Matthew R. Smith

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Education

2005–2012 **Ph.D., Geological Sciences**, *University of Washington*, Seattle, WA.
Advisors: Alan Gillespie & Josh Bandfield

2001–2005 **B.S., Geological Sciences**, *University of Southern California*, Los Angeles, CA.
Honors: Magna Cum Laude
Research Advisor: Frank Corsetti

Research Experience

Jul 2018–Present **Research Associate**, *Harvard University*.
Ongoing modeling of diets and nutrition to assess the role of current and future global environmental changes on access to adequate food and nutrition in a changing world

2014–2018 **Postdoctoral Research Fellow**, *Harvard University*.
Dietary and nutritional modeling to investigate the role of different environmental stressors on nutritional adequacy

2012–2014 **Analyst**, *Lake Partners Strategy Consultants*.
Assessing effect of political and practical barriers to growing agricultural programs in developing countries.

2006–2012 **Research Assistant**, *University of Washington*.
Using satellite and ground measurements to characterize the geological history of Mars and Earth.

2009–2012 **Assistant Editor**, *Quaternary Research*.
Review articles for clarity, content and correct grammar; manage peer-review process by communicating with authors, editors, and reviewers and issue decisions based on reviewer recommendations.

Publications

Inadequate zinc intake in India: Past, present, and future
MR Smith, R DeFries, A Chhatre, S Ghosh-Jerath, and SS Myers, Food and Nutrition Bulletin, 40(1), 2019.

Predicting nutrient content of ray-finned fishes using phylogenetic information
B Vaitla, D Collar, **MR Smith**, SS Myers, BL Rice, and CD Golden, Nature Communications, 9(1), 2018.

Impact of historical changes in coarse cereals consumption in India on micronutrient intake and anemia prevalence
R DeFries, A Chhatre, KF Davis, A Dutta, J Fanzo, S Ghosh-Jerath, SS Myers, ND Rao, and **MR Smith**, Food and Nutrition Bulletin, 39(3), 2018.

Impact of anthropogenic CO2 emissions on global human nutrition
MR Smith and SS Myers, Nature Climate Change, 8(9), 2018.

Trade and the equitability of global food nutrient distribution
SA Wood, **MR Smith**, J Fanzo, R Remans and R DeFries, Nature Sustainability, 1(1), 2018.

Does aquaculture support the needs of nutritionally vulnerable nations?
CD Golden, KL Seto, MM Dey, OL Chen, JA Gephart, SS Myers, **MR Smith**, B Vaitla, EH Allison, Frontiers in Marine Science, 4, 2017.

Anthropogenic carbon dioxide emissions may increase the risk of global iron deficiency
MR Smith, CD Golden, and SS Myers, GeoHealth, 2017. doi:10.1002/2016GH000018

Global trends in dietary micronutrient supplies and estimated prevalence of inadequate intakes
T Beal, E Massiot, JE Arsenault, **MR Smith**, and RJ Hijmans, PLOS ONE, 12(4), e0175554, 2017.

Climate change and global food systems: Potential impacts on food security and undernutrition
SS Myers, **MR Smith**, S Guth, CD Golden, B Vaitla, ND Mueller, AD Dangour, and P Huybers, Annual Reviews of Public Health, 38, 259-277, 2017.

Nutrition: Fall in fish catch threatens human health
Golden CD, EH Allison, WWL Cheung, MM Dey, BS Halpern, DJ McCauley, **MR Smith**, B Vaitla, D Zeller, and SS Myers, Nature, 534, 317-320, 2016.

Global Expanded Nutrient Supply (GENuS) Model: A new method for estimating the global dietary supply of nutrients
MR Smith, R Micha, CD Golden, D Mozaffarian, and SS Myers, PLOS ONE, 2016.

Impact of animal pollinator declines on human nutrition and global health
MR Smith, GM Singh, D Mozaffarian, and SS Myers, The Lancet, 2015.

Hydrated silica on Mars: Combined analysis with near-infrared and thermal-infrared spectroscopy
MR Smith, JL Bandfield, EA Cloutis, and MS Rice, Icarus, 2013.

Geology of quartz and hydrated silica-bearing deposits near Antoniadi Crater, Mars
MR Smith and JL Bandfield, Journal of Geophysical Research (Planets), 2012.

In-scene atmospheric correction of hyperspectral thermal infrared images with nadir, horizontal and oblique view angles
MR Smith, AR Gillespie, H Mizzon, L Balick, JC Jiménez-Muñoz, and JA Sobrino, International Journal of Remote Sensing, 2012.

Crater-fault interactions: A metric for dating fault zones on planetary surfaces
MR Smith, AR Gillespie, DR Montgomery, and J Batbataar, Earth and Planetary Science Letters, 284, p. 151-156, 2009.

Effect of obliteration on crater-count chronologies for Martian surfaces
MR Smith, AR Gillespie, and DR Montgomery, Geophysical Research Letters, 35, L10202, 2008.

Teaching

2006–2010 **Guest Lecturer**, *University of Washington.*

- Space and Space Travel
- Introduction to Remote Sensing
- NASA Research Seminar
- Introduction to Research Methods
- Planetary Geology
- Spectral Remote Sensing
- Martian Geomorphology

2006–2010 **Volunteer Instructor**, *'Rock'ing Out, University of Washington.*
Outreach volunteer for a graduate student-run elementary school teaching organization. Designed demonstrations, visited local classrooms, attended elementary school science nights, and participated in the annual spring UW Open House.

2005–2008 **Graduate Teaching Assistant**, *University of Washington.*
Designed lectures, led discussions, guided field trips, developed curriculum, and graded assignments.
Courses: *Introduction to Geology · Space and Space Travel · Introduction to Remote Sensing*

Invited Presentations

2017 Food Systems, Nutrition and Health in a Changing Environment, *Experimental Biology.*

Symposium: Global Dietary Assessment Architecture: Where Are We? Where Do We Need to Be? And How Can We Get There Faster?, *Experimental Biology.*

Honors and Awards

2017 Top Abstracts in Planetary Health, *The Lancet. Planetary Health/GeoHealth Annual Meeting.*

2012 Career Development Award, *Lunar and Planetary Institute.*

2011 David A. Johnston Memorial Fellowship for Research Excellence, *University of Washington.*
Awarded to the most outstanding graduate student in geology

Howard A. Coombs, Harry Wheeler, and Inquisitive Student Fellowships, *U. of Washington.*

Robert G. and Nadine E. Bassett Graduate Student Research Award, *U. of Washington.*

Graduate School Fund for Excellence and Innovation Travel Award, *U. of Washington.*

2010 Best Paper, *WHISPERS Workshop on Hyperspectral Image and Signal Processing.*

2008 Mars Student Travel Award, 3^{rd} *MSL Landing Site Workshop*, Monrovia, CA.

UW Departmental Travel Award, *AGU Fall Conference*, San Francisco, CA.

2005 Estwing Pick Award, *University of Southern California.*
Awarded for highest GPA and best overall graduating student in department

Honorable mention, Undergraduate Research Symposium *University of Southern California.*
Title: Using Image Compression to Find the Presence of Life in Ordovician Stromatolites

National Association of Geoscience Teachers Field Camp Scholarship.

2001–2005 Dean's List, *University of Southern California.*