

# MARIELLE NATASHA SMITH

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## EDUCATION

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**University of Arizona.** 2010-present. Ph.D. Candidate in Ecology & Evolutionary Biology.

**Imperial College, London.** 2005-2006. MSc Science Communication.

**Cardiff University, Wales.** 2001-2005. BSc Ecology & Environmental Management (First Class Honours).

## PUBLICATIONS

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- **Smith, M. N.**, Taylor, T. C., van Haren, J., Rosolem, R., Restrepo-Coupe, N., de Oliveira, R. C., da Silva, R., da Araujo, A. C., de Camargo, P. B., Huxman, T. E., and Saleska, S. R. *In prep.* *Evidence that tropical forest photosynthesis is not directly limited by high temperatures.*
- **Smith, M. N.**, de Oliveira, E., Ferreira, M., Stark, S. C., van Haren, J., de Oliveira, R. C., Alves, L. F., Figueira, M., Camargo, P. B., Aragao, L., McMahon, S. M., Falk, D., Huxman, T. E., and Saleska, S. R. *In prep.* *El Niño-associated changes in LiDAR-derived LAI and leaf profiles in an eastern Amazonian forest.*
- Stark, C. S., Leitold, V., Schiatti, J., Parker, G. G., McMahon, S. M., Nelson, B., de Almeida, D. R. A., Rosa, D. M., **Smith, M. N.**, Lefsky, M. A., de Oliveira, R. C., Saleska, S. R. *In prep.* *Evaluating the capacity of profiling LiDAR for comprehensive cross-scale LAI and leaf area profile estimation in an Amazonian forest.*
- Albert, L. P., Restrepo-Coupe, N., **Smith, M. N.**, Wu, J., Chavanna-Bryant, C., Prohaska, N., Taylor, T. C., Martins, G., Huxman, T. E., McMahon, S. M., Saleska, S. R. *In prep.* *Ecosystem implications of cryptic phenology: hidden seasonality in Amazon forests and beyond.*
- Taylor, T. C., McMahon, S. M., **Smith, M. N.**, Violle, C., van Haren, J., Simova, I., Jardine, K., Ferreira, L., da Costa, L., Meir, P., Boyle, B., Enquist, B. J., Saleska, S. R. *In prep.* *Isoprene emission links tropical tree community assembly to climate.*
- Hayek, M. N., Longo, M., Wiedemann, K. T., Wu, J., **Smith, M. N.**, Restrepo-Coupe, N., Tapajós, R., da Silva, R., Fitzjarrald, D. R., Camargo, P. B., Huttyra, L., Alves, L. F., Daube, B., Munger, J. W., Saleska, S. R., and Wofsy, S. C. *In review.* *Factors controlling carbon exchange in an eastern Amazon forest: from hours to years.*
- Sides, C. B., Enquist, B. J., Ebersole, J. J., **Smith, M. N.**, Henderson, A. N., Sloat, L. L. (2014). Revisiting Darwin's hypothesis: Does greater intraspecific variability increase species' ecological breadth? *American Journal of Botany*. 101(1): 56-62.

## PRESENTATIONS

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- **Smith, M. N.**, de Oliveira, E., Ferreira, M., Stark, S. C., van Haren, J., de Oliveira, R. C., Alves, L. F., Figueira, M., Camargo, P. B., Aragao L., Saleska, S. R. 2016 (poster). *El Niño-associated changes in LiDAR-derived LAI and leaf profiles in an eastern Amazonian forest.* Ecological Society of America Annual Meeting, Fort Lauderdale.
- **Smith, M. N.**, and Saleska, S. R. 2016 (oral). *Evidence that tropical forest photosynthesis is not directly limited by high temperatures.* EEB departmental seminar, University of Arizona.
- **Smith, M. N.** 2015 (oral). *How will tropical forests respond to increased temperatures?* Presentation to ECOL 302 course, University of Arizona.
- **Smith, M. N.**, Stark, S. C., and Saleska, S. R. 2015 (oral). *Modelling 'The Nothing': Can population demography be used to model forest gap dynamics?* EEB departmental seminar, University of Arizona.

