

Mahinaokalani G. Robbins

Kanaka 'Ōiwi | Graduate Assistant | Ph.D. Student
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EDUCATION

Ph.D. (in progress)	University of Hawai'i at Mānoa , Earth & Planetary Science Thesis: <i>Modeling the magmatic plumbing system of Kīlauea (Hawai'i) with major and trace element compositions of recent (2020-2023) summit eruptions</i> (working title) – Under the advisement of Dr. Aaron Pietruszka.	2023 – present
M.S.	Western Washington University , Geology Thesis: <i>Connections Between Eruption Style and Magmatic Reservoir Evolution: Insights from Augustine Volcano, Alaska, USA</i> – Under the advisement of Dr. Kristina Walowski.	Graduated: 2023
B.S.	William & Mary , Geology, Mathematics Thesis: <i>Sea-Level Rise and Updrift Sediment Trapping Drive Net Sand Loss along the Virginia Barrier Islands</i> – Under the advisement of Dr. Christopher Hein.	2021
A.S.	Virginia Peninsula Community College , Science	2018

PUBLICATIONS

Journal Articles:

Robbins, M.G., Shawler, J.L., Hein, C.J., 2022, Contribution of inter-island sand exchanges to mesoscale barrier-island behavior, *Geomorphology*, v. 403, 108163. doi: 10.1016/j.geomorph.2022.108163.

Shawler, J.L., Hein, C.J., Obara, C.L., **Robbins, M.G.**, Huot, S., and Fenster, M., 2021, The effect of coastal landform development on decadal-to millennial-scale longshore sediment fluxes: Evidence from the Holocene evolution of the central mid-Atlantic coast, USA, *Quaternary Science Reviews*, doi: 10.1016/j.quascirev.2021.107096.

Conference Presentations:

Robbins, M.G. and Pietruszka, A., Modeling the magmatic plumbing system of Kīlauea (Hawai'i) with major and trace element compositions of recent (2020-2023) summit eruptions, Magma Supply Workshop at Lamont Doherty Earth Observatory, Jun. 2-5, 2024. (Poster)

Robbins, M.G., Walowski, K., Koleszar, A., Loewen, M., Wallace, K., Changes in Magmatic Plumbing System Configuration May Drive Eruption Style at Augustine Volcano (Alaska-Aleutian Arc, USA), AGU Annual Meeting, December 2023. (Oral)

Robbins, M.G., Walowski, K., Koleszar, A., and Loewen, M., Connections Between Eruption Style and Magmatic Reservoir Evolution: Insights from Augustine Volcano, Alaska, USA, *Geological Society of America Abstracts with Programs*. Vol. 54, No. 5, 2022. doi: 10.1130/abs/2022AM-380737. (Poster)

Robbins, M.G., Shawler, J.L., and Hein, C.J., Sea-Level Rise and Updrift Sediment Trapping Drive Net Sand Loss along the Virginia Barrier Islands, *Geological Society of America Abstracts with Programs*. Vol. 52, No. 2, 2020. doi: 10.1130/abs/2020SE-344368. (Poster, online)

Robbins, M.G., Late Cretaceous shale formations in the El Paso, TX area and how they correlate with Eocene intrusions, Geological Society of America Abstracts with Programs. Vol. 50, No. 6. doi: 10.1130/abs/2018AM-325074. (Poster)

Data Publications:

Robbins, M.G. and C.J. Hein. 2022. Shorelines and island boundaries for the Atlantic barrier islands of Virginia, 1851-2017 ver 1. Environmental Data Initiative. doi: 10.6073/pasta/69c10fdd9b27e43168f24ca8ef293dc7.

