

**Jacob I. Walter**  
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## Education

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- 2012** Ph.D. Earth Sciences  
University of California, Santa Cruz, CA  
Thesis title: *The influence of small stresses on the dynamics of glaciers and subduction zones*
- 2006** B.A. Geology (Magna cum laude)  
University of Colorado, Boulder, CO

## Appointments

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- 2016 -** **Geophysicist/State Seismologist**, Oklahoma Geological Survey, University of Oklahoma
- 2014 - 2017** **Research Associate**, Institute for Geophysics, University of Texas at Austin
- 2012 - 2013** **Postdoctoral Fellow**, Georgia Institute of Technology, Atlanta, GA

## Teaching Experience

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- Spring 2018** **Co-instructor**, 50%, OU Geophysics 4970 – Introduction to Seismology
- 2017 -** **Co-instructor**, 20%, OU Geophysics 5970 - Graduate seminar on Geophysics
- 2014** **Guest Instructor (1 lecture)**, UT, Intro. to the Cryosphere (Fall 2014)
- 2013** **Guest Instructor (3 lectures)**, GT, Seismology (Fall 2013)
- 2012** **Guest Instructor (1 lecture)**, UCSC, Glaciology
- 2011, 2009** **Teaching Assistant**, UCSC EART 110C: The Dynamic Earth (Geophysics course for Senior Undergraduate and Graduate Students)

## Professional Experience

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- 2006 - 2007** **Geologist**, Trihydro Corporation, Laramie, WY

## Publications – peer-reviewed (\* denotes student advisee)

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40. Patel, S., F. Kolawole, **J. I. Walter**, X. Chen, and K. J. Marfurt (in review), Seismic illumination of small-offset seismogenic faults, Anadarko Basin, Oklahoma
39. Ortega-Romo, A. D., **J. I. Walter**, X. Chen, and B. M. Carpenter (in review), Spatially distinct tectonic zones across Oklahoma inferred from shear wave splitting

38. **Walter, J. I.**, P. Ogwari, A. Thiel, F. Ferrer, and I. Woelfel (in review), easyQuake: Putting machine learning to work for your regional seismic network or local earthquake study
37. Behm, M., **J. I. Walter**, D. Binder, F. Cheng, B. Kulesa, K. Langley, P. Limpach, S. Mertl, W. Schöner, M. Tamstorf, and G. Weyss (2020), Seismic Characterization of a Rapidly-Rising Jökulhlaup Cycle at the A.P. Olsen Ice Cap, NE-Greenland, *Journal of Glaciology*, in press.
36. Qin, Y., X. Chen, **J. I. Walter**, J. Haffener, D. T. Trugman, B. M. Carpenter, and M. Weingarten (2019), Deciphering the stress state of seismogenic faults in Oklahoma and southern Kansas based on high-resolution stress maps, *J. Geophys. Res. Solid Earth*, doi:10.1029/2019JB018377.
35. Frohlich, C. F., C. Hayward, J. Rosenblit, C. Aiken, P. Hennings, A. Savvaidis, C. Lemons, E. Horne, **J. I. Walter**, and H. R. DeShon (2020), Onset and cause of increased seismic activity near Pecos, West Texas, USA from observations at the Lajitas TXAR Seismic Array, *J. Geophys. Res. Solid Earth*, 125, <https://doi.org/10.1029/2019JB017737>.
34. **Walter, J. I.**, P. Ogwari, A. Thiel, F. Ferrer, I. Woelfel, J. C. Chang, A. P. Darold, and A. A. Holland (2020), The Oklahoma Geological Survey Statewide Seismic Network, *Seismol. Res. Lett.*, 91 (2A): 611–621, doi: <https://doi.org/10.1785/0220190211>.
33. Huang, G. D., A. Savvaidis, and **J. I. Walter** (2019), Mapping the 3-D Lithospheric Structure of the Greater Permian Basin in West Texas and Southeast New Mexico for Earthquake Monitoring, *J. Geophys. Res. Solid Earth*, <https://doi.org/10.1029/2019JB018351>.
32. Rosson, Z.\* , **J. I. Walter**, T. Goebel, and X. Chen (2019), Narrow spatial aftershock zones for induced earthquake sequences in Oklahoma, *Geophys. Res. Lett.*, <https://doi.org/10.1029/2019GL083562>.
31. Goebel, T., Z. Rosson\*, E. E. Brodsky, and **J. I. Walter** (2019), Aftershock deficiency of induced earthquake sequences during rapid mitigation efforts in Oklahoma, *Earth and Planet. Sci. Lett.*, 522: 135-143, <https://doi.org/10.1016/j.epsl.2019.06.036>.
30. Regmi, N. and **J. I. Walter** (2019), Detailed Mapping of Shallow Landslides in Eastern Oklahoma and Potential Triggering by Oklahoma Earthquakes, *Geomorphology*, , <https://doi.org/10.1016/j.geomorph.2019.05.026>.
29. Skoumal, R. J., J. O. Kaven, and **J. I. Walter** (2019), Characterizing Seismogenic Fault Structures in Oklahoma Using a Relocated Template-Matched Catalog, *Seismol. Res. Lett.*, doi: <https://doi.org/10.1785/0220190045>.
28. Vore, M. E., T. C. Bartholomaeus, J. P. Winberry, **J. I. Walter**, and J. M. Amundson (2019), Seismic tremor reveals spatial organization and temporal changes of subglacial water system, *J. Geophys. Res. Earth Surface*, <https://doi.org/10.1029/2018JF004819>.

