

Maureen L. Walton

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EDUCATION

- Ph.D. 2016 The University of Texas at Austin Geological Sciences (adviser: Dr. Sean Gulick)
Dissertation title: *Tectonic and sedimentary processes of the Southeast Alaska margin*
- B.A. 2010 The University of Colorado at Boulder *summa cum laude* in Geology
Thesis title: *Links between surface water runoff and active subsidence of Paradox Formation evaporites in the Needles District, Canyonlands National Park* (adviser: Dr. Karl Mueller)

PROFESSIONAL POSITIONS

- 2021-present Geophysicist, U.S. Naval Research Laboratory (Stennis Space Center, MS)
- 2020-2021 Geologist, U.S. Geological Survey (Santa Cruz, CA)
- 2018-2020 Research Geologist, U.S. Geological Survey (Santa Cruz, CA)
- 2016-2018 Mendenhall Postdoctoral Fellow, U.S. Geological Survey (Santa Cruz, CA)
- 2011-2016 Graduate Research and Teaching Assistant, The University of Texas at Austin (Austin, TX)
- 2013 Graduate Intern, Shell International Exploration and Production, Inc. (Houston, TX)
- 2011 Research Assistant/Temporary Aide, NOAA National Geophysical Data Center (Boulder, CO)
- 2009-2011 Student Research Assistant, NOAA National Geophysical Data Center (Boulder, CO)
- 2009-2010 Undergraduate Geology Tutor, the University of Colorado at Boulder (Boulder, CO)
- 2007-2010 Undergraduate Research Assistant, the University of Colorado at Boulder (Boulder, CO)

PEER-REVIEWED PUBLICATIONS (* indicates student first author)

- Paull, C. K., J. K. Hong, D. W. Caress, R. Gwiazda, J.-H. Kim, E. Lundsten, J. B. Paduan, Y. K. Jin, M. J. Duchesne, T. S. Rhee, V. Brake, J. Obelcz, **M. A. L. Walton** (in review), Massive ice outcrops and thermokarst along the Arctic shelf edge: By-products of ongoing groundwater freezing and thawing in the sub-surfaces: manuscript submitted to *Journal of Geophysical Research: Earth Surface*.
- Lundsten, E., C. K. Paull, R. Gwiazda, S. Dobbs, D. W. Caress, L. A. Kuhnz, **M. A. L. Walton**, N. Nieminski, M. McGann, T. Lorensen, G. Cochrane, and J. Addison (2024), Pockmarks offshore Big Sur, California provide evidence for recurrent, regional, and unconfined sediment gravity flows: *Journal of Geophysical Research: Earth Surface*, 129(e2023JF007374), <https://doi.org/10.1029/2023JF007374>.
- Oliva, S. J., M. G. Bostock, A. J. Schaeffer, E. Nissen, R. Merrill, A. Hughes, S. W. Roecker, M. R. Nedimović, E. Roland, L. L. Worthington, **M. A. L. Walton**, and A. Gase (2024), Incipient Subduction and Slip Partitioning at High Obliquity: The Haida Gwaii Plate Boundary: *Journal of Geophysical Research: Solid Earth*, 129(e2024JB028752), <https://doi.org/10.1029/2024JB028752>.
- Walton, M. A. L.**, J. E. Conrad, A. G. Papesch, D. S. Brothers, J. W. Kluesner, M. McGann, and P. Dartnell (2024), A comprehensive assessment of submarine landslides and mass wasting processes offshore southern California: *Geochemistry, Geophysics, Geosystems*, 25(e2023GC011258), <https://doi.org/10.1029/2023GC011258>.
- *Dobbs, S. C., C. K. Paull, E. M. Lundsten, R. Gwiazda, D. W. Caress, M. McGann, M. M. Coholich, **M. A. L. Walton**, N. M. Nieminski, T. McHargue, and S. A. Graham (2023), Sediment gravity flow frequency offshore central California diminished significantly following the Last Glacial Maximum: *Frontiers in Marine Science*, 10(1099472), <https://doi.org/10.3389/fmars.2023.1099472>.
- Christeson, G. L., S. P. S. Gulick, **M. A. L. Walton**, and G. A. Barth (2022), Seismic evidence for magmatic underplating along the Kodiak-Bowie Seamount Chain, Gulf of Alaska: *Tectonophysics* 845(229639),

<https://doi.org/10.1016/j.tecto.2022.229639>.