RESEARCH EXPERIENCE

- **Graduate Research Assistant** (University of Hawai'i at Mānoa, Aug. 2023 – Present)
 - Focus: Combining high resolution geochemical data with numerical models to understand the magmatic plumbing system of Kīlauea, particularly in recent eruptions (the voluminous 2018 eruption and the 2008-2010 Halema'uma'u and 2020-2023 Halema'uma'u eruptions).
 - Duties: Developing numerical models to understand magmatic reservoir dynamics, integrating Native Hawaiian methodologies into volcano science, collaborating with Hawaii Volcano Observatory scientists, learning clean lab chemical procedures, and planning and design lab setups.
- **Graduate Research Assistant** (Western Washington University, Sept. 2021 – Aug. 2023)
 - Thesis: *Connections Between Eruption Style and Magmatic Reservoir Evolution: Insights from Augustine Volcano, Alaska, USA*
 - Advisor: Dr. Kristina Walowski
 - Duties: Developing techniques for quantifying mineral compositions and modes in tephra, operating and collecting data using scanning electron microscopes and electron microprobes, using mineral thermometry methods, and collaborating with Alaska Volcano Observatory volcanologists in the lab and in the field.
- **Assistant Lab Technician** (Virginia Institute of Marine Science, May 2019 – July 2021)
 - Duties: Processed grain size samples in a Laser Diffraction Particle Size Analyzer, general chemical lab work, data management, use of ArcGIS and Adobe Illustrator, and contributed to multiple field campaigns for the Coastal Geology Lab with Dr. Christopher Hein.
- **Undergraduate Senior Thesis** (William & Mary, Jan. 2019 – May 2020)
 - Thesis: *Sea-Level Rise and Updrift Sediment Trapping Drive Net Sand Loss along the Virginia Barrier Islands*
 - Advisor: Dr. Christopher Hein
 - Presentations: William & Mary Geology Department's Senior Research Saturday Seminar (Talk)
- **NSF REU Internship** (Research Opportunities for Community College Students at the University of Texas at El Paso & El Paso Community College, Summer 2018)
 - Project: *Late Cretaceous shale formations in the El Paso, TX area and how they correlate with Eocene intrusions.*

FORMAL TEACHING EXPERIENCE

Graduate Teaching Assistant (Western Washington University):

- GEOL 406 – **Igneous and Metamorphic Petrology** (Fall 2021, Spring 2022, Winter and Spring 2023 10 weeks each term)
- GEOL 211L – **Physical Geology Lab** (Winter 2022, 10 weeks)
- GEOL 195 – **Mt. Baker Geology and Volcanic Hazards** (Summer 2022, 1 week)

Additional Teaching Experience:

- **Volunteer Orientation** (Virginia Living Museum, multiple classes from 2018 – 2019)

OUTREACH & SERVICE

- **How Do I See Inside a Volcano?** (community lecture + volcano activity at libraries on O'ahu, HI) Ongoing
- **Science Fair Judge** (Niu Valley Middle School, Honolulu, HI) 2023
- **URGE (Unlearning Racism in Geoscience) Pod Steering Representative** (Western Washington University) 2022 – 2023
- **North2Western Volunteer Mentor** (Western Washington University) 2022
- **Department of Geology Faculty Search Committee** (William & Mary) 2021
- **Geology Tutor** (William & Mary)
- **City Science Fair Judge** (Newport News Public Schools) 2021
- **Classroom Assistant at Summer Science Camp** (VA Peninsula Community College) 2018 & 2019
- **Education Volunteer and Volunteer Recruiter** (VA Living Museum) 2018
- 2017 – 2018

HONORS, FELLOWSHIPS, & SCHOLARSHIPS

Graduate:

- **The Lawrence A. Taylor Research Fund in Petrology and Geochemistry (NSF)** \$4,000 2024
- **Donald Swanson Graduate Fellowship (UH)** \$3,000 2024
- **Lipman Research Award & On To the Future Research Grant (NSF/GSA)** \$3,500 2024
- **Bruce L. Biff Reed Scholarship Award (NSF/GSA)** \$3,500 2022
- **Research and Sponsored Programs Fund for the Enhancement of Graduate Research (WWU)** \$1,500 2022
- **Geology Dept. T.A. of the Year (WWU)** \$211 2022
- **Geology Dept. Advance for Field Work and Research (WWU)** \$800 2022
- **Elias Austin Bond Graduate Fellowship in Geology (WWU)** \$2,000 2021

Undergraduate:

- **Robert C. and Muriel M. Jennings Scholarship (W&M)** \$3,185 2020
- **Stofan Scholarship for Undergraduate Research (W&M)** \$3,000 2019

MEDIA

- **Untitled Volcano Documentary** produced and directed by Mona Xia and Whitney Kapololu (pre-production)
- Robbins et al. (2022) cited in **The Washington Post: On the edge of retreat** by Chris Mooney, Zoeann Murphy, and Simon Ducroquet, published Nov. 28, 2022.

PROFESSIONAL TRAINING & SKILLS

Selected Workshops:

- **CONVERSE Workshop – “Planning a Future”** (Mar. 27-30, 2023) Contributed to the outline for an NSF proposal to lay the groundwork for future collaborations of academia and volcano hazard institutions during volcanic crises.
- **Volcanic Crisis Awareness – GSA Short Course** (Oct. 2022) National Disaster Preparedness Training Center (NDPTC), Federal Emergency Management Agency (FEMA) Combined geoscience, social science (risk perception and communication), emergency management, and emergency response to work through a hypothetical volcanic eruption. This is a standardized FEMA class offered through NDPTC.
- **Incorporated Research Institutions Seismology (IRIS) Skill Building Workshop** (June – August 2020) Established familiarity with Linux operating system, GMT (Generic Mapping Tools), SAC

(Seismic Analysis Code), IRIS seismic data retrieval, and techniques for arrival picks for earthquake seismograms.

Selected Skills:

- **Laboratory Instruments (user with minimal supervision):** Electron microbe (EPMA), Scanning electron microscope with energy-dispersive detectors (SEM-EDS), Laser Diffraction Particle Size Analyzer (LDPSA).
- **Software:** ArcGIS & ArcMap, MATLAB, Python, Strabospot, Adobe Products (Photoshop, Illustrator, InDesign), Microsoft Excel & Word.
- **Additional Skills:** Outreach event planning, graphic design, life drawing, customer service, social media and blogging management.
- **Certifications:** Wilderness First Aid and CPR/AED for Adult/Child/Infant (June 2022)

PROFESSIONAL AFFILIATIONS

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| ▪ Executive Board Member, Huliāmahi (Earth Sciences DEI Group) | 2023 – present |
| ▪ Steering Representative, Member, URGE (Unlearning Racism in Geoscience) | 2022 – 2023 |
| ▪ Member, AAPIIG (Asian Americans and Pacific Islanders in Geosciences) | 2022 – present |
| ▪ Member, AWG (Association for Women Geoscientists) | 2021 – present |
| ▪ Member, SGE (Sigma Gamma Epsilon National Honor Society for the Earth Sciences) | 2019 – 2021 |
| ▪ Member, AGU & GSA | 2018 – present |
| ▪ Member, LSAMP (Luis Stokes Alliance for Minority Participation) | 2017 – 2018 |

ADDITIONAL WORK EXPERIENCE

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| ▪ Portraits Supervisor, Artist – Kaman’s Art Shoppes (Williamsburg, VA) | 2010 – 2020 |
| ○ Strong life drawing skills developed over ten years & mentored new artists one-on-one at a fast-paced theme park. | |
| ▪ Volunteer Services Assistant – Virginia Living Museum (Newport News, VA) | 2018 – 2019 |
| ○ Managed volunteer office, trained volunteers, & created volunteer training material. | |
| ▪ Printing Assistant – Hampton Roads Giclée (Newport News, VA) | 2015 – 2016 |
| ○ Crafted museum-quality artwork reproductions using computer software (Adobe InDesign & Photoshop) & industrial flatbed scanners. | |
| ▪ Teacher’s Aide – Source4Teachers (Hampton, VA) | 2014 – 2015 |
| ○ Assisted grade-school level children in classroom, crafted lesson plans, & worked one-on-one with students. | |
| ▪ Appliances Sales Associate – Best Buy Inc. (Newport News, VA) | 2014 – 2015 |
| ○ Translated technical concepts to non-expert audience. | |