- **Smith, M. N.**, Saleska, S. R. 2014 (oral). *Is the Biosphere 2 tropical forest biome really more temperature tolerant than real world tropical forests?* EEB departmental seminar, University of Arizona.
- **Smith, M. N.**, Stark, S. C., Saleska, S. R., and Taylor, T. C. 2013 (poster). *Leaf area phenology at a site in the Brazilian Amazon from a large-scale study using ground-based LiDAR to look at vertical canopy structure.* Ecological Society of America Annual Meeting, Minneapolis.
- **Smith, M. N.**, and Saleska, S. R. 2012 (oral). *Exploring the patterns, drivers, and implications of leaf area phenology at a site in the Brazilian Amazon.* EEB departmental seminar, University of Arizona.
- Albert, L. P., Wu, J., **Smith, M. N.**, Taylor, T. C., Prohaska, N., Campos, K. S., Bicalho, A. P., and Eltringham, M. 2012 (oral). *Entendendo o futuro da Amazônia sob a mudança da clima.* Universidade Luterana do Brasil (ULBRA) and Universidade Federal do Oeste do Pará (UFOPA), Brazil.
- **Smith, M. N.**, and Enquist, B. J. 2011 (oral). *Carbon accumulation in secondary forests and plantations in the tropics.* Institute of the Environment Grad Blitz, University of Arizona.
- **Smith, M. N.**, and Enquist, B. J. 2011 (poster). *Carbon accumulation in secondary forests and plantations in the tropics.* University of Arizona Student Showcase
- Taylor, T. C., **Smith, M. N.**, Boyle, B., Saleska, S. R., Rosolem, R., and van Haren, J. 2011 (poster). *Enhanced thermal tolerance of the Biosphere 2 tropical forest in response to long-term warming.* Ecological Society of America Annual Meeting, Austin.
- **Smith, M. N.**, Albert, L. P., Taylor, T. C., Wu, J., Huxman, T. E., and Saleska, S. R. 2010 (oral). *How do tropical plants respond physiologically to increased temperatures?* EEB departmental seminar, University of Arizona.

#### AWARDS, GRANTS, AND FELLOWSHIPS

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2016	Institute of the Environment Travel Award
2015	BDFFP (Biological Dynamics of Forest Fragments Project) Thomas Lovejoy research fellowship
Declined	NASA Earth & Space Science Fellowship (21/25 from reviewers in 2014 and 22/25 in 2015)
2013	EEB Graduate Research Fellowship
2013	UA Eye on the Environment photo competition
2012	University of Arizona Galileo Circle scholarship
2011-2012	Biosphere 2 & Carson Scholars Science and Society Fellowship
2011	University of Arizona Graduate/Professional Student Council travel grant
2000	Glaxo Prize for Science, presented by Freman College, Buntingford, UK

#### POSITIONS

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2012-2014	Graduate Research Associate, University of Arizona. Advisor: Scott Saleska.
2011	Graduate Research Associate, Biosphere 2 (B2), University of Arizona. Advisor: Stephen DeLong. Produced an exhibit and outreach activities on water resources to help interpret B2's largest research project, the Landscape Evolution Observatory.
2010, 2012-2015	Graduate Teaching Associate, Ecology & Evolutionary Biology, University of Arizona.
2010	Media Relations Assistant, University of Cambridge, UK. Produced the monthly events poster <i>What's On</i> for the University and the <i>What's On</i> website.

- 2009 Festival Bookings Administrator, Cambridge Science Festival, University of Cambridge, UK. Helped to organise events for the largest free science festival in the UK.
- 2008 Radio producer, Clear Channel Radio Fairbanks, Alaska, USA. Created, produced, and presented a programme called *Energy-Wise* that gave coverage to innovative local energy efficiency solutions.
- 2006-2007 Assistant Ecologist, Capita Symonds Ltd., East Grinstead, UK. Conducted habitat surveys, and surveys for trees, invasive species and protected species. Produced habitat maps using MapInfo software, conducted desk studies, and wrote screening reports and ecological chapters for Environmental Statements.

### **TEACHING EXPERIENCE**

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*Graduate Teaching Associate positions at the University of Arizona:*

- 2010, 2013 & 2015 Ecology (ECOL 302)  
 Taught two lab sections, led field labs, graded section assignments and course exams.
- 2015 Outreach Scholars STEM Education Preparation Program  
 Helped to design syllabus, schedule, and course materials, organised course speakers and field trips, liaised with University outreach centres to organise student training experiences, advised students on their final projects and outreach experiences, and graded assignments.
- 2014 Herpetology (ECOL 483)  
 Taught two lab sections, co-led field trips, graded section assignments and course exams, and managed on-line resources.
- 2012 Vertebrate Physiology (ECOL437)  
 Taught two lab sections, graded section assignments and course exams, and gave a guest lecture.