- Walton, M. A. L.**, S. P. S. Gulick, and P. J. Haeussler (2022), Revisiting the 1899 earthquake series using integrative geophysical analysis in Yakutat Bay, Alaska: *Geosphere* 18(3), <https://doi.org/10.1130/GES02423.1>.
- Walton, M. A. L.** and Staisch, L., T. Dura, J. K. Pearl, B. Sherrod, J. Gomberg, S. Engelhart, A. Tréhu, J. Watt, J. Perkins, R. C. Witter, N. Bartlow, C. Goldfinger, H. Kelsey, A. E. Morey, V. Sahakian, H. Tobin, K. Wang, R. Wells, and E. Wirth (2021), Toward an integrative geological and geophysical view of Cascadia subduction zone earthquakes: *Annual Review of Earth and Planetary Sciences* 49:367-98, <https://doi.org/10.1146/annurev-earth-071620-065605>.
- Kravitz, K., K. J. Mueller, R. G. Bilham, and **M. A. L. Walton** (2020), Active steady-state creep on a normal fault in southeast Utah: Implications for strain release in a rapidly deforming salt system: *Geophysical Research Letters* 47(e2020GL087081), <https://doi.org/10.1029/2020GL087081>.
- Walton, M. A. L.**, D. S. Brothers, J. E. Conrad, K. L. Maier, E. C. Roland, J. W. Kluesner, and P. Dartnell (2020), Morphology, structure, and kinematics of the San Clemente and Catalina faults based on high-resolution marine geophysical data, southern California Inner Continental Borderland: *Geosphere* 16, <https://doi.org/10.1130/GES02187.1>.
- Brothers, D. S., B. D. Andrews, **M. A. L. Walton**, H. G. Greene, J. V. Barrie, N. C. Miller, U. ten Brink, A. East, P. J. Haeussler, J. W. Kluesner, and J. E. Conrad (2019), Slope failure and mass transport processes along the Queen Charlotte Fault, Southeastern Alaska: *Geological Society of London Special Publications* 477, <https://doi.org/10.1144/SP477.30>.
- Greene, H. G., J. V. Barrie, D. S. Brothers, J. E. Conrad, K. Conway, A. East, R. Enkin, K. L. Maier, S. Nishenko, and **M. A. L. Walton** (2019), Slope failure and mass transport processes along the Queen Charlotte Fault zone, Western British Columbia: *Geological Society of London Special Publications* 477, <https://doi.org/10.1144/SP477.31>.
- 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 Planetary Science Letters* 507, <https://doi.org/10.1016/j.epsl.2018.11.021>.
- Conrad, J. E., N. G. Prouty, **M. A. L. Walton**, J. W. Kluesner, K. L. Maier, M. McGann, D. S. Brothers, E. C. Roland, and P. Dartnell (2018), Seafloor Fluid Seeps on Kimki Ridge, offshore southern California: Links to Active Strike-Slip Faulting: *Deep-Sea Research Part II* 150, <https://doi.org/10.1016/j.dsr2.2017.11.001>.
- Dufresne, A., M. Geertsema, D. H. Shugar, M. Koppes, B. Higman, P. J. Haeussler, C. Stark, J. G. Venditti, D. Bonno, C. Larsen, S. P. S. Gulick, N. McCall, **M. A. L. Walton**, M. G. Loso, and M. J. Willis (2018), Sedimentology and geomorphology of a large tsunamigenic landslide: Taan Fiord, Alaska, *Sedimentary Geology* 364(1), <http://doi.org/10.1016/j.sedgeo.2017.10.004>.
- Haeussler, P. J., S. P. S. Gulick, N. McCall, **M. A. L. Walton**, R. S. Reece, C. Larsen, D. Shugar, M. Geertsema, J. Venditti, and K. Labay (2018), Submarine deposition of a subaerial landslide in Taan Fiord, Alaska: *Journal of Geophysical Research* 123(10), <https://doi.org/10.1029/2018JF004608>.
- Higman, B., D. Shugar, C. P. Stark, G. Ekstrom, M. N. Koppes, P. Lynett, A. Dufresne, P. J. Haeussler, M. Geertsema, S. P. S. Gulick, A. Mattox, J. G. Venditti, **M. A. L. Walton**, N. McCall, E. Mckittrick, B. MacInnes, E. L. Bilderback, H. Tang, M. J. Willis, B. Richmond, R. S. Reece, C. Larsen, B. Olson, J. Capra, A. Ayca, C. Bloom, H. Williams, D. Bonno, R. Weiss, A. Keen, V. Skanavis, and M. Loso (2018), The 2015 landslide and tsunami in Taan Fiord, Alaska: *Nature Scientific Reports* 8(12993), <https://doi.org/10.1038/s41598-018-30475-w>.
- Maier, K. L., E. C. Roland, **M. A. L. Walton**, J. E. Conrad, D. S. Brothers, P. Dartnell, and J. W. Kluesner (2018), The tectonically controlled San Gabriel channel-lobe transition zone, Catalina Basin, southern California borderland: *Journal of Sedimentary Research* 88(8), <https://doi.org/10.2110/jsr.2018.50>.
- Tréhu, A. M., M. Scheidhauer, K. M. M. Rohr, B. Tikoff, **M. A. L. Walton**, S. P. S. Gulick, and E. C. Roland (2015),

An abrupt transition in the mechanical response of the upper crust to transpression across the Queen Charlotte Fault: *Bulletin of the Seismological Society of America* 105(2b):1114-1128, <https://doi.org/10.1785/0120140159>.

- ***Walton, M. A. L.**, S. P. S. Gulick, E. C. Roland, P. J. Haeussler, and A. M. Tréhu (2015), Basement and regional structure along-strike of the Queen Charlotte Fault in the context of modern and historical earthquake ruptures: *Bulletin of the Seismological Society of America* 105(2b):1090-1105, <https://doi.org/10.1785/0120140174>.
- *Zurbuchen, J., S. P. S. Gulick, **M. A. L. Walton**, and J. Goff (2015), Imaging Evidence for Hubbard Glacier Advances and Retreats since the Last Glacial Maximum in Yakutat and Disenchantment Bays, Alaska: *Geochemistry, Geophysics, Geosystems* 16(6), <https://doi.org/10.1002/2015GC005815>.
- ***Walton, M. A. L.**, S. P. S. Gulick, R. S. Reece, G. A. Barth, G. L. Christeson, and H. J. A. Van Avendonk (2014), Dynamic response to strike-slip tectonic control on the deposition and evolution of the Baranof Fan, Gulf of Alaska: *Geosphere* 10(4):680-691, <https://doi.org/10.1130/GES01034.1>.