27. Walton, M. A. L., E. C. Roland, **J. I. Walter**, S. P. S. Gulick, and P. J. Dotray (2019), Seismic velocity structure across the 2013 Craig, Alaska rupture from aftershock tomography: Implications for seismogenic conditions, *Earth and Planet. Sci. Lett.*, 507: 94-104, <https://doi.org/10.1016/j.epsl.2018.11.021>.
26. **Walter, J. I.**, C. Frohlich, and T. Borgfeldt\* (2018), Natural and induced earthquakes in the Texas and Oklahoma Panhandles, *Seismol. Res. Lett.*, 89 (6): 2437-2446, <https://doi.org/10.1785/0220180105>.
25. Barcheck, G. C., S. Tulaczyk, S. Y. Schwartz, **J. I. Walter**, and J. P. Winberry (2018), Implications of basal micro-earthquakes and tremor for ice stream mechanics: stick-slip basal sliding and till erosion, *Earth and Planet. Sci. Lett.*, 486: 54-60, doi:10.1016/j.epsl.2017.12.046.
24. Scales, M. M., H. R. DeShon, M. B. Magnani, **J. I. Walter**, L. Quinones, T. L. Pratt, and M. J. Hornbach (2017), A Decade of Induced Slip on the Causative Fault of the 2015 Mw 4.0 Venus Earthquake, Northeast Johnson County, Texas, *J. Geophys. Res.: Solid Earth*, 122, doi:10.1002/2017JB014460.
23. Goebel, T. H. W., **J. I. Walter**, K. Murray, and E. E. Brodsky (2017), Comment on “How will induced seismicity in Oklahoma respond to decreased saltwater injection rates?” by C. Langenbruch and M. D. Zoback, *Science Advances*, 3:8, doi:10.1126/sciadv.1700441.
22. Chen, X., C. Pennington, J. Haffener, J. C. Chang, X. He, Z. Zhan, S. Ni, and **J. I. Walter** (2017), The Pawnee earthquake as a result of the interplay among injection, faults and foreshocks, *Scientific Reports*, 7: 4945, doi:10.1038/s41598-017-04992-z.
21. **Walter, J. I.**, J. C. Chang, and P. J. Dotray (2017), Foreshock seismicity suggests gradual differential stress increase in the months prior to the 3 September 2016 Mw 5.8 Pawnee earthquake, *Seismol. Res. Lett.*, 88(4), doi:10.1785/0220170007.
20. Yao, D., **J. I. Walter**, X. Meng, T. E. Hobbs, Z. Peng, A. V. Newman, S. Y. Schwartz, and M. Protti (2017), Detailed Spatio-Temporal Evolution of Microseismicity and Repeating Earthquakes following the 2012 Mw7.6 Nicoya Earthquake, *J. Geophys. Res. Solid Earth*, 121, doi:10.1002/2016JB013632.
19. Holland, D.M., D. Voytenko, K. Christianson, T.H. Dixon, M.J. Mei, B.R. Parizek, I. Vaňková, R.T. Walker, **J.I. Walter**, K. Nicholls, and D. Holland (2016), An intensive observation of calving at Helheim Glacier, East Greenland, *Oceanography* 29(4):46–61, doi.org/10.5670/oceanog.2016.98.
18. Frohlich, C., H. R. DeShon, B. W. Stump, C. Hayward, M. J. Hornbach, and **J. I. Walter** (2016), Reply to "Comment on 'A historical review of induced earthquakes in Texas' by Steve Everley", *Seismol. Res. Lett.*, 87, 1381-1383, doi:10.1785/0220160148.