### **SCIENCE COMMUNICATION AND OUTREACH**

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- February 2016. Led rainforest tours and hands-on demonstrations for the “What if tropical rainforests are resilient to climate change?” event at Biosphere 2.
- October 2014. Spoke to visitors to the rainforest as part of Biosphere 2’s “Discovery Nights” programme.
- December 2013. My photo showing Ty Taylor climbing the eddy flux tower at K67, Brazil, selected for the front of the UA Institute of the Environment Annual Report.
- November 2013. Recorded audio narration about conducting research in the Amazon for “What Happens in the Rainforest Doesn't Stay in the Rainforest” photo exhibit displayed at Biosphere 2 and the Arizona-Sonoran Desert Museum.  
<http://www.crpasaleskalab.com/>
- October 2013. Explained my research to visitors to the tropical rainforest biome as part of Biosphere 2’s open evening programme.
- September 2013. Oral presentation: “Climate change research and adventure in the Brazilian Amazon”, University of Arizona Science Café at Borderlands Brewing, Tucson.
- June 2013. Climbing demonstration and oral presentation about conducting research in the Amazon to 3-5 year olds at St. Mark’s Preschool and Kindergarten, Tucson.
- May 2013. Interviewed by Globo TV about my research in the Amazon and at Biosphere 2.
- April 2013. “Stories from the field: researching Amazonia”. Article for Terrain.org, written with Ty Taylor. [www.terrain.org/2013/currents/researching-amazonia](http://www.terrain.org/2013/currents/researching-amazonia)

- February 2012. Hands-on event at Biosphere 2 guiding visitors to take photosynthesis measurements on plants.
- November 2011. Oral: "Using ecology as a tool to combat global change problems", Biosphere 2.
- December 2010. Oral: "An introduction to conservation biology", Pembroke College Open Day and Cambridge Science Festival, University of Cambridge.
- 2008-2009. Contributed to the *So Far and Yet So Near* show, a global development radio programme broadcast on Cambridge's Community Radio Station (209 Radio).

## **FIELD EXPERIENCE**

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### ***Research Assistant positions***

- March-April 2016 Field campaign in the Biological Dynamics of Forest Fragments Project, near Manaus, Brazil. Planned and led field work to collect forest structure and light environment measurements in secondary forest plots.
- Oct-Nov 2014 2-week field campaign in the Tapajós National Forest, near Santarém, Brazil. Planned and led field work to collect forest structure measurements with ground-based LiDAR.
- Aug 2012-Jan 2013 Collaborative field campaign with other Saleska lab Ph.D. students Loren Albert, Jin Wu, Neill Prohaska, and Ty Taylor, to understand dry season phenology in the Tapajós National Forest, near Santarém, Brazil.
- May-Aug 2011 Graduate Research Associate, University of Arizona. Advisor: Brain Enquist. Field campaign at the Rocky Mountain Biological Laboratory, Colorado investigating intraspecific variation of specific leaf area in herbaceous plants along an elevational gradient.

### ***Field assistant positions***

- Oct 2007 – Jan 2008 Mauritian Wildlife Foundation, Mauritius. Member of small team conducting island-wide survey of the Mauritius kestrel.
- March-June 2007 La Selva Biological Station, Costa Rica. Field assistant to Ph.D. student Steven Whitfield (Florida International University), investigating causes of amphibian and reptile declines.
- June & Sept 2003 A Rocha Portugal, Algarve, Portugal. Field assistant to Dr. Rob Thomas (Cardiff University) on long-term projects investigating migratory bird species (European storm petrels and reed warblers).

### ***Field courses***

- June-July 2012 Tropical Plant Systematics course, Organization for Tropical Studies, Costa Rica. 5-week intensive course to develop skills in tropical plant identification, inventory, classification, and phylogenetic analysis.
- July 2010 Amazon PIRE Field Course: Ecology & Biogeochemistry of the Amazon, near Manaus, Brazil. 2-week graduate field course which provided instruction on a range of different survey methods and instrumentation.
- 2002-2005 Llysdyman Field Centre, Wales. Numerous field courses to Cardiff University's field centre provided training in plant identification, and the capture and identification of small mammals, birds, insects, reptiles and amphibians.
- July 2003 Bialowieza Forest & Biebrza National Park, Poland (with Cardiff University). Conducted surveys of wood boring beetles and aided a researcher assessing weasel populations in the Bialowieza Forest.

**PROFESSIONAL SOCIETY MEMBERSHIP**

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Ecological Society of America  
American Geophysical Union

**LANGUAGES**

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English, Portuguese (advanced), Spanish (beginner), French (beginner).