

Education and Appointments

2016-	CITY COLLEGE & GRADUATE CENTER, CITY UNIVERSITY OF NEW YORK Assistant professor. Department of Earth and Atmospheric Science.	NEW YORK, NY
2014-2016	UNIVERSITY OF CALIFORNIA-BERKELEY Postdoctoral scholar. <i>Supervisor: Michael Manga</i>	BERKELEY, CA
2008-2013	MASSACHUSETTS INSTITUTE OF TECHNOLOGY Doctor of Philosophy in Geology and Geochemistry. September 2013. <i>Dissertation: "Volatiles as a link between planetary interiors and the environment."</i>	CAMBRIDGE, MA
2007-2008	ORKUSTOFNUN (NATIONAL ENERGY AUTHORITY OF ICELAND) Fulbright fellowship.	REYKJAVÍK, ICELAND
2005-2007	NEW YORK UNIVERSITY Master of Fine Arts in creative writing (fiction).	NEW YORK, NY
2001-2005	HARVARD UNIVERSITY A.B. Earth and Planetary Sciences (<i>magna cum laude</i>).	CAMBRIDGE, MA

Research

Magmatism has fundamentally shaped the crustal and atmospheric evolution of the terrestrial planets, and planetary landscapes record changes in climate and resurfacing over time. My research investigates (1) why and how magmas erupt, (2) the consequences of magmatism for climate and biota, and (3) what planetary surface processes reveal about past, present, and future tectonic and environmental conditions in our solar system. From a geological perspective, the effects of magmatism on climate are often considered qualitatively. I combine sample-based analyses with fieldwork and computational simulation to quantitatively evaluate the environmental consequences of large-scale volcanism. Recent and ongoing projects also explore the self-destruction of Phobos and the erosional history of Titan, Earth, and Mars.

Submitted manuscripts

B.A. Black and M. Manga. "Volatiles and the eruptibility of flood basalt magmas."

B.A. Black, J.T. Perron, D. Hemingway, E. Bailey, F. Nimmo and H. Zebker. "Tectonics and global drainage patterns on Earth, Mars, and Titan."

Peer-reviewed publications

- [17] Black, B.A., M. Manga, and B. Andrews. (in press) "Ash production and dispersal from sustained low-intensity Mono-Inyo eruptions." *Bulletin of Volcanology*.
- [16] Li, M., B.A. Black, S. Zhong, M. Manga, M. Rudolph, and P. Olson. (2016) "Quantifying melt flux at mid-ocean ridges from global mantle convection models with plate motion history." *G3*.
- [15] Black, B.A. and M. Manga. (2016) "The eruptibility of magmas at Tharsis and Syrtis Major on Mars." *JGR-Planets*.
- [14] Marchi, S., B.A. Black, L.T. Elkins-Tanton, and W.F. Bottke. (2016) "Massive impact-induced release of carbon and sulfur gases in the early Earth's atmosphere." *Earth and Planetary Science Letters* 449, 96-104.
- [13] Black, B.A. and T. Mittal. (2015) "The demise of Phobos and development of a martian ring system." *Nature Geoscience* 8, 913-917.
- [12] Lillis, R.J., J. Dufek, W.S. Kiefer, B.A. Black, M. Manga, J.A. Richardson, and J.E. Bleacher. (2015) "The Syrtis Major volcano, Mars: A multi-disciplinary approach to interpreting its magmatic evolution and structural development." *JGR-Planets* 120.
- [11] Black, B.A., R.R. Neely, M. Manga. (2015) "Campanian Ignimbrite volcanism, climate, and the final decline of the Neanderthals." *Geology* 43(5), 411-414.
- [10] Black, B.A., B.P. Weiss, R.V. Veselovsky, L.T. Elkins-Tanton, and A.V. Latyshev. (2015) "Siberian Traps volcanoclastic rocks and the role of magma-water interactions." *GSA Bulletin* 127 (9-10), 1437-1452.

