

HELEN A. JANISZEWSKI

ASSISTANT PROFESSOR

DEPARTMENT OF EARTH SCIENCES | SOEST | UNIVERSITY OF HAWAI'I AT MĀNOA

Department of Earth Sciences
1680 East-West Road POST 614A
Honolulu, HI 96822

<http://www.helenjaniszewski.squarespace.com>
hajanisz@hawaii.edu
(808) 956-0313

EDUCATION

COLUMBIA UNIVERSITY | New York, NY

Ph.D. in Seismology, Department of Earth and Environmental Sciences 2018

M.Phil. in Seismology, Department of Earth and Environmental Sciences 2016

M.A. in Seismology, Department of Earth and Environmental Sciences 2014

RUTGERS UNIVERSITY | New Brunswick, NJ

B.S. (summa cum laude) in Geological Sciences (Highest Honors) and Physics 2012

Minors: Mathematics, Russian Language

PROFESSIONAL HISTORY

UNIVERSITY OF HAWAI'I AT MĀNOA

Department of Earth Sciences | Honolulu, HI

Assistant Professor 2019 -

CARNEGIE INSTITUTION FOR SCIENCE

Department of Terrestrial Magnetism | Washington, DC

Postdoctoral Fellow 2017 - 2019

TEACHING

UNIVERSITY OF HAWAI'I AT MĀNOA | Dept. of Earth Sciences

ERTH 103: Geology of the Hawaiian Islands

This undergraduate course covers geological and geophysical processes in Hawai'i, as well as the geology of specific places (Hawai'i Nei). We will interleave processes and places, starting from Lō'ihi (the youngest Hawaiian volcano) and moving NW along the chain to finish at Meiji seamount (the oldest Hawaiian volcano). Students will be able to look at the entire Hawaiian-Emperor volcanic chain, understand how it got there, why it is not the same all along the chain, and what the geologic future may hold.

Fall 2021

ERTH 451: Earthquakes and Crustal Deformation

This graduate level course introduces concepts related to the deformation of the earth over a variety of length scales, time scales, and locations. This course covers continuum mechanics in geophysics, as applied to the deformation of Earth materials (elastic, viscoelastic, and plastic deformations) and seismic wave propagation (body waves, surface waves, anisotropy, and attenuation). It explores the role of plate tectonic stress and strain in earthquake generation and crustal motions associated with the earthquake cycle. Tsunami wave generation, liquefaction, and relevant planetary observations of quake-like events will also be discussed.

Spring 2021

ERTH 631: Geophysics - Solid, Fluid, and Wave Mechanics

This graduate level course introduces concepts related to the deformation of the earth over a variety of length scales, time scales, and locations. This course covers continuum mechanics in geophysics, as applied to the deformation of Earth materials (elastic, viscoelastic, and plastic deformations) and seismic wave propagation (body waves, surface waves, anisotropy, and attenuation). Topics to be covered include tensors, stress and strain in solids, rock failure, moment tensors, elasticity, ductile rheology, viscous flow, equations of motion and boundary conditions, the vector wave equation, wave field energy, reflection and transmission of seismic waves, and surface waves.

Fall 2020

ERTH 303: Structural Geology (co-taught)

This undergraduate course is an introduction to the geometry, kinematics, and mechanics of lithospheric deformation. It is a required course for the undergraduate Bachelor of Science degree in the Dept. of Earth Sciences.

Fall 2020

FUNDING

ACTIVE

NSF-EAR Geophysics (2052829) 2021-2024

Constraining Transcrustal Magmatic Systems with Receiver Functions Along the Aleutian Island Arc

PI: H. A. Janiszewski.

\$296,022

USGS 2021-2023

Deep Crustal Magmatic Structure in the Vicinity of the Pahala Earthquake Swarm

PI: H. A. Janiszewski.

\$54,450

NSF-EAR/OCE GeoPRISMS (2025668) 2020-2022

Plate Boundary Structure and Deformation Workshop

PI: H. A. Janiszewski.

