Taiyi A. Wang

taiyi.wang@jsg.utexas.edu, (507) 403-3912
The Jackson School of Geosciences
2305 Speedway, Stop C1160, Austin, TX 78712

Professional appointments

2026 -	Assistant Professor of Geophysics Department of Earth and Planetary Sciences, The University of Texas at Austin
2024 - 2026	O. K. Earl Postdoctoral Fellow, California Institute of Technology Advisors: Zachary Ross and Nadia Lapusta

Education

2024	Ph. D. Geophysics Thesis advisor: Paul Segall Committee: Eric Dunham, William Ellsworth, Howard Zebker	Stanford University
2019	B. A. Geology with distinction; Minor in Mathematics; *cum laude*	Carleton College

Manuscripts under review

2. Berg, E., **Wang, T. A.**, Wig, E., Segall., P., Anderson, K. R. (2026). Evolution of summit magma pressure during the 2018 caldera collapse at Kīlauea volcano. Geophysical Research Letters.

1. Wilding, J. D., **Wang, T. A.,** Liu, Y., Ross, Z. E. (2026). *Cascading magmatic unrest and aseismic faulting in the Aegean Sea enabled by elastic stress relay.* Science Advances.

Peer-reviewed publications

10. **Wang, T. A.**, Dunham, E. M. (2026), *Non-symmetric seismic moment and seismic torques: Theory and application to caldera collapse earthquakes at Kīlauea Volcano in 2018*. Bulletin of the Seismological Society of America.

9. **Wang, T. A.**, McBrearty I. W., Segall, P. (2025). *Graph Neural Network based elastic deformation emulators for magmatic reservoirs of complex geometries*. Volcanica, 8(1), 95-109.

8. **Wang, T. A**., Dunham, E. M., Krenz, L., Abrahams, L. S., Segall, P., Yoder, M. R. (2024). *Dynamic rupture simulations of caldera collapse earthquakes: Effects of wave radiation, magma viscosity, and evidence of complex nucleation at Kīlauea 2018.* Journal of Geophysical Research: Solid Earth 129.4: e2023JB028280.

7. Segall, P., Matthews, M., Shelly, D. R., **Wang, T. A.**, Anderson, K. R. (2024). *Stress-driven recurrence and precursory moment surge in caldera collapse mainshocks.* Nature Geoscience, 1-6.

6. **Wang, T. A.,** Segall, P., Hotovec-Ellis, A., Anderson, K. R., Cervelli, P. F. (2023), *Ring fault creep induces volcano-tectonic seismicity during caldera collapse of Kīlauea in 2018.* Earth and Planetary Science Letters, *618*, 118288.

5. **Wang, T. A.**, Dunham, E. M. (2022). *Hindcasting injection-induced aseismic slip and microseismicity at the Cooper*

Basin Enhanced Geothermal Systems Project. Scientific Reports, 12(1), 1-12.

4. Segall, P., Anderson, K., **Wang, T. A.** (2022). *Could Kīlauea's 2020 post caldera-forming eruption have been anticipated?* Geophysical Research Letters, 49(15), e2022GL099270.

3. **Wang, T. A.**, Coppess, K. R., Segall, P., Dunham, E. M., Ellsworth, W. (2022). *Physics-Based model reconciles caldera collapse induced static and dynamic ground motion: application to Kīlauea 2018*. Geophysical Research Letters, 49(8), e2021GL097440.

2. **Wang, T. A.**, Zheng, Y., Pulvirenti, F., & Segall, P. (2021). *Post-2018 caldera collapse re-inflation uniquely constrains Kīlauea's magmatic system*. Journal of Geophysical Research: Solid Earth, 126(6), e2021JB021803.

1. Segall, P., Anderson, K. R., Pulvirenti, F., **Wang, T. A.**, Johanson, I. (2020). *Caldera collapse geometry revealed by near-field GPS displacements at Kīlauea Volcano in 2018*. Geophysical Research Letters, 47(15), e2020GL088867.

Invited talks

13. *Opening on nonplanar faults and shear ruptures in heterogeneous*, *elastic media*. Earth Science seminar at the Department of Earth and Planetary Sciences, Massachusetts Institute of Technology (April, 2026)

12. *Cascading magmatic unrest and aseismic faulting in the Aegean Sea enabled by elastic stress relay*. Weekly seminar at the Department of Earth, Environmental and Planetary Sciences, Rice University (October 9nd, 2025)

11. *Neural operator accelerated earthquake sequence simulations with evolving elastic heterogeneities*. GMG (Geomechanics and Mitigation of Geohazards) Industrial Advisory Board Meeting (October 2nd, 2025)

10. *Neural operator accelerated earthquake sequence simulations with evolving elastic heterogeneities*. The 3rd Workshop on Earthquake Physics and Applications of Artificial Intelligence to Tectonic Faulting (September 23rd, 2025)

