

# Kayla Iacovino, Ph.D.

## Curriculum Vitae

Jacobs, NASA Johnson Space Center  
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### PROFESSIONAL EXPERIENCE

2019 – Present    Research Scientist, Jacobs, NASA Johnson Space Center, Houston, TX  
2016 – 2019       Post-doctoral Research Scientist, School of Earth and Space Exploration, Arizona State University  
2014 – 2016       NSF Post-doctoral Fellow, U.S. Geological Survey, Menlo Park, CA  
                        NSF EAR Grant (PI): [Quantifying total volatile budgets of explosive volcanic eruptions](#)  
2015 – 2016       Visiting Scholar, Dept. of Geological & Environmental Sciences, Stanford University  
2010 – 2014       Graduate Researcher, Dept. of Geography, University of Cambridge  
2007 – 2010       Undergraduate NASA/Space Grant Research Intern, School of Earth and Space Exploration, Arizona State University  
2007                Undergraduate Research Intern, Research Experience for Undergraduates Summer Program, Dept. of Earth Sciences, University of Minnesota

### EDUCATION

#### 2010–14    **Ph.D., University of Cambridge**

*An unexpected journey: Experimental insights into magma and volatile transport beneath Erebus volcano, Antarctica*  
Supervisor: Dr. Clive Oppenheimer

#### 2010        **B.S., Arizona State University, Cum Laude**

Geological Sciences (minor in Geography)  
Undergraduate research supervisor: Dr. Gordon Moore

### PEER REVIEWED PUBLICATIONS (\*=mentored student, †=mentored post-doc)

*h-index: 12   Citations: 546 (via Google Scholar)*

18. \*Gallo RI, Ort MH, **Iacovino K**, Silleni A, Smith V, Giordano G, Isaia R, Boro J (2023) Reconciling complex stratigraphic frameworks reveals temporally and geographically variable depositional patterns of the Campanian Ignimbrite. *Geosphere*, <https://doi.org/10.1130/GES02651.1>
17. **Iacovino K**, McCubbin FM, Vander Kaaden KE, Clark J, Wittmann A, Jakubek RS, Moore GM, Fries MD, Archer D, Boyce JW (2023) Carbon as a key driver of super-reduced explosive volcanism on Mercury: Evidence from graphite-melt smelting experiments. *Earth and Planetary Science Letters*, doi: [10.1016/j.epsl.2022.117908](https://doi.org/10.1016/j.epsl.2022.117908)
16. Righter K, Butterworth A, Gainsforth Z, Jilly-Rehak J, Roychoudhury S, **Iacovino K**, Rowland R, Erickson T, Pando K, Ross DK, Prendergast D, Westphal A (2023) Oxygen fugacity buffering in high pressure solid media assemblies from IW-6.5 to IW+4.5 and application to the V K-edge oxybarometer. *American Mineralogist*, doi: [10.2138/am-2022-8301](https://doi.org/10.2138/am-2022-8301)
15. Wadsworth FB, Llewellyn EW, Castro JM, Tuffen H, Schipper CI, Gardner JE, Foster A, Vasseur J, Damby DE, McIntosh IM, Boettcher S, Unwin HE, Heap MJ, Farquharson JI, Dingwell DB, **Iacovino K**, Paisley R, Jones