\$64,916

UHM Strategic Investment Award 2020-2021

Strategic investment in high-impact practices in UHM online undergraduate education: Immersive Virtual Huaka'i (Field Trips)

PI: B. Smith-Konter, Co-PIs: H. A. Janiszewski, B. Houghton, S. Martel, J. Sinton, T. Shea, J. Konter, A. Anderson, J. Hammer, S. Rowland, H. Cremer, S. White, L. Koga, A. Swift, D. Hirata.

\$69,498 (\$44,498 Provost Funds, \$25,000 SOEST Dean's Office)

COLLABORATOR

NSF GEO/EAR Education and Human Resources 2020-2023

REU Site: Earth Science on Volcanic Islands

PI: B. Smith-Konter, Co-PI: P. Wessel, Collaborators: B. Chen, S. Coats, H. Dulaiova, C. Glenn, N. Grobbe, J. Hammer, G. Ito, H. Janiszewski, J. Konter, A. Pietruszka, B. Popp, T. Shea, C. Smith.

\$558,074

PUBLICATIONS

9. Mosher, S. G., Z. C. Eilon, H. A. Janiszewski, P. Audet, Probabilistic Inversion of Seafloor Compliance for Oceanic Crustal Shear Velocity Structure Using Mixture Density Neural Networks, JGR: Solid Earth 2021

8. Portner, D. E., L. S. Wagner, H. A. Janiszewski, D. C. Roman, J. A. Power, Ps-P tomography of a mid-crustal magma reservoir beneath Cleveland Volcano, Alaska, Geophysical Research Letters 2020
7. Golden, S., L. S. Wagner, B. Schleigh, D. Power, D. C. Roman, S. I. Sacks, H. A. Janiszewski, Digitization of the Carnegie Analog Broadband Instruments Tape Records (1965-1996). Seismological Research Letters doi: <https://doi.org/10.1785/0220190334> 2020
6. Janiszewski, H.A., L.S. Wagner, D.C. Roman, Aseismic mid-crustal magma reservoir at Cleveland Volcano imaged through novel receiver function analyses. Scientific Reports, 10, 1780, doi:10.1038/s41598-020-58589-0 2020
5. Crosbie, K. J., G. A. Abers, M. E. Mann, H. A. Janiszewski, K. C. Creager, C. Ulberg, S. Moran, Shear velocity structure from ambient noise and teleseismic surface wave tomography in the Cascades around Mount St. Helens, Journal of Geophysical Research: Solid Earth, 124, 8358–8375. doi:10.1029/2019JB017836 2019
4. Janiszewski, H. A., J. B. Gaherty, G. A. Abers, H. Gao, Z. Eilon, Amphibious surface wave phase velocity measurements of the Cascadia subduction zone, Geophysical Journal International, Volume 217, Issue 3, June 2019, Pages 1929-1948, doi: 10.1093/gji/ggz051 2019
3. Till, C. B., A. Kent, G. A. Abers, H A. Janiszewski, J. B. Gaherty, B. Pitcher, The Causes of Spatiotemporal Variations in Erupted Fluxes and Compositions Along a Volcanic Arc, Nature Communications, Volume 10, Issue 1, doi: 10.1038/s41467-019-09113-0 2019
2. Janiszewski, H. A., G. A. Abers, Imaging the plate interface in the Cascadia seismogenic zone: New constraints from offshore receiver functions, Seismological Research Letters, v. 86 no. 5 p. 1261-1269, doi: 10.1785/0220150104. 2015
1. Janiszewski, H. A., G. A. Abers, Shillington, D.J., J. A. Calkins, Crustal structure along the Aleutian island arc: New insights from receiver functions constrained by active source data, Geochem. Geophys. Geosys., 14, 2977-2992, doi: 10.1002/ggge.20211. 2013

NON-PEER REVIEWED

1. Audet, P., H. A. Janiszewski, OBStools: Software for processing broad-band ocean-bottom seismic data. Zenodo. doi: 10.5281/zenodo.3905412 2020

FELLOWSHIPS AND AWARDS

Carnegie DTM Postdoctoral Fellowship	2017 - 2019
Geoprisms Student AGU Prize - Honorable Mention	2016
AGU Outstanding Student Presentation Award - Tectonophysics	2016
Geoprisms Student AGU Prize - Honorable Mention	2015
National Science Foundation Graduate Research Fellowship	2012 - 2015
EPS Chair Award, Earth & Planetary Sciences, Rutgers University	2012
Vinton Gwinn Award, Earth & Planetary Sciences, Rutgers University	2011
George O. Scott Award, Earth & Planetary Sciences, Rutgers University	2011
Noemi B. Koller Scholarship, Physics & Astronomy, Rutgers University	2011
Phi Beta Kappa	2011

