

## Fernanda Santos

UC Chancellor's Postdoctoral Fellow  
School of Natural Sciences, University of California Merced

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*Research areas: global change and soil biogeochemistry, terrestrial-aquatic ecosystems*

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### EDUCATION

Ph.D., **Earth and Environmental Sciences**, The Graduate Center, City University of NY 2014  
Dissertation title: Carbon and nitrogen dynamics from slow pools of soil organic matter in a temperate forest: pyrogenic organic matter and root litter. Advisor: Dr. Jeffrey A. Bird

MA, **Physical Geography**, Hunter College, City University of NY 2007  
Thesis title: Quantifying the scales of the land surface heterogeneity.  
Advisor: Dr. Haydee Salmun

BS, **Geography**, State University of Rio de Janeiro, Brazil 2004  
Independent research title: The effect of two distinct land cover types on the characteristics and properties of a soil to assess its degradation conditions: Estrangina microbasin, Petrópolis, Rio de Janeiro. (*Estudo comparativo entre o efeito de duas coberturas vegetais distintas sobre as características e propriedades de um solo, para fins de avaliação das condições de degradação do mesmo: microbia da Estrangina, Petrópolis, RJ.*)  
Advisor: Dr. Neusa Maria Costa Mafra; Co-advisor: Dr. Beata Eموke Madari

Teaching certificate (*Licenciatura*), **Geography**, State University of Rio de Janeiro, Brazil 2004

### RESEARCH EXPERIENCE

**UC Chancellor's Postdoctoral Fellow**, *University of California-Merced, CA* 2017-present  
PIs.: Dr. Asmeret Asefaw Berhe (UC Merced) and Dr. Sanjai Parikh (UC-Davis)

**Postdoctoral Scholar**, *University of California-Merced, CA* 2015-2017  
PI.: Dr. Asmeret Asefaw Berhe

**Visiting Scientist**, *Florida International University, FL* March, 2015

**Postdoctoral Research Associate**, *Michigan State University, MI* February 2014-April 2015  
PI.: Dr. Jessica Miesel

**Graduate Research Assistant**, *School of Earth and Environmental Sciences Queens College, CUNY, Flushing, NY* 2012, 2011, 2008

<b>Research Fellow</b> , <i>Univ. of Michigan Biological Station, Pellston, MI</i>	2012-2009
<b>Visiting Graduate Student</b> , <i>Global Institute of Sustainability, Arizona State U., AZ</i>	2011
<b>Visiting Graduate Student</b> , <i>Department of Geography, U. of Zurich, Switzerland</i>	2010
<b>Graduate Research Assistant</b> , <i>Department of Geography, Hunter College, CUNY, NY</i>	2007-2005
<b>Undergraduate Research Assistant</b> , <i>Soil Research Institute of the Brazilian Agricultural Research Corporation, Rio de Janeiro, Brazil</i>	2004-2001
<b>Undergraduate Research Assistant</b> , <i>State U. of Rio de Janeiro, Rio de Janeiro, Brazil</i>	2002-2001