- C, Whattam J (2022) A reappraisal of explosive-effusive silicic eruption dynamics: syn-eruptive assembly of lava from the products of cryptic fragmentation. *Journal of Volcanology and Geothermal Research*. <https://doi.org/10.1016/j.jvolgeores.2022.107672>
14. Wieser PE, **Iacovino K**, Moore GM, Matthews S, Allison CM (2022) VESical Part II: A critical approach to volatile solubility modeling using an open-source Python3 engine. *Earth and Space Science*, doi: [10.1029/2021EA001932](https://doi.org/10.1029/2021EA001932)
  13. **Iacovino K**, Matthews S, Wieser PE, Moore GM, Bégué F (2021) VESical Part I: An open-source thermodynamic model engine for mixed volatile (H<sub>2</sub>O-CO<sub>2</sub>) solubility in silicate melts. *Earth and Space Science*, doi: [10.1029/2020EA001584](https://doi.org/10.1029/2020EA001584)
  12. Wieser PE, Lamadrid H, MacLennan J, Edmonds M, Matthews S, **Iacovino K**, Jenner F, Gansecki C, Trusdell F, Lee L, Ilyinskaya E (2021) Reconstructing magma storage depths for the 2018 Kilauean eruption from melt inclusion CO<sub>2</sub> contents: The importance of vapor bubbles, G3. doi: [10.1029/2020GC009364](https://doi.org/10.1029/2020GC009364)
  11. **Iacovino K**, Guild MR, Till CB (2020) Aqueous fluids are effective oxidizing agents of the mantle in subduction zones, *Contributions to Mineralogy and Petrology*. doi: [10.1007/s00410-020-1673-4](https://doi.org/10.1007/s00410-020-1673-4)
  10. Edmonds M, Tutolo B, **Iacovino K**, Moussallam Y (2020) Magmatic carbon outgassing and uptake of CO<sub>2</sub> by alkaline waters, *American Mineralogist*. doi: [10.2138/am-2020-6986CCBY](https://doi.org/10.2138/am-2020-6986CCBY).
  9. Ojha L, Karunatilake S, **Iacovino K** (2019) Atmospheric injection of sulfur from the Medusae Fossae forming events, *Planetary and Space Science*. doi: [10.1016/j.pss.2019.104734](https://doi.org/10.1016/j.pss.2019.104734).
  8. **Iacovino K**, Till CB (2019) DensityX: A program for calculating the densities of magmatic liquids up to 1,627 °C and 30 kbar, *Volcanica* 2(1), pp. 1-10. doi: [10.30909/vol.02.01.0110](https://doi.org/10.30909/vol.02.01.0110).
  7. Bary PH, de Moor J, Giovannelli D, Schrenk M, Hummer D, Lopez T, Pratt C, Alpízar Segura Y, Battaglia A, Beaudry P, Bini G, Cascante M, d'Errico G, di Carlo M, Fattorini D, Fullerton K, Gazel E, González G, Halldórsson S, **Iacovino K**, Kulongoski J, Manini E, Martínez M, Miller H, Nakagawa M, Ono S, Patwardhan S, Ramírez C, Regoli R, Smedile G, Turner S, Vetriani C, Yücel M, Ballentine C, Fischer T, Hilton D, Lloyd K (2019) Forearc carbon sinks reduce long-term volatile recycling into the mantle, *Nature* v. 586, p. 487-492. doi: [10.1038/s41586-019-1131-5](https://doi.org/10.1038/s41586-019-1131-5)
  6. Lowenstern JB, van Hinsberg V, Berlo K, Liesegang M, **Iacovino K**, Bindeman I, Wright H (2018) Opal-A in Glassy Pumice, Acid Alteration, and the 1817 Phreatomagmatic Eruption at Kawah Ijen (Java), Indonesia, *Frontiers in Volcanology* 6:11. doi: [10.3389/feart.2018.00011](https://doi.org/10.3389/feart.2018.00011)
  5. **Iacovino K**, Kim JS, Sisson T, Lowenstern J, Ri KH, Jang JN, Song KH, Ham HH, Oppenheimer C, Hammond JOS, Donovan A, Weber-Liu K, Ryu KR (2016) Quantifying gas emissions from the 'Millennium Eruption' of Paektu volcano, Democratic People's Republic of Korea/China. *Science Advances*. doi: [10.1126/sciadv.1600913](https://doi.org/10.1126/sciadv.1600913)
  4. Ri KS, Hammond JOS, Ko CN, Kim H, Yun YG, Pak GJ, Ri CS, Oppenheimer C, Weber-Liu K, **Iacovino K**, Ryu KR (2016) Evidence for partial melt in the crust beneath Mt. Paektu (Changbaishan), Democratic People's Republic of Korea/China. *Science Advances* doi: [10.1126/sciadv.1501513](https://doi.org/10.1126/sciadv.1501513)
  3. **Iacovino K**, Oppenheimer C, Scaillet B & Kyle PR (2016) Storage and evolution of mafic and intermediate alkaline magmas beneath Ross Island, Antarctica. *Journal of Petrology* doi:[10.1093/petrology/egv083](https://doi.org/10.1093/petrology/egv083)
  2. **Iacovino K** (2015) Linking subsurface to surface degassing at active volcanoes: A thermodynamic model with applications to Erebus volcano. *Earth and Planetary Science Letters* doi:[10.1016/j.epsl.2015.09.016](https://doi.org/10.1016/j.epsl.2015.09.016)

1. **Iacovino K**, Moore GM, Roggensack K, Oppenheimer C & Kyle PR (2013) H<sub>2</sub>O-CO<sub>2</sub> solubility in mafic alkalic magmas: Applications to volatile sources and degassing behavior at Erebus volcano, Antarctica. Contributions to Mineralogy and Petrology doi:[10.1007/s00410-013-0877-2](https://doi.org/10.1007/s00410-013-0877-2)