17. Frohlich, C. F., H. DeShon, B. Stump, C. Hayward, M. J. Hornbach, and **J. I. Walter** (2016), A historical review of induced earthquakes in Texas, *Seismol. Res. Lett.*, 87(4), doi:10.1785/0220160016.
16. Gimbert, F., V. C. Tsai, J. M. Amundson, T. C. Bartholomaus, and **J. I. Walter** (2016), Sub-seasonal changes in pressure, geometry, and sediment transport observed in subglacial channels, *Geophys. Res. Lett.*, 43, doi:10.1002/2016GL068337.
15. **Walter, J. I.**, P. J. Dotray\*, C. Frohlich, and J. F. W. Gale (2016), Earthquakes in northwest Louisiana and the Texas-Louisiana border possibly induced by energy resource activities within the Haynesville shale play, *Seismol. Res. Lett.*, 87(2A), doi:10.1785/0220150193.
14. **Walter, J. I.**, Z. Peng, X. Meng, A. V. Newman, S. Y. Schwartz, and J. Marino Protti (2015), Far-field triggering of foreshocks near the nucleation zone of the 5 September 2012 (Mw 7.6) Nicoya Peninsula, Costa Rica earthquake, *Earth and Planet. Sci. Lett.*, 431: 75-86, doi:10.1016/j.epsl.2015.09.017.
13. Bartholomaus, T. C., J. M. Amundson, **J. I. Walter**, S. O'Neel, M. E. West, and C. F. Larsen (2015), Subglacial discharge at tidewater glaciers revealed by seismic tremor, *Geophys. Res. Lett.*, 42, doi:10.1002/2015GL064590.
12. Malservisi, R., S. Y. Schwartz, N. Voss, M. Protti, V. Gonzalez, T. H. Dixon, Y. Jiang, A. V. Newman, J. Richardson, **J. I. Walter**, and D. Vayenko (2015), Multiscale postseismic behavior on a megathrust: The 2012 Nicoya earthquake, Costa Rica, *Geochem. Geophys. Geosyst.*, 16, doi:10.1002/2015GC005794.
11. Aiken, C., J. P. Zimmerman, Z. Peng, and **J. I. Walter** (2015). Triggered seismic events along the eastern Denali fault in northwest Canada following the 2012 Mw 7.8 Haida Gwaii, 2013 Mw 7.5 Craig, and two Mw>8.5 teleseismic earthquakes, *Bull. Seismol. Soc. Am.*, 105, no. 2B, doi: 10.1785/0120140156.
10. Frohlich, C., **J. I. Walter**, and J. F. W. Gale (2015), Analysis of transportable array (USArray) data shows earthquakes are scarce near injection wells in the Williston Basin, 2008-2011, *Seismol. Res. Lett.*, 86, 492-499.
9. **Walter, J. I.**, I. Svelitsky, S. Tulaczyk, J. Fineberg, E. E. Brodsky, and S. P. Carter (2015), Rupture speed dependence on initial stress profiles: Insights from glacier and laboratory stick-slip, *Earth and Planet. Sci. Lett.*, 411: 112-120, <http://dx.doi.org/10.1016/j.epsl.2014.11.025>.
8. Peng, Z., **J. I. Walter**, R. Aster, D. A. Wiens, S. Anandkrishnan, and A. Nyblade (2014), Antarctic icequakes triggered by the 2010 Maule earthquake in Chile, *Nature Geosci.*, 7, 677-681, doi:10.1038/ngeo2212.
7. Protti, M., V. Gonzalez, A. V. Newman, T. H. Dixon, S. Y. Schwartz, J. S. Marshall, L. Feng, **J. I. Walter**, R. Malservisi, and S. E. Owen (2014), Nicoya earthquake rupture

