

DIEGO BARCELLOS

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Current Address:

3111 Miller Plant Sc., Univ of Georgia
Athens, GA, USA, 30602

Permanent Address:

Fazenda Fortaleza, Acioli
João Neiva, ES, Brazil, 296870-000

Born: 19/May/1987, Ibirapu, Espirito Santo, Brazil

EDUCATION

The University of Georgia

PhD in Soil Science (GPA 3.84/4.0)
Masters in Soil Science (GPA 3.85/4.0)

Athens, GA, USA

Jan 2014 to present

Jan 2012 - Dec 2013

Colorado State University (*Summer Soil Institute*)

Two weeks of intense training in techniques/equipment for soil science (103 hours)

Fort Collins, CO, USA

July 2015

Universidade Federal de Viçosa (UFV), GPA 82/100

Bachelor in Agronomic Engineering (Agronomy)

Viçosa, MG, Brazil

March 2008 - Dec 2011

The University of Georgia, *Exchange Student*, GPA 3.86/4.0

Financed by CAPES (Brazilian Government)

Athens, GA, USA

Spring 2011

Universidade Federal de Ouro Preto (UFOP)

Studied Mining Engineering

Ouro Preto, MG, Brazil

March 2005 - Dec 2007

LANGUAGE & COMPUTER SKILLS

Trilingual: Fluency in both English and Spanish; Portuguese (native speaker). Basic in French.

Computer Skills: ArcGIS, SAS, R, Microsoft Office, basic AutoCAD

RELEVANT COURSEWORK

Undergraduate: Soil Courses (Genesis, Physics, Chemistry, Microbiology, Fertility, Classification, Survey, Management and Conservation). Hydraulics, Hydrology, Irrigation, Water Management, Meteorology, GIS, Rural Economics & Administration, Crop Science, Horticulture, Botany, Plant Physiology, Plant Pathology, Seeds, Silviculture, Animal Production, Entomology, Geology, Geomorphology, and Hydrogeology.

Graduate: Soil Chemistry, Soil Physical-Chemistry, Advanced Soil Fertility, Soil Physics, Clay Mineralogy, Biogeochemistry, Pedology, Waste Site Remediation, Landtreatment, Advanced Seminar, Experimental Design (Statistics), Scientific Research, English Writing.

At Colorado State University: Soil organic matter chemistry and analysis (TOC, SEM, FTIR, UV-Vis), soil organic matter fractionation and stable isotopes, pedology, soil microbiology (qPCR, SIR, and enzyme assays), soil fauna, and soil trace gas analysis (field measurements and laboratory incubation). Including field trips in CO.

PROJECTS EXPERIENCE

PhD Project (Dr. Aaron Thompson, UGA)

Athens, GA, USA

Title: *Interactions between iron minerals and carbon in soils from tropics and subtropics*

Jan 2014 - present

- Projects in Critical Zone Observatories: Puerto Rico (LCZO) and South Carolina (CCZO)
- Conducted 3 laboratory experiments with redox oscillations studying iron and carbon dynamics in soils
- Characterized Fe minerals by spectrophotometry, XRD, Mossbauer spectroscopy, and selective extractions
- Analyzed gas samples (CO₂, CH₄, and N₂O) in Gas Chromatograph (GC)
- Measured soil carbon and nitrogen in CHN Analyzer and TOC/TON Analyzer
- Measured elemental composition of soils using inductively coupled plasma mass spectrometry (ICP-MS)
- Conducted a 2-month field experiment in Puerto Rico measuring different pools of Fe, DOC, and Eh in soils
- Researcher assistant in soil's projects