## NON-PEER REVIEWED PUBLICATIONS

6. Hughes E, Ding S, **Iacovino K**, Wieser P, Kilgour G (2023) “Workshop report: Modelling volatile behaviour in magmas” Sunday 29<sup>th</sup> January 2023 IAVCEI pre-conference workshop, Rotorua, Aotearoa” doi:[10.31223/X5FD3Q](https://doi.org/10.31223/X5FD3Q)
5. **Iacovino K**, Lunning NG, Moore GM, Vander Kaaden K, Righter K, McCubbin FM, Prissel KB, Asimow PD (2020) “Making planets on Earth: How experimental petrology is essential to planetary exploration” Planetary Science and Astrobiology Decadal Survey 2023-2032, The National Academies of Sciences, Engineering, and Medicine.
4. Wada I, Karlstrom L, Arcay D, Caricchi L, Fulton P, Gerya T, **Iacovino K**, Keller T, Lauer R, Lotto G, Montesi L, Sun T, Vrijmoed H, Warren J (2019) “Modeling Collaboratory for Subduction RCN Fluid Migration Workshop Report” <https://www.sz4dmcs.org/fluids-workshop>
3. Barnes R, Shahar A, Unterborn C, Hartnett H, Anbar A, Foley B, Driscoll P, Shim S-HD, Quinn T, **Iacovino K**, Kane S, Desch S, Sleep N, Catling D (2018) “Geoscience and the Search for Life Beyond the Solar System”, doi:[10.48550/arXiv.1801.08970](https://doi.org/10.48550/arXiv.1801.08970)
2. Hicks K, **Iacovino K**, Ilanko T, Moussallam Y, Peters N (2012) “Field Measurements of Active Volcanoes in the Southern Chilean Andes” Royal Geographical Society.
1. **Iacovino K** (2014) “An unexpected journey: Experimental insights into magma and volatile transport beneath Erebus volcano, Antarctica” [PhD dissertation](#), University of Cambridge.

## ABSTRACTS (\*=mentored student, †=mentored post-doc)

40. Anzures BA, McCubbin FM, Vander Kaaden KE, Iacovino K, Prissel K, Boujibar A, Righter M, Righter K, Lanzirotti A, Newville M (2024) “Understanding Mercury’s magmatic history: Geochemical affinity, compatibility, & volatility changes due to reduction” MEXAG Annual Meeting 2024, Virtual.
39. \*Wasser VK, Lopez TM, Larsen JF, Izbekov PE, Loewen M, Waythomas C, Newcombe M, **Iacovino K** (2023) “Exploring the magmatic plumbing system of Pavlov volcano, Alaska over time with olivine-hosted melt inclusions” American Geophysical Union Fall Meeting, San Francisco, CA.
38. Iacovino K, McCubbin FM, Moore GM, †Anzures BA, Jakubek R, Fries M (2023) “Silicon vapor species at very reducing conditions: Applications to Mercury’s mysterious hollows” Experimental Mineralogy Petrology and Geochemistry International Symposium, Milan, Italy.
37. **Iacovino K**, Prissel K (2023) **Keynote Talk**. “Modeling lunar magmas in the Artemis Era” EGU General Assembly 2023, Vienna, Austria. (doi: [10.5194/egusphere-egu23-2383](https://doi.org/10.5194/egusphere-egu23-2383))
36. **Iacovino K**, McCubbin FM, Vander Kaaden KE, Moore GM (2023) “Carbon as a key driver of explosive volcanism on Mercury” 54<sup>th</sup> Lunar and Planetary Science Conference, The Woodlands, TX. ([abstract](#))
35. Moore GM, McCubbin FM, **Iacovino K**, Prissel K, Marrs I, Macris C, Vander Kaaden KE, Boyce JW, Righter K (2023) “New experiments and modelling of the partitioning of silicon between iron-rich metal and silicate melt: Implications for planetary core formation and composition” 54<sup>th</sup> Lunar and Planetary Science Conference, The Woodlands, TX. ([abstract](#))
34. †Anzures BA, Vander Kaaden KE, McCubbin FM, **Iacovino K**, Prissel K, Righter M, Righter K, Lanzirotti A, Newville M (2023) “Temperature effect on trace element partitioning in the presence of sulfur under