### AWARDS AND HONORS

- 2018. Interdisciplinary Small Grants Program, UC Merced (\$3,000)
- 2017. Recipient of the University of California Chancellor's Postdoctoral Fellowship (\$120k)
- 2016. NSF ASSIST Travel Grant to attend the Society of Hispanic Professional Engineers Faculty Development Institute organized by the Society of Hispanic Professional Engineers.
- 2015. Finalist - U. of California President's Postdoctoral Fellowship Program
- 2015. Novus Research Coordination Network Scientist Exchange Program (\$1,500)
- 2015. Michigan State University/Committee on Institutional Cooperation (CIC, \$500)
- 2015. CIC/Alliances for Graduate Education and the Professoriate (\$250)
- 2014. Fulbright Scholar travel award proposal recommended for funding in the first phase of a rigorous review process.
- 2013. Office of the Dean of the Division of Mathematics and Natural Sciences, QC, CUNY (\$250)
- 2012. Paul Roux Scholarship Fund, School of Earth and Environmental Sciences, QC, CUNY (\$1,000)
- 2012. U. of Michigan Biological Station Mort Neff Graduate Student Research Fund (\$1,020)
- 2011. U. of Michigan Biological Station Henry Allan Gleason Fellowship (\$2,080)
- 2011-2009. NSF-IGERT Biosphere-Atmosphere Research and Training Fellowship (\$60,000)
- 2009-2007. CUNY The Graduate Center Science Fellowship (\$24,000)
- 2009. Research Grant for CUNY Doctoral Students (\$1,000)
- 2008. CUNY Alliances for Graduate Education and the Professoriate Summer Grant (\$5,000)
- 2008. Sue Rosenberg Zalk Travel & Research Fund Award (\$300)
- 2008-2007. NSF/CUNY Alliances for Graduate Education and the Professoriate Grant (\$2,550)
- 2008. Geological Society of America Joint Annual Meeting Student Travel Fund Award (\$75)
- 2006. Gamma, Theta, Upsilon International Geographical Honor Society

2006. Society of Woman Geographers Graduate Fellowship Award (\$5,000)

## WORKS IN PROGRESS

Delgado-Baquerizo, Manuel; Richard Bardgett , Peter Vitousek , Fernando Maestre , Mark Williams , David Eldridge , Hans Lambers , Antonio Gallardo , Osvaldo Sala , Sebastián Abades , Fernando Alfaro , Asmeret Asefaw Berhe , Matthew Bowker , Courtney Currier , Nick Cutler , Laura García-Velázquez , Stephen Hart , Patrick Hayes , Zeng-Yei Hseu , Martin Kirchmair , Sigrid Neuhauser , Victor Peña , Cecilia Pérez , Sasha Reed , **Fernanda Santos**, Christina Siebe , Benjamin Sullivan , Luis Weber-Grullon , Noah Fierer. The fate of belowground biodiversity during pedogenesis. *Proceedings of the National Academy of Sciences of the United States of America Science Journal* (in review).

Felipe Bastida, Carlos García, Noah Fierer, David J. Eldridge, Matthew A. Bowker, Sebastián Abades, Fernando D. Alfaro, Asmeret Asefaw Berhe, Nick A. Cutler, Antonio Gallardo, Laura García-Velázquez, Stephen C. Hart, Patrick E., Hayes, Teresa Hernández, Zeng-Yei Hseu, Nico Jehmlich, Martin Kirchmair, Hans Lambers, Sigrid Neuhauser, Víctor M. Peña-Ramírez, Cecilia A. Pérez, Sasha C. Reed, **Fernanda Santos**, Christina Siebe, Benjamin W. Sullivan, Pankaj Trivedi, Alfonso Vera, Mark A. Williams, José Luis Moreno, Manuel Delgado-Baquerizo. Unravelling the direction and magnitude of the priming effect in soils across the globe. *Proceedings of the National Academy of Sciences of the United States of America Science Journal* (in review).

Stutz, Kenton P.; Kaiser, Klaus; Wambsganß, Janna; **Santos, Fernanda**; Berhe, Asmeret Asefaw; Lang, Friederike. Lignin from white-rotted European beech deadwood and soil physicochemical processes. *Biogeochemistry* (in review).

Jason James, Cole Gross, Pranjal Dwivedi, Tyler Myers, **Fernanda Santos**, Rodolpho Bernardi, Marianne Fidalgo de Faria, Irae Guerrini, Rob Harrison, David Butman. The influence of land-use change on the radiocarbon age, lability, and spectroscopic characteristics of soil carbon and extractable organic matter in Brazilian oxisols. *Geoderma* (in review).

## MANUSCRIPTS IN PREPARATION

**Santos, F.**, Rice, D., Bird, A. J., Berhe, A. A. Effects of soil depth and pyrolysis temperature on pyrogenic matter degradation: a laboratory incubation study. *Biogeosciences* (in preparation; manuscript available upon request).