- anticipated by geodetic measurement of the locked plate interface, *Nature Geosci.*, 7, 117–121, doi:10.1038/ngeo2038.
6. **Walter, J. I.**, S. Y. Schwartz, M. Protti, and V. Gonzalez (2013), The synchronous occurrence of shallow tremor and very low frequency earthquakes offshore of the Nicoya Peninsula, Costa Rica, *Geophys. Res. Lett.*, 40, 1517–1522, doi:10.1002/grl.50213.
  5. Horgan, H. J., S. Anandakrishnan, R. W. Jacobel, K. Christianson, R. B. Alley, D. S. Heeszel, S. Picotti, and **J. I. Walter** (2012), Subglacial Lake Whillans – Part 1: Imaging a Shallow Active Reservoir Beneath a West Antarctic Ice Stream, *Earth and Planet. Sci. Lett.*, 331: 201-209.
  4. **Walter, J. I.**, J. E. Box, S. Tulaczyk, E. E. Brodsky, I. M. Howat, Y. Ahn, and A. Brown (2012), Oceanic mechanical forcing of a marine-terminating Greenland glacier, *Ann. Glaciol.*, 53(60), 181-192(12), doi:10.3189/2012AoG60A083.
  3. **Walter, J. I.**, E. E. Brodsky, S. Tulaczyk, S. Y. Schwartz, and R. Pettersson (2011), Transient slip events from near-field seismic and geodetic data on a glacier fault, Whillans Ice Plain, West Antarctica, *J. Geophys. Res. Earth Surface*, 116, F01021, doi:10.1029/2010JF001754.
  2. **Walter, J. I.**, S. Y. Schwartz, J. M. Protti, and V. Gonzalez (2011), Persistent tremor of the northern Costa Rica seismogenic zone, *Geophys. Res. Lett.*, 38, L01307, doi:10.1029/2010GL045586.
  1. Outerbridge, K. C., T. H. Dixon, S. Y. Schwartz, **J. I. Walter**, M. Protti, V. Gonzalez, J. Biggs, M. Thorwart, and W. Rabbel (2010), A tremor and slip event on the Cocos-Caribbean subduction zone as measured by a GPS and seismic network on the Nicoya Peninsula, Costa Rica, *J. Geophys. Res.*, 115, B10408, doi:10.1029/2009JB006845.

## Funding and Grants

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### Current External Research Grants

“NSFPLR-NERC: TIME (Thwaites Interdisciplinary Margin Evolution) - The Role of Shear Margin Dynamics in the Future Evolution of Thwaites Drainage Basin,” co-PI with 8 other co-PIs at 4 other institutions, 1 OU co-PI (N. Nakata – now at MIT), NSF, \$512,170 to OU, 1 month salary/yr, 5/1/18-4/30/23.

“Refining Principal Stress Measurements in Reservoir Underburden in Regions of Induced Seismicity through Seismological Tools, Laboratory Experiments, and Theory,” lead PI at OU with 2 other co-PIs (Carpenter and Ghassemi) and federal lab collaborators, US Department of Energy, \$495,423 to OU, 1 month salary/yr, 10/1/18-9/31/22

“Mapping Characteristics of Eastern Oklahoma Landslides,” co-PI with OGS scientist N. Regmi, FEMA through Oklahoma Department of Emergency Management, \$64,000 awarded, 5/3/19-11/22/21.

“Collaborative Research: Triggering of Antarctic Icequakes, Slip Events, and other Tectonic Phenomena by Distant Earthquakes,” lead PI with Z. Peng (Georgia Tech), NSF-Antarctic Earth Sciences, \$189,702 awarded, 2 months salary/yr, 6/1/16-5/31/20 (no cost extension).

“Roles of stress heterogeneity and stress interaction in induced seismicity: example from the Fairview/Woodward area in Oklahoma,” co-PI, lead PI is X. Chen (OU), USGS, \$52,705, 5/1/18-12/31/19.

**Pending External Research Proposals**

“Collaborative Research: Slip behavior of a shallow, seismogenic subduction interface,” lead PI with 2 other US inst., ~\$400k to OU, NSF-Geophysics.

“Variability of Ground Motion in Oklahoma,” co-PI with OGS scientist P. Ogwari, \$50k to OU, USGS.

**Past Internal Research Grants**

“Probing variations in deformation rate and seismicity along the forearc of the uniquely accessible Western Solomon Islands,” lead PI, JSG seed grant, 0.5 months salary, \$34,214.