- reduced conditions” 54<sup>th</sup> Lunar and Planetary Science Conference, The Woodlands, TX. ([abstract](#))
33. Suckale J, Popp AM, **Iacovino K** (2022) “Towards a process-based understanding of Deflation-Inflation events and associated lava fountaining at Kilauea Volcano” AGU Fall Meeting, Chigaco, IL.
  32. **Iacovino K**, Matthews S, Wieser P, Moore GM, Allison CM, Bégué F (2022) “VESIcal: An open-source thermodynamic model engine for mixed volatile (H<sub>2</sub>O-CO<sub>2</sub>) solubility in silicate melts” Goldschmidt Conference, Honolulu, HI. ([abstract](#); [presentation](#))
  31. †Anzures BA, Vander Kaaden KE, McCubbin FM, **Iacovino K**, Moore GM, Prissel K, Righter M, Righter K (2022) “Trace element partitioning in the presence of sulfur under reduced conditions” Goldschmidt Conference, Honolulu, HI. ([presentation](#))
  30. **Iacovino K**, Vander Kaaden KE, McCubbin FM, Clark JV, Archer D, Boyce J (2021) **Invited Talk**. “Carbon as the primary driver of super-reduced explosive volcanism on Mercury: Evidence from graphite-melt smelting experiments” AGU Fall Meeting, New Orleans, LA.
  29. \*Murray AN, Ort MH, **Iacovino K**, Smith V, Giordano G, Isaia R (2021) “Evidence of shallow storage and re-equilibration of magmas feeding the 39 ka Campanian Ignimbrite (Italy) eruption” AGU Fall Meeting, New Orleans, LA.
  28. \*Wasser VK, Lopez TM, **Iacovino K** (2021) “First steps towards modeling eruption size at arc-volcanoes in near-real time using multidisciplinary data” AGU Fall Meeting, New Orleans, LA.
  27. **Iacovino K**, Boyce JW, Vander Kaaden K, Lunning NG, McCubbin FM, Moore GM (2021) “Carbon solubility in mercurian magmas: What we don’t know” 52<sup>nd</sup> Lunar and Planetary Science Conference, Virtual.
  26. Righter K, **Iacovino K**, Erickson TM (2021) “Vanadium valence in MgAl<sub>2</sub>O<sub>4</sub> spinels at reducing conditions (IW to IW-5)” 52<sup>nd</sup> Lunar and Planetary Science Conference, Virtual.
  25. **Iacovino K** (2020) **Invited Talk**. “Volcanic gas chemistry and thermodynamic modeling to determine eruption triggers” Geological Society of America Conference, Virtual.
  24. **Iacovino K** (2020) **Invited Talk**. “Toward a general thermodynamic model to interpret volcanic gases” Goldschmidt Conference, Honolulu, HI.
  23. **Iacovino K** and de Moor, Maarten (2019) “Determining eruption triggers and magmatic sources using volcanic gas chemistry and thermodynamic modeling” AGU Fall Meeting, San Francisco, CA.
  22. \*Gallo RI, **Iacovino K**, Ort MH, Silleni A, Barbero A, Isaia R (2019) “Correlating the Campanian Ignimbrite using matrix glass geochemistry and morphology” AGU Fall Meeting, San Francisco, CA.
  21. Farquharson J, Wadsworth FB, Kushnir AR, Williams R, Chevrel O, Kennedy B, Heap MJ, Delmelle P, **Iacovino K**, Krippner J, Vasseur J, Varley NR, Hornby A, James MR, von Aulock FW, Donovan A (2019) “Volcanica: a diamond open-access success story for volcano-based research” AGU Fall Meeting, San Francisco, CA.
  20. **Iacovino K**, Till CB, Guild M (2019) “Oxidation of the mantle wedge by aqueous fluids: A new interdisciplinary approach” Goldschmidt Conference, Barcelona, Spain. ([abstract](#))
  19. **Iacovino K**, Till C (2018) **Keynote Talk**. “Can Slab Fluids Oxidize the Sub-Arc Mantle?” Goldschmidt Conference, Boston, MA. ([abstract](#))
  18. Hartnett H, Till C, Anbar A, Glaser D, Guild M, **Iacovino K**, Johnson A, Leong J & Ostrander C (2018) “Solid-

Earth Processes are Key Drivers in the Evolution of Earth's Redox State and Set the Stage for the Great Oxidation Event" Goldschmidt Conference, Boston, MA.