Future of Fire Consortium (it includes **Fernanda Santos** as a co-author). Fire as a fundamental ecological process. *Journal of Ecology/Essay Review* (in preparation).

## PAPERS PUBLISHED OR IN PRESS

**Santos, F.**, Jackson, B. K. Wymore. A.S., Mažeika P. S., McDowell, W. H., Berhe, A. A. Fire severity, time

since fire and site-levels characteristics influence streamwater chemistry at baseflow conditions in catchments of the Sierra Nevada, California, USA. *Fire Ecology* (accepted).

**Santos, F.**, Abney, R., Barnes, M., Jin, L., Moreland, K., Bogie, N., Sulman, B., Ghezzehei, T. A., Berhe, A. A. (2018) The role of soil physical properties for determining biogeochemical responses to soil warming. *In: Ecosystem Consequences of Soil Warming: Microbes, Vegetation, Fauna and Soil Biogeochemistry*. Editor: Jacqueline Mohan.

**Santos, F.**, Wagner, S., Rothstein, D., Miesel, J. R., Jaffe, R. 2017 Impact of a historical fire event on pyrogenic carbon stocks and dissolved pyrogenic carbon in spodosols in Northern Michigan. *Frontiers in Earth Science: Biogeoscience. Research topic: From Fires to Oceans: Dynamics of Fire-Derived Organic Matter in Terrestrial and Aquatic Ecosystems*.

**Santos, F.**, Russell, D., Berhe, A. A. 2016. Thermal alteration of water extractable organic matter in climosequence soils from the Sierra Nevada, California. *Journal of Geophysical Research: Biogeosciences* 121, 2877–2885.

**Santos, F.**, Nadelhoffer, K., & Bird, J. A. 2016. Rapid fine root C and N mineralization in a northern temperate forest soil. *Biogeochemistry*, 128(1-2), 187-200.

**Santos, F.**, Fraser, M. P., Bird, J. A. 2014. Atmospheric black carbon deposition and characterization of biomass burning tracers in a northern temperate forest in MI, USA. *Atmospheric Environment* 95, 383-390.

**Santos, F.**, Torn, M.S., Bird, J.A., 2012. Biological degradation of pyrogenic organic matter in temperate forest soils. *Soil Biology & Biochemistry* 51, 115-124.

Chatterjee, S., **Santos, F.**, Abiven, S., Itin, B., Stark, R. E., Bird, J. A., 2012. Elucidating the chemical structure of pyrogenic organic matter by combining magnetic resonance, mid-infrared spectroscopy and mass spectrometry, *Organic Geochemistry* 51, 35-44.

Yarnes, C., **Santos, F.**, Singh, N., Abiven, S., Schmidt, M.W.I., Bird, J.A., 2011. Stable isotopic analysis of pyrogenic organic matter in soils by liquid chromatography–isotope-ratio mass spectrometry of benzene polycarboxylic acids. *Rapid Communications in Mass Spectrometry* 25, 3723-3731.

Salmun, H., Molod, A., Albrecht, J., **Santos, F.**, 2009. Scales of variability of surface vegetation: Calculation and implications for climate models. *Journal of Geophysical Research: Biogeosciences*, 114, G02007.

Andrade, A. G. ; Mendes, C. A. R. ; Mahler, C. F. ; Lumbreiras, J. F. ; **Santos, F. A.** ; Portocarrero, Hugo; Carvalho, G. F., 2004. Aspectos da Perda de Solos: A Agricultura Migratória e a Convencional. [*Soil losses: shifting cultivation versus conventional farming*] In: Resende, A. S. de; Campello, E. F. C. (Org.). Seminário Sobre Agricultura Migratória na Região Serrana do Rio de Janeiro. : Embrapa Agrobiologia, p. 40-52.