Master's Project (Dr. Aaron Thompson & Dr. Larry Morris, UGA)	Athens, GA, USA
Title: <i>Phytoremediation of organic contaminated soils and water</i>	Jan 2012 - Dec 2013
<ul style="list-style-type: none"> • Evaluated phytoremediation using Eucalyptus and Pine trees in greenhouse & field studies • Analyzed organic pollutants in the soil, water, and plants using Gas Chromatograph / Mass Spectrometry (GC/MS) • Characterized soil's physical, chemical, and mineralogical properties in field study (South of Brazil) • Researcher assistant in soil's projects 	
Guidelines of Harvesting Wood Biomass for Renewable Energy (Dr. Larry Morris, UGA)	Athens, GA, USA
<ul style="list-style-type: none"> • Weighed, grinded, and crushed samples for physical & chemical analysis • Worked with spreadsheet data and statistical analysis 	Feb 2011 - May 2011
Genesis and Characterization of Soils (Dr. João L. Lani, UFV)	Viçosa, MG, Brazil
<ul style="list-style-type: none"> • Analyzed soil's physical, chemical, mineralogical characteristics • Mapped, surveyed, and classified soils • Worked with watershed planning, land capability, geomorphology, and water resources 	March 2009 - Dec 2010
Georeferencing of Closure Mines in Minas Gerais (Dr. Hernani Lima, UFOP)	Ouro Preto, MG, Brazil
<ul style="list-style-type: none"> • Evaluated state of art of mine closure in Minas Gerais State (Brazil) • Georeferenced closed mines using ArcGIS 	March 2006 - March 2007

TEACHING, TUTORING AND MENTORING EXPERIENCES

Teaching Assistant (University of Georgia):	Athens, GA, USA
CRSS 4660 - Analytical Methods in Soils & Environmental Characterization (Dr. Thompson)	Jan 2016 - May 2016
CRSS 4670 - Environmental Soil Chemistry (Dr. Aaron Thompson)	Jan 2015 - May 2015
CRSS 3060 - Soils and Hydrology (Dr. William Miller)	Jan 2014 - May 2014
<ul style="list-style-type: none"> • Taught, corrected essays, assignments, and exams. Assisted students' questions 	
Tutoring Programs:	
Rural Administration (Univ. of Viçosa, MG, Brazil)	Aug 2011 - Dec 2011
Meteorology and Climatology (Univ. of Viçosa, MG, Brazil)	Aug 2009 - Dec 2009
English and Spanish in language school in Viçosa, MG, Brazil	Aug 2009 - Dec 2009
General Chemistry (Univ. of Ouro Preto, MG, Brazil)	Aug 2005 - Dec 2005
<ul style="list-style-type: none"> • Developed skills in teaching and answering students' questions 	
Mentoring:	
<i>Elizabeth Osota:</i> Assisted field project in Puerto Rico, conducted chemical extractions	June 2016
<i>Shannon Burns:</i> Assisted laboratory experiment, conducted ferrozine analysis for Fe pools	Aug 2015 - Nov 2015

LEADERSHIP POSITIONS

• President - Agronomy Graduate Student Association - University of Georgia (2 terms)	Aug 2014 - Aug 2016
• Chairman - Poster Exhibition, Department of Crop and Soil Sc. UGA. Athens, GA	March 2016
• Chairman - Poster Exhibition, Department of Crop and Soil Sc. UGA. Athens, GA	April 2015
• Planning Committee Member – 4 th Plant and Soil Graduate Symposium. Athens, GA	Nov 2015
• Planning Committee Member – 3 rd Plant and Soil Graduate Symposium. Athens, GA	Nov 2014
• Awarded selected participant: Grad Student Leadership Conference, SSSA International Meeting	Nov 2014
• Co-founder of student consultant group in Mining Engineering (UFOP, Brazil)	March 2007 - Dec 2007

PUBLICATIONS

Publications in Refereed Journals:

- 1) Barcellos, D.; Morris, L.A.; Nzengung, V.; Moura, T.; Mantripragada, N.; and Thompson, A. (2016). *Eucalyptus urograndis* and *Pinus taeda* Enhance Removal of Chlorobenzene and Benzene in Contaminated Soils: A Greenhouse Study. *International Journal of Phytoremediation*, 18(10): 977-984
- 2) Silva Jr, C.A.; Moreira, E.P.; Frank, T.; Moreira, M.A.; Barcellos, D. (2014) Comparison of areas of soybean obtained through the interpretation of TM/Landsat and MODIS/Terra images in the municipality of Maracaju (MS, Brazil). *Bioscience Journal (Uberlandia, Brazil)*, 30(2): 707-716.

