

Dr. Hannah Inés Shamloo

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RESEARCH INTERESTS

Eruption Initiation; Magmatic Timescales, Storage, and Processes; Experimental Petrology; Diffusion Chronometry; Volcano Science and Hazards; Igneous Petrology

PROFESSIONAL EXPERIENCE

2021–Present Assistant Professor, Department of Geological Sciences, Central Washington University
2020–2022 National Science Foundation Earth Sciences Postdoctoral Fellow
2015–2020 Research Assistant, School of Earth and Space Exploration, Arizona State University
2015–2020 Teaching Assistant, School of Earth and Space Exploration, Arizona State University
2014–2015 Undergraduate Research Assistant, Dept. Geological Sciences, Cal. State, Northridge
2013 Research Intern, Southern California Earthquake Center (NSF funded REU)

EDUCATION

2020 Ph.D., Geological Sciences, Arizona State University
Advisor: Christy B. Till, Committee: R. Hervig, M. Barboni, E. Shock, D. Shim
2015 B.S., Geophysics, Minor in Physics, California State University, Northridge
Cum Laude, Advisor: Joshua J. Schwartz

FUNDING & AWARDS

Grants

Title	Agency	Total Funds	Duration	Roles/Collab.
Collaborative Research: Phenocryst or Not? Using a Stratovolcano's Crystal Cargo to Explore Crustal-scale Magmatic Systems, Koma Kulshan (Mt. Baker), Northern Cascade Arc	NSF EAR CH	\$277,473	36 mo. Start: 2022	PI (CWU): H. Shamloo PI's (WWU): S. DeBari & K. Walowski
Unleashing the Petrogenetic Potential of Sanidine Using a Combined Compositional, Experimental, and 3D Textural Approach	NSF EAR Postdoctoral Fellowship	\$174,000	24 mo. Start: 2020	PI (OSU): H. Shamloo

Other Awards

2018 GSA MGPV Student Research Grant Award, \$2,500
2018 Graduate College Research Fellowship, \$10,000
2019 Graduate Excellence Award, \$100
2018 Goldschmidt Graduate Travel Award, \$450
2017 Graduate College Travel Award, \$500
2013–2015 Louis Stokes Alliance for Minority Participation Awards, \$1,500
2013–2014 Frank M. Hanna Award Geological Science Department

2014 AfricaArray Training and Research Opportunity Support, \$1,500
 2014 GSA On to the Future Program Award, \$ 500
 2012–2013 CSUN Scholarship for leadership in Society of Physics Students for Women \$2,500
 2012 Presidential Service Award bestowed by President Barack Obama

WRITINGS

Peer-Reviewed Publications

Shamloo, H. I. and Kent, A. J.R., (*in review*) An appraisal of the observed crystallinities of volcanic materials.

Shamloo, H. I. and Grunder, A., (2023) Magma mingling and ascent in the minutes to hours before an explosive eruption as recorded by banded pumice. *Geology*. doi: <https://doi.org/10.1130/G51318.1>

Shamloo, H. I., Till C. B., Hervig, R. L., (2021) Multi-Mode Magnesium Diffusion in Sanidine: Applications for Geospeedometry in Magmatic Systems. *Geochimica et Cosmochimica Acta*. <https://doi.org/10.1016/j.gca.2021.01.044>

Till C.B., Vazquez J.A., Stelten M., **Shamloo H. I.**, Shaffer J., (2019) Co-existing Discrete Bodies of Rhyolite and Punctuated Volcanism Characterize Yellowstone’s Post-Lava Creek Tuff Caldera Evolution. *Geochemistry, Geophysics, Geosystems*. <https://doi.org/10.1029/2019GC008321>

Shamloo, H. and Till C.B., (2019) Decadal transition from quiescence to supereruption: petrologic investigation of the Lava Creek Tuff, Yellowstone Caldera, WY. *Contributions to Mineralogy and Petrology*, 174(4), 32. <https://doi.org/10.1007/s00410-019-1570-x>

Other Writings

Shamloo, H. I. (2020). Quantifying the Timing and Controls of Magmatic Processes Associated with Volcanic Eruptions (Doctoral Dissertation, Arizona State University).

Shamloo, H. I. and Zaniewski, A. (2016) Mentoring workbook: Designing a near-peer mentoring program for science majors.