**Past External Research Grants**

“Probing dynamic interactions between the Haida Gwaii and Craig earthquakes and implications for Southeast Alaska faults,” lead PI with Z. Peng (Georgia Tech), USGS-NEHRP, \$49,996 awarded to UT, 2 months salary, 3/1/15-2/29/16.

“Collaborative Research: MIDGE: Minimally Invasive Direct Glacial Exploration of Biogeochemistry, Hydrology and Glaciology of Blood Falls, McMurdo Dry Valleys,” NSF-AISS, subaward in amount of \$15,353 awarded, 0.78 months salary.

**Students**

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**Graduate advisor**

|                  |            |           |                   |
|------------------|------------|-----------|-------------------|
| Zach Rosson      | MS Student | OU        | M.S. awarded 2019 |
| Taylor Borgfeldt | MS Student | UT Austin | M.S. awarded 2017 |

**Graduate thesis committee member**

|                   |     |           |                |
|-------------------|-----|-----------|----------------|
| Angie Ortega Romo | MS  | OU        | 2018-          |
| Yan Qin           | PhD | OU        | 2018-          |
| Colin Pennington  | PhD | OU        | 2018-          |
| Jiewen Zhang      | PhD | OU        | 2018-          |
| Stephen Marsh     | MS  | OU        | Completed 2018 |
| Mason Fried       | PhD | UT Austin | 2014-2018      |

**Undergraduate research supervising**

|                   |                      |    |
|-------------------|----------------------|----|
| Thomas Givens     | 2019 Spring research | OU |
| Sarah Sundberg    | 2018 Summer research | OU |
| Angie Ortega Romo | 2018 Summer research | OU |

|                   |                         |                         |
|-------------------|-------------------------|-------------------------|
| Roberto Clairmont | 2018 Summer research    | OU                      |
| Shawn Lee         | 2015 IRIS summer intern | UC Berkeley, Geophysics |
| Julie Gerzina     | Fall 2015 – Spring 2016 | UT Austin, Physics      |
| Peter Dotray      | Fall 2014 – Fall 2016   | UT Austin, JSG          |

### **Invited/Special Seminars**

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Regional Induced Seismicity Collaboration (RISC) Webinar on Oklahoma seismicity, 1 hour duration, 100+ remote participants.

URTEC Workshop: Optimizing Oklahoma from Execution to Production, Induced Seismicity Panel, June 2019.

Future seismic hazard in Oklahoma, University of Tulsa, Spring 2019.

Identifying hydraulic-fracture triggered earthquakes amongst other earthquakes in Oklahoma, Keynote presentation, Microseismic Industry Consortium, Calgary, Alberta, November 2018

Hydraulic-fracture triggered earthquakes in Oklahoma, Oklahoma City Geophysical Society, Oklahoma City, OK, October 2018.

Keynote on Oklahoma earthquakes, SEG Technical Workshop on Earthquake damage to Infrastructure, August 2018

The past and future seismic hazard in Oklahoma and how we can change the outlook, Oklahoma State University Geology Seminar, Spring 2018.

Oklahoma, America's earthquake hotbed?, UC Riverside Geology Department Seminar, Fall 2017

Oklahoma Geological Survey: Monitoring and studying seismicity in Oklahoma, Oklahoma State University, National Earthquake Program Manager's Meeting, Spring 2017.

A myriad of mechanisms for inducing Texas earthquakes in the last century, Baylor University, September 2016.

Towards observing the full spectrum of fault slip behavior, from slow slip to megathrust earthquakes, University of Montana, March 2016.

Antarctica Now: Hot Science in a Changing World, SXSW Eco, Austin, TX, October 2014.

The spatio-temporal evolution of seismic activity preceding and following the 5 September 2012 Nicoya Peninsula earthquake, Pacific Geoscience Centre, February 2014.

Dynamics of ice sheets on seismic (and slightly longer) timescales, University of Illinois Chicago, October 2013.

The spatio-temporal evolution of seismic activity preceding and following the 5 September 2012 Nicoya Peninsula earthquake, Institute of Geophysics, Chinese Earthquake Administration, August 2013.

Dynamics of ice sheets on seismic (and slightly longer) timescales, Earthquake Research Institute, University of Tokyo, August 2013.

### **Selected Recent Conference Presentations**

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**Walter, J. I.**, P. Ogwari, F. Ferrer, A. Thiel, and I. Woelfel (Invited Talk), Elevated Potential for Damaging Earthquakes Across the Mid-Continent, *AAPG Mid-Continent Meeting*, Wichita, KS, 2019.