- 3) Barcellos, D.; Wilmoth, J.; Thompson, A. Short periods of redox oscillations increased iron reduction rates in soils from Luquillo CZO (Puerto Rico). *In prep.*
- 4) Barcellos, D.; Silver, W., Pett-Ridge, J., Thompson, A. Iron reduction influenced by the length of oxic cycles in Puerto Rican soils during redox oscillations. *In prep.*
- 5) Barcellos, D.; Silver, W., Thompson, A. Monitoring Hot Spots and Hot Moments of Redox, Iron Reduction, and Carbon Mineralization under field conditions in Puerto Rican Soils. *In prep.*
- 6) Thompson, A.; Barcellos, D.; Wilmoth, J.; Richter, D. Iron crystallinity increases down soil profile in redoxmorphic features at Calhoun CZO (South Carolina). *In prep.*

Thesis:

Barcellos, D. 2013. Phytoremediation of soil and groundwater contaminated by chlorobenzene and benzene using *Eucalyptus urograndis* and *Pinus taeda*. University of Georgia (Department of Crop and Soil Sciences). M.S. thesis, Athens, GA, USA. 89p.

Barcellos, D. 2011. Pedological characterization and genesis of the pedotubules/paleoworms (*In Portuguese*). Federal University of Viçosa (Department of Soils). Undergraduate thesis, Viçosa, MG, Brazil. 29p.

Abstracts published in Conferences:

1. Barcellos, D.; Silver, W., Pett-Ridge, J., Thompson, A. Soil Iron Reduction and Carbon Mineralization in Reconstructed Aggregates during Redox Fluctuations. In: Goldschmidt - Geochemical Conference. Yokohama, Japan. June 2016. (Poster)
2. Barcellos, D.; Silver, W., Pett-Ridge, J., Thompson, A. Iron reduction and carbon dynamics during redox fluctuations in soil slurries from Luquillo CZO (Puerto Rico). American Geophysical Union (AGU) Meeting. San Francisco, CA, USA. Dec 2015. (Poster)
3. Barcellos, D.; Wilmoth, J.; Cyle, T.K.; Thompson, A. Iron reduction rates and carbon mineralization in a soil from Puerto Rico. In: Goldschmidt - Geochemical Conference. Prague, Czech Republic. August 2015. (Poster)
4. Thompson, A.; Barcellos, D.; Wilmoth, J.; Richter, D. Depth variation of soil iron crystallinity at the Calhoun Critical Zone Observatory. In: Goldschmidt - Geochemical Conference. Prague, Czech Republic. August 2015.
5. Thompson, A.; Wilmoth, J.; Ginn, B.; Meile, C.; Barcellos, D. Timescales of soil redox oscillations and the role of iron in the critical zone. In: 249th American Chemical Society National Meeting. Denver, CO, USA. March 2015
6. Barcellos, D.; Kauffman, K.; Thompson, A. Pedogenic element distribution in soils from Guana Island, British Virgin Islands. In: Soil Science Society of America International Meeting. Long Beach, CA, USA. 2014. (Poster)
7. Barcellos, D.; Wilmoth, J.; Thompson, A. Redox fluctuations and C stability in a tropical soil from Puerto Rico. In: Plant and Soil Graduate Symposium (University of Georgia). Athens, GA, USA. Nov 2014. (Oral Presentation)
8. Wilmoth, J.; Barcellos, D.; Thompson, A. Conceptualizing iron valence transitions in redox dynamic soils with Mossbauer spectroscopy and ⁵⁷Fe tracing. In: Plant and Soil Graduate Symposium (University of Georgia). Athens, GA, USA. Nov 2014. (Oral Presentation)
9. Barcellos, D.; Wilmoth, J.; Thompson, A. Linkages between soil Fe reduction rates and the characteristics of redox fluctuations at the Luquillo CZO, Puerto Rico. In: All Hands Meeting for the Critical Zone Observatories (CZO) network. Merced, CA, USA. 2014. (Poster Presentation)
10. Wilmoth, J.; Meile, C.; Barcellos, D.; Thompson, A. Oxygen flux rate controls net rates of microbial Fe(III) reduction in a redox-dynamic tropical soil. In: All Hands Meeting for the Critical Zone Observatories (CZO) network. Merced, CA, USA. 2014. (Poster Presentation)
11. Barcellos, D.; Morris, L.A.; Moura, T.; Thompson, A. Evaluating *Eucalyptus* sp. trees exposed to chemical oxidation and their potential to phytoremediate organic solvents. In: Soil Science Society of America International Meeting. Tampa, FL, USA. 2013. (Oral Presentation)