9. *Caldera collapse earthquakes at basaltic volcanoes – a trilogy of waves, magma, and friction*. Lithosphere Dynamics Seminar, Department of Earth Sciences, University of Southern California (April 9th, 2025)

8. *Bridging the gap between numerical simulations of caldera collapse earthquakes and seismic observables*. AGU Chapman Conference, Hilo, Hawaii (February 11th, 2025)

7. *Caldera collapse earthquakes at basaltic volcanoes – a trilogy of waves, magma, and friction*. Weekly seminar at the Department of Earth and Planetary sciences, University of Hawaii, Manoa (February 7th, 2025)

6. *Caldera collapse earthquakes at basaltic volcanoes – a trilogy of waves, magma, and friction*. Weekly Seminar at the Caltech Seismological Laboratory (January 31st, 2025)

5. *Caldera collapse earthquakes at basaltic volcanoes – a trilogy of waves, magma, and friction*. The DeFord Lecture Series in the Department of Earth and Planetary Sciences, University of Texas at Austin (December 5th, 2024)

4. *Dynamics of caldera collapse earthquakes – effect of chamber viscoelasticity, seismic wave radiations, and seismic representations.* USGS Earthquake Center, Moffett Field (March 2024)

3. *Hindcasting injection-induced aseismic slip and microseismicity at the Cooper Basin Enhanced Geothermal Systems Project, Australia.* USGS Earthquake center, Moffett Field (March 2023)

2. *3D modeling of fault-zone injection and slip at Cooper Basin Enhanced Geothermal Systems Project, Australia.* SCITS

(Stanford Center for Induced and Triggered Seismicity) affiliates meeting (December 2021)

1. *Post-caldera collapse reinflation at Kīlauea – what can we learn about its magmatic plumbing system?* USGS, volcano seminar series (June 2021)

Awards and honors

2025	Exceptional Thesis Award (Department of Geophysics, Stanford University)	
2024	O. K. Earl Fellowship (California Institute of Technology)	$ 170,000
2023	Geophysics Student Travel Grant (Stanford University)	$ 1,500
2022	Stanford-USGS Fellowship	$ 102,960
2021	AGU research spotlight	
2018	Duncan Stewart Fellowship for research (Geology Department, Carleton College)	$ 500
2018	Sam ’75 and Meg Woodside Fund for Career Exploration (Carleton College)	$ 3,000
2017	Kolenkow-Reitz Fellowship for undergraduate research (Carleton College)	$ 1,500

Professional service

-	Reviewer for Geophysical Research Letters (3 reviews), Journal of Geophysical Research (5 reviews), Geophysical Journal International (1 review), Volcanology and Geothermal Research (3 reviews), Volcanica (1 review), Communications Earth & Environment (1 review), National Science Foundation (1 review)
2026	Session co-convener for “Developing Data-Driven Methods in the AI Era: New Approaches to Earthquake Science” at Seismological Society of America annual meeting in Pasadena, CA.
2025	Organizer for the weekly Brownbag Seminar at the Seismological Laboratory at Caltech
2022	Participant in community-wide code verification exercise for modeling volcano deformation

Teaching

2021	Crustal deformation (graduate; 1 lecture; office hours & grading)	Stanford University
2020	Predicting volcanic eruptions (undergraduate; 1 lecture; grading)	Stanford University
2018	Tectonics (undergraduate; facilitate lab sessions & hold office hours)	Carleton College

Certificates

2020	InSAR processing and time-series analysis for geophysical applications (through GAGE)

Other field and research experience

2018	Paleomagnetism research on the Midcontinent rift. Advisor: Nicholas Swanson-Hysell	University of California, Berkeley
2018	Summer of Applied Geophysical Experience: magnetotellurics, seismic reflection, near-surface geophysics	New Mexico

Mentoring & Outreach

2025-	Member of doctoral committee for Gabriele Benedetti, PhD student at University of Iceland
2023	Mentoring of a physics undergraduate student (Eric Berg) for summer research on estimating pressure history in the summit reservoirs of Kīlauea during caldera collapse of 2018.
2022	Mentoring of a high school student (Neel Gajare, now undergraduate at UC Berkeley) on modeling deformation due to magma chambers of complex geometries, which resulted in an AGU presentation
2022-2023	Co-hosting an annual science demonstration event on volcanism/earthquakes for Escondido Elementary school

Computational skills

Programming languages: proficient in python, MATLAB; working knowledge in Fortran, C++, Mathematica
Scientific software: SeisSol, COMSOL, Paraview

Language skills

Chinese (native), English (fluent), German (basic)

Professional memberships

American Geophysical Union; Seismological Society of America