- [9] Black, B.A., J.F. Lamarque, C.A. Shields, L.T. Elkins-Tanton, and J.T. Kiehl. (2015) “Atmospheric effects of Large Igneous Province volcanism: a Siberian perspective,” in *Volcanism and global environmental change*, Camb. Univ. Press.
- [8] Black, B.A., E. H. Hauri, L.T. Elkins-Tanton, and S.M. Brown. (2014) “Sulfur isotopic evidence for sources of volatiles in Siberian Traps magmas.” *Earth and Planetary Science Letters* 394, 58-69.
- [7] Black, B.A., J.F. Lamarque, C.A. Shields, L.T. Elkins-Tanton, and J.T. Kiehl. (2014) “Acid rain and ozone depletion from pulsed Siberian Traps magmatism.” *Geology* 42(1), 67-70. (**Research highlight in *Nature***)
- [6] Tewelde, Y., J.T. Perron, P. Ford, S. Miller, and B.A. Black. (2013) “Estimates of fluvial erosion on Titan from sinuosity of lake shorelines.” *JGR-Planets* 118.
- [5] Burr, D.M., S.A. Drummond, R. Cartwright, B.A. Black, and J.T. Perron. (2013) “Morphology of fluvial networks on Titan: evidence for structural control.” *Icarus* 226, 742-759.
- [4] Burr, D.M., M. Ádámkóvics, V.R. Baker, G.C. Collins, A.D. Howard, R.P. Irwin, M.P. Lamb, J.M. Moore, J.T. Perron, L.S. Sklar, S.A. Drummond, and B.A. Black (2013). “Fluvial Features on Titan.” *GSA Bulletin* 125 (3-4), 299-321.
- [3] Black, B.A., J.T. Perron, S.A. Drummond, and D.M. Burr (2012). “Estimating Erosional Exhumation on Titan from Drainage Network Morphology.” *JGR-Planets* 117. (**Research highlight in *Nature Geoscience***)
- [2] Black, B.A., L.T. Elkins-Tanton, M.C. Rowe and I. U. Peate (2012). “Magnitude and consequences of volatile release from the Siberian Traps.” *Earth and Planetary Science Letters* 317, 363-373.
- [1] Black, B.A. and S.T. Stewart-Mukhopadhyay (2008). “Excess Ejecta Craters record episodic ice-rich layers at middle latitudes on Mars.” *JGR-Planets* 113.

Funded projects

NSF: Flood volcanism and environmental impacts -- A multidisciplinary investigation of the Deccan Traps and events at the Cretaceous-Paleogene boundary (Co-PI)

NASA: Environmental Consequences of Asteroidal Bombardment on Early Mars (Co-I)

Teaching

CCNY Geomorphology (EAS 31117/B1001). Primary instructor, 2016

MIT Field Geology (12.114 & 12.115) Teaching Assistant (my 2010-2011 student rating: 7.0/7.0), 2010-2012

Adjunct Instructor of Creative Writing at New York University, Spring 2007

Honors & Awards

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| 2011 | MIT EAPS Award for Excellence in Teaching |
| 2009 | NSF Graduate Research Fellowship |
| 2008 | Lewis and Clark Fund for Astrobiology Field Scholar, MIT Presidential Fellowship |
| 2007 | Fulbright fellowship |
| 2005 | Thomas Temple Hoopes Prize, Edward Eager Prize |
| 2004 | Harvard College Research Fellowship |

Service & Professional Activities

Member: AGU, GSA

Reviewer for *Earth and Planetary Science Letters*, *Geomorphology*, *Icarus*, *Geology*

Co-convenor: AGU 2012, EGU 2011

EAPS Student Seminar Coordinator, 2010-2011; EAPS Mentoring Coordinator, 2010-2012

Laboratory, Analytical, & Field Experience

NanoSIMS, SIMS, electron microprobe, paleomagnetism, petrography, experimental petrology. Field work in Mojave desert (2009, 2010, 2011, 2012), Siberia (2008, 2009, 2010), Alaska (2006), & Norway (2011).