17. Lloyd KG, Barry P, Battaglia A, Beaudry P, Bini G, Fullerton K, de Moor M, Giovannelli D, González G, Hummer D, **Iacovino K**, Lopez T, Martinez M, Matamoros M, Miller H, Pratt K, Ramírez C, Schrenk M, Segura Y, Turner S (2018) "Microbial effects on volatile fluxes across the Costa Rica convergent margin" 4D Workshop: Deep-Time Data-Driven Discovery and the Evolution of Earth, Carnegie Institute, Washington DC.
16. **Iacovino K**, Till C (2017) Oral Presentation. "Fluid-mediated redox transfer in subduction zones: Measuring the intrinsic  $fO_2$  of slab fluids in the lab" AGU Fall Meeting, New Orleans, LA. ([abstract](#))
15. Lowenstern JB, Van Hinsberg V, Berlo K, Wright H, **Iacovino K**, Liesegang M, Bindeman I (2017) "Multiple origins of opal in pumice: A case study from the 1817 phreatomagmatic event at Kawah Ijen, Java (Indonesia)" IAVCEI Scientific Assembly, Portland, OR.
14. Hamilton J, **Iacovino K**, Fischer T, Saballos JA (2017) "Application of a Thermodynamic Model for Resolving Volatile Concentration Differences Between Melt Inclusions and Surface Degassing" IAVCEI Scientific Assembly, Portland, OR.
13. Ort M, **Iacovino K**, Zanella E, Isaia R (2017) "Emplacement Temperatures as Evidence for Atmospheric Incorporation in Dilute Pyroclastic Density Currents" IAVCEI Scientific Assembly, Portland, OR.
12. Fullerton K, Barry P, Battaglia A, Beaudry P, Bini G, Cascante M, de Moor M, Giovannelli D, Gonzalez G, Hummer D, **Iacovino K**, Martinez M, Miller H, Turner S, Pratt K, Ramirez C, Sequra YA, Lloyd K (2017) "Biology Meets Subduction: Exploration of microbial diversity of Costa Rican convergent margin" Southeastern Biogeochemical Society meeting.
11. **Iacovino K**, Kim JS, Sisson T, Lowenstern J, Jan JN, Song KH, Ham HH, Ri KH, Donovan A, Oppenheimer C, Hammond J, Liu KS, Ryu KR (2016) Oral Presentation. "Quantifying gas composition and yield from the 946 CE Millennium Eruption of Paektu volcano, DPRK/China" Goldschmidt Conference, Yokohama, Japan. ([abstract](#))
10. **Iacovino K**, Kim JS, Sisson T, Lowenstern J, Jan JN, Song KH, Ham HH, Ri KH, Donovan A, Oppenheimer C, Hammond J, Liu KS, Ryu KR (2015) Poster Presentation. "New Constraints on the Geochemistry of the Millennium Eruption of Mount Paektu (Changbaishan), Democratic People's Republic of Korea/China" AGU Fall Meeting, San Francisco, CA. ([abstract](#))
9. **Iacovino K**, Sisson T, Lowenstern J (2014) Oral Presentation. "Evidence of a pre-eruptive fluid phase for the Millennium Eruption, Paektu volcano, North Korea" AGU Fall Meeting, San Francisco, CA. ([abstract](#))
8. **Iacovino K**, Peters N, Oppenheimer C (2013) Poster Presentation. "Toward a unified method for the quantification of volatiles in magmas via FTIR" Goldschmidt Conference, Florence, Italy. ([abstract](#))
7. **Iacovino K**, Oppenheimer C, Scaillet B, Kyle P.R (2013) Oral Presentation. "Experimental constraints on the storage conditions and evolution of alkaline lavas at Erebus volcano, Antarctica: A case for CO<sub>2</sub>-dominated volcanism" IAVCEI Scientific Assembly, Kagoshima, Japan. ([abstract](#))
6. Un Y.G, Ju U.O, Kim M.S, Ri G.S, Ri K.N, Hammond J.O.S, Oppenheimer C, Whaler K, Park S, Dawes G, **Iacovino K** (2013) Poster Presentation. "The Mt. Paektu Geoscientific Experiment" IAVCEI Scientific Assembly. Kagoshima, Japan. ([abstract](#))
5. **Iacovino K**, Oppenheimer C, Scaillet B, Kyle PR (2012) Oral Presentation. "Experimental constraints on the evolution of alkaline magmas from Ross Island, Antarctica: A case for CO<sub>2</sub>-dominated volcanism"

Goldschmidt Conference, Montreal, Canada. ([abstract](#))

4. **Iacovino K**, Oppenheimer C, Scaillet B, Kyle PR (2012) Oral Presentation. “Constraints on primitive magma evolution beneath Erebus” Le Studium Erebus Conference, Orléans, France.
3. **Iacovino K**, Oppenheimer C, Scaillet B, Kyle PR (2011) Poster Presentation. “Experimental constraints on the crystallization and evolution of primitive magmas from Erebus volcano, Antarctica” AGU Fall Meeting, San Francisco, CA. ([abstract](#))
2. **Iacovino K** (2010) Oral Presentation. “H<sub>2</sub>O-CO<sub>2</sub> solubility in basanite: Applications to volatile sources and degassing behavior at Erebus volcano, Antarctica” Arizona Space Grant Consortium, Tucson, AZ.
1. **Iacovino K**, Moore GM, Roggensack K, Oppenheimer C, Kyle PR (2009) Oral Presentation. “H<sub>2</sub>O-CO<sub>2</sub> solubility in basanite: Applications to volatile sources and degassing behavior at Erebus volcano, Antarctica” AGU Fall Meeting, San Francisco, CA. ([abstract](#))