**Walter, J. I.** and Z. Rosson (Talk), Estimating the decadal-level seismic hazard in Oklahoma, *GSA Joint Section Meeting*, Manhattan, KS, 2019.

**Walter, J. I.**, P. Ogwari, F. Ferrer, A. Thiel, and I. Woelfel (Poster), Oklahoma Geological Survey regional network, *SSA Meeting*, Seattle, WA, 2019.

**Walter, J. I.**, Z. Peng, Z. Rosson, S. Sundberg, and S. Hansen (Poster), Microseismicity detection across the Antarctic continent, *SSA Meeting*, Seattle, WA, 2019.

**Walter, J. I.**, J. C. Chang, and K. Murray (Talk), Earthquakes and human activities to induce them in Oklahoma, *SSA Meeting*, Miami, FL, 2018.

**Walter, J. I.**, and K. Murray (Talk), Evolving spatio-temporal associations between earthquakes and wastewater injection wells in Oklahoma, *GSA South-Central Meeting*, Little Rock, AR, 2018.

**Walter, J. I.**, Z. Peng, S. Hansen, Z. Rosson (Poster), Repeating ice-earthquakes beneath David Glacier from the 2012-2015 TAMNNET array, *AGU Fall Meeting*, New Orleans, December 2017.

**Walter, J. I.**, J. C. Chang, P. J. Dotray (Poster), The spatio-temporal evolution of seismic activity leading up to the 3 September 2016 Mw 5.8 Pawnee earthquake, *AGU Fall Meeting*, San Francisco, CA, December 2016.

**Walter, J. I.**, C. Frohlich, T. Borgfeldt, P. J. Dotray, S. Bilek (Talk), West Texas-New Mexico seismicity: induced and natural sequences along old tectonic features, *GSA Meeting*, Denver, CO, October 2016.

**Walter, J. I.**, Z. Peng, H. Kao, X. Meng, T. Hobbs, P. Dotray, T. Mulder (Talk), Dynamic interactions between the late October 2012 Haida Gwaii and early January 2013 Craig earthquakes and other faults in Southeast Alaska, *AGU Fall Meeting*, San Francisco, CA, December 2015.



**Walter, J. I.,** Z. Peng, S. Tulaczyk, and L. Beem (Talk), Ice stream slip triggered by distant earthquakes, *AGU Fall Meeting*, San Francisco, CA, December 2014.

**Walter, J. I.,** I. Svetlizky, J. Fineberg, E. E. Brodsky, S. Tulaczyk, and S. P. Carter (Talk), Interfacial stresses at the grounding line of the Whillans Ice Plain control the initial stick-slip rupture speed, *Western Antarctic Ice Sheet Workshop*, San Diego, CA, September 2014.

**Walter, J. I.,** H. Kao, Z. Peng, C. Aiken, X. Meng, J. Zimmerman (Talk), Investigating dynamic interactions between the October 2012 Haida Gwaii and January 2013 Craig earthquakes, *Seismological Society of America Meeting*, Anchorage, AK, May 2014.

**Walter, J. I.,** J. Amundson, Z. Peng, S. Prejean, and P. Morgan (Invited Talk), The seismic signature of glacier outburst floods, *AGU Fall Meeting*, San Francisco, CA, December 2013.

**Walter, J. I.,** Z. Peng, X. Meng, C. Kyriakopoulos, A. V. Newman, R. Malservisi, L. Feng, S. Y. Schwartz, T. H. Dixon, M. Protti, and Z. Kannan, Spatio-temporal patterns of post-earthquake seismicity and afterslip following the 5 September 2012 (Mw 7.6) Nicoya Peninsula earthquake (Talk), *AGU Fall Meeting*, San Francisco, CA, December 2013.

**Walter, J. I.,** Z. Peng, S. Y. Schwartz, X. Meng, A. Newman, and M. Protti (Invited Talk), Tremor, slow slip, and the spatio-temporal evolution of seismic activity at the fringes of a megathrust earthquake at the Nicoya Peninsula, Costa Rica, *Seismological Society of America Meeting*, Salt Lake City, UT, April 2013.

