Laura B Carter

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EDUCATION

RICE UNIVERSITY
Ph.D. in Earth Science
Cum. GPA: 3.89
Expected May 2018 | Houston, TX

UNIVERSITY OF BRISTOL
Masters of Research in Natural Hazards, with Distinction
Awarded with Distinction
Dec 2012 | Bristol, UK

TUFTS UNIVERSITY
B.S. in Geological Science
Cum. GPA:3.39, Major GPA: 3.69
May 2011| Medford, MA

AWARDS

Rice University
2016 Alison Henning Teaching Award
2016 Broussard Fellowship
2015 Torkild Rieber Award
Geological Society of America
2014 Kirk Bryan Award for Excellence
American Geophysical Union
2012 Meeting Student Travel Grant
Indiana University
2011 The Charles Deiss and the Judson Mead Field Station Scholarship
Tufts University
2011 Robert L. Nichols Scholarship
2010 Charles E. Stearns Scholarship
2009 Hume Field Geology Scholarship

SKILLS

Technical
Research (print, online) • Editing • Microsoft Office • Adobe Illustrator • French, some Russian and Spanish
Laboratory
Piston cylinder • Chemicals • Sample polishing, cutting • Microscopy • Microprobe • Specroscopy
Field
Geologic mapping • Cross-sectional mapping • Stereography • Core drilling (manual and USGS drill truck)

TEACHING & OUTREACH EXPERIENCE

RICE UNIVERSITY | 2013-Present
Lab Teacher | CampSpark
- Planned, budgeted, and taught geology lab for high school refugees at graduate student-led camp for STEM research immersion

Teaching Assistant | Mineralogy + Petrology Course
- Presented several lectures, lead hands-on labs for undergraduates
- Planned and assisted on field trip to CA, NV

Outreach Coordinator | Geounion
- Organized department- and campus-wide events, assisted with faculty hires (including written reviews of candidates) and course changes
- Prepared, supervised, taught yearly at Sally Ride STEM Festival for Girls
- Liaison with Houston societies, volunteer at local kids outreach events

UNIVERSITY OF BRISTOL | 2012
Environmental Science Volunteer | Annual Bristol Science Fair
- Set-up, gave hands-on education about climate and ecology for children of all ages at city's annual science fair

TUFTS UNIVERSITY | 2008-2011
Teaching Assistant | Geology Department
- Assisted with hands-on laboratories and local field trips around Boston

ICE SKATING CLUBS | Portland, Yarmouth and Falmouth, ME
Figure Skating Coach |2005-2012
- Taught public city and club group and private lessons for all ages and levels
- Trained figure skaters in off-ice ballet, yoga, pilates classes

LEADERSHIP & ORGANIZATIONAL EXPERIENCE

RICE UNIVERSITY | 2013-Present
Founder, President | Women of Earth Science
- Initiated, lead support group for graduate women in department

Organizational Committee member | Rice University Wiki Women
- Brainstorm, organize, lead career events for female, STEM students

Vice President + Outreach Coordinator | Geounion
- Organized department- and campus-wide events, assisted with faculty hires (including written reviews of candidates) and course changes

TUFTS UNIVERSITY | 2008-2011
Office Assistant | Geology Department
- Prepared geology handouts, performed office duties

USM CONFERENCE CENTER | Freeport, ME
Special Project Assistant at Univ. of Southern Maine |2004-2008
- Liaisoned, set-up, ran historic house for summer conferences

Caterer with StonyField Cafe |2008-2009
- Prepared, transported, cooked, served food for conference breakfasts, luncheons and dinners/receptions

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AFFILIATIONS

• American Association for the Advancement of Science
2017-Present
• American Association of Petroleum Geologists
2014-Present
• Geological Society of Houston
2014-2016
• Geochemical Society
2014-Present
• International Association of Volcanology and Chemistry of the Earth's Interior
2012-Present
• American Geophysical Union
2014-Present
• Geological Society of America
2009-Present

COURSEWORK

Rice University

•Earth Systems Modeling
• Trace Element & Isotope Geochemistry
• Planetary Volcanology
• Volcanic Processes
• Advanced Petrology
• Economic Geology
• Mars

University of Bristol

•GIS and Remote Sensing of Natural Hazards
• Natural Hazards & Risk Assessment
• Physics of Volcanoes & Hazardous Flows
• Natural Hazards in Central America Field Course

Tufts University

•The Dynamic Earth
• Environmental Geology
• Mineralogy
• Igneous & Metamorphic Petrology
• Sedimentology
• Stratigraphy
• Geomorphology
• Glacial/Quaternary Geology
• Isotope Geochemistry
• Ring of Fire: Volcanoes
• Groundwater
• Introduction to GIS

RESEARCH EXPERIENCE

RICE UNIVERSITY | Ph.D.
Advisor: Dr. Rajdeep Dasgupta | Houston, TX
- Prepared chemicals, ran high pressure experiments, analyzed geochemistry
- Calculated volcanic carbon emissions (published and in prep for publication)

COOPERATIVE INSTITUTE FOR DYNAMIC EARTH RESEARCH | Summer Workshop 2015
Organizers: Dr. Terry Plank, Dr. Barbara Romanowicz | Berkeley, CA
- Attended lectures, performed labs run by top scientists in various fields
- Collaborated on inter-disciplinary, student-designed project (in prep)