Shamloo, H. I. (2015). Timescales of Intra-arc Contraction and Extensional Collapse in the Lower to Middle Crust of a Cretaceous Convergent-margin Magmatic Arc, Central Fiordland, New Zealand (Undergraduate Thesis, California State University Northridge).

PUBLISHED PRESENTATION ABSTRACTS

Key: * *Student abstract*

** *Primary advisement to student*

† *Invited talk*

21. Florea, A.*, Walowski, K., DeBari, S., **Shamloo, H.**, Ruth, D., Johnson, E., Using Olivine-Hosted Melt Inclusions to Better Understand the Transcrustal Architecture Beneath Koma Kulshan. AGU Fall Meeting Abstract V21C-0131, San Francisco, CA.
20. Kaplan, E.*, DeBari, S., Andrews, J., Yaude, S., Walowski, K., **Shamloo, H.**, Ruth, D., What role do silicic dacitic magmas play in the construction of the dominantly intermediate andesitic Koma Kulshan volcano (Mount Baker)? testing the hypothesis for dacite mush remobilization. AGU Fall Meeting Abstract V21C-0143, San Francisco, CA.

19. Machel, S.*, DeBari, S., Tucker, D., Yaude, S., Walowski, K., **Shamloo, H.**, Ruth, D., (2023) Using trace element concentrations in volcanic ash to elucidate magma sources for Koma Kulshan's (Mount Baker) most recent explosive eruption - the 6.7 ka Black Ash (BA) tephra. AGU Fall Meeting Abstract V21C-0136, San Francisco, CA.
18. Yoder, E.** , **Shamloo, H.**, DeBari, S., Walowski, K., (2023) Eruption Initiation Timescales at a Very High Threat Washington Volcano: Clues from Crystal Cargo in Lavas from Koma Kulshan (Mt. Baker). AGU Fall Meeting Abstract V21C-0136, San Francisco, CA.
17. Cunningham, D.** , **Shamloo, H.**, DeBari, S., Walowski, K., (2023) Timescales of Magma Storage and Eruption Initiation of the Most Recent Lava Flow at Koma Kulshan (Mt. Baker, WA). AGU Fall Meeting Abstract V31G-06, San Francisco, CA.
16. Josten, K.* and **Shamloo, H.** (2023) Using gray scale image analysis to determine the timing of the Swift Creek eruption, Koma Kulshan (Mt. Baker), WA, SOURCE Conference, Central Washington University, WA.
15. **Shamloo, H.**† and Grunder, A (2023) Magma Mingling and Ascent in the Minutes Before an Explosive Eruption as Recorded by Banded Pumice. IAVCEI Scientific Assembly, Abstract 212, Rotorua, New Zealand
14. **Shamloo, H.** and Kent, A.J.R. (2023) A Reappraisal of the Crystallinity of Volcanic Rocks: Implications for Eruptibility. IAVCEI Scientific Assembly, Abstract 221, Rotorua, New Zealand
13. **Shamloo, H.**, Grunder A., Pendergast, K. (2021) Ignimbrite Magma Ascent Rate in the Conduit Determined by Diffusion in Banded Pumice. AGU Fall Meeting Abstract V22B-08, New Orleans, LA.
12. **Shamloo, H.**, Kent, A.J.R., Watkins, J., Befus, K. (2021) An Experimental Reexamination on Ba Zoning in Sanidine: What Magmatic Processes Is It Actually Recording? Geological Society of America Abstract 95-3, Portland, OR.
11. **Shamloo, H.**, C.B. Till, A.J.R. Kent (2021) Statistical Analysis of the Effects of Sampling Bias on the Distribution of Historic Eruptions at Six High-Threat Cascade Volcanoes. GSA Cordilleran Section Meeting Abstract 14-11.
10. **Shamloo, H.**† and C.B. Till, (2020) Supersized and Speedy: The Timing and Initiation of the Lava Creek Tuff Supereruption, Yellowstone Caldera. AGU Fall Meeting Abstract 672837, San Francisco, CA.
9. **Shamloo, H.**, Till, C.B., Kent, J. R., Cooper, K. (2019) Constraining first-order controls on volcanic repose time by examining cumulative distribution functions. AGU Fall Meeting Abstract V034, San Francisco, CA.
8. Till C. B., Vazquez J. A., **Shamloo H. I.**, Stelten M. E., (2019) Records of Magma Evolution & Eruption during Yellowstone's Last Caldera Cycle from Geospeedometry and Zircon Petrochronology. AGU Fall Meeting Abstract V24B-04, San Francisco, CA.
7. Muller, J.K., Kemmerlin M.S., Gonzalez Santana, J.M., **Shamloo, H. I.**, Tan Y.J., Zhan, Y., Smith, C.A., Myers, M., Gregg, P.A., Abers, G.A., Plank, T.A., Wallace, P.J., Andrews, B.J., Roman, D.C., Bergantz, G., and Cooper, K.M., (2019) Tectonic and compositional controls on magma storage depths globally: Results from CIDER 2019. AGU Fall Meeting Abstract V23D-0256, San Francisco, CA.