FIELD

PACIFIC (OLD) ORCA

(R/V Revelle, RR2003; Co-Chief Scientist; 48 days)

- Oversaw OBS recovery, multibeam bathymetric mapping, and dredging operations (South Pacific; American Samoa). 2020

ALASKA AMPHIBIOUS COMMUNITY SEISMIC EXPERIMENT <i>(R/V Sikuliaq, SKQ2019-18S; Science Party; 21 days)</i>	
OBS recovery cruise of deep water and TRM instruments with ROV Jason (Alaska, USA).	2019
DELAWARE QUICK DEPLOYMENT	
Rapid deployment after the November 30 M 4.1 earthquake (Delaware, USA).	2017
ENAM COMMUNITY SEISMIC EXPERIMENT	
Service run for broadband instruments (North Carolina, USA).	2015
QUEBEC MAINE III	
Broadband seismometer deployment (Northern Maine, USA).	2013
RIDGE2TRENCH <i>(R/V Langseth, MGL1211; Science Party; 28 days)</i>	
Wide Angle/ MCS seismic survey of the Juan de Fuca Plate (Washington, USA).	2012
Ship to shore instrument deployment (Western Washington, USA).	2012
FIELD COURSES	
Pacific Northwest, WA, USA: Graduate student field trip (Field Guide).	2014
Adirondacks, NY, USA: Graduate student field trip (Field Guide).	2013
North Anatolian Fault Zone, Turkey: Field mapping course (SDSMT).	2011
INVITED TALKS	
<i>*upcoming</i>	
*University of Rochester, Dept. of Earth and Environmental Sciences	2021
Tohoku University, Earth, Sea, and Sky VI Workshop	2021
USGS Volcano Science Seminar	2021
Vanderbilt University, Department of Earth and Environmental Sciences	2021
Marine Seismology Symposium, Plenary Session Speaker	2021
Hawaiian Volcano Observatory	2020
SAGE/GAGE Workshop: Earth in 4D, Plenary Session Speaker	2019
IRIS Webinar	2019
Annual Joint AEG-PGS Meeting	2019
National Museum of Natural History, Smithsonian, Dept. of Mineral Sciences	2019
Purdue University, Earth, Atmospheric, and Planetary Sciences Dept.	2019
Woods Hole Oceanographic Institution, Geology and Geophysics Dept.	2019
Penn State University, Geodynamics Seminar	2019
University of Delaware, Geological Sciences Dept.	2019
Geological Society of Washington	2019
University of California Santa Barbara, Earth Science Speaker Series	2019
University of Hawai'i Mānoa, Earth Science Dept.	2019
Princeton University, Solid Earth Brown Bag Seminar	2018
Rutgers University, Earth and Planetary Sciences Colloquium	2018
University of Maryland, Geology Colloquium	2018
George Mason University, Geology Seminar	2018
Binghamton University, Geology Seminar	2018
Cornell University, Geophysics Seminar	2017
Carnegie Institution for Science, DTM Seminar	2017

Woods Hole Oceanographic Institution, Geophysics Seminar	2017
Lamont Doherty Earth Observatory, Seismology Student Workshop	2016
Amphibious Array Facility Workshop, Plenary Session Speaker	2014
Yale University, Geophysics Group Seminar	2014

PROFESSIONAL SERVICE

OVERSIGHT COMMITTEES

Ocean Bottom Seismometer Instrument Center (OBSIC) Oversight Committee	2020-2023
UNOLS Marine Seismic Research Oversight Committee (MSROC)	2020-2023

AGU FALL MEETING

OSPA Judge, GeoPrisms Student Prize Judge

Primary Convener

Geophysical, Mechanical, and Geologic Constraints on the Subduction Interface 2020

Synthesis: Knowns and Unknowns of the Cascadia Subduction System 2018

New Insights on the Cascadia Subduction Zone from Offshore and Amphibious Studies 2017