12. Barcellos, D.; Morris, L.A.; Moura, T.; Thompson, A. Assessment of Phytoremediation of Soils Contaminated with Chlorobenzene/Benzene at a Site in Southern Brazil. In: Plant and Soil Graduate Symposium (University of Georgia). Athens, GA, USA. September 2013. (Oral Presentation)
13. Barcellos, D.; Morris, L.A.; Moura, T.; Thompson, A. Phytoremediation of Soils Contaminated by Organic Solvents using *Pinus taeda* and *Eucalyptus urograndis* Trees (Greenhouse Study). In: Brazilian Soil Science Conference (Congresso Brasileiro de Ciência do Solo). Florianópolis, SC, Brazil. July 2013. (Poster Presentation)
14. Barcellos, D.; Morris, L.A.; Moura, T.; Thompson, A. Potential of *Eucalyptus urograndis* and *Pinus taeda* to Phytoremediate Soil and Water Contaminated by Benzene-based Compounds – Preliminary Results. In: Soil Society of Georgia Annual Meeting. Athens, GA, USA. February 2013. (Poster Presentation)
15. Morris, L.A.; Barcellos, D.; Thompson, A.; Moura, T. The Role of Trees in Wastewater Treatment and Site Remediation. In: 4th Amazon Green Materials Congress. Manaus, AM, Brazil. 2012
16. Barcellos, D.; Morris, L.A.; Moura, T.; Thompson, A. Survivorship of *Pinus Taeda* Exposed to Benzene-Based Compounds: Preliminary Study to Support Phytoremediation Greenhouse Experiment. In: Soil Science Society of America International Meeting. Cincinnati, Ohio, USA. October 2012. (Poster Presentation)
17. Lani, J.L.; Barcellos, D.; Moreira, E.P.; Gomes, M.A. Identification of Landslides Risk Areas in Piranga County, Minas Gerais, Brazil. In: Soil Sc Society of America International Meeting. Cincinnati, Ohio, USA. 2012 (Poster)
18. Barcellos, D.; Lani, J.L. Genesis, Physical and Chemical Characteristics of Pedotubules (*published in Portuguese*). In: Academic Symposium of UFV. Viçosa, MG, Brazil. October 2011. (Poster & Oral Presentation)
19. Moreira, E.P.; Lani, J.L.; Barcellos, D.; Elliot, W.J. Model to estimate vegetation height using LiDAR sensor in Idaho, USA (*published in Portuguese*). In: Academic Symposium of UFV. Viçosa, MG, Brazil. Oct, 2011 (Poster)
20. Barcellos, D.; Reis, G.G.; Campos, S.; Lani, J.L. Fernandes, R.B.A. Plan for sustainable use of the lands in “Sítio da Equideocultura”, Viçosa, MG, Brazil (*published in Portuguese*). In: Brazilian Soil Science Conference. Uberlândia, MG, Brazil. August 2011. (Poster Presentation)
21. Barcellos, D.; Campos, S.; Reis, G.G.; Lani, J.L.; Morris, L. Use of soil classification and survey for management in Minas Gerais, Brazil. In: Soil Society of Georgia Annual Meeting. Athens, GA, USA. Feb 2011. (Poster)
22. Barcellos, D.; Reis, G.G.; Campos, S.; Fernandes, R.B.A. Land Capability for “Sítio da Equideocultura”, Viçosa, MG, Brazil (*published in Portuguese*). In: Minas Gerais Soils Symposium. Viçosa, MG, Brazil. Nov 2010 (Poster)
23. Barcellos, D.; Moreira, E.P.; Lani, J.L. Land Capability for “Assentamento Ouro Verde”, Muniz Freire/ES, Brazil (*published in Portuguese*). In: Academic Symposium of UFV. Viçosa, MG, Brazil. Oct 2010. (Poster)
24. Barcellos, D.; Figueiredo, N.A.; Moreira, E.P.; Lani, J.L. Soil Mapping and Classification for “Assentamento Rural Ouro Verde”, Muniz Freire, ES, Brazil (*published in Portuguese*). In: Fertbio (Brazilian Soil Meeting). Guarapari, ES, Brazil. September 2010. (Poster Presentation)
25. Lani, J.L.; Moreira, E.P.; Barcellos, D. Soil Fertility aspects and Soil Classification for “Assentamento Rural Paraíso”, Alegre, ES, Brazil (*published in Portuguese*). In: Fertbio (Brazilian Soil Meeting). Guarapari, ES, Brazil. Sept 2010. (Poster)
26. Barcellos, D.; Tavares, W.S.; Pereira, A.I.A.; Cruz, I; Fonseca, F.G.; Zanoncio, J.C. Atividade de Extratos de Piperina, Nim e Pirolenhoso Sobre Posturas de Spodoptera Frugiperda Smith e de Diatraea Saccharalis Fabricius. In: Academic Symposium of UFV. Viçosa, MG, Brazil. October 2009. (Poster Presentation)
27. Barcellos, D.; Lima, H.M. Georeferencing of Mine Closure in Minas Gerais State, Brazil (*published in Portuguese*). In: Academic Symposium of UFOP. Ouro Preto, MG, Brazil. November 2007. (Oral Presentation)