OTHER PUBLICATIONS

- Staisch, L., R. Witter, J. Watt, A. Grant, **M. A. L. Walton**, D. Brothers, E. Davis, C. Dura, S. Engelhart, R. Enkin, C. Garrison-Laney, C. Goldfinger, T. Hamilton, A. Hawkes, J. Hill, I. Hong, B. Jaffe, H. Kelsey, S. Lahusen, S. La Selle, A. Nelson, N. Nieminski, J. Padgett, J. Patton, J. Pearl, J. Pilarczyk, B. Sherrod, and K. Stanton (2024), Compiled onshore and offshore paleoseismic data along the Cascadia Subduction zone: U.S. Geological Survey data release, <https://doi.org/10.5066/P13OJQYW>.
- McGann, M., C. K. Paull, E. Lundsten, R. Gwiazda, **M. A. L. Walton**, N. M. Nieminski, T. D. Lorenson, and H. J. Lee (2023), Radiocarbon age dating of biological material from cores collected off central California in 1999, 2006, and 2019: U.S. Geological Survey data release, <https://doi.org/10.5066/P9FWTKZQ>.
- Papesh, A. G., **M. A. L. Walton**, J. E. Conrad, D. S. Brothers, J. W. Kluesner, and M. McGann (2023), Digital maps of submarine landslides and mass wasting features offshore of southern California: U.S. Geological Survey data release, <https://doi.org/10.5066/P9IHWTYL>.
- Balster-Gee, A.F., D. S. Brothers, J. W. Kluesner, N. C. Miller, P. J. Haeussler, T. F. O'Brien, R. K. Marcuson, P. E. Hart, J. E. Conrad, **M. A. L. Walton**, and A. R. Nichols (2022), Multichannel sparker and chirp seismic reflection data collected offshore southeast Alaska during USGS field activity 2017-621-FA: U.S. Geological Survey data release, <https://doi.org/10.5066/P9QXL00L>.
- Christeson, G. L., S. P. S. Gulick, **M. A. L. Walton**, and G. A. Barth (2022), Processed OBS seismic refraction data (SEG-Y format) from the 2011 Gulf of Alaska U.S. Extended Continental Shelf (ECS) Survey, cruise MGL1109: Interdisciplinary Earth Data Alliance (IEDA), <https://doi:10.26022/IEDA/331070>.
- Christeson, G. L., S. P. S. Gulick, **M. A. L. Walton**, and G. A. Barth (2022), Seismic P-wave velocity grids (netCDF format) from the 2011 Gulf of Alaska U.S. Extended Continental Shelf (ECS) Survey, cruise MGL1109: Interdisciplinary Earth Data Alliance (IEDA), <https://doi:10.26022/IEDA/331040>.
- Cochrane, G. R., L. A. Kuhnz, L. Gilbane, P. Dartnell, **M. A. L. Walton**, and C. K. Paull (2022), California Deepwater Investigations and Groundtruthing (Cal DIG) I, Volume 3—Benthic habitat characterization offshore Morro Bay, California: U.S. Geological Survey Open-File Report 2022–1035, 18 p., <https://doi.org/10.3133/ofr20221035>.
- Cochrane, G. R., L. A. Kuhnz, P. Dartnell, L. Gilbane, and **M. A. L. Walton** (2022), Multibeam echosounder, video observation, and derived benthic habitat data offshore of south-central California in support of the Bureau of Ocean Energy Management Cal DIG I offshore alternative energy project: U.S. Geological Survey data release, <https://doi.org/10.5066/P9QQZ27U>.
- Staisch, L. and **M. A. L. Walton** (2022), Cascadia subduction zone database: compilation of published datasets relevant to Cascadia subduction zone earthquake hazards and tectonics: U.S. Geological Survey data release, <https://doi.org/10.5066/P9O69X6E>.
- Balster-Gee, A. F., J. T. Watt, E. C. Roland, J. W. Kluesner, D. S. Brothers, S. Bennett, P. E. Hart, E. K. Myers, K. Pszczola, **M. A. L. Walton**, and B. Sherrod (2021), Multichannel minisparker, multichannel boomer, and