### **Earthquake risk/Antarctica/Scientist as a career outreach talks**

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Thelma Parks Elementary, Oklahoma City, OK, November 2019

Taft Middle School, Oklahoma City, OK, November 2019

Tishomingo High School, Tishomingo, OK, November 2019

Temple Middle/High School, Temple, OK, November 2019

Eisenhower Elementary, Norman, OK, October 2019

Teen program, Southwest Oklahoma City Library, July 2019

STEM Middle School summer camp, Hartshorne, OK, June 2019

Jones Academy Elementary School, Hartshorne, OK, March 2019

Norman Science Cafe, Norman Central Library, OK, March 2019

Wilson Elementary, Norman, OK, March 2019

Will Rogers Elementary, Putnam City, OK, February 2019

Timber Creek Elementary, Moore, OK, January 2019

Geology and Geophysics Colloquium, “Life after Grad School,” Norman, OK January 2019

Frontier Elementary, Edmond, OK, November 2018

Public talk, Norman Frontier West Public Library, October 2018.

Public talk, Enid First Baptist Church, August 2018.

Skype with a Scientist, Jenks Elementary School, Jenks, OK, May 2018.

Cross Timbers Elementary, Earthquakes in Oklahoma!, Tecumseh, OK, March 2018

What is an earthquake? What is a scientist? Various earthquake activities, Jones Academy STEM Summer Science Camp visit to OU and Norman, June 2018

Raspberry Shake program training to teachers, Enid, OK, June 2018

Public talk, Okmulgee Lions Club, June 2018.

Earthquake risk in Oklahoma, Ready Business Quakesmart Workshop, Midwest City, OK, October 2017

Earthquake risk in Oklahoma, Oklahoma County Local Emergency Planning Committee Tabletop Exercise, OK, October 2017

Earthquake risk in Oklahoma, East Oklahoma County Rotary Club, Choctaw, OK, October 2017

McKinley Elementary, Great Central US Shakeout – What to do in an Earthquake?, Norman, OK, October 2017

What is an earthquake? What is a scientist? Various earthquake activities, Jones Academy STEM Summer Science Camp, Hartshorne, OK, July 2017

## Service

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**Reviewer** Science, Nature Geoscience, Earth and Planetary Sciences Letters, Geophysical Research Letters, Seismological Research Letters, Journal of Geophysical Research-Earth Surface/Solid Earth, Geology, Journal of Glaciology, Bulletin of the Seismological Society of America, Polar Science, National Geographic (ad-hoc), NSF Arctic Natural Sciences (ad-hoc), NSF Geophysics (ad-hoc), NSF

GeoPRISMS (ad-hoc), USGS Earthquake Hazards Program (panel), SEG Technical Abstracts

**Committee** OGS Team Leader, PASSCAL Scientific Standing Committee Member (2015-2017), Polar Networks Science Committee (joint IRIS/UNAVCO), Institutional Representative to IRIS consortium of Universities conducting seismological research (2015-2017), UTIG Annual Review Committee (2016), UTIG Seminar Committee (2016)

**Outreach** STEM summer science camp instructor to Choctaw Nation students; Various outreach talks to local schools (10-14 per year in Oklahoma; Adult-oriented evening public lectures (10-11 per year); Contributed to Ice Stories, an Exploratorium (science museum in San Francisco) project and website featuring contributions from Antarctic researchers

**Organizer** Eastern Section of the Seismological Society of America 2017 Meeting

### Awards as a Graduate Student

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**2011 - 2012** Chancellor's Dissertation Year Fellowship (\$21,000 plus student fees)  
**2011** Earthscope Annual Meeting Student Presentation Award  
**2010** Waters Award (Best Department Thesis Proposal ~\$4,000)  
**2009 - 2012** NASA Earth and Space Science Fellowship (\$90,000)  
**2010** US Antarctic Service Medal

### Fieldwork experience

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Field party participant and leader of smaller sub-groups during work: Costa Rica, 5 trips during PhD; Greenland, 2008; Whillans Ice Plain, 2008 and 2010; Taylor Glacier, Dry Valleys, December 2014; Solomon Islands, April 2015

Field team leader (or co-leader), responsible for all aspects of safety and logistics: Helheim Glacier, August 2014; Solomon Islands, September 2015; Taku Glacier, March 2016; Thwaites Glacier, Antarctica, 2019

Certifications/skills: First-Aid CPR with AED (January 2016 recertification), glacier roped-travel, crevasse rescue training

### References

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