

# Kayla Iacovino, Ph.D.

## Curriculum Vitae

Arizona State University  
School of Earth and Space Exploration  
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### EDUCATION

#### 2014 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

### PROFESSIONAL EXPERIENCE

- 2016 – present Post-doctoral Research Scientist, School of Earth and Space Exploration, Arizona State University  
NSF FESD Grant (Post-doc): [The Dynamics of Earth System Oxygenation](#)
- 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, Dept. of Earth Sciences, University of Minnesota

### PEER REVIEWED PUBLICATIONS

- 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)
- 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)
- 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)
- 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)
- 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

1. Hicks K, **Iacovino K**, Ilanko T, Moussallam Y, Peters N (2012) "Field Measurements of Active Volcanoes in the Southern Chilean Andes" Royal Geographical Society.

## SELECTED ABSTRACTS

1. **Iacovino K**, Till, C (2017) Oral Presentation. "Fluid-mediated redox transfer in subduction zones: Measuring the intrinsic fO<sub>2</sub> of slab fluids in the lab" AGU Fall Meeting, New Orleans, LA.
2. 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.
3. 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.
4. 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.
5. 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.
6. **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](#))
7. **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](#))
8. **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](#))
9. **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](#))
10. **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](#))
11. 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](#))
12. **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](#))
13. **Iacovino K**, Oppenheimer C, Scaillet B, Kyle PR (2012) Oral Presentation. "Constraints on primitive magma

evolution beneath Erebus” Le Studium Erebus Conference, Orléans, France.

14. **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](#))
15. **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.
16. **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](#))

#### **INVITED TALKS**

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**

2016 EPIC/FESD Post-doctoral Fellowship (\$114,000)  
2016 AAAS Research Grant (\$5,000)  
2014 NSF Post-doctoral Fellowship Grant EAR-1349486 (PI, \$174,000)  
2013 Software Sustainability Institute Fellowship (£3,000)  
2013 Volcanofiles Chile Expedition (£10,000)  
2012 Volcanofiles Chile Expedition (£14,000)  
2011 US Antarctica Service Medal  
2010-2013 Philip Lake Fund Research Grant  
2010-2013 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  
Magma Chambers, Part II (Supervisor), University of Cambridge  
Eruption Styles, Part II (Supervisor), University of Cambridge
- 2012** Contributing scientist to the [Royal Geographical Society From the Field Programme](#) 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  
Petrology (Teaching Assistant), Arizona State University  
Earth, Solar System, and Universe (Teaching Assistant), Arizona State University  
Introduction to Geology (Teaching Assistant), Arizona State University

## **MEDIA EXPERIENCE**

- 2017 Contributor to BBC Documentary “Jungle Volcano”
- 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

- Collaborator with the BBC on documentary and fieldwork on volcanoes in the DR Congo
- [Featured](#) as part of the BBC’s #100WomenWiki project to add important and inspirational women of the world to the pages of Wikipedia
- Member, [Advisory Committee](#) to the Aircraft Carrier Industrial Base Coalition for National U.S. Navy Aircraft Carrier Month
- Creator of webseries [“Science at the Survey”](#), a series of videos featuring women in geoscience.
- 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
- Featured in the [“Mighty Women of Science Alphabet Book”](#)
- 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
- Co-founder, webmaster, and outreach coordinator for The Volcanofiles, an educational outreach group run by volcanologists
- Public outreach through radio appearances on National Public Radio’s Science Friday and Morning Edition programs, Radio New Zealand and professional writing for NPR Science Friday (2010-2012) and GEEK Magazine (2012-2014)

Convener/Session Chair

AGU Fall Meeting 2017  
AGU Fall Meeting 2016  
Software and Research Town Hall, AGU Fall Meeting, 2013

Peer Reviewer

Science Advances  
Geology  
Bulletin of Volcanology  
Chemical Geology  
Journal of Petrology  
Contributions to Mineralogy and Petrology  
Journal of Volcanology and Geothermal Research  
Earth and Planetary Science Letters  
Journal of Mineralogy and Geochemistry  
NSF Division of Earth Sciences

Participant in Scientific Community Workshops

Subduction Zone Observatory workshop, 2016  
Software Sustainability Institute Fellows Meeting, 2013  
Royal Geographic Society Explore event, 2012  
Sulfur in Magmas and Melts GSA workshop, 2011  
Afar Rift Consortium workshop, 2011