Papers published in conference proceedings

Lima, H.M.; Cunha, M.F.; Barcellos, D. Mine Closure: The State of Art in Minas Gerais State. In: Mine Closure Seminar, 2007. Santiago, Chile. v.1. p. 400-411.

REGIONAL, NATIONAL, and INTERNATIONAL MEDIA AND PRESS:

1. "AMAZING STUDENT." Featured in UGA webpage. June 2016. www.uga.edu/amazing/profile/barcellos-diego/
2. "Aproveitava toda folga que tinha para enfiar a cara nos livros, diz capixaba com PhD nos EUA" (*In Portuguese*). Newspaper of Espírito Santo State, Brazil (both printed and online versions). June 11, 2016. <http://www.gazetaonline.com.br/conteudo/2016/06/noticias/cidades/3949828-aproveitava-toda-folga-que-tinha-para-enfiar-a-cara-nos-livros--diz-capixaba-com-phd-nos-eua.html>
3. "Ex-aluno da UFV é destaque em portal de universidade americana". (*In Portuguese*). Press released from the University of Viçosa (Brazil). June 06, 2016.
4. "MS Candidate Barcellos Conducts Research in Brazil". Newsletter, Office of Global Programs, College of Agriculture and Environmental Sciences. University of Georgia. Summer 2013.

HONORS, AWARDS, and OTHER ACTIVITIES

- Graduate International Travel Award. College of Agriculture, University of Georgia. March 2016.
- 3rd place in poster presentation. Soil Science Society of Georgia Annual Meeting. Athens, GA, USA. Feb 2016
- 2nd place in oral Presentation. Warnell School of Forest Symposium, Univ. of Georgia. Athens, GA. Feb 2014
- Graduate International Travel Award. College of Agriculture, University of Georgia. April 2013.
- 1st place in poster presentation. Soil Science Society of Georgia Annual Meeting. Athens, GA, USA. Feb 2013.
- 3rd place in oral presentation. Plant and Soil Graduate Symposium at UGA. Athens, GA. September 2013.
- Finalist (1 of 3) on the Singularity Univ. & Univ. of Georgia Award Competition (3 times). 2013, 2015, 2016
- 2nd place in poster presentation. Soil Science Society of Georgia Annual Meeting. Athens, GA. February 2011
- CAPES Brazilian Gov't Scholarship to study in USA (2011): 1 of 3 selected among more than 150 applicants
- Academic achievement award 2007 (highest GPA of the Major for 2 semesters), UFOP. Ouro Preto, MG, Brazil.
- Played saxophone in hometown city band (1999 - 2010). João Neiva, ES, Brazil.
- Participation in University Catholic Prayer Group (2008 -2011). Viçosa, MG, Brazil.