- chirp seismic-reflection data of USGS field activity 2017-612-FA collected in Puget Sound and Lake Washington in February of 2017: U.S. Geological Survey data release, <https://doi.org/10.5066/P9GWF28U>.
- Dartnell, P., E. C. Roland, N. A. Raineault, C. M. Castillo, J. E. Conrad, R. Kane, D. S. Brothers, J. Kluesner, and **M. A. L. Walton** (2021), Colored shaded-relief bathymetry, acoustic backscatter, and selected perspective views of the northern part of the California Continental Borderland, southern California: U.S. Geological Survey Scientific Investigations Map 3473, 3 sheets, scale 1:250,000, <https://doi.org/10.3133/sim3473>.
- Kennedy, D. J., **M. A. L. Walton**, G. R. Cochrane, A. F. Balster-Gee, J. W. Kluesner, P. E. Hart, R. W. Sliter, J. K. Miller, and L. Gilbane (2021), High-resolution multi-channel and Chirp seismic-reflection data from USGS cruise 2018-641-FA collected in south-central California in support of the Bureau of Ocean Energy Management Cal DIG I offshore alternative energy project: U.S. Geological Survey data release, <https://doi.org/10.5066/P9JU17GE>.
- Kennedy, D. J., **M. A. L. Walton**, G. R. Cochrane, J. A. Addison, C. K. Paull, R. Gwiazda, T. D. Lorensen, and E. Lundsten (2021), Piston and gravity core data collected during USGS cruise 2019-642-FA offshore of south-central California in support of the Bureau of Ocean Energy Management (BOEM) California Deepwater Investigations and Groundtruthing (Cal DIG I) alternative energy project, September 2019: U.S. Geological Survey data release, <https://doi.org/10.5066/P9DE639J>.
- Kennedy, D. J., **M. A. L. Walton**, G. R. Cochrane, C. K. Paull, D. Caress, K. Anderson, and E. Lundsten (2021), Donated AUV bathymetry and Chirp seismic-reflection data collected during Monterey Bay Aquarium Research Institute cruises in 2018-2019 offshore of south-central California: U.S. Geological Survey data release, <https://doi.org/10.5066/P97QM7NF>.
- Kennedy, D. J., **M. A. L. Walton**, G. R. Cochrane, C. K. Paul, R. Gwiazda, E. Lundsten, L. Kuhn, T. D. Lorensen, M. L. McGann, N. M. Nieminski, and J. A. Addison (2021), Donated ROV vibracore and sampling data collected during Monterey Bay Aquarium Research Institute cruises in 2019 offshore of south-central California: U.S. Geological Survey data release, <https://doi.org/10.5066/P9E2OP35>.
- Walton, M. A. L.**, C. K. Paull, G. R. Cochrane, J. Addison, D. Caress, R. Gwiazda, D. Kennedy, E. Lundsten, and A. Papesch (2021), California Deepwater Investigations and Groundtruthing (Cal DIG) I, Volume 2—Fault and Shallow Geohazard Analysis Offshore Morro Bay: U.S. Department of the Interior Bureau of Ocean Energy Management, Camarillo, CA, OCS Study BOEM 2021-044, 56 p.
- Walton, M. A. L.**, A. G. Papesch, S. Y. Johnson, J. E. Conrad, and D. S. Brothers (2020), Quaternary faults offshore of California: U.S. Geological Survey data release, <https://doi.org/10.5066/P91RYE24>.
- Staisch, L., **M. A. L. Walton**, and R. Witter (2019), Addressing Cascadia Subduction Zone great earthquake recurrence: *Eos* 100, <https://doi.org/10.1029/2019EO127531>.
- Gulick, S. P. S., P. J. Haeussler, **M. A. L. Walton**, R. S. Reece, and N. McCall (2018), Multi-channel seismic field data in Icy Bay and Taan Fjord, Alaska, acquired by the R/V *Alaskan Gyre* in 2016 (AG1608): Academic Seismic Portal at UTIG, Marine Geoscience Data System, <https://doi.org/10.1594/IEDA/500191>.
- Gulick, S. P. S., P. J. Haeussler, **M. A. L. Walton**, R. S. Reece, and N. McCall (2018), Multi-channel seismic processed data in Icy Bay and Taan Fjord, Alaska, acquired by the R/V *Alaskan Gyre* in 2016 (AG1608): Academic Seismic Portal at UTIG, Marine Geoscience Data System, <https://doi.org/10.1594/IEDA/500192>.
- Walton, M. A. L.**, D. S. Brothers, N. C. Miller, J. E. Conrad, P. J. Haeussler, and J. W. Kluesner (2018), Expedition along a hazardous, fast-moving underwater fault - the Queen Charlotte-Fairweather Fault off Southeast Alaska: *Soundwaves*, U.S. Geological Survey.
- Dartnell, P., E. C. Roland, N. A. Raineault, C. M. Castillo, J. E. Conrad, R. R. Kane, D. S. Brothers, J. W. Kluesner, and **M. A. L. Walton** (2017), Multibeam bathymetry and acoustic-backscatter data collected in 2016 in Catalina Basin, southern California and merged multibeam bathymetry datasets of the northern portion of the Southern California Continental Borderland: U.S. Geological Survey data release, <https://doi.org/10.5066/F7DV1H3W>.

- Walton, M. A. L.** (2016), Tectonic and sedimentary processes of the Southeast Alaska Margin: University of Texas at Austin Ph.D. dissertation, 258 pp.
- Walton, M. A. L.**, S. P. S. Gulick, P. J. Haeussler, E. C. Roland, and A. M. Tréhu (2015), Reprocessed, prestack migrated, multichannel seismic data crossing the central Queen Charlotte Fault, acquired during the R/V *Maurice Ewing* survey EW9412 (1994): Academic Seismic Portal at UTIG, Marine Geoscience Data System, <https://doi.org/10.1594/IEDA/500123>.
- Gulick, S. P. S., **M. A. LeVoir**, P. J. Haeussler, and S. Saustrop (2012), Evaluating Active Faulting and Geohazards in the Yakutat Bay Region of Southeastern Alaska: U. S. Geological Survey Final Technical Report G12AP20009, 15 p., <https://walrus.wr.usgs.gov/reports/reprints/G12AP20009.pdf>.
- LeVoir, M. A.**, L. A. Taylor, J. C. Cartwright, M. Huet, and H.-W. Schenke (2011), Report to the GEBCO Subcommittee on Undersea Feature Names on Part I of the Review and Enhancement of the GEBCO Gazetteer of Undersea Feature Names and Database carried out by the National Geophysical Data Center (NGDC): NOAA National Geophysical Data Center, 39 p.
- LeVoir, M. A.** (2010), Links between surface water runoff and active subsidence of Paradox Formation evaporites in the Needles District, Canyonlands National Park: University of Colorado at Boulder undergraduate thesis, 57 p.

GRANTS AND FELLOWSHIPS

- 2023-2026 PI, "Exploiting an untapped source of low-frequency acoustic bottom loss observations," ONR 6.2 UW Base Program (\$1.557M)
- 2019-present Co-PI, "Collaborative Research: Relationship between plate boundary obliquity, strain accommodation, and fault zone geometry at oceanic-continentals transforms: The Queen Charlotte Fault," NSF OCE Awards 1824927, 1824165
- 2018-2021 Fellow, "Margin-wide geological and geophysical synthesis to understand the recurrence and hazards of great subduction zone earthquakes in Cascadia," USGS Powell Center Fellowship
- 2016-2018 PI, "A new perspective on earthquake, landslide, and tsunami hazards of the southern California Inner Continental Borderland: Coupling state-of-the-art geophysical and geochemical methods," USGS Mendenhall Postdoctoral Research Fellowship
- 2016-2017 Co-PI, "Integrative onshore-offshore fault mapping and hazard assessment, Icy Bay, Southeast Alaska," USGS Earthquake Hazards Program Award G16AP00150 (\$103,644)
- 2016-2017 Co-investigator, "The 2015 Taan Fiord landslide tsunami: An interdisciplinary study of cause and effect," NSF GLD Award 1638434
- 2015 Ewing/Worzel Graduate Summer Fellowship, The University of Texas Institute for Geophysics
- 2014-2015 GK-12 Graduate Teaching Fellowship, The University of Texas Environmental Science Institute
- 2014 Ewing/Worzel Graduate Summer Fellowship, The University of Texas Institute for Geophysics
- 2012 Devon Corporation Graduate Fellowship
- 2010 American Geophysical Union Student Travel Grant