6. **Shamloo, H.** and C.B. Till, (2019) Mg Diffusion in Alkali Feldspar; Applications for Diffusion Chronometry in Magmatic Systems. Geological Society of America Abstract T35-338595, Phoenix, AZ.
5. **Shamloo, H.** and C.B. Till, (2018) Mg Diffusion in Alkali Feldspar; Applications for Diffusion Chronometry in Magmatic Systems. Goldschmidt Abstract 2306, Boston, MA.
4. **Shamloo, H.** and C.B. Till, (2017) Petrologic Insights into the Timing and Triggering Mechanism for the Lava Creek Tuff Super-eruption, Yellowstone Caldera, WY. IAVCEI 2017 Scientific Assembly Abstract PE43B-097, Portland, OR.
3. **Shamloo H.** and C.B. Till, (2016) Petrologic Insights into the Triggering Mechanism for the Lava Creek Tuff Super-eruption, Yellowstone Caldera, WY. AGU Fall Meeting Abstract V23B-2979, San Francisco, CA.
2. **Shamloo H.,** Schwartz J.J., Klepeis K., Stowell H.H., Sadorski, J.F., Coble, M.A., (2014) Timescales of Intra-arc Contraction and Extensional Collapse in the Lower and Middle Crust of Cretaceous Convergent-margin Magmatic Arc, Central Fiordland, New Zealand. GSA Annual Conference Abstract 58-3, Vancouver, B.C.
1. Arvin L., Novoa K., **Shamloo H.,** Philo D., Yuan J., Jordan T., de Groot R., Rousseau N., Smith D., Milner K., (2013) SCEC Undergraduate Studies in Earthquake Information Technology Program: Implementing GIS, UCERF3, and OpenSHA data in SCEC-VDO. SCEC Annual Meeting Abstract, Palm Springs, CA.

INVITED TALKS & COLLOQUIA

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| 2023 Nov. | 12. Washington State University, Earth Sciences Seminar Series |
| 2023 Jan. | 11. Central Washington University, Geology Department Seminar Series |
| 2022 Nov. | 10. Association for Women Geoscientists, U. Nevada, Las Vegas chapter |
| 2022 Jan. | 09. Western Washington University, Geology Department Seminar Series |
| 2021 Sep. | 08. Diffusion Chronometry Seminar Series, Ruhr-Universität Bochum |
| 2021 Mar. | 07. University of Maryland, Geology Seminar Series |
| 2021 Feb. | 06. California Institute of Technology, Geology Seminar |
| 2021 Jan. | 05. University of California, Davis, Earth & Planetary Department Seminar Series |
| 2020 Oct. | 04. Central Washington University, Seminar Series, "Mentee/Mentor Relationships" |
| 2020 Sep. | 03. Oregon State University, Geology & Geophysics Seminar |
| 2019 Nov. | 02. California State University, Northridge, Geology Colloquium |
| 2015 Oct. | 01. California State University, Northridge, ROCS Group, "Applying to Grad School" |

TEACHING

Courses Taught

Key: *Courses developed;

† Courses team-taught

Courses taught at Central Washington University unless otherwise noted.

Courses are taught on repeat with succeeding academic years.