### **STUDENTS MENTORED (co-supervised with university advisor)**

4. Valerie Wasser (PhD, University of Alaska Fairbanks, 2020-Present), supervised by T. Lopez
3. Paige Laplant (MS, Northern Arizona University, 2019-2021), co-supervised with M. Ort
2. Allyson Murray (MS, Northern Arizona University, 2019-2021), co-supervised with M. Ort
1. Rose Gallo (MS, Northern Arizona University, 2018-2020), co-supervised with M. Ort

### **INVITED TALKS**

- 2023 EGU General Assembly 2023, Keynote Talk, Vienna, Austria
- 2023 Rice University Earth, Environmental, and Planetary Sciences Seminar, Houston, TX
- 2022 Oxford Earth Science Department Seminar, virtual
- 2021 American Geophysical Union Fall Meeting 2021, Invited Talk, New Orleans, LA
- 2021 Carnegie Earth and Planets Laboratory Seminar, virtual
- 2021 Univ. Geneva Science Seminar, virtual
- 2021 Univ. Oregon Earth Science Seminar, virtual
- 2020 Univ. Utah Distinguished Lecture Series, Invited Talk, virtual ([archived](#))
- 2020 Geological Society of American Conference 2020, Invited Talk, virtual
- 2020 Univ. Bristol Geoscience Seminar
- 2020 Goldschmidt Geochemistry Conference 2020, Invited Talk, Honolulu
- 2019 Univ. Baylor 5050 Geosciences Seminar
- 2018 Goldschmidt Geochemistry Conference 2018, Keynote Talk, Boston ([abstract](#))
- 2018 Academia Film Olomouc academic film festival, Czech Republic (two invited talks on STEM outreach and filmmaking)
- 2018 UCLA Colloquium
- 2018 UT Texas Austin Colloquium
- 2015 Peninsula Geological Society seminar ([abstract](#))
- 2014 Stanford Univ. Chain Gang Lecture Series
- 2014 San Jose State University
- 2014 USGS Volcano Science Center ([archived](#))
- 2014 Gangplank Brown Bag, Chandler, AZ
- 2014 PyData Conference, London, England (talk, [archived](#))
- 2013 Mt. Paektu Group Meeting, Pyongyang, DPRK
- 2013 Cambridge Univ. Expeditions Society
- 2012 Darwin College Lunchtime Seminar Series

### **GRANTS, HONORS, AND AWARDS**

- 2023 Goddard Instrument Field Team field study “Volatile delivery from mantle to surface on Mars: Clues from deeply sourced melt inclusions”
- 2019 Rotary National Award for Space Achievement nomination



- 2017 “Physical and Chemical Constraints on Large-volume Pyroclastic Blasts: The Campanian Ignimbrite Eruption, Italy”, [NSFGEO-NERC 1761713](#), Awarded to M. Ort. I worked on development of the project, co-wrote the proposal, and am a named collaborator on the project. (\$290,655)
- 2016 EPIC/FESD Post-doctoral Fellowship (\$114,000)
- 2016 AAAS Research Grant (\$5,000)
- 2014 “Quantifying total volatile budgets of explosive volcanic eruptions: An experimental investigation of C-O-H-S-F-Cl in Silicic Peralkaline Magma from Paektu volcano, North Korea and China”, [NSF Post-doctoral Fellowship Grant EAR-1349486](#) (PI, \$174,000)
- 2013 Software Sustainability Institute Fellowship (£3,000)
- 2013 Volcanofiles Chile Expedition, Antofagasta (£10,000)
- 2012 Volcanofiles Chile Expedition, Antofagasta (£14,000)
- 2011 US Antarctica Service Medal
- 2010-13 Philip Lake Fund Research Grant
- 2010-13 William Vaughan Lewis Research Grant
- 2010 Cum Laude graduation honors, Arizona State Univ.
- 2010 Outstanding Teaching Assistant Award, Arizona State Univ.