UNIVERSITY OF BRISTOL | M.Res
Advisors: Prof. Jon Blundy, Dr. Susanne Skora | Bristol, UK
- Powdered rocks, ran high pressure experiments, analyzed geochemistry
- Calculated source of subduction zone volcanism (published)

INDIANA UNIVERSITY | Field Camp
Judson Meade Field Station | Tobacco Root Mountains, MT
- Learned several methods to produce geologic and cross-sectional maps

TUFTS UNIVERSITY |Research Assistant & B.S.
PIs: Prof. Jack Ridge, Prof. Molly McCanta | Sommerville, MA
- Drilled & measured for New England Varve Chronology Project (published)
- Sieved sediments, picked & analyzed grains for Senior Research Project

US GEOLOGICAL SURVEY, AUGUSTA, ME |Student Intern, 2007
PIs: Stephen Dickson, Peter Slovinsky
- Measured elevation of geodetic markers along coastline
- Analyzed coastal storm erosion, suggested building proximity and structure

INTERESTS

RESEARCH

Igneous Petrology
- Experimental and field investigation of melts, minerals & gases in magmatic systems

Volcanology
- Geochemical controls and hazards of volcanic processes

Geochemistry
- Major& minor elements, isotopes of igneous rocks as source and process indicators

CAREER

- Editing
- Science Writing, particularly to the public or a broad audience
- Geology Education
- Outreach, particularly of STEM to underrepresented groups
- Geological research

HOBBIES

• Reading • Writing • Yoga • Biking • Hiking • Running • Crafting (Knitting, Crochet, Drawing, Calligraphy) • Figure skating • Dance • Archery

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PUBLICATIONS

Science Articles

Carter, L.B. "Climate affected by extra source of volcanic CO2 degassing." Outcroppings Magazine, Rice University Dept of Earth Science, Fall 2016.

Carter, L.B. & Lin, A. "Extreme Physics and Chemistry Community Workshop, Stanford University, USA." Press Release, Deep Carbon Observatory, Dec 2016.

Peer Reviewed Journal Articles

Carter, L.B. & Dasgupta, R. (2016) Effect of melt composition on crustal carbonate assimilation—Implications for the transition from calcite consumption to skarnification and associated CO2 degassing. Geochem., Geophys., Geosys., v. 17, no. 10, p. 3893-3916.

Carter, L.B. & Dasgupta, R. (2015). Hydrous basalt-limestone interaction at crustal conditions: Implications for generation of ultracalcic melts and outflux of CO2 at volcanic arcs. Earth and Planet. Sci. Let., v. 412, p.132-142.

Carter, L.B. , Skora, S.E., Blundy, J., de Hoog, J.C.M., Elliott, T., (2015). An experimental study of trace element fluxes from subducted oceanic crust. J. of Pet., v. 56, no. 8, p. 1585-1606.

Ridge, J.C. , Balco, G., Bayless, R.L., Beck, C.C., Carter, L.B., Dean, J.L., Voytek, E.B., Wei, J.H. (2012). The New North American Varve Chronology: A Precise Record of Southeastern Laurentide Ice Sheet Deglaciation and Climate, 18.2-12.5kyr BP, and Correlations with Greenland Ice Core Records. Am. J. of Sci., v.312, p. 685-722.

SELECTED PRESENTATIONS

Oral Presentations

Carter, L.B. & Dasgupta, R. "Magma-Carbonate Interactions as a Source of CO2 Outgassing at Continental Arcs." Oral Presentation, Deep Carbon Observatory Extreme Physics and Chemistry Workshop, Stanford, CA, Dec 2016.

Carter, L.B. "Effect of Magma-Crustal Carbonate Interaction on Carbon Cycling and Long-Term Climate," Invited talk, Industry-Rice Earth Science Symposia, Taste of Rice, Nov 2016.

Carter, L.B. & Dasgupta, R. "Crustal Carbonate Assimilation as a Source of CO2 Release at Continental Arcs." Oral Presentation, European Mineralogical Conference, Rimini, Italy, Sept 2016.

Carter, L.B. , & Dasgupta, R. "Basalt-Limestone and Andesite-Limestone Interaction in the Arc Crust–Implications for Volcanic Degassing of CO2." AGU Annual Meeting Oral Presentation, Abstract no. V31G-04, San Francisco, CA, Dec 2014.

Poster Presentations

Carter, L.B. & Dasgupta R. "Magma-Limestone Interaction in the Arc Crust—Implications for Volcanic Degassing of CO2." Deep Carbon Observatory Thematic Institute Poster Presentation and CIDER Poster Presentation, Berkeley, CA, July 2015.

Carter, L.B. & Dasgupta, R. "Basalt-calcite interaction at crustal conditions and implication for volcanic emission of CO2. Abstract no. 3924, Goldschmidt Annual Meeting Poster Presentation, Sacramento, CA, June 2014.

Carter, L.B. , Skora, S.E., Blundy, J. "Experimental Hydrated Partial Melting of Natural Pristine and Altered MORB Beneath Subduction Zones." AGU Annual Meeting Poster Presentation, Abstract no. 1489236, San Francisco, Dec 2012.