AWARDS

- 2022-2023 NRL merit increase and performance award
- 2019-2021 USGS Superior Individual Performance Award
- 2018 USGS Exceptional Individual Performance Award
- 2017 USGS Superior Individual Performance Award
- 2015 GeoPRISMS AGU Prize for Outstanding Student Presentation, Honorable Mention
- 2014 Seismological Society of America Annual Meeting Student Presentation Award
- 2013 American Geophysical Union Outstanding Student Paper Award, Tectonophysics
- 2013 UT-Austin Jackson School of Geosciences GSEC Student Service Award
- 2012 UT-Austin Jackson School of Geosciences 2nd place early-career graduate presentation award
- 2010 CU-Boulder Johnston Award for Outstanding Senior in Geosciences

- 2009 CU-Boulder Bruce Curtis Scholarship for Outstanding Junior in Geosciences
2007 CU-Boulder Chancellor's Achievement Scholarship

INVITED TALKS

- 2024 Marine geophysics research in Federal Government: Examples from a career at US Geological Survey and US Naval Research Laboratory: UW-Milwaukee Geosciences Colloquium, 28 Mar.
- 2021 Massive pockmark fields and ancient faults: Using high-resolution seismic reflection data to characterize geohazards offshore of central California: Marine Seismic Symposium, 14 Mar.
- 2020 Massive pockmark fields, mysterious sand, and ancient faults: Characterizing geohazards offshore of central California: University of New Mexico Earth & Planetary Sciences Colloquium, 20 Nov.
- 2019 Invited alumni speaker for the University of Texas at Austin Jackson School of Geosciences commencement ceremony, Austin, TX, 24 May.
- 2018 Quaternary deformation and earthquake hazards along the Queen Charlotte Fault, southeastern Alaska: New insights from marine geophysical data: University of Oregon, Eugene, OR, 14 Nov.
- 2018 Quaternary deformation and earthquake hazards along the Queen Charlotte Fault, southeastern Alaska: New insights from marine geophysical data: Berkeley Seismological Laboratory Seminar, Berkeley, CA, 6 Nov.
- 2018 Geomorphic expressions of marine geohazards: Faults, landslides, and seeps: Naval Research Laboratory (NRL) Seminar, Stennis Space Center, MS, 9 Mar.
- 2017 The Queen Charlotte-Fairweather Fault Zone: Geomorphology of a submarine transform fault, offshore British Columbia and southeastern Alaska: Presenting author for invited talk at the American Geophysical Union Fall Meeting, New Orleans, LA, 14 Dec.
- 2017 USGS Coastal and Marine Geology high-resolution marine seismic capabilities: Marine Seismic Research Oversight Committee pre-AGU meeting invited talk, New Orleans, LA, 10 Dec.
- 2017 Assessing marine geohazards along transform margins of western North America: University of California-Santa Cruz (UCSC) Whole Earth Seminar (WES), Santa Cruz, CA, 11 Apr.
- 2016 Using marine geophysical data to study earthquake tectonics and geohazards: USGS Earthquake Science Center (ESC) Seminar, Menlo Park, CA, 26 Oct.
- 2015 Mapping and seismic reflection processing along the Queen Charlotte Fault, southeastern Alaska: University of Washington School of Oceanography MG&G Seminar, Seattle, WA, 8 Jan.
- 2011 GEBCO Undersea Feature Names Gazetteer Enhancement Project Part I: GEBCO Science Day presentation, La Jolla, California, 4 Oct.

DEPARTMENTAL TALKS

- 2021 Massive pockmark fields, mysterious sand, and ancient faults: Characterizing geohazards offshore of central California: USGS Pacific Coastal and Marine Science Center (PCMSC) Seminar, Santa Cruz, CA, scheduled for 11 May.
- 2017 Assessing marine geohazards along transform margins of western North America: USGS Pacific Coastal and Marine Science Center (PCMSC) Seminar, Santa Cruz, CA, 5 Apr.
- 2015 Revisiting the 1899 earthquakes of Yakutat Bay, Alaska: University of Texas Institute for Geophysics (UTIG) Seminar, Austin, TX, 4 Dec.
- 2014 Basement and regional structure along-strike of the Queen Charlotte Fault in the context of modern and historical earthquake ruptures: University of Texas iPGST Seminar, Austin, TX, 16 Apr.
- 2013 Sedimentary and tectonic processes of the Southeast Alaska margin: Shell GA/PPP team presentation, Houston, TX, 13 June.
- 2012 Tectonic control on deposition and evolution of the Baranof Fan, Gulf of Alaska: University of Texas Soft Rock Seminar, Austin, TX, 26 Nov.