Mafra, N. M. C. ; Lopes, M. R. S. ; Sathler, R. ; Lisboa, A. ; Mendes, L. D.; Portocarrero, H. ; Santos, F. ; Ull, F. V., 2002. Inventário das condições do meio físico para avaliação do potencial das terras com fins de planificação de uso: Aplicação às bacias hidrográficas nos distritos de Posse e Pedro do Rio, município de Petrópolis, RJ. [*Inventory of landscape's physical characteristics to assess land-use potential and planning: the case of watersheds in Posse and Pedro do Rio districts, municipality of Petropolis, RJ*]. In: G. J. Marafon; M. F. Ribeiro. (Org.). Estudos de Geografia Fluminense. Rio de Janeiro: Livraria e editora Infobook Ltda, p. 1-208.

## TEACHING EXPERIENCE

<b>Guest Lecturer</b> , Chemical properties of soils, <i>UC-Merced</i>	2018
<b>Guest Lecturer</b> , Nitrogen cycle, <i>UC-Merced</i>	2017
<b>Guest Lecturer</b> , Critical Zone Science, <i>UC-Merced</i>	2016
<b>Guest Lecturer</b> , “What is soil, and what do we investigate?” <i>UC-Merced</i>	2015
<b>Guest Lecturer</b> , “Energy, radiation and greenhouse effects”, Physical Geography, <i>Department of Earth, Environmental, and Geographic Sciences, Northern Michigan University</i>	2015
<b>Guest Lecturer</b> , “Physical and chemical properties of soils”, Forest Ecology, <i>Department of Forestry, Michigan State University</i>	2014
<b>Guest Lecturer</b> , “Soils”, Earth System Sciences, <i>School of Earth and Environmental Sciences, Queens College, CUNY</i>	2013
<b>Adjunct Instructor</b> , Introduction to the Environment, <i>School of Earth and Environmental Sciences, Queens College, CUNY</i>	2007, 2008, 2012, 2013
<b>Adjunct Instructor</b> , Weather and Climate, <i>Department of Geography, Hunter College, CUNY</i>	2007
<b>Language Instructor</b> , Portuguese, <i>Inlingua Language Center, New York</i>	2006-2007
<b>Teaching intern</b> , Geography, <i>Centro Supletivo de Ensino Fundamental e de Ensino Médio (Adult Education) – InvestUERJ, State University of Rio de Janeiro</i>	2002

## STUDENTS MENTORED

Naivy Morales, undergraduate student. Mentored Naivy in the lab.	2018
Lesly Lopez, graduate student. Mentorship support as part of the UC-Merced Women in STEM mentoring program.	2018
Angel Kongsomboonvech, graduate student. Mentorship support as part of the UC-Merced Women in STEM mentoring program.	2017
Morgan Barnes, graduate student. Mentorship support as part of the UC-Merced Women in STEM mentoring program.	2015-2017

Diana Lu, Grade 11, Detroit Country Day School, MI. Co-mentored Diana over a seven-week 2014 period as part of the Michigan State University High School Honors Science/ Mathematics/Engineering Program.

## **TECHNICAL SKILLS**

- Molecular characterization of organic compounds: liquid-state  $^1\text{H}$  Nuclear Magnetic Resonance Fourier, transform infrared (FTIR) spectroscopy Diffuse Reflectance (DRIFT), and UV-VIS
- Pyrogenic C in soil, air, and water: benzene polycarboxylic acids approach; chemical-oxidation method; thermo/optical approach; molecular markers approach
- Microbial community: phospholipid fatty acids (PLFAs)
- Carbon and nitrogen stable isotopes:  $^{13}\text{C}$  in soils,  $\text{CO}_2$ , dissolved organic C, and PLFAs;  $^{15}\text{N}$  in soils, and total inorganic nitrogen
- Stable isotope ( $^{13}\text{C}$  and  $^{15}\text{N}$ ) labeling of plants
- High performance liquid and gas chromatography; isotope ratio mass spectrometry ( $^{13}\text{C}$ , liquid and gas), and spectrophotometry (UV-VIS), C and N elemental analyzer for solid samples (dry combustion, and Walkley-Black method for soil C)
- Scanning electron microscope
- Batch sorption experiment
- Iron and aluminum oxides and dissolved organic matter extraction techniques
- Soil organic matter density fractionation method
- Water-stable aggregates in soils