INTERNSHIP EXPERIENCE

NewFields: Environmental Consulting Company	Atlanta, GA, USA
• Worked on reports of Brazilian projects involving remediation of contaminated sites	May 2011 - July 2011
• GIS analysis and map production for reports. Database management	
• Translation of reports from English to Portuguese, Portuguese to English, and English to Spanish	
Extrema County Ecosystem Services Project	Extrema, MG, Brazil
• Worked in Watershed Ecosystem Services Project. Interaction with farmers	July 2010 - July 2010
Extension Program in Coffee Crop Production at Minas Gerais State	Viçosa, MG, Brazil
• Worked with all coffee crop production chain	March 2009 - Dec 2009
• Interacted with farmers and provided information about new technologies	
Irriger: Irrigation Management & Engineering Company	Unai/MG & Cristalina/GO, Brazil
• Managed Irrigation for several crops in the Region of Cerrado	July 2009 - August 2009
• Diagnosed and planned energy use by central Pivot. Checked soil moisture	
IEMA (Environmental Institute of Espírito Santo State)	Castelo & Vitória, ES, Brazil
• Working in the management plan for 2 state forest parks	Dec 2008 - Feb 2009
Junior Consulting Company of Mining Engineering at UFOP	Ouro Preto, MG, Brazil
• Co-founder and first director of projects	March 2007 - Dec 2007
Coffee & Cattle Family's Farm	João Neiva, ES, Brazil
• Managed and worked in a coffee and cattle production systems	School Vacations and Weekends
• Supervised a group of 30 employees in coffee harvesting	(1998 - 2006)

CONFERENCES ATTENDED

1. Goldschmidt – Geochemistry Conference. Yokohama, Japan. June 2016
2. Soil Science Society of Georgia Annual Meeting. Athens, GA. Feb 2016
3. American Geophysical Union Meeting. San Francisco, CA. December 2015
4. Goldschmidt – Geochemistry Conference. Prague, Czech Republic. August 2015

5. Southeastern Biogeochemistry Symposium. Georgia Institute of Technology, Atlanta, GA. March 2015
6. Soil Science Society of America International Meeting. Long Beach, CA. Nov 2014
7. Plant and Soil Graduate Symposium (University of Georgia). Athens, GA. Nov 2014
8. All Hands Meeting - Critical Zone Observatories (CZO) network. Merced, CA. Sept 2014
9. Luquillo Critical Zone Observatory (CZO) workshop. Puerto Rico. May 2014
10. Soil Science Society of America International Meeting. Tampa, FL. Nov 2013
11. Plant and Soil Graduate Symposium (University of Georgia). Athens, GA. Sept 2013
12. Brazilian Soil Science Conference (Congresso Brasileiro de Ciência do Solo). Florianópolis, SC, Brazil. July 2013
13. Soil Science Society of Georgia Annual Meeting. Athens, GA. Feb 2013
14. Soil Science Society of America International Meeting. Cincinnati, OH. Oct 2012
15. Brazilian Soil Science Conference (Congresso Brasileiro de Ciência do Solo). Uberlândia, MG, Brazil. Aug 2011
16. Soil Science Society of Georgia Annual Meeting. Athens, GA. Feb 2011
17. International Symposium on food security and poverty reduction. Viçosa, MG, Brazil. Nov 2011
18. Minas Gerais State Soil Symposium (Simpósio Mineiro de Ciência do Solo). Viçosa, MG, Brazil. Nov 2010
19. Brazilian Soil Science Meeting (Fertbio). Guarapari, ES, Brazil. Sept 2010
20. 3 Consecutive Annual Research Conferences at University of Viçosa, MG, Brazil. Oct 2008, Oct 2009, Oct 2010
21. Coffee Production Conference. Viçosa, MG, Brazil. Oct 2009
22. 22° Agribusiness for Exportation Seminar. Viçosa, MG, Brazil. April 2009
23. Ethanol Seminar. Viçosa, MG, Brazil. June 2008
24. Academic Symposium in Agronomy. Viçosa, MG, Brazil. Nov 2008
25. Additional 12 conferences related to soils, agronomy, environment, and water resources

SOCIETY MEMBERSHIP

• Soil Science Society of America	2012 - Present
• Agronomy Society of America	2012 – Present
• American Geophysical Union	2015 – Present
• European Association of Geochemistry	2015 – Present
• Soil Science Society of Georgia	2011 - Present
• Brazilian Soil Science Society	2010 - Present
• Agronomy Graduate Student Association - University of Georgia	2013 – Present
• Brazilian Student Association - University of Georgia	2011 – Present

REFERENCES: Available upon request.

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