2024 Winter	Field Trip to Hawaii*†	GEOL 388
2023 Fall	Regional Geology†	GEOL 502
2023 Spring	Isotope Geochemistry†	GEOL 483/583
2023 Winter	Volcanoes of the USA*	GEOL 184
2022 Fall	Living with Volcanoes: Indigenous Voices in Volcanism*	GEOL 498/598
2022 Fall	Rocks & Minerals†	GEOL 320
2022 Spring	Volcanology*	GEOL 478/578
2022 Spring	Earth History†	GEOL 203
2022 Winter	Undergraduate Seminar Series	GEOL 304
2022 Winter	Graduate Seminar Series	GEOL 504
2022 Winter	Research Methods†	GEOL 503
2020 Fall	Igneous Petrology†, Oregon State University	GEO 412/512

Invited Lecturer

2020 Fall	Integrated Science, Milpitas High School, CA	9 th -10 th Grade
2019 Fall	Advanced Petrology, California St. U. Northridge	GEOL 536
2017 Spring	Physics Leadership & Mentoring, Arizona State University	PHY 194/494

Teaching Assistant

2018	Historical Geology, Arizona State University	GLG 104
2017	Introduction to Geology, Arizona State University	GLG 101
2015	Petrology, Arizona State University	GLG 424/424Lab

SELECT FIELD EXPERIENCE & FIELD TRIP PARTICIPATION

2023	Goat Rocks Wilderness, Central Washington
2023	Friends of the Pleistocene, Saddle Mountains, Central Washington
2023	Taupo Volcanic Zone, New Zealand, Reconnaissance and sample collection
2022	Mt. Baker (Kulshan), Northern Washington, Research and sample collection
2021	Volcanism in Central Oregon Cascades Arc, Deschutes Formation, GSA Field Trip #14
2017, 2020	Medicine Lake (2x), CA, Research and sample collection
2019	Katmai, Alaska, Advanced Volcanology Field Trip Class, U. of Alaska, Fairbanks
2017	Mt. Shasta, CA, Research and sample collection
2017	Long Valley Caldera, CA, IAVCEI Scientific Assembly Field Trip
2015	Yellowstone National Park, Research and sample collection

STUDENT RESEARCH SUPERVISION

*Central Washington University students unless otherwise noted
WWU: Western Washington University; ASU: Arizona State University*

Graduate (Master of Science) Students

CWU Primary Advisees

Active since

Fall 2022 Desiree` Cunningham
Fall 2022 Emily Yoder

CWU Thesis Committee Advisees

Active since

Fall 2022 Robin Gaudette
Fall 2022 David Miller

Graduated

Fall 2023 Catherine Mast
Spring 2023 Tim Miller
Spring 2023 Zack Stevens

External Thesis Committee Advisees

Active since

Fall 2019 Jessie Bersson, PhD, (ASU)
Fall 2022 Amanda Florea (WWU)
Fall 2022 Erin Kaplan (WWU)

Graduated

Spring 2022 Brendan Garvey (WWU)

Undergraduate Students

Active since

Fall 2023 Taylor Taylor
Spring 2023 Yusei O'Leary
Fall 2022 James IV Genero

Graduated

Spring 2023 Nathan Pickett
Spring 2023 Kathryn Josten *Recipient of Outstanding Undergraduate Research Award*
Winter 2023 Marcus Ashton

PROFESSIONAL SERVICE

Service to Central Washington University

2023 Wildcat Preview Day, Academic Fair Faculty
2022–Pres. Geology Department Seminar Co-organizer
2022–Pres. Scholarship Committee, Dept. of Geological Sciences
2023 Spring Committee Chair & Reviewer, Summer Undergraduate Research Experience (SURE)
2023 Construction of CHIVES lab, Dept. Geological Sciences, *Experimental petrology lab for student research and learning*
2022 Panelist for Graduate class: *How to Publish in Geoscience*
2022 Outreach and recruitment for Dept. Geological Sciences, *Redesign display case*

Editorial Service

2021–2023 Proposal Reviewer, National Science Foundation EAR-Petrology & Geochemistry (3x)
2019–Pres. Manuscript Peer Reviewer: Bulletin of Volcanology • Geology • G-Cubed • Journal of Petrology • Journal of Volcanology and Geothermal Research • LITHOS

