FELIPE ANDRÉS ABURTO GUERRERO, Ph.D.

Assistant Professor, Pedology and Soil Biogeochemistry Group

Education

2014 **Ph.D. in Soil and Biogeochemistry**. Emphasis: Pedology, Mineralogy, and Geomorphology. University of California, Davis, USA.

2011 **MS in Soil and Biogeochemistry**. University of California, Davis, USA.

2007 **Agriculture Engineer**, Minor in Soil and Water Management. (Professional Degree) and **Bachelor in Agricultural Sciences,** University of Chile.

Employment History

2021 to Present	**Assistant Professor,** Soil and Crop Sciences Dep., Texas A&M University
2022 to Present	**Adjunct Professor,** Territorial Planning and Urban Systems Dep., U.de Concepción
2019 to 2021	**Associate Professor,** Forest Sciences Dep., Universidad de Concepción
2014 to 2019	**Assistant Professor,** Forest Sciences Dep. , Universidad de Concepción

Program Overview

Research: My primary research interest areas are pedology, landscape-scale processes, and human-soil systems interactions. I focus on the biogeochemical controls of soil mineral weathering, elemental cycling, and soil development. Most of my projects study the effect of anthropic disturbances on soil properties and carbon dynamics, including land use change, agricultural and forest use intensification, erosion, fire, and pollution. Teaching: My instruction at Texas A&M includes Soil Morphology and Interpretations (SCSC 310), Soil Judging (SCSC 489), and Soil Genesis, Morphology and Classification (SCSC 605).