TEACHING AND ADVISING

- 2024 PhD dissertation committee member for Mr. Olumide Adedeji, University of New Mexico (Albuquerque, NM)
- 2024 PhD dissertation committee member for Dr. Collin Brandl, University of New Mexico (Albuquerque, NM), successful defense 27 June 2024
- 2021-2024 Master's thesis committee member for Mr. Lazaro Garza, Western Washington University (Bellingham, WA), successful defense 14 May 2024
- 2023 NRL SEAP program mentor to Mr. Michael Uwaifo, co-mentor to Mr. Peter Yu (Stennis Space Center, MS)
- 2018-2021 Mentor/co-supervisor to Mr. Daniel Kennedy, contractor, U.S. Geological Survey (Santa Cruz, CA)
- 2017-2021 Mentor/supervisor to Ms. Antoinette Papesh, undergraduate student volunteer and student services contractor, U.S. Geological Survey (Santa Cruz, CA)
- 2015-2016 Mentor to Dr. Susannah Morey, undergraduate honors student at the University of Texas Institute for Geophysics (Austin, TX); 2023 PhD recipient from University of Washington, Seattle
- 2015 Teaching Assistant, "Sustaining A Planet," The University of Texas at Austin (Austin, TX)
- 2014-2015 GK-12 Teaching Fellow, Lamar Middle School and Burnet Middle School (Austin, TX)
- 2014 Teaching Assistant, "Introduction to Geology," The University of Texas at Austin (Austin, TX)
- 2013-2014 Mentor to Dr. Julie Zurbuchen, undergraduate honors student at the University of Texas Institute for Geophysics (Austin, TX); 2019 PhD recipient from UC-Santa Barbara
- 2009-2010 Undergraduate Geology Tutor, the University of Colorado at Boulder (Boulder, CO)

FIELD EXPERIENCE

- 2022 Collaborative study of degradation of marine Arctic permafrost (ARA13C), R/V *Araon* (Utqiagvik, AK)
- 2021 Co-PI, Transform Obliquity on the Queen Charlotte fault and Earthquake Study (TOQUES), CCGS *Tully* (Port Angeles, WA)
- 2019 Co-PI, California Deepwater Investigations and Groundtruthing jumbo piston coring, R/V *Bold Horizon* (San Francisco, CA)
- 2019 Astoria Canyon geophysical mapping, R/V *Rachel Carson* (Astoria, OR)
- 2018 Co-PI (2 legs), California Deepwater Investigations and Groundtruthing, NOAA Ship *Rainier* (San Francisco, CA)
- 2017 Queen Charlotte Fault geophysical mapping, R/V *Ocean Starr* (Seattle, WA and Juneau, AK)
- 2017 Seattle Fault Zone geophysical mapping, R/V *Barnes* (Puget Sound and Lake Washington, WA)
- 2016 Co-PI, Alaska earthquake, tsunami, and landslide studies, R/V *Alaskan Gyre* (Icy Bay and Taan Fiord, AK)
- 2013 Craig earthquake rapid response ocean-bottom seismometer deployment, USCGC *Maple* (Sitka, AK)
- 2012 Yakutat Bay earthquake tectonics geophysical mapping, R/V *Alaskan Gyre* (Yakutat Bay, AK)
- 2012 UTIG Marine Geology and Geophysics Field Course, R/V *Manta* (Port Aransas, TX)
- 2011 U.S. Extended Continental Shelf Project geophysical mapping, R/V *Marcus G. Langseth* (Gulf of AK)
- 2010 Earthscope Bighorn Arch Seismic Experiment (BASE) seismometer deployment (Shell, WY)

SERVICE AND LEADERSHIP

- 2023 NRL Berman Award review panel
- 2023 National Science Foundation Ocean Sciences Postdoctoral Research Fellowship review panel
- 2022-2023 National Science Foundation proposal review panel, Marine Geology and Geophysics program
- 2022 Peer reviewer: *Nature Communications Earth and Environment*
- 2022 Session moderator, "Cascadia (Northern California Edition)", Northern California Earthquake Hazards Workshop
- 2021 Peer reviewer: *Nature Scientific Data*
- 2021 Convener, "Cascadia Subduction Zone earthquakes: Geologic, geophysical, and modeling constraints on rupture timing and process," GSA Connects meeting

- 2016-2023 AGU Outstanding Student Paper Award judge (annually except 2019; did not attend)
- 2016-2021 USGS internal peer reviewer
- 2020 Peer reviewer: *Geosphere*
- 2019 Peer reviewer: *Journal of Geophysical Research*
- 2018-2019 Annual visits to San Lorenzo Valley High School science classroom to discuss science careers
- 2018 Peer reviewer: *Geochemistry Geophysics Geosystems* and *Geophysical Research Letters*
- 2018 Primary Convener, session T51G “Multiscale Processes Influencing Tectonics and Earthquakes at Plate Boundary Fault Systems,” AGU Fall Meeting
- 2016-2018 Seminar Committee, USGS Pacific Coastal and Marine Science Center
- 2017 Primary Convener, session T047 “Transform Plate Boundaries: Mechanics and Hazards,” AGU Fall Meeting
- 2013-2015 Philanthropy Chair, UT-Austin Jackson School of Geosciences Graduate Student Executive Committee
- 2012-2013 President, UT-Austin Jackson School of Geosciences Graduate Student Executive Committee
- 2011-2012 Volunteer, UT-Austin Jackson School of Geosciences Graduate Student Executive Committee

MEDIA INTERVIEWS

- 2020 KCAW Sitka radio interview by Robert Woolsey, 19 March 2020: Queen Charlotte fault study to disclose secrets of the San Andreas of the Pacific.
- 2020 KTOO Juneau radio interview by Sheli DeLaney, 18 March 2020: Scientists outline a geophysical data collection project planned for this summer in Southeast Alaska waters.
- 2019 *Epoch Times* story interview by Chris Karr, 23 December 2019: Thousands of mysterious ‘micro depressions’ discovered offshore near Big Sur.