Convener

Volcano Seismology and Acoustics: Recent Advances in Understanding Volcanic Processes 2021

The Cascadia margin: Linking geophysical characteristics with subduction zone structure and evolution 2021

Whose Fault Is It? Relating Structural and Compositional Heterogeneity to Slip Behavior 2018

Session Chair

Scientific Advances from Subduction Zone Observatories 2015

CONFERENCE ORGANIZATION

Marine Seismology Symposium

Organizing Committee 2021

OBS Data Processing SIG, Lead Organizer 2021

GeoPRISMS Workshops

Plate Boundary Structure and Deformation Workshop, Lead Organizer 2022

Aleutian-Alaska GeoPRISMS Workshop, Organizing Committee 2019

Seismology Student Workshop

Organizing Committee 2015 - 2017

JOURNAL REVIEWER

Scientific Reports, Geophysical Research Letters, Journal of Geophysical Research: Solid Earth, G-Cubed, Earth and Planetary Science Letters, Seismological Research Letters, Bulletin of the Seismological Society of America, Journal of Volcanology and Geothermal Research, Geophysical Journal International, Tectonophysics, AGU Books, Frontiers in Earth Sciences, Marine Geology, Pure and Applied Geophysics, Solid Earth 2016 -

PROPOSAL REVIEWER

NSF EAR: Petrology and Geochemistry, GeoPRISMS, Geophysics, Earthscope; OCE: Marine Geology and Geophysics, Ocean Sciences Postdoc Research Fellowship 2017 -

PANEL REVIEWER

NSF EAR: Instrumentation and Facilities 2020

INSTITUTIONAL SERVICE**UNIVERSITY OF HAWAI'I AT MĀNOA**

School of Ocean and Earth Science and Technology

Research Vessel Operations Committee 2021 -

Department of Earth Sciences

JEDI and Community Committee (Inaugural Chair) 2021 -

Huliāmahi Faculty Participant (Student-Led Grassroots JEDI Focus Group) 2021 -

Faculty Search Committee Member (3 positions) 2020

Department Committee Member 2020 - 2021

Curriculum Committee Member 2020 - 2021

CARNEGIE INSTITUTION FOR SCIENCE

Geophysics and Geochemistry Reading Group Organizer 2018 - 2019

COLUMBIA UNIVERSITY**Graduate Student Advisory Council**

Vice President of Administration 2014 - 2016

Communications Chair 2013 - 2014

Field Trip Planning Committee

Pacific Northwest (with C. Eddy, Z. Eilon, J. Gale, P. Moulik, H. Rabinowitz) 2014

ADVISING AND MENTORING**UNIVERSITY OF HAWAI'I AT MĀNOA****Graduate Advisor**

Jade Wight (MS Student; 2021-current)

Undergraduate Research Advisor

Sophia Hernandez (2021-current), Madeleine Tan (2021 ESVI REU)

Dissertation Committee Member

Hannah Tilley (2020-current)

Comprehensive Exam Committee Member

Abigail Flom (2021), Chiara Ferrari-Wong (2021), Elizabeth Benyshek (2021), Kelly McCartney (2021)

EXTERNAL COMMITTEES**Masters Thesis**

Joseph Phillips, Northern Arizona University (2021-current)

PUBLIC OUTREACH AND MEDIA**INTERVIEWS**

Television: ABC Philadelphia, KHON2 News

Print Media: National Geographic, EARTH Magazine

Podcasts: Don't Panic Geocast, Episode 151

NON-TECHNICAL TALKS AND PANELS

JEDI in the Geosciences, REU Seminar, UH Mānoa 2021

EPIK Faculty Lightning Talks 2020, 2021

Seismology Student Workshop Alumni Career Panel 2021

Earth Science on Volcanic Islands REU Seminar, UH Mānoa 2020

Invited Q&A Session, Rutgers Undergraduate Geology Club	2018
Lunch and Learns, DTM Carnegie Institution for Science	2018
Lamont Summer Intern Seminar, Lamont Doherty Earth Observatory	2016

