

Megan K. Nasto

Department of Biology & Ecology Center
Utah State University
megan.nasto@usu.edu | @MegankNasto

EDUCATION

- Ph.D. Forest and Conservation Sciences, 2017
W.A. Franke College of Forestry and Conservation, University of Montana, MT
Dissertation: Nutrient acquisition strategies in tropical rain forests: interactions among nitrogen and phosphorus through plant-microbial mutualisms
- B.S. Environmental Science: Applied Geology, 2011
Northern Arizona University
Thesis: Methane flux response in the presence of nitrogen and phosphorus fertilization across a retrogressive semiarid chronosequence

EXPERIENCE

RESEARCH

- 2017 – **Postdoctoral Fellow**, Department of Biology & the Ecology Center, Utah State University
- 2012 – 2017 **Graduate Research Assistant**, W.A. Franke College of Forestry & Conservation, University of Montana
- 2012 **Laboratory Technician**, Terrestrial Ecosystem Ecology Laboratory, University of Montana
- 2011 **Undergraduate Laboratory Assistant**, Sedimentary Records of Environmental Change Laboratory, Northern Arizona University
- 2011 **Undergraduate Laboratory Assistant**, Amino Acid Geochronology Laboratory, Northern Arizona University
- 2009 – 2011 **Undergraduate Research Assistant/Assistant Crew Leader**, Ecological Restoration Institute, Northern Arizona University

PROFESSIONAL

- 2011 **Forestry Technician**, Ouray Ranger District, USDA Forest Service

TEACHING

- 2014, 2015 **Graduate Teaching Assistant**, “Climate, Hydrology, & Soils,” University of Montana

PUBLICATIONS

In Review

Nasto MK, K Winter, BL Turner, CC Cleveland. Nutrient acquisition strategies augment growth in tropical N₂ fixing trees in nutrient poor soil and under elevated CO₂. *Ecology*.

Soper FM, **MK Nasto**, BB Osborne, CC Cleveland. Nitrogen fixation and foliar nitrogen do not predict phosphorus acquisition in tropical trees. *Journal of Ecology*.

Soper FM, BW Sullivan, **MK Nasto**, BB Osborne, D Bru, CS Balzotti, PG Taylor, GP Asner, AR Townsend, L Philippot, S Porder, CC Cleveland. Remotely-sensed nitrogen influences nitrous oxide emissions in a lowland tropical rainforest. *Ecology*.

Winbourne J, M Harrison, BW Sullivan, S Alvarez-Clare, S Rafaela Lins, L Martinelli, **MK Nasto**, D Piotta, S Rolim, M Wong, S Porder. A framework for evaluating estimates of symbiotic nitrogen fixation in forests. *American Naturalist*.

6. **Nasto MK**, BB Osborne, Y Lekberg, GP Asner, CS Balzotti, S Porder, PG Taylor, AR Townsend, CC Cleveland. 2017. Nutrient acquisition, soil phosphorus partitioning, and competition among trees in a lowland tropical rain forest. *New Phytologist* 214(4): 1506—1517.
5. Osborne BB, **MK Nasto**, GP Asner, CS Balzotti, CC Cleveland, BW Sullivan, PG Taylor, AR Townsend, S Porder. 2017. Climate, topography, and canopy chemistry exert hierarchical control over soil N cycling in a Neotropical lowland forest. *Ecosystems* 25: 637—652.
4. Balzotti CS, GP Asner, PG Taylor, CC Cleveland, R Cole, RE Martin, **MK Nasto**, BB Osborne, S Porder, AR Townsend. 2016. Environmental controls on canopy foliar N distributions in a Neotropical lowland forest. *Ecological Applications* 26(8): 2451—2464.
3. Sullivan BW, **MK Nasto**, SC Hart, BA Hungate. 2015. Proximate controls on semiarid soil greenhouse gas fluxes across 3 million years of soil development. *Biogeochemistry* 125(3): 375—391.
2. **Nasto MK**, S Alvarez-Clare, Y Lekberg, BW Sullivan, AR Townsend, CC Cleveland. 2014. Interactions among nitrogen fixation and soil phosphorus acquisition in lowland tropical rain forests. *Ecology Letters* 17(10): 1282—1289.
1. Sullivan BW, WK Smith, AR Townsend, **MK Nasto**, SC Reed, R Chazdon, CC Cleveland. 2014. Spatially robust estimates of biological nitrogen (N) fixation imply substantial human alteration of the tropical N cycle. *Proceedings of the National Academy of Sciences, USA* 111(22): 8101—8106.

