)*

Williamson, A.L., D. Melgar, X. Xu, C. Milliner. “Tsunami Generation From Coseismic Deformation During the 2018 M_w 7.5 Palu Earthquake.” *2018 AGU Fall Meeting*

Williamson, A.L., A.V. Newman. “Resolution testing and limitations of geodetic and tsunami datasets for finite fault inversions along subduction zones.” *2017 AGU Fall Meeting*

Williamson, A.L., A.V. Newman. “From Trench to coast: estimates of coseismic slip through sub-aerial geodetic-tsunami joint inversions.” *2017 International Tsunami Symposium*

Williamson, A.L., A.V. Newman. “Efficiency of DART gauge locations for tsunami early warning along seismically active subduction zones.” *2017 International Tsunami Symposium*

Williamson. A.L., A.V. Newman*. “Spatial GNSS/DART Requirements for Real-Time Local Tsunami Warning using Joint Source Inversions.” *2017 GNSS Tsunami Early Warning Systems Workshop*

Williamson, A.L., A.V. Newman, P. Cummins, R. Benavente. "Incorporation of Multiple Datasets in Earthquake Source Inversions: Case Study for the 2015 Illapel Earthquake." *2016 AGU Fall Meeting*

Williamson, A.L., A.V. Newman, E.M. Okal. "Detection and Modeling of the Tsunami Generated by 2013 Okhotsk Deep Focus Earthquake." *2015 AGU Fall Meeting*

Williamson, A.L., and A. V. Newman. "Temporal Feasibility of Rapid Joint Inversions in Response to Tsunamis Triggered by Megathrust Earthquakes." 2014 *AGU Fall Meeting*.

Teaching Experience

Co-Instructor (Lecture and Laboratory)

Earth Processes | Georgia Institute of Technology |. *2018*

Teaching Assistant: Lab instructor

Introductory Geology | Denison University | *2012 - 2013*
Structural Geology | Georgia Institute of Technology | *2017*
Earth Processes | Georgia Institute of Technology | *2014 – 2017*

Past External Funding

- (2016) NSF: A Better Understanding of Shallow Subduction Zone Earthquakes Through Bayesian Analysis: A Case Study of the 2015 Illapel, Chile Earthquake | P.I. Amy Williamson | Award Number: 161414

Short Courses/Workshops

- Megathrust Modeling Workshop *October* 2019
- Re-examining our Grand Challenges in Geodesy, Earthscope *November* 2018
- Advanced InSAR Processing, *UNAVCO* *June* *2015*
- Cascadia Initiative Expedition Team: RV Oceanus *June* *2014*
- Black Hills Geology Field Camp, Kent State University *Summer* *2013*

Outreach and Service

- Reviewer for NOAA Hollings Scholarship program (2020)
- Science content editor for young adult novel: *The Disaster Days* by Rebecca Behrens (2019)
- Georgia Tech Undergraduate Research Symposium Judge (2017)
- Georgia Tech President's Undergrad Research Award proposal reviewer (2013-2018)
- GT Center for Education Integrating Science, Mathematics, and Computing (CEISMIC), Science Olympiad Event Supervisor (2015 - 2017)

Professional Memberships:

- American Geophysical Union (2013 – present)
- Seismological Society of America (2015 – present)