OUTREACH

Skype a Scientist	2018-2020
USA Science and Engineering Festival, Experiment Leader for DTM booth	2018
Lamont Doherty Earth Observatory Open House	2012, 2014
Columbia University Girls Science Day, Experiment Leader	2012, 2013

TRAINING, WORKSHOPS, AND CERTIFICATIONS

DIVERSITY, EQUITY AND INCLUSION

URGE: Unlearning Racism in the Geosciences, Pod Leader	2021
University of Hawai'i at Mānoa, Allies for LGBTQ+ Safe Zone Training	2020

RECENT CONFERENCE ABSTRACTS

** advised undergraduate student*

Janiszewski, H. A., C. Caplan, M. Chertok, S. Coats, T. McKenzie, B. Okuhata, A. Pietruszka, E. Ravanis, T. Shea, D. Tachera, F. Zhu, Huliāmahi: Overflowing of JEDI Efforts at the University of Hawai'i at Mānoa , <i>2021 Fall Meeting, AGU.</i>	2021
<i>Tan, M.*</i> , H. A. Janiszewski., J. Ritsema, Receiver function analysis of the magmatic plumbing system beneath Okmok volcano, <i>2021 Fall Meeting, AGU.</i>	2021
Kent, A., C. Till, G. Abers, P. Wieser, B. Pitcher, H. A. Janiszewski., J. Gaherty, Linking large geochemical and geophysical data sets to help understand magmatic processes in Cascadia, <i>2021 Fall Meeting, AGU.</i>	2021
Janiszewski, H. A., G. A. Abers, J. B. Gaherty, Z. Eilon, L. Wagner, D. Roman, J. Power, D. Portner, M. Haney, Multiscale Amphibious Experiments at Subduction Zones: Recent Advancements and Future Directions, <i>2021 SSA Annual Meeting. (Invited)</i>	2021
Janiszewski, H. A., J. B. Russell, W. B. Hawley, Y. J. Tan, C. Lynner, J. B. Gaherty, Z. Eilon, S. G. Mosher, 10+ Years of Ocean Bottom Seismometer Noise: Fresh Insights and Persistent Questions, <i>2021 Marine Seismology Symposium. (Invited)</i>	2021
Janiszewski, H. A., J. B. Russell, W. B. Hawley, Y. J. Tan, C. Lynner, J. B. Gaherty, Z. Eilon, S. G. Mosher, 10+ Years of Ocean Bottom Seismometer Noise: Fresh Insights and Persistent Questions, <i>2020 Fall Meeting, AGU. (Invited)</i>	2020
Portner, D. E., L. S. Wagner, H. A. Janiszewski., D. C. Roman, J. A. Power, Seismic Imaging of the Magma Plumbing System Beneath Mount Cleveland Volcano, Alaska, <i>2020 Fall Meeting, AGU.</i>	2020
Power, J. A., D. C. Roman, K. P. Nicolaysen, P. E. Izbekov, C. A. Werner, H. A. Janiszewski., D. E. Portner, L. S. Wagner, T. A. Plank, D. J. Rasmussen, J. J. Lyons, M. M. Haney, H. Le Mevel and M. Kaufman, Multi-Disciplinary Evidence for a Large, Previously Unrecognized Caldera in the Islands of Four Mountains, Central Aleutian Arc, Alaska, <i>2020 Fall Meeting, AGU.</i>	2020
Janiszewski, H. A., L. S. Wagner, D. C. Roman, Imaging Trans-Crustal Magmatic Systems with Receiver Functions – A Path Towards Linking Tectonic and Eruptive Processes, Abstract T53D-02, <i>2019 Fall Meeting, AGU. (Talk)</i>	2019
Lynner, C., A. Guajardo, Z. Eilon, H.A., Janiszewski, Surface wave tomography across the Eastern North American Margin from amphibious data, Abstract T21F-0376, <i>2019 Fall Meeting, AGU.</i>	2019