CONFERENCE ABSTRACTS AND PRESENTATIONS (2023-PRESENT) (* denotes student first author)

- *Adedeji, O., L. L. Worthington, C. C. Brandl, **M. A. L. Walton**, E. C. Roland, L. Garza, A. Gase, and M. R. Nedimović (2024), Slope Evolution and the Accommodation of Oblique Convergence From the Central to the Northern Queen Charlotte Fault (talk): Abstract presented at the 2024 Seismological Society of America Annual Meeting, Anchorage, AK, 29 April-3 May.
- *Brandl, C. C., L. L. Worthington, E. C. Roland, **M. A. L. Walton**, M. R. Nedimović, O. Adedeji, J. C. Castellanos, A. Gase, and B. J. Phrampus (2024), Transpression Along the Southern Queen Charlotte Fault: Underthrusting and Strain Partitioning of the Queen Charlotte Terrace (poster): Abstract presented at the 2024 Seismological Society of America Annual Meeting, Anchorage, AK, 29 April-3 May.
- Gase, A. C., E. C. Roland, L. L. Worthington, **M. A. L. Walton**, M. Bostock, M. R. Nedimović, C. Brandl, and S. J. Oliva (2024), Local Earthquake Monitoring of the Central Queen Charlotte Fault With an Ocean-Bottom Seismic Array (poster): Abstract presented at the 2024 Seismological Society of America Annual Meeting, Anchorage, AK, 29 April-3 May.
- *Kennedy, K., E. C. Roland, D. Clark, L. L. Worthington, J. Baichtal, **M. A. L. Walton**, and H. G. Greene (2024), Morphologic Expression of Shallow Volcanics and Ice Sheet Extent Along the Queen Charlotte Fault, SE Alaska and British Columbia (poster): Abstract presented at the 2024 Seismological Society of America Annual Meeting, Anchorage, AK, 29 April-3 May.
- *Martin, E. C., A. Gase, E. C. Roland, L. Garza, L. L. Worthington, O. Adedeji, **M. A. L. Walton**, and M. R. Nedimović (2024), Crustal Velocity Structure of the 2013 m7.5 Craig Earthquake Source Region With Joint Ocean-Bottom Seismometer and Streamer Tomography (poster): Abstract presented at the 2024 Seismological Society of America Annual Meeting, Anchorage, AK, 29 April-3 May.
- Roland, E., L. L. Worthington, A. Gase, **M. A. L. Walton**, C. Brandl, and M. Nedimović (2024), Crustal Structure Crossing the Queen Charlotte Fault and Trough in the Region of the Haida Gwaii 2012 m7.9 Thrust Earthquake Using P-Wave Tomography (poster): Abstract presented at the 2024 Seismological Society

of America Annual Meeting, Anchorage, AK, 29 April-3 May.

Walton, M. A. L., L. L. Worthington, E. C. Roland, A. Gase, L. Garza, C. Brandl, B. J. Phrampus, and M. R. Nedimović (2024), Crustal Architecture Across the Queen Charlotte Fault Zone North of Haida Gwaii, British Columbia From 2D Tomography (poster): Abstract presented at the 2024 Seismological Society of America Annual Meeting, Anchorage, AK, 29 April-3 May.

Worthington, L. L., C. C. Brandl, E. C. Roland, **M. A. L. Walton**, M. Nedimović, O. Adedeji, J. C. Castellanos, A. Gase, B. Phrampus, M. Bostock, and S. J. Oliva (2024), New Constraints on Crustal Structure and Fault Zone Architecture in the m7.8 2012 Haida Gwaii Earthquake Source Region, Offshore British Columbia (poster): Abstract presented at the 2024 Seismological Society of America Annual Meeting, Anchorage, AK, 29 April-3 May.

Paull, C. K., J. K. Hong, D. W. Caress, R. Gwiazda, J.-H. Kim, M. J. Duchesne, E. Lundsten, J. B. Paduan, T. S. Rhee, Y. K. Jin, V. Brake, J. Obelcz, and **M. A. L. Walton** (2024), Rapidly forming submarine craters and massive ice outcrops along the Arctic shelf edge: By-products of subsea permafrost degradation (presentation): Abstract presented at the 2024 European Geophysical Union General Assembly 2024, Vienna, Austria, 14-19 April.

Conrad, J. E., D. S. Brothers, J. W. Kluesner, M. McGann, **M. A. L. Walton**, B. Derosier, and D. Orange (2023), Revised chronology for the Goleta slide complex, Santa Barbara Channel, Southern California (poster): Abstract presented at the 2023 American Geophysical Union Fall Meeting, San Francisco, CA, 11-15 Dec.

Gase, A., E. Roland, L. L. Worthington, **M. A. L. Walton**, M. Bostock, M. Nedimović, C. Brandl, and S. J. Oliva (2023), Local seismic observations of the central Queen Charlotte Fault from an ocean-bottom seismic array (poster): Abstract presented at the 2023 American Geophysical Union Fall Meeting, San Francisco, CA, 11-15 Dec.

*Martin, E., A. Gase, E. C. Roland, L. Garza, L. L. Worthington, O. Adedeji, **M. A. L. Walton**, and M. R. Nedimović (2023), Imaging of the shallow crustal structure across the region of the 2013 M7.5 Craig Earthquake with high-resolution seismic streamer tomography (poster): Abstract presented at the 2023 American Geophysical Union Fall Meeting, San Francisco, CA, 11-15 Dec.

Obelcz, J., W. T. Wood, C. K. Paull, J. K. Hong, **M. A. L. Walton**, M. Duchesne, J. Graw, B. J. Phrampus, D. W. Caress, E. M. Lundsten, T. A. Hill, E. L. King, R. Gwiazda, Y. K. Jin, and S.-G. Kang (2023), Improving thermokarst seabed instability inventories along the Canadian Beaufort margin (poster): Abstract presented at the 2023 American Geophysical Union Fall Meeting, San Francisco, CA, 11-15 Dec.

Oliva, S. J., M. G. Bostock, A. J. Schaeffer, E. Nissen, R. Merrill, S. W. Roecker, A. Hughes, M. R. Nedimović, E. Roland, L. L. Worthington, **M. A. L. Walton**, and A. C. Gase (2023), Fault zone complexity, obliquity, and degree of underthrusting at the southern Queen Charlotte plate boundary (talk): Abstract presented at the 2023 American Geophysical Union Fall Meeting, San Francisco, CA, 11-15 Dec.

