

# CURRICULUM VITAE (CV)

Valerie Curry

Work Address: Boston University, 19 Deerfield Street 3rd floor, Boston, MA 02215

Home Address: 1313 Mockingbird Lane, Cambridge, MA 02139

(617) 362-1200; [studentcv@bu.edu](mailto:studentcv@bu.edu)

## EDUCATION:

**Boston University, Boston, MA**

**Jan. 2018 - Present**

Postdoctoral Researcher, Department of Earth and Environment

- Research focuses on the production of magmas in the Aleutian arc using experiments and geochemical modeling.

**Massachusetts Institute of Technology, Cambridge, MA**

**Sept. 2017**

Ph.D. Department of Earth, Atmospheric and Planetary Sciences

- Thesis: *Petrology and Geochemistry of High Degree Mantle Melts.*

**Harvard University, Cambridge, MA**

**June 2010**

BA, Earth and Planetary Sciences, Cum Laude

- Senior Thesis: *The Predicted Seismic Velocity of the Mantle Transition Zone Based on High Pressure Phase Equilibria Experiments.*

## AWARDS:

- National Merit Scholarship
- Awarded best senior thesis by Harvard Geology Club

## RESEARCH:

**Boston University, Department of Earth and Environment**

**Jan. 2018-Present**

Advisor, Dr. Who, Boston, MA

- Quantify the pressure, temperature, and composition of the source region of Aleutian arc magmas. Focus is on the effect of water on phase relations.
- Work involves high pressure experiments, analyses of experimental charges, and geochemical modeling of data.

**MIT, Department of Earth, Atmospheric and Planetary Sciences**

**July 2012-July 2017**

Advisor, Dr. Anonymous, Cambridge, MA

- Experimentally determined the thermodynamic effect of water on high-degree mantle melting.
- Incorporated experimental data into a predictive thermodynamic model of hydrous mantle melting.
- Estimated the secular cooling of the Earth's mantle by applying predictive model to subduction magmas from 0 to 3.5 Ga.
- Employed trace element modeling to estimate the effect of metamorphism on Barberton komatiite bulk samples and to constrain their tectonic setting.
- Modeled the flow of mantle in subduction zones using pre-existing finite element codes.
- This geodynamic study was combined with petrologic data to constrain the temperature and viscosity structure of the sub-arc mantle.
- Determined the solubility of He in olivine with the goal of understanding the extent of degassing and convection in the deep mantle.
- Other experimental projects include the solubility of Fe in AuPd alloys, textural studies of komatiites, and development of the multi-anvil device at MIT.

**Harvard University, Department of Earth and Planetary Sciences****Sept. 2009-May 2010**

Advisor, Dr. Gold, Cambridge, MA

- Constrained the composition of the mantle transition zone by comparing observed and predicted seismic velocities.
- Work involved running ultra-high pressure (up to 2.3 GPa) phase equilibrium experiments and analyzing results with electron microprobe.
- The measured phase proportions and compositions were used to calculate the seismic velocities of the mantle at transition zone pressures.
- The calculations were used to evaluate various compositional models.

**TEACHING:****Boston University, Department of Earth Sciences, Boston, MA****Jan. 2018 – Present**

Lecturer-Introduction to Geochemistry

- Taught and managed entire curriculum for up to 100 students.
- Initiated use of computer modeling in teaching geochemical principles. Focused on teaching students fungible geochemical skills.

**MIT, Dept. of Earth, Atmosphere and Planet Sciences, Cambridge, MA****Fall 2015**

Teaching Assistant-Mineralogy

- Taught lab component of class.
- Assisted in development of lab curriculum.
- Updated and revised existing lab assignments.

**MIT, Dept. of Earth, Atmosphere and Planet Sciences, Cambridge, MA****Fall 2014**

Teaching Assistant-Mineralogy

- Assisted in development of lab curriculum for new course.
- Met individually with students for curriculum input.

**MIT, Dept. of Earth, Atmosphere and Planet Sciences Cambridge, MA****Spring 2014**

Teaching Assistant-Beyond the Solar System.

- Assisted with labs. Graded homework assignments.

**PRESENTATIONS:**

Grove TL, **Curry V**, Dann JC (Kaapvaal conference, 2017) The generation of Barberton komatiites in an Archean subduction zone.

Grove TL, Dann JC, **Curry V** (Komatiites, Norites, Boninites and Basalts, 2016) Petrologic and experimental evidence for high H<sub>2</sub>O contents in Barberton komatiite magmas.

Grove TL, **Curry V** (Goldschmidt, 2015) Compositional effects of H<sub>2</sub>O on ol-opx saturated melts.

**Curry V**, Dann J, de Wit M, Grove T. (IAVCEI, Cape Town, 2015) Segregation vesicles in 3.5 Ga komatiites: Barberton, South Africa.

**Curry V**, Grove TL (Spring AGU, 2014) High pressure water under saturated liquidus phase relations of komatiite from the Barberton Mountainland, South Africa.

Holzheid AD, Grove TL, **Curry V** (First International Pressure Calibration Workshop, 2014)  
Precision and accuracy of pressure in a Walker-style multi-anvil device.

Grove TL, **Curry V**, Gaetani GA, Elkins LT (Materials Recycling near convergent plate boundaries, Carnegie Inst. of Washington, Puel˜o Azul, Philippines, 2013) Mass transfer processes in the southern cascade subduction zone: the influence of variable water content on mantle melting.

Grove TL, Gaetani G, **Curry V**, Dann J, de Wit M (Spring AGU, 2013) Origin of spinifex textures in 3.49 Ga komatiite magmas from the Barberton Mountainland, South Africa.

#### **PUBLICATIONS:**

**Curry V**, Grove TL, Dann JC, and de Wit MJ (accepted, Feb. 2017) *Boninites, komatiites, and Archean subduction zones*. Geophysical Research Letters.

Grove TL, **Curry V**, Dann JC, (2016) *Conditions of magma generation for Archean komatiites from the Barberton Mountainland, South Africa*.

In Mantle Petrology: Field Observations and High Pressure Experimentation: A tribute to Francis R. (Joe) Boyd, **Curry V**, The Geochemical Society, Special Publication 6, Y Fei, C.M. Bertka and B.O. Mysen, eds., p. 155-167.

**Curry V**, Darm JC, Grove TL and de Wit MJ (2015) *Emplacement conditions of komatiite magmas from the 3.49 Ga Komati formation, Barberton Greenstone Belt, South Africa*. Earth Planet. Sci. Lett. 150, p. 303-323.

#### **ACTIVITIES:**

- American Geophysical Union, Communications Director, 2018-present.
- Cambridge Cooperative Pre-School, Board of Directors, 2017-present.
- Officer, Harvard Geology Club, 2009-2010.

#### **REFERENCES:**

Dr. Who  
Department of Earth and Environment  
Boston University  
500 Commonwealth Ave.  
Boston, MA 02215  
(617) 353-0000, [who@bu.edu](mailto:who@bu.edu)

Dr. Blanc  
Department of Geology and Geophysics Woods Hole  
Oceanographic Institution Woods Hole, MA 02543  
(508) 343-2233, [blank@whoi.edu](mailto:blank@whoi.edu)

Dr. Josephs  
Department of Earth, Atmospheric, and Planetary Sciences  
Massachusetts Institute of Technology  
Cambridge, MA 02139  
(617) 253-0002, [mjosephs@mit.edu](mailto:mjosephs@mit.edu)