- Janiszewski, H. A., L. S. Wagner, D. C. Roman, Receiver function imaging of magmatic- and subduction-related structures beneath arc volcanoes: A case study at Cleveland Volcano, Alaska, *2019 SSA Annual Meeting*. (Talk) 2019
- Janiszewski, H. A., L. S. Wagner, D. C. Roman, Receiver function imaging of magmatic- and subduction-related structures beneath arc volcanoes: A case study at Cleveland Volcano, Alaska, *Geoprisms Synthesis and Integration TEI* 2019
- Janiszewski, H. A., L. S. Wagner, D. C. Roman, Receiver function imaging of magmatic- and subduction-related structures beneath arc volcanoes: A case study at Cleveland Volcano, Alaska, Abstract V13D-0120, *2018 Fall Meeting, AGU*. 2018
- Rasmussen, D. J., T. A. Plank, D. C. Roman, E. Hauri, H. A., Janiszewski, E. Lev, K. P. Nicolaysen, P. E. Izbekov, How slab depth is reflected in Aleutian arc magmas, Abstract T22B-02, *2018 Fall Meeting, AGU*. 2018
- Till C. B., A. J. R. Kent, G. A Abers, H. A. Janiszewski J. B. Gaherty, B. W. Pitcher, Towards Assessing the Causes of Volcanic Diversity in the Cascades Arc, *2018 Goldschmidt*. (Keynote Talk) 2018
- Janiszewski, H. A., J. B. Gaherty, G. A. Abers, A. Becel, Figuring out the Forearc: Shoreline-Crossing Seismic Imaging in Cascadia, *2018 IRIS Workshop*. 2018
- Janiszewski, H. A., J. B. Gaherty, G. A. Abers, H. Gao, Amphibious Shear Velocity Structure of the Cascadia Subduction Zone, Abstract T51E-0540, *2017 Fall Meeting, AGU*. 2017
- Crosbie K., G. A. Abers, M. E. Mann, H. A. Janiszewski, K. C. Creager, E. Kiser, C. W. Ulberg, R. P. Denlinger, S. C. Moran, Shear Wave Structure of Mount St. Helens, WA Region From Ambient Noise, Earthquake Surface Waves and Receiver Functions, Abstract T51E-0542, *2017 Fall Meeting, AGU*. 2017
- Till C. B., A. J. R. Kent, G. A Abers, B. Pitcher, H. A. Janiszewski, B. Schmandt, Toward Assessing the Causes of Volcanic Diversity in the Cascades Arc, Abstract T23I-07, *2017 Fall Meeting, AGU*. (Talk) 2017
- Bletery Q., W. Fan, H. A. Janiszewski, E. Lynch, K. A. McCormack, N. J. Phillips, B. Rousset, C. Seyler, Y. J. Tan, M. E. French, J. B Gaherty and C. Regalla, Hunting for Shallow Slow-Slip Events at Cascadia, Abstract T51E-0531, *2017 Fall Meeting, AGU*. 2017
- Janiszewski, H. A., J. B. Gaherty, G. A. Abers, H. Gao, Shoreline-crossing shear-velocity structure of the Juan de Fuca plate and Cascadia subduction zone from surface waves and receiver functions, *2017 OBS Symposium, OBSIP*. 2017
- Janiszewski, H. A., J. B. Gaherty, G. A. Abers, H. Gao, Shoreline-crossing shear-velocity structure of the Juan de Fuca plate and Cascadia subduction zone from surface waves and receiver functions, presented at the *2017 EGU General Assembly*. 2017
- Janiszewski, H. A., J. B. Gaherty, G. A. Abers, H. Gao, Shoreline-crossing shear-velocity structure of the Juan de Fuca plate and Cascadia subduction zone from surface waves and receiver functions, Abstract T31D-2944, *2016 Fall Meeting, AGU*. 2016
- Abers, G. A., H. A. Janiszewski, K. M. Keranen, J. Li, D. M. Saffer, D. J. Shillington, K. Schindler, Seismic signals from the slab surface within and downdip of the thrust zone: blind men and the elephant?, Abstract T51I-06, *2016 Fall Meeting, AGU*. (Invited Talk) 2016
- Janiszewski, H. A., J. B. Gaherty, G. A. Abers, Surface Wave Imaging of the Cascadia Subduction Zone Using an Amphibious Dataset, *2016 Subduction Zone Observatory Workshop*. 2016
- Janiszewski, H. A., J. B. Gaherty, Surface-Wave Imaging of the Juan de Fuca Plate and Cascadia Subduction Zone, *2016 IRIS Workshop*. 2016