## TEACHING EXPERIENCE

- 2017 Petrology (Guest Lecturer), Arizona State University
- 2016 Petrology (Guest Lecturer), Arizona State University
- 2013 Volcanic Hazards, Part IB (Supervisor), University of Cambridge
- 2013 Magma Chambers, Part II (Supervisor), University of Cambridge
- 2012 Contributing scientist to the [Royal Geographical Society From the Field Programme](#)
- 2012 Developed A-levels (Grades 9-12 US equiv.) science curricula focused on volcanology
- 2010 Field Geology II (Teaching Assistant), Arizona State University
- 2009 Petrology Laboratory (Lecturer), Arizona State University
- 2009 Petrology (Teaching Assistant), Arizona State University
- 2009 Earth, Solar System, and Universe (Teaching Assistant), Arizona State University
- 2009 Introduction to Geology (Teaching Assistant), Arizona State University

## LABORATORY EXPERIENCE

- 2019- Lead of ARES Experimental Petrology lab at Johnson Space Center
- 2016-18 Post-doc researcher in EPIC Lab at Arizona State Univ.
- 2017 Set up hydrothermal cold-seal pressure vessel laboratory at Arizona State Univ.
- 2014-16 Post-doc researcher in experimental petrology lab at USGS Menlo Park, CA
- 2014 Restored hydrothermal cold-seal pressure vessel laboratory at Stanford University
- 2013 Set up non-end-loaded piston cylinder laboratory at Università di Camerino, Italy
- 2010-14 Graduate researcher at University of Cambridge, UK
- 2010-14 Visiting graduate researcher at Institut des Science de la Terre d'Orleans, France
- 2007-10 Undergraduate researcher in Depths of the Earth Laboratory, Arizona State Univ.

## FIELD EXPERIENCE

- 2023 Tephra sampling in Lanzarote, Canary Islands, Spain
- 2022 Gas sample collection in Nicaragua
- 2019 Sample collection in the Campanian Ignimbrite, Naples, Italy
- 2017 Sample collection, in-situ gas monitoring, documentary production in DR Congo
- 2017 Sample collection and in-situ gas monitoring in Costa Rica arc and forearc
- 2015 Sample collection for K-Ar and Ar-Ar age dating at SP Crater, AZ
- 2014 Tephra stratigraphy and sample collection at Newberry volcano, OR
- 2014 Sample collection at Paektu volcano, DPRK Korea (North Korea)
- 2013 In-situ gas monitoring campaign in Costa Rica
- 2013 In-situ gas monitoring campaign in central Chilean Andes
- 2012 In-situ gas monitoring campaign in central and northern Chilean Andes

- 2010 Sample collection and in-situ volcanic plume measurements at Erebus volcano, Antarctica
- 2010 Mapping in northern Arizona, Geology Field Camp (Teaching Assistant)
- 2009 Mapping in northern Arizona, Geology Field Camp (student)

## DOCUMENTARIES

- TBA “Tao of Trek”. Smithsonian Channel Docuseries.
- 2019 “Breakthroughs: Portraits of Women in Science” Episode 1: “[The Volcano Trekker](#)”. Featured profile for NPR and the Howard Hughes Medical Institute documentary series
- 2019 “[Pompeii: Secrets of the Dead](#)” National Geographic Documentary
- 2018 “[Polar Extremes](#)” PBS NOVA Documentary
- 2017 “[Expedition: Volcano](#)” BBC Documentary
- 2017 DCO Biology Meets Subduction [outreach videos and documentary](#)

## OTHER MEDIA EXPERIENCE

- 2021 “Periodic Talks” podcast, “[A Beginner’s Guide To Astonishing Volcanoes](#)”
- 2020 “The Thought Exchange” podcast, “[TTE 02 Kayla Iacovino](#)”
- 2020 AGU StoryCorps “[These are really big questions that right now no one could really answer](#)”
- 2016 New York Times “[Only a Rumbling Volcano Could Make North Korea and the West Play Nice](#)”
- 2016 NPR Morning Edition, “[North Korean Volcano Provides Rare Chance For Scientific Collaboration](#)”
- 2016 Earth Magazine Profile “[Down to Earth With: Volcanologist Kayla Iacovino](#)”
- 2016 CNN Profile “[Meet the Trekkie who became a real-life volcanologist](#)”
- 2016 Physics Today cover story “[Volcano research flows from North Korea](#)”
- 2015 Korea Econ Inst podcast “[Seismology and Mt. Baekdu: Science Diplomacy in North Korea](#)”
- 2014 Essay, SinoNK.com “[Of Eruptions and Men: Science Diplomacy at North Korea’s Active Volcano](#)”
- 2014 Profile for [Medium.com](#)
- 2014 Profile for [Tested.com](#)
- 2014 Interviewed for [de Volkskrant](#) newspaper
- 2014 Radio New Zealand “[Kayla Iacovino: volcanoes and North Korea](#)”
- 2013 NPR Science Friday “[World’s Largest Volcano Discovered on Pacific Seafloor](#)”
- 2011 NPR Science Friday “[Exploring Science at the End of the Earth](#)”
- 2010 NPR Science Friday “[A Visit To Antarctica](#)”