Paull, C. K., J. K. Hong, D. W. Caress, R. Gwiazda, J. H. Kim, E. Lundsten, J. Paduan, Y. K. Jin, M. J. Duchesne, T. S. Rhee, V. Brake, J. Obelcz, and **M. A. L. Walton** (2023), Recycling relic permafrost: Rapidly forming submarine craters and massive ice outcrops along the Arctic shelf edge produced by ascending water from melted permafrost (poster): Abstract presented at the 2023 American Geophysical Union Fall Meeting, San Francisco, CA, 11-15 Dec.

*Rysanek, S., O. Adedeji, L. Worthington, C. Brandl, E. Roland, **M. A. L. Walton**, M. Nedimović, S. P. S. Gulick, and J. Jaeger (2023), Seismic reflection imaging of the proximal Baranof Fan in the eastern Gulf of Alaska: Insights into glaciomarine sedimentary processes and transform tectonics (poster): Abstract presented at the 2023 American Geophysical Union Fall Meeting, San Francisco, CA, 11-15 Dec.

Staisch, L., R. Witter, J. Watt, A. Grant, **M. A. L. Walton**, D. S. Brothers, E. Davis, T. Dura, S. Engelhart, R. Enkin, C. Garrison-Laney, C. Goldfinger, T. Hamilton, A. Hawkes, J. C. Hill, I. Hong, B. Jaffe, H. Kelsey, S. LaHusen, S. La Selle, A. Nelson, N. Nieminski, J. Padgett, J. Patton, J. Pearl, J. Pilarczyk, B. Sherrod, and K. Stanton (2023), Synthesis and quality assessment of paleoseismic data at the Cascadia subduction zone (poster): Abstract presented at the 2023 American Geophysical Union Fall Meeting, San Francisco,

CA, 11-15 Dec.

- *Tomer, J., E. C. Roland, C. Brandl, L. L. Worthington, **M. A. L. Walton**, B. J. Phrampus, and H. G. Greene (2023), Multibeam-detected seafloor fluid seeps on an accretionary wedge adjacent to the Queen Charlotte Fault zone – linking seafloor and subseafloor morphology to fluid flow processes (poster): Abstract presented at the 2023 American Geophysical Union Fall Meeting, San Francisco, CA, 11-15 Dec.
- *Uwaifo, M. O., **M. A. L. Walton**, W. T. Wood, P. J. Yu, and J. H. Graw (2023), Using machine learning to predict sediment thickness from multi-channel seismic data observations offshore of the U.S. West Coast (poster): Abstract presented at the 2023 American Geophysical Union Fall Meeting, San Francisco, CA, 11-15 Dec.
- Walton, M. A. L.**, J. E. Conrad, J. Obelcz, J. Graw, and D. S. Brothers (2023), An updated catalog of mass wasting features offshore southern California and potential applications for slope stability prediction using machine learning (poster): Abstract presented at the 2023 American Geophysical Union Fall Meeting, San Francisco, CA, 11-15 Dec.
- Worthington, L. L., C. Brandl, E. Roland, **M. A. L. Walton**, M. Nedimović, O. Adedeji, J. C. Castellanos, A. Gase, B. Phrampus, and M. Bostock (2023), Faulting and deformation in the M7.8 2012 Haida Gwaii earthquake epicentral area, offshore British Columbia: Crustal shortening or incipient subduction? (invited talk): Abstract presented at the 2023 American Geophysical Union Fall Meeting, San Francisco, CA, 11-15 Dec.
- *Yu, P. J., W. T. Wood, T. R. Lee, **M. A. L. Walton**, M. O. Uwaifo, and J. H. Graw (2023), Global seafloor prediction of total organic carbon, total inorganic carbon, and mass accumulation rate using geospatial machine learning (poster): Abstract presented at the 2023 American Geophysical Union Fall Meeting, San Francisco, CA, 11-15 Dec.
- Lundsten, E., C. K. Paull, R. Gwiazda, S. Dobbs, D. W. Caress, L. A. Kuhnz, **M. A. L. Walton**, N. M. Nieminski, M. McGann, T. Lorenson, G. Cochrane, and J. Addison (2023), Pockmarks offshore Big Sur, California maintained by regional, unconfined, sediment gravity flows over a basin between two submarine channels (talk): Abstract presented at INCISE (International Network for submarine Canyon Investigation and Scientific Exchange), Wellington, New Zealand, 5-7 Dec.
- Obelcz, J., W. T. Wood, P. Duff, J. H. Graw, T. R. Lee, B. J. Phrampus, and **M. A. L. Walton** (2023), Bringing marine geoscience into the big data era: A necessary approach when ‘I don’t know’ isn’t good enough (talk): Abstract presented at the 2023 GSA Connects Annual Meeting, Pittsburgh, PA, 15-18 Oct.
- Staisch, L., R. Witter, J. Watt, A. Grant, **M. A. L. Walton**, D. S. Brothers, E. Davis, T. Dura, S. E. Engelhart, R. Enkin, C. Garrison-Laney, C. Goldfinger, T. Hamilton, A. Hawkes, J. C. Hill, I. Hong, B. Jaffe, H. M. Kelsey, S. LaHusen, S. La Selle, A. Nelson, N. Nieminski, J. Padgett, J. R. Patton, J. Pearl, J. Pilarczyk, B. L. Sherrod, and K. Stanton (2023), Compilation and assessment of data quality for onshore and offshore paleoseismic proxies of great Cascadia megathrust rupture (talk): Abstract presented at the 2023 Seismological Society of America Annual Meeting, San Juan, Puerto Rico, 17-20 April.