Press Coverage & Media

2023	<i>Central Today</i> feature on CHIVES Group
2021	<i>Atlas Obscura</i> interviewee, “At Pizza Pacaya, the Oven Is an Active Volcano”
2020	<i>National Geographic</i> , “X-Ray Earth” Docuseries, Episode 3, Available on Disney+
2020	Consultant, Science Vs, Gimlet Media
2018	<i>New York Times</i> , Coverage on Yellowstone research
2018-2019	Secondary Coverage on NYT Article: Snopes.com, National Geographic, PBS Nova, National Public Radio, Channel 12 News, TIME, USAToday, CBS, Fox, + more
2018 Oct.	<i>transverse RANGES Magazine</i> , Featured scientist
2016 May	AGU <i>EOS Magazine</i> , Coverage on Yellowstone research
2016 Dec.	Generación STEM on Vme Television, Featured LatinX scientist

Educational Activities and Products

2022 Apr.	Conceptual Academy collaboration on volcanoes lesson plan, virtual learning platform for High School science programs
2022 Feb.	Interviewee for student project in Science Writing Class on Yellowstone
2021 Jul.	GeoClick published activity, SERC Carleton
2021 Jun.	Discovery Education Originals, “Volcano Scientist”, 4 th Grade Curriculum
2018 Jan.	The Science of Magma, ASU CLASroom Video Series Ep. 3, Wrote and co-produced
2018 Jan.	Scholastic’s Science World Magazine, Coverage on Yellowstone research
2018 Jan.	K-12 Edu. Books: What Does a Scientist Look Like? & Who Thinks About Scale?

Conference Convening and Conference Proposal Submissions

2023 Jan.	IAVCEI Scientific Assembly, “Unmasking the lithosphere: mantle-to-surface perspectives on magma heterogeneity”, Rotorua, New Zealand
2021 Dec.	AGU Annual Conference, “The Cascadia Margin: Linking Geophysical Characteristics with Subduction Zone Structure and Evolution”, New Orleans, LA
2021 Oct.	GSA Annual Conference, “Rhyolites, Take a Bow! Examining the Production of Rhyolite Magma in Continental Arc Settings”, Portland, OR
2017 Dec.	Access Network Conference, “Best Mentoring Practice,” Tempe, AZ

Contribution to Improving Diversity, Equity, and Inclusion

2023	Kulshan Summer Institute, Co-PI, Western Washington University
2022	Association for Women Geoscientists Panelist
2022	Undocu Ally Training, Washington State University
2021	University of Maryland Diverse Career Paths Interviewee
2019, 2020	Scientist Spotlight Initiative, Featured Scientist
2020 Oct.	Social Justice Education Initiative, Tier One Training
2019	Bystander Intervention Workshop, One Orb, Tempe, AZ
2017–2019	Mentor, ASU Sundial Program, For students from marginalized groups in STEM
2017–2018	Program Facilitator, Organized Sundial mentors/mentees, co-wrote mentoring workbook

Participant in Scientific Community Workshops

2021	National Association of Geoscience Teachers Traveling Workshop
2021	Earth Educators Rendezvous
2021	Early Career Geoscience Faculty Workshop

2020	Melts, Glasses, Magmas
2019	Community Network for Volcanic Eruption Response, GSA Workshop, Phoenix, AZ
2019	Cooperative Institute for Dynamic Earth Research, "Volcanoes", Berkeley, CA
2018	Mineralogical Society of America's Diffusion Short-course, Bochum, Germany
2018	Hot Life in the Desert, Integrating Geologic, Geochemical, Microbial Research, AZ
2017	Enabling Knowledge Integration Data-thon, Tempe, AZ
2017	NSF Secondary Ion Mass Spectrometry Workshop, ASU, Tempe, AZ

Professional Societies

Since 2020	National Association of Geoscience Teachers
Since 2016	Mineralogical Society of America
Since 2015	American Geophysical Union
Since 2013	Geological Society of America

COMMUNITY ENGAGEMENT AND OUTREACH

2022	Yakima Rock & Mineral Show, Trashcano Demonstrations
2017-2019	Student Advocate, ASU School of Earth, and Space Exploration Graduate Council
2016-2019	Tour Guide, ASU Sundial Summer Program, lab tours of EPIC lab
2018	Event Supervisor, Arizona Science Olympiad State Tournament
2015-2019	Earth and Space Exploration Day and ASU Open Door, K-12+ Science Demos
2013-2015	The Great California ShakeOut, Promote earthquake hazard awareness to Los Angeles