## PUBLIC SERVICE and CONTRIBUTIONS TO DIVERSITY

### Outreach Activities

- 2023 Advisory Board member for the Nichelle Nichols Foundation, a 501(c)(3) organization dedicated to the advancement of women and girls in STEM
- 2023 Panelist on “The Demon Haunted Panel” a critical thinking discussion at STL23
- 2023 Panelist on “[Hailing Frequencies Open: Exploring Strange New Worlds](#)” hosted by the Nichelle Nichols Foundation
- 2023 Panelist on “Careers in Government” panel hosted by the Arizona State University Graduate College
- 2021 Panelist on “COVID-19 Impacts on Geochemistry: What’s Next?” panel hosted by the Geochemical Society
- 2020 Research Careers profile in textbook “Earth History,” FOSS Science Resources, UC Berkeley.
- 2019 Mentor for the [STEM Enhancement in Earth Science \(SEES\)](#) NASA internship program. Developed curricula and work alongside 5 high-school students in a two-week intensive program to develop a proposal for a lunar habitat for future astronauts.
- 2019 Participant in [We Are Girls](#) Houston event at Hogg Middle School. Helped design and run the Female Superheroes of Science workshop meant to inspire and motivate young girls to pursue their interests and gain confidence.
- 2017 AGU Fall Meeting OSPA Mentor
- 2017 Collaborator with the BBC on [Expedition: Volcano](#) documentary and fieldwork in the DR Congo
- 2017 [Featured](#) as part of the BBC’s #100WomenWiki project to add important and inspirational women of the world to the pages of Wikipedia



- 2016 STEM outreach member, [Advisory Committee](#) to the Aircraft Carrier Industrial Base Coalition for National U.S. Navy Aircraft Carrier Month
- 2015 Creator of web series "[Science at the Survey](#)", a series of videos featuring women in geoscience.
- 2015 Created materials aimed at inspiring girls to consider a career in volcanology for the [Curiosity Science Program](#), developed for late elementary and middle school-aged girls from low-income immigrant families
- 2015 Featured in the "[Mighty Women of Science Alphabet Book](#)"
- 2015 Developed outreach activities such as the "What controls a volcano's eruptive style?" exhibit showcased at multiple events in the Bay Area in 2014-2016
- 2010-2014 Professional science writing for GEEK Magazine
- 2010-2012 Professional science writing for NPR Science Friday

#### Professional Society Boards

- 2022-Present Member of the SZ4D Magmatic Drivers of Eruption Working Group
- 2020-2021 Member of the Diversity Equity and Inclusion board, Geochemical Society
- 2020 Social media manager, Geochemical Society

#### Convener/Session Chair

- 2023 LPSC Conference
- 2022 Goldschmidt Meeting
- 2020 Goldschmidt Meeting
- 2019 AGU Fall Meeting
- 2019 [SZ4D Fluid Transport Modeling Workshop](#), Early Career Scientist Session
- 2018 Goldschmidt Meeting
- 2017 AGU Fall Meeting
- 2016 AGU Fall Meeting
- 2013 Software and Research Town Hall, AGU Fall Meeting

#### Participant in Scientific Community Workshops

- 2023 Organizer: Modeling Volatile Behavior in Magmatic Systems IAVCEI Workshop
- 2022 Volatiles From Source To Surface GeoPRISMS Workshop
- 2019 [ENKI](#) User Workshop
- 2017 [ENKI](#) Datathon
- 2017 [ENKI](#) User Workshop
- 2016 [Subduction Zone Observatory workshop](#)
- 2013 Software Sustainability Institute Fellows Meeting
- 2012 Royal Geographic Society Explore event
- 2011 Sulfur in Magmas and Melts GSA workshop
- 2011 Afar Rift Consortium workshop

#### Journal Editor

[Volcanica](#) (Diamond open access, free to publish)  
Frontiers in Geochemistry

#### Peer Reviewer

American Mineralogist	Gondwana Research
Bulletin of Volcanology	Icarus
Chemical Geology	Journal of Geophysical Research
Contributions to Mineralogy and Petrology	Journal of Mineralogy and Geochemistry
Earth and Planetary Science Letters	Journal of Petrology
Earth, Planets, and Space	Journal of Volcanology and Geothermal Research
Frontiers	NASA ROSES
G Cubed	NSF Division of Earth Sciences
Geochimica et Cosmochimica Acta	Science Advances
Geochemical Perspectives Letters	Science

Geophysical Research Letters  
Geology

SLAC National Accelerator Laboratory  
Volcanica