## **COMPUTER SKILLS**

- Microsoft Excel, Linux, Sigma Plot, SPSS, Systat, R, MestReNova, Matlab, ArcGIS, QGIS, Fragstats

## **SHORT COURSES**

- Radiocarbon Short Course, U. of California-Irvine, July 21-26, 2014
- Stable Isotope Biogeochemistry & Ecology (Iso-Camp), U. of Utah, June 9-20, 2008

## **PROFESSIONAL DEVELOPMENT AND ASSOCIATIONS**

- Future of Fire Workshop, Chautauqua National Historic Landmark, Boulder, CO, November 6-7, 2017
- Faculty Development Institute, Society of Hispanic Professional Engineers, Seattle, November 3<sup>rd</sup>, 2016

- Wildland Fire Science Workshop, NatureBridge Crane Flat Campus, Yosemite National Park, August 15 & 16, 2016
- Student Engagement in (Large-Enrollment) Classrooms – Special Topic, UC Merced Center for Engaged Teaching & Learning, June 17<sup>th</sup>, 2016
- Climate & Water Tools & Resources for Informed Agricultural Decisions. Center for Climate Communication Workshop Series. UC Merced, May 12<sup>th</sup>, 2016
- Cross-Critical Zone Observatory Biogeochemistry Workshop. UC Riverside, September 28-29, 2015
- Mastering the classroom with 1<sup>st</sup> generation college students, UC Merced Center for Engaged Teaching & Learning, May 6<sup>th</sup>, 2015
- Developing Communication and Conflict Management Skills for Successful Collaborations Workshop, Michigan State University, February 6, 2015
- How to be a successful professional workshop, Michigan State University, January 31, 2015
- Write winning grant proposals workshop, Michigan State University, January 8, 2015
- MSU NSF-AGEP Alliance for Graduate Education and the Professoriate, Fall 2014
- Networking and communication, Earth Science Women’s Network, U. of Wisconsin-Madison, June 4-6, 2012
- Soil Science Society of America; American Geophysical Union; Society of Woman Geographers; Association for Women Soil Scientists; Sociedade Brasileira de Ciência do Solo

**COLLABORATORS (Past 48 months)**

Baquerizo, D. M. (U. of Colorado-Boulder); Berhe, A. A. (UC Merced); Bird, J. A. (CUNY); Butman, D. (U. of Washington), Fierer, Noah (U. of Colorado-Boulder); Fraser, M. (Arizona State U.); Ghezzehei, A.T. (UC Merced); Jaffe, R. (Florida International U.); Lang, F. (Albert Ludwig U. of Freiburg, Germany); LiWang, A. (UC Merced); Maestrini, B. (U. of Zurich); McDowell, W. (U. of New Hampshire), Midgley, M. (The Morton Arboretum); (Miesel, J. (Michigan State U.); Nadelhoffer, N. (U. of Michigan); Parikh, S. (UC-Davis); Rice, D. (UC Merced); Rhoades, C.(U.S. Forest Service); Rothstein, D. (Michigan State U.); Russell, D. (Genentech); Sulman, B. (Sierra Nevada Research Institute, UC Merced), Wagner, S. (Skidaway Institute of Oceanography); Wymore, A. (U. of New Hampshire), Yan, J (UC Merced).

