

Liam Toney

Email: ldtoney@alaska.edu

Phone: +1 360 305 8188

Web: liam.earth

EDUCATION

University of Alaska Fairbanks (UAF) | *Fairbanks, AK* | May 2023 (expected)

Ph.D. in Geophysics

Pomona College | *Claremont, CA* | December 2017

B.A. *cum laude* in Physics; minor in Geology

School for International Training | *Jaipur, Rajasthan, India* | August 2015–December 2015

Sustainable Development and Social Change program

RESEARCH EXPERIENCE

U.S. Geological Survey Geologic Hazards Science Center | *Golden, CO* | June 2020–present

Student Trainee (Physical Science), Landslide Hazards Program

UAF Geophysical Institute (GI) | *Fairbanks, AK* | August 2018–present

Graduate Research Assistant

GNS Science | *Waikato, New Zealand* | April 2018–May 2018

Ashfall Geovisualization Developer

Sandia National Laboratories (SNL) | *Albuquerque, NM* | June 2017–August 2017

R&D Intern, Geophysics Department

Incorporated Research Institutions for Seismology (IRIS) | *Albuquerque, NM* | June 2016–August 2016

Summer REU Intern (placement at SNL as part of the IRIS Undergraduate Internship Program)

TEACHING EXPERIENCE

GEOS 431/631 — Foundations of Geophysics | *UAF* | Fall 2020

Teaching Assistant

GEOS 436/636 — Programming and Automation for Geoscientists | *UAF* | Fall 2020

Teaching Assistant

Remote Online Sessions for Emerging Seismologists (ROSES) Summer School | August 2020

Instructor

Breakthrough Collaborative | *Birmingham, AL* | June 2015–July 2015

Teaching Fellow

Pomona College | *Claremont, CA* | January 2014–May 2016

Teaching Assistant, Physics Department

PUBLICATIONS

Dannemann Dugick, F., van der Lee, S., Prieto, G. A., Dybing, S. N., **Toney, L.**, & Cole, H. (in review). ROSES: Remote Online Sessions for Emerging Seismologists. *Seismological Research Letters*.

Toney, L., & Allstadt, K. E. (in press). lsforce: A Python-based single-force seismic inversion framework for massive landslides. *Seismological Research Letters*.

Toney, L., Fee, D., Allstadt, K. E., Haney, M., & Matoza, R. S. (in press). Reconstructing the dynamics of the highly-similar May 2016 and June 2019 Iliamna Volcano, Alaska ice-rock avalanches from seismoacoustic data. *Earth Surface Dynamics Discussions*. doi.org/10.5194/esurf-2020-47

Fee, D., **Toney, L.**, Kim, K., Sanderson, R. W., Iezzi, A. M., Matoza, R. S., De Angelis, S., Jolly, A. D., Lyons, J. J., & Haney, M. (2021). Local explosion detection and infrasound localization by reverse time migration using 3-D finite-difference wave propagation. *Frontiers in Earth Science*, 9. doi.org/10.3389/feart.2021.620813

Toney, L., Abbott, R. E., Preston, L. A., Tang, D. G., Finlay, T., & Phillips-Alonge, K. (2019). Joint body- and surface-wave tomography of Yucca Flat, Nevada using a novel seismic source. *Bulletin of the Seismological Society of America*, 109(5), 1922–1934. doi.org/10.1785/0120180322

CONFERENCE PRESENTATIONS

Toney, L., Fee, D., & Witsil, A. (2020). An assessment of support vector machines for volcanic infrasound signal classification on local scales. Abstract S001-0012 presented at *2020 AGU Fall Meeting*, online, 1–17 Dec. (poster)

Fee, D., **Toney, L.**, Matoza, R. S., Sanderson, R. W., Haney, M., Lyons, J. J., Iezzi, A. M., Kim, K., De Angelis, S., Diaz Moreno, A., & Jolly, A. D. (2019). A framework for improved infrasound back-projection on local and regional scales. Abstract S41E-0577 presented at *2019 AGU Fall Meeting*, San Francisco, CA, 9–13 Dec. (poster)

Toney, L., Fee, D., Allstadt, K. E., Haney, M., & Matoza, R. S. (2019). A tale of two very large avalanches: Probing the limits of seismoacoustic avalanche characterization on Iliamna volcano, Alaska. Abstract S23D-0658 presented at *2019 AGU Fall Meeting*, San Francisco, CA, 9–13 Dec. (poster)

Toney, L., Fee, D., Haney, M., Matoza, R. S., & Allstadt, K. E. (2019). Seismoacoustic insights from the May 22nd, 2016 Iliamna volcano rock and ice avalanche. Abstract 47 presented at *2019 SSA Annual Meeting*, Seattle, WA, 23–26 April. (poster)

Toney, L., Abbott, R. E., & Preston, L. A. (2017). Joint body-and surface-wave tomography of Yucca Flat, Nevada. Abstract S33A-0854 presented at *2017 AGU Fall Meeting*, New Orleans, LA, 11–15 Dec. (poster)

Toney, L., Abbott, R. E., Knox, H. A., Preston, L. A., & Hoots, C. R. (2016). Surface-wave tomography of Yucca Flat, Nevada. Abstract S51A-2744 presented at *2016 AGU Fall Meeting*, San Francisco, CA, 12–16 Dec. (poster)

OPEN SOURCE CODE CONTRIBUTIONS

PyGMT | github.com/GenericMappingTools/pygmt
Contributor

lsforce | code.usgs.gov/ghsc/lhp/lsforce
Co-developer

rtm | github.com/uafgeotools/rtm
Co-developer

sonify | github.com/liamtoney/sonify
Developer

SERVICE

Referee

Surveys in Geophysics

Co-founder & Member | September 2020–present

GI Diversity, Equity, and Inclusion Committee

Vice President | May 2020–present

GI Graduate Student Association (GIGSA)

Treasurer | April 2019–May 2020

GIGSA

HONORS & AWARDS

Secretary of Energy Achievement Award

U.S. Department of Energy (as part of the Source Physics Experiment, Phase II, Dry Alluvium Geology team)

Honorable Mention

John Hunter Excellence in Plotting Contest, SciPy 2020

Distinction in the Senior Exercise

Physics Department, Pomona College

Pomona College Scholar

Pomona College

Tileston Physics Prize

Physics Department, Pomona College

PROFESSIONAL AFFILIATIONS

American Geophysical Union | 2016–present

Seismological Society of America | 2019–present

TECHNICAL SKILLS

Coding

- Python
- MATLAB
- R
- Unix
- GMT
- GDAL
- L^AT_EX
- Git
- HTML + CSS

Software

- ArcGIS
- Adobe Illustrator + InDesign + Photoshop + Lightroom
- GitHub

- Mendeley
- macOS
- Windows

FIELDWORK

Date	Duration	Activity	Location	Role
July– August 2019	4 weeks	Seismic and infrasound station installation/maintenance	Adak/Atka/Chuginadak/Umnak islands, Alaska, USA	Assistant
April 2018	1 day	Volcanic gas flux measurement	White Island, New Zealand	Assistant
April 2018	2 days	Microgravity survey	Mount Tongariro, New Zealand	Assistant
February 2018	1 week	Seismic deployment	Southland, New Zealand	Assistant
July 2016	1 week	Active-source seismic survey	Nevada National Security Site, Nevada, USA	Assistant