GRANTS, FELLOWSHIPS, SCHOLARSHIPS, & AWARDS

RESEARCH GRANTS

2016 National Science Foundation Doctoral Dissertation Improvement Grant \$18,850

FELLOWSHIPS

| | | |
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| 2016 | Smithsonian Tropical Research Institute Short-Term Fellowship | \$3,000 |
| 2010 | Northern Arizona University Hooper Undergraduate Research Fellowship | \$2,880 |

SCHOLARSHIPS

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| 2016 | George E. Bright Memorial Scholarship, University of Montana | \$2,100 |
| 2015 | Bertha Morton Scholarship, University of Montana | \$3,000 |
| 2015 | George E. Bright Memorial Scholarship, University of Montana | \$2,125 |
| 2014 | George E. Bright Memorial Scholarship, University of Montana | \$2,700 |
| 2013 | Danny On Memorial Scholarship, University of Montana | \$500 |

AWARDS

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| 2016 | INTERFACE Travel Award | \$896 |
| 2014 | Winner of the University of Montana 13 th Annual Graduate Student Research Conference | |

RESEARCH PRESENTATIONS

INVITED PAPERS

- 2017 “Microbial carbon-use efficiency in agroecosystems: the effects of drought and N availability on soil microbial production and respiration.” USDA-NIFA AFRI Bioeconomy Agroecosystems Annual Project Director Meeting, Tampa, FL.
- 2017 “Nutrient acquisition strategies in tropical rain forests: interactions among nitrogen and phosphorus through plant-microbial mutualisms.” Ecology Center, Utah State University, Logan, UT.
- 2016 “Nutrient acquisition strategies in tropical rain forests: interactions among nitrogen and phosphorus through plant-microbial mutualisms.” Symposium: The Carbon Sequestration Potential of Restoration, Piro Biological Station, Osa Conservation, Costa Rica.
- 2016 “Nutrient acquisition strategies in tropical rain forests: interactions among nitrogen and phosphorus through plant-microbial mutualisms.” Piro Biological Station, Osa Conservation, Costa Rica.

CONTRIBUTED PAPERS

- 2017 **Nasto MK**, K Winter, BL Turner, CC Cleveland. “Nutrient acquisition strategies promote high growth in tropical nitrogen fixing trees under elevated CO₂.” Ecological Society of America, Portland, OR.
- 2016 **Nasto MK**, BB Osborne, M Lopez Morales, Y Lekberg, CC Cleveland. “Soil phosphorus partitioning reduces competition among nitrogen fixing and non-nitrogen fixing trees in tropical rain forests.” INTERFACE Workshop: Phosphorus Cycling in Terrestrial Ecosystems, Townsend, TN. (poster)

- 2015 **Nasto MK**, S Alvarez-Clare, Y Lekberg, BW Sullivan, AR Townsend, CC Cleveland. "Symbiotic dinitrogen fixation enhances soil phosphorus acquisition strategies in tropical forests." Soil Ecology Society, Colorado Springs, CO.
- 2014 **Nasto MK**, S Alvarez-Clare, Y Lekberg, BW Sullivan, AR Townsend, CC Cleveland. "Interactions among nitrogen fixation and soil phosphorus acquisition in lowland tropical rain forests." Ecological Society of America, Sacramento, CA.
- 2014 **Nasto MK**, S Alvarez-Clare, Y Lekberg, BW Sullivan, AR Townsend, CC Cleveland. "Symbiotic dinitrogen fixation enhances phosphorus acquisition in lowland tropical rain forests." University of Montana Graduate Research Symposium, Missoula, MT.
* Winner of the University of Montana 13th Annual Graduate Student Research Conference
- 2013 **Nasto MK**, BW Sullivan, CC Cleveland. "Does biological nitrogen fixation enhance phosphorus acquisition in lowland tropical rainforests?" University of Montana Graduate Research Symposium, Missoula, MT.
- 2011 **Nasto MK**, BW Sullivan. "Methane flux response in the presence of nitrogen and phosphorus fertilization across a retrogressive semiarid chronosequence." Northern Arizona University Undergraduate Research Symposium, Flagstaff, AZ.

COAUTHORED CONTRIBUTED PAPERS

- 2017 Cleveland CC, **MK Nasto**, BL Turner, N Fierer, AN Shaw. "How do diverse ecosystems overcome low soil phosphorus? Mechanisms, implications, and meditations." Ecological Society of America, Portland, OR.
- 2017 Osborne BB, **MK Nasto**, GP Asner, CS Balzotti, CC Cleveland, PG Taylor, AR Townsend, S Porder. "Canopy nitrogen is correlated with litter and soil nitrogen in a lowland tropical forest." Ecological Society of America, Portland, OR.
- 2017 Soper FM, **MK Nasto**, BW Sullivan, BB Osborne, S Porder, CC Cleveland. "Canopy nitrogen heterogeneity influences denitrification rates in a lowland tropical forest." Ecological Society of American, Portland, OR.
- 2016 Osborne BB, **MK Nasto**, GP Asner, CS Balzotti, CC Cleveland, BW Sullivan, PG Taylor, AR Townsend, S Porder. "Canopy tree species drive local heterogeneity in soil nitrogen availability." American Geophysical Union, San Francisco, CA.
- 2015 Castle SC, BW Sullivan, R Jones, **MK Nasto**, A Ballantyne, A Hursh, CC Cleveland. "Landuse determines soil microbial community resistance and resilience to climate change in the lowland tropics." Ecological Society of America, Baltimore, MD.
- 2015 Marklein AR, **MK Nasto**, BW Sullivan, CC Cleveland. "Interactions among plants, symbiotic N-fixing bacteria, and arbuscular mycorrhizal fungi in tropical rain forest: Results from a theoretical model." Ecological Society of America, Baltimore, MD.
- 2015 Osborne BB, **MK Nasto**, GP Asner, CC Cleveland, BW Sullivan, PG Taylor, AR Townsend, S Porder. "Geomorphology and canopy chemistry influence soil nitrogen availability on

- variable time scales in a lowland tropical forest.” Ecological Society of America, Baltimore, MD.
- 2015 Sullivan BW, **MK Nasto**, S Alvarez-Clare, RJ Cole, SC Reed, R Chazdon, EA Davidson, CC Cleveland. “Trends in nitrogen and phosphorus cycling are consistent and constrained during tropical secondary forest succession: is secondary forest young primary forest from a nutrient perspective?” American Geophysical Union, San Francisco, CA. (poster)
- 2015 Sullivan BW, **MK Nasto**, S Alvarez-Clare, SC Reed, CC Cleveland. “Nitrogen and phosphorus fertilization alters biological nitrogen fixation in lowland tropical rainforest.” Ecological Society of America, Baltimore, MD.
- 2015 Townsend AR, CC Cleveland, GP Asner, PG Taylor, BB Osborne, **MK Nasto**, WR Wieder, BW Sullivan. “One size does not fit all: Multi-scale heterogeneity in the lowland tropical N cycle.” Ecological Society of America, Baltimore, MD.
- 2013 Cleveland CC, BW Sullivan, **MK Nasto**. “Nutrient constraints on carbon cycling in tropical forests.” Invited Seminar, Department of Integrative Biology, University of Texas, Austin, TX.
- 2013 Sullivan BW, **MK Nasto**, SC Reed, RL Chazdon, CC Cleveland. “Patterns and rates of biological nitrogen fixation during secondary succession in a lowland tropical rain forest.” Ecological Society of America, Minneapolis, MN.
- 2013 Sullivan BW, **MK Nasto**, SC Reed, E Ortis, B Vilchez, R Chazdon, CC Cleveland. “Rates and patterns of biological nitrogen fixation during secondary succession in a lowland tropical rain forest.” Association for Tropical Biology and Conservation, San Jose, Costa Rica.
- 2011 Sullivan BW, **MK Nasto**, SC Hart, BA Hungate, RA Parnell. “Soil fluxes of CO₂, CH₄, and N₂O after fertilization across a three million year old soil age gradient.” Ecological Society of America, Austin, TX.

SERVICE

JOURNAL REFEREE

Biogeochemistry

Frontiers in Plant Science

Nutrient Cycling in Agroecosystems

Ecology

Global Change Biology

Oecologia

PROFESSIONAL SERVICE

2017 – Webmaster, Ecological Society of America Biogeosciences section

2016 Invited participant, “INTERFACE Workshop: Phosphorus Cycling in Terrestrial Ecosystems,” Townsend, TN

2016 Symposium co-organizer, “The Carbon Sequestration Potential of Restoration,” Piro Biological Station, Osa Conservation, Costa Rica

INSTITUTIONAL SERVICE

- 2014 – 2017 Executive Board Member, Interdisciplinary Collaborative Network, University of Montana | www.montanaicn.com
- 2014 – 2016 Senator, Graduate and Professional Student Association, University of Montana
- 2013 – 2016 Organizer, W.A. Franke College of Forestry & Conservation Graduate Student Seminar, University of Montana

EDUCATIONAL SERVICE

- 2014 – 2017 Blogger, Interdisciplinary Collaborative Network, University of Montana
- 2014 – 2017 Science Educator, spectrUM Discovery Area, University of Montana
- 2013 – 2017 Judge, Montana State Science Fair

PROFESSIONAL SOCIETIES

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| American Geophysical Union | Association for Women Soil Scientists |
| Earth Science Women's Network | Ecological Society of America |
| Interdisciplinary Collaborative Network | International Mycorrhiza Society |
| Soil Ecology Society | Soil Science Society of America |

ADVISORS & REFERENCES

ADVISOR

Postdoctoral Dr. John Stark, Utah State University | jstark@biology.usu.edu
PhD Dr. Cory Cleveland, University of Montana | cory.cleveland@umontana.edu

ADDITIONAL REFERENCES

Dr. Benjamin Sullivan, University of Nevada, Reno | bsullivan@cabnr.unr.edu
Dr. Ylva Lekberg, MPG Ranch | ylekberg@mpgranch.com
Dr. Stephen Porder | stephen_porder@brown.edu
Dr. Ashley Ballantyne | ashley.ballantyne@umontana.edu