## SERVICES

### Leadership Recognition and Committees

- NEON Terrestrial Biogeochemistry Technical Working Group Present
- NSF Research Traineeship Program Present
- Outstanding Women Leadership Subcommittee 2018
- AGU Biogeosciences Early Career Committee 2017
- Recipient of the Outstanding Womxn's Award at the Womxn's Empowerment Conference, UC Merced 2017
- Chair of The Union for Postdocs (UAW5810) at UC-Merced 2016 to 2018
- Treasurer - Woman in Science, Technology, Engineering, and Math, UC-Merced 2015 to 2017
- Executive and Admissions Committee, Earth and Environmental Sciences Ph.D. program, The Graduate Center, CUNY 2008-2010

### Symposium co-organizer and/or moderator

- Symposium: New Insights on Biogeochemical Processes in Forest Ecosystems as Revealed by Isotopic and Biomarker Approaches, Soil Science Society of America 2017
- Graduate Students Research Symposium, MSU 2015

### Outreach

- 2018 Fernanda Santos and Benjamin Sulman. "Soil Science at UC Merced". 1<sup>st</sup> Earth Science Sustainability Festival (K-12), April 28, Patterson, CA
- 2018 Fernanda Santos and Michelle Gilmore. "The Science of Fire". Edison Science Days event (6th-grade), April 26. Shaver Lake, CA.

### Manuscript reviewer

- Global Change Biology
- Biogeochemistry
- Soil Biology and Biochemistry
- European Journal of Soil Science
- Soil Research
- Geoderma
- Environmental Chemistry
- Water
- Journal of Visualized Experiments
- Ecological Indicators

### Seminar and conferences

- Co-organizer of the Enviro-Lunch Seminar, UC-Merced 2015-2017



- Co-leader of the W-STEM Grant Writing Workshop Event, UC-Merced 2016
- Co-leader of the W-STEM Mentoring Program Kick-Off Event, UC-Merced 2015
- Co-organizer of GeoSeminar Series, CUNY 2006-2007
- Volunteer of the 3<sup>rd</sup> International Conference on Land Degradation and Meeting of the IUSS Subcommittee C-ICLD3 2001

## LANGUAGE PROFICIENCY

Portuguese (native speaker); English (fluent); Spanish (read well)

## INVITED TALKS

**Santos, F.** (forthcoming, 2019) Symposium presenter. Symposium: Soils of Wildfire-affected Landscapes: Linking Belowground Ecology & Watershed Processes. *Soil Science Society of America Annual Meeting, San Diego, California.*

**Santos, F.** (2018) The effects of fire on soil carbon dynamics. Seminar Series. *Department of Earth and Environmental Sciences (October), University of California, Irvine.*

**Santos, F.** (2018) Dynamics of fire-transformed organic carbon in soils. *UC Merced Environmental Systems Seminar (September), University of California, Merced*

**Santos, F.** (2018) O fogo que arde sem se ver: Biogeociências e os efeitos dos incêndios na matéria orgânica do solo e da água. *Multidisciplinary Institute of Federal Rural University of Rio de Janeiro, Nova Iguaçu, Brazil.*

**Santos, F.** (2018) Ecosystem perturbations and soil organic matter dynamics: soil responses and implications for freshwater systems. *Ecology and Evolutionary Biology Seminar (March), University of California, Irvine*

**Santos, F.** (2018) Postdoctoral panelist speaker of the W-STEM organization at the University of California, Merced. *February 22.*

**Santos, F.** (2017) Impacts of fire on soils and rivers. *UC Merced Environmental Systems Seminar (September), University of California, Merced*

**Santos, F.** (2016) Heat-induced changes in water- extractable soil organic matter. *Enviro-Lunch Seminar (February), University of California, Merced*

**Santos, F.** (2015) Tracing the fate of slow cycling soil C pools in temperate forests. *Department of Forestry (January) Hanover Seminar, Michigan State University*

## POSTER AND ORAL PRESENTATIONS

### 2017

**Santos, F.**; Bird, J.A.; Berhe, A.A.. Responses of soil carbon turnover rates to pyrogenic carbon additions to a forest soil of Sierra Nevada, California: effects of pyrolysis temperature and soil depth. *American Geophysical Union Annual Meeting, New Orleans, LA*

**Santos, F.**; Bird, J.A.; Berhe, A.A. (forthcoming). Effects of pyrolysis temperature and soil depth on pyrogenic carbon dynamics from a forest soil of Sierra Nevada, California. *Soil Science Society of America annual meeting. Tampa, FL*

### 2016

**Santos, F.**, Wymore, A., Berhe A. A. Thermal alteration of dissolved organic matter: observations from a lab heating experiment and fire-impacted watersheds of the Sierra Nevada, California. *American Geophysical Union Annual Meeting, San Francisco, CA*

**Santos, F.**, Russell, D., Berhe A. A. Chemical structure of WEOC from thermally-altered soils of Sierra Nevada, California. *2016 ASA, CSSA, and SSSA Annual Meeting in Phoenix, AZ*

### 2015

**Santos, F.**, Wagner, S., Rothstein, D., Miesel, J., Jaffe, R. Evaluating the influence of fire history on dissolved pyrogenic C exported from coniferous and deciduous forest soils in the northern Great Lakes Region. *American Geophysical Union Fall Meeting (December), San Francisco, CA*

**Santos, F.** Transformations and fate of fire-derived (pyrogenic) C in soils. *School of Natural Sciences, Spotlight Social for Postdocs (December), University of California, Merced*

**Santos, F.** Carbon goes on: transformations and fate of fire-derived C in soils. *Enviro-Lunch Seminar (September), University of California, Merced*

### 2013

**Santos, F.** C and N dynamics of slow turnover soil organic matter in temperate forests: pyrogenic organic matter and fine roots. *School of Earth and Environmental Sciences Fall 2013 Colloquium, Queens College, CUNY*

**Santos, F.**; Nadelhoffer, K., Bird, J. A. (November). Environmental controls of fine-roots decomposition dynamics in a northern temperate forest soil. In *Soil Science Society of America meeting, Tampa, FL*

Bird\*, J. A.; **Santos, F.**; Winner, A.; Singh, N.; Maestrini, B.; Abiven, S.; Schmidt, M. W. I.; Torn, M. S. (September). Turnover and microbial utilization of pyrogenic organic matter in forest soils. In

246<sup>th</sup> American Chemical Society National Meeting and Exposition. \*Presenter

## 2010

**Santos, F.**; Torn, M.; Bird, J. A. (December). An incubation study on black carbon degradation in temperate forest soils. In *University of California Stable Isotope Facility Symposium*, Davis, CA.

**Santos, F.**; Fraser, M.; Bird, J. A. (December). Measurements of black carbon aerosols in a rural temperate forest in Northern Michigan. In *American Geophysical Union Fall Annual Meeting*.

**Santos, F.**, Torn, M.S. and Bird\*, J. (March). Microbial utilization of black carbon in temperate forest soils. In *Stable isotopes and biogeochemical cycles in terrestrial ecosystems*. \*Presenter

**Santos, F.** A study of black carbon biological degradation, export pathways and atmospheric deposition in a temperate forest soil (Michigan, USA). (February). *Department of Geography Seminar, University of Zurich, Switzerland*.

## 2009

**Santos, F.** Quantifying black carbon dynamics in a temperate forest ecosystem. *School of Earth and Environmental Sciences Fall 2009 Colloquium, Queens College, CUNY*

## 2008

**Santos, F.**; Bird, J. A., & Torn, M. S. (2008, December). Biological Degradation of Black Carbon in Temperate Forest Soils: Effects of Clay Mineralogy and Nitrogen Availability. In *AGU Fall Meeting Abstracts* (Vol. 1, p. 0369).

## 2003

**Santos, F. A.**, Mafra, N. M. C., Madari, B. E. Identificação de mudanças nas características e propriedades de um solo sob cobertura vegetal distinta na microbacia da Estrangina, Petrópolis, RJ. Rio de Janeiro: X Simpósio Brasileiro de Geografia Física Aplicada. In: Revista do Departamento de Geografia - GEOUERJ (Edição Especial). Rio de Janeiro: UERJ, Departamento de Geografia, 2003. [ISSN 1415-7543]

**Santos, F. A.** Estudo comparativo entre o efeito de duas coberturas vegetais distintas sobre as características e propriedades de um mesmo tipo de solo: Microbacia da Estrangina, Petrópolis, RJ. In: XII Semana de Iniciação Científica da UERJ, Rio de Janeiro: UERJ, Department of Support to Human Sources, 2003, p. 160.

## 2002

Souza, L. F. de L., **Santos, F. A.**, Mafra, N. M. C. Inventário das condições pedogeomorfológicas da bacia do córrego do Paiolzinho (Petrópolis, RJ) para fins de avaliação da capacidade de uso agrário. In: IV Simpósio Nacional de Geomorfologia. UFMA, vol. 1, 2002.

**Santos, F. A.**, Souza, L. F. de L., Carvalho, G. F., Portocarrero, H., Andrade, A. G., Tavares, S. R. L. Desenvolvimento de *Acacia mangium*, *Albizia guachapelle*, *Mimosa bimucronata* e *Mimosa caesalpiniiifolia* em taludes de corte e aterro, Aeroporto Internacional do Rio de Janeiro -

Galeão/Antonio Carlos Jobim. In: V Simpósio Nacional sobre Recuperação de Áreas Degradadas. Belo Horizonte: SOBRADE, 2002, p. 356-357.

**Santos, F. A.**, Souza, L. F. de L., Mafra, N. M. C. Influência das diferentes coberturas vegetais nas características e propriedades dos solos em áreas de microbacia, Bacia do Rio bonito, Petrópolis, RJ. In: IV Simpósio Nacional de Geomorfologia. UFMA, vol.1, 2002.

**Santos, F. A.**, Souza, L. F. de L. Considerações sobre o estudo da relação solo-planta e o estado de conservação dos solos em área serrana: microbacia da Estrangina, Petrópolis, RJ. XI Semana de Iniciação Científica, Rio de Janeiro: UERJ, Department of Support to Human Sources, 2002, p. 244. Orientação: Neusa Maria Costa Mafra.

Mendes, L. D., Mafra, N. M. C., Ull, F. V., **Santos, F. A.**, Souza, L. F. de L., Silva, J. R., Rodrigues, E., Aguiar, M. H., Miranda, M. Ocorrência de solos com epípedons húmicos em área serrana no Rio de Janeiro e sua relação com o uso agrícola. In: XIV Reunião Brasileira de Manejo e Conservação do Solo e da Água, Cuiabá: UFMT, 2002.

## 2001

Andrade, A. G., **Santos, F. A.**, Tavares, S. R. L., Franco, A. A., Menezes, C. E. G., Silva, M. S., Oliveira, J. A. Degradation of the Atlantic Forest in Paraíba do Sul River Valley (RJ, Brazil) and proposals for its rehabilitation. In: 3<sup>rd</sup> International Conference on Land Degradation and Meeting of the IUSS subcommission C – Soil and Water conservation (Conference guide, program and book of abstracts). Rio de Janeiro: Embrapa solos, 2001, p. 155.

**Santos, F. A.**, Mendes, L. D. Ocorrência de solos com horizontes superficiais húmicos e sua relação com o uso agrícolas: município de Petrópolis, RJ. X Semana de Iniciação Científica, Rio de Janeiro: UERJ, Departamento de Capacitação e Apoio à formação de Recursos Humanos, 2001, p. 299. Orientação: Neusa Maria Costa Mafra.

**Santos, F. A.**, Lisboa, A. Considerações sobre o estudo da relação solo-planta na bacia do Rio Bonito (Petrópolis, RJ). In: IX Semana de Iniciação Científica, Rio de Janeiro: UERJ, Departamento de Capacitação e Apoio à formação de Recursos Humanos, 2000, p. 535. Orientação: Neusa Maria Costa Mafra.

**Santos, F.** O estudo dos solos no maciço alcalino de Tinguá: formação e os processos atuantes. In: XII Encontro Nacional de Geógrafos, UFSC: Rio de Janeiro, 2000, p. 516.