

# Liam D. Toney

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## EDUCATION

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**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

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

Student Trainee (Physical Science), Landslide Hazards Program

**UAF Geophysical Institute** | *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

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**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

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

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*.

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. (in press). Local explosion detection and infrasound localization by reverse time migration using 3-D finite-difference wave propagation. *Frontiers in Earth Science*.

**Toney, L.**, Fee, D., Allstadt, K. E., Haney, M., & Matoza, R. S. (in review). 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*. <https://doi.org/10.5194/esurf-2020-47>

**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. <https://doi.org/10.1785/0120180322>

## CONFERENCE PRESENTATIONS

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**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)

## HONORS & AWARDS

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### 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**

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**American Geophysical Union** | 2016–present

**Seismological Society of America** | 2019–present

## **SERVICE**

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### **Referee**

*Surveys in Geophysics*

**Vice President** | May 2020–present

Geophysical Institute Graduate Student Association (GIGSA)

**Treasurer** | April 2019–May 2020

GIGSA

## **TECHNICAL SKILLS**

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### **Coding**

- Python
- MATLAB
- R
- Unix
- GMT
- GDAL
- L<sup>A</sup>T<sub>E</sub>X
- Git
- HTML + CSS

### **Software**

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

## **FIELDWORK**

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<b>Date</b>	<b>Duration</b>	<b>Activity</b>	<b>Location</b>	<b>Role</b>
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