

Maureen Diana Feineman

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Education and Training

Johns Hopkins Univ., Baltimore, MD	Earth & Planetary Sci	B.A.	1995
University of California, Berkeley, CA	Geology	Ph.D.	2004
Okayama University, Misasa, Japan	Geochemistry	Postdoc	2005

Research and Professional Experience

2022-present	EPMA Specialist, Materials Characterization Laboratory, Penn State
2018-present	Associate Research Professor, Penn State Geosciences
2016-2022	Associate Head for Undergraduate Programs, Penn State Geosciences
2017	Blaustein Visiting Assistant Professor, Stanford University, Dept. of Earth System Science (Sept. 1 – Dec. 31)
2005-2018	Assistant Professor, Pennsylvania State University, Dept. of Geosciences
2004-2005	Center of Excellence for the 21st Century (COE-21) Post-Doctoral Fellow, Institute for Study of the Earth's Interior, Okayama Univ., Misasa, Japan
2002-2004	Student Employee Graduate Research Fellow, Lawrence Livermore National Laboratory
1998-2002	Research Assistant, University of California, Berkeley
1997-1998	Staff Geologist, Cambria Environmental Technology, Emeryville, CA
1996	Volcanology Volunteer, USGS Hawaiian Volcano Observatory

Awards

Schreyer Honors College Excellence in Honors Advising Award, 2022
College of Earth and Mineral Sciences Faculty Advising Award, 2021
Wilson Award for Excellence in Teaching, 2019
Wilson Travel Grant, 2014 & 2019
E. Willard & Ruby S. Miller Faculty Fellowship, 2008

Publications

Hudak M, **Feineman M**, LaFemina P, Geirsson H, Agostini S. Conduit formation and crustal microxenolith entrainment in a basaltic fissure eruption: Observations from Thrihnúkagígur Volcano, Iceland. *Volcanica* 5 (2022) 249-270. <https://doi.org/10.30909/vol.05.02.249270>.

Cruz-Uribe A, Page FZ, Lozier E, **Feineman M**, Zack T, Mertz-Kraus R, Jacob D, Kitajima K. Trace element and isotopic evidence for fluid-mediated garnet growth in amphibolitized eclogite from the Franciscan Complex, CA, USA. *Contributions to Mineralogy and Petrology* 176 (2021) 41, <https://doi.org/10.1007/s00410-021-01795-4>.

Rozelle P, **Feineman M**, White T, Crescenzo N, Kump L, Larson A, Pisupati S. The Mercer Clay in Pennsylvania as a Polymetallic Mineral Resource: Review and Update. *Mining Metallurgy & Exploration* 38 (2021) 2037-2054. <https://doi.org/10.1007/s42461-021-00452-5>.

Brovarone A, Butch C, Ciappa A, Cleaves H, Elmaleh A, Faccenda M, **Feineman M**, Hermann J, Nestola F, Cordone A, Giovannelli D. Let there be water: How hydration/dehydration reactions accompany key Earth and life processes. *American Mineralogist* 105 (2020) 1152- 1160.

Garber J, Smye A, **Feineman M**, Kylander-Clark A, Matthews S. Decoupling of zircon U–Pb and trace-element systematics driven by U diffusion in eclogite-facies zircon (Monviso meta-ophiolite, W. Alps). *Contributions to Mineralogy and Petrology* 175 (2020).

Roman D, LaFemina P, Bussard R, Stephens K, Wauthier C, Higgins M, **Feineman M**, Arellano S, Moor J, Avard G, Cruz M, Burton M, Varnam M, Saballos A, Ibarra M, Strauch W, Tenorio V. Mechanisms of Unrest and Eruption at Persistently Restless Volcanoes: Insights From the 2015 Eruption of Telica Volcano, Nicaragua. *Geochemistry, Geophysics, Geosystems* 20 (2019) 4162-4183.

Cruz-Uribe A, **Feineman M**, Zack T, Jacob D, Assessing trace element (dis)equilibrium and the application of single element thermometers in metamorphic rocks, *Lithos* 314-315 (2018) 1-15.

Cruz-Uribe A, Mertz-Kraus R, Zack T, **Feineman M**, Woods G, Jacob D, A new LA-ICP-MS method for Ti in quartz: Implications and application to high pressure rutile-quartz veins from the Czech Erzgebirge, *Geostandards and Geoanalytical Research* 41 (2017) 29-40. doi: 10.1111/ggr.12132.

Witter M, Furman T, LaFemina P, **Feineman M**, Understanding magmatic processes at Telica volcano, Nicaragua: Crystal size distribution and textural analysis, *American Mineralogist* 101 (2016) 1052-1060.

Cruz-Uribe A, **Feineman M**, Zack T, Barth M, Metamorphic reaction rates at ~650-800°C from diffusion of niobium in rutile, *Geochimica et Cosmochimica Acta* 130 (2014) 63-77.

Geirsson H, Rodgers M, LaFemina P, Witter M, Roman D, Muñoz A, Tenorio V, Alvarez J, Jacobo V, Nilsson D, Galle B, **Feineman M**, Furman T, Morales A. Multidisciplinary observations of the 2011 explosive eruption of Telica volcano, Nicaragua: Implications for the dynamics of low-explosivity ash eruptions. *Journal of Volcanology and Geothermal Research* 271 (2014) 55-69.

Feineman M, Moriguti T, Yokoyama T, Terui S, Nakamura, E, Sediment-enriched adakitic magmas from the Daisen volcanic field, Southwest Japan. *Geophysics, Geochemistry, Geosystems* 14 (2013) 3009-3031, doi:10.1002/ggge.20176.

Brounce M, **Feineman M**, Gurenko A, LaFemina P, Insights into crustal assimilation from boron in melt inclusions: the 1783-1784 Lakagigar eruption, Iceland. *Geochimica et Cosmochimica Acta* 94 (2012) 164-180.

Sruoga P, Etcheverría M, **Feineman M**, Rosas M, Burkert C, Ibañes O, Complejo Caldera Diamante-Volcán Maipo (34°10'S, 69°50'O): Evolución volcanológica y geoquímica e implicancias en su peligrosidad. *Revista de la Asociación Geológica Argentina* 69 (2012) 508-530.

Yakob J, **Feineman M**, Deane J, Eggler D, Penniston-Dorland S, Lithium partitioning between olivine and diopside at upper mantle conditions: an experimental study. *Earth and Planetary Science Letters* 329-330 (2012) 11-21.

Feineman M, Penniston-Dorland S, Poitrasson F, Weyer S., Applications of non-traditional stable isotopes in high-temperature geochemistry, *Chemical Geology* 258 (2009) 1-4.

Gilman T, **Feineman M**, Fisher D, The Chulitna Terrane of south-central Alaska: A rifted volcanic arc caught between the Wrangellia Composite Terrane and the Mesozoic margin of North America, *GSA Bulletin* 121 (2009) 979-991.

Feineman MD, Ryerson FJ, DePaolo DJ, Plank T., Zoisite-aqueous fluid trace element partitioning with implications for subduction zone fluid composition, *Chemical Geology* 239 (2007) 250-265.

Feineman MD, DePaolo DJ, Steady-state $^{226}\text{Ra}/^{230}\text{Th}$ disequilibrium in mantle minerals: Implications for melt transport rates in island arcs, *Earth and Planetary Science Letters* 215 (2003) 339-355.

Guest Editor

Insights into Subduction Zone Processes from Models and Observations of Exhumed Terranes. *Geochemistry, Geophysics, Geosystems (G-Cubed) Special Theme (2020-2023)*

Applications of non-traditional stable isotopes in high-temperature geochemistry. *Chemical Geology* 258 (2009)

Courses Taught

- GEOSC 30 Volcanoes (Penn State World Campus)
- GEOSC 40 The Sea Around Us
- GEOSC/ARTH 107N Rocks, Minerals, and the History of Art (Penn State World Campus)
- GEOSC 111 Forensic Geoscience
- GEOSC 201 Earth Materials
- GEOSC 416 Stable and Radiogenic Isotope Geochemistry
- GEOSC 472B Field Geology
- GEOSC 494W Senior Thesis
- GEOSC 500 Issues in Geosciences
- GEOSC 497/597 Special Topics including *Diversity Issues in Geosciences*, *Advanced Volcanology*, *Messy Moho*, *Experimental Methods*, and many more
- EARTH 111 Water, Science, and Society (Penn State World Campus)
- EMSC 470W Undergraduate Collaborative Research in Earth and Materials Sciences (CAUSE)

Synergistic Activities

Broadening Participation: **GeoPEERS REU** – summer research experience for undergraduate students considering a career in geosciences. Program combines individual research projects, field trips, and faculty-led discussions to explore the

intersections of energy, environment, justice, and sustainability. Hosted at Penn State 2022-2024. **Bushveld – AfricaArray REU**, supported 30 undergraduates (>60% under-represented minorities) over 4 years for a summer research experience at Penn State and University of the Witwatersrand, South Africa, 2015-2019.

Innovations in Online Integrative Education: Collaboratively developed online Integrative Studies course “**Rocks, Minerals, and the History of Art**” for Penn State World Campus. Integrates the Natural Science and Arts (GN/GA) learning domains. Curriculum development for the NSF-funded **InTeGrate program** (Interdisciplinary Teaching about Earth for a Sustainable Future), the Penn State portion of which is now offered as the Earth and Sustainability certificate through World Campus. Integrates the Natural Sciences and Social Sciences (GN/GS) learning domains.

International Collaboration and Sample Archive: Co-organizer for annual workshops and field institutes for ~25 researchers from the United States and European Union, including 11 Early Stage Researchers (post-docs and PhD students) and 4 REU participants, as part of the **E-FIRE Partnership for International Research and Education**; Manage sample registration, storage, and distribution for >600 research samples collected by E-FIRE participants in the Western Alps from 2017 - 2019

Art-Science Synergy: Pennsylvania State University **Earth and Mineral Sciences Museum and Art Gallery**, Advisory Board Chair 2014-2021, Advisory Board Member 2008-2014.

Graduate Students Advised

Ella Do, MS (current); Emilie Saucier, MS (current); Vic Garcia, MS (2021); Michael Hudak, MS (2016); Alicia Cruz-Urbe, PhD (2014); Timothy Murray, MS (2013); James Deane Jr., MS (2013); Jessica Yakob, MS (2011); Brian LeVay, PhD (2010)

Postdoctoral Scholars Advised

Dr. Leila Joyce Seals (EMS Dean’s Fund Postdoc, current); Dr. Joshua Garber (E-FIRE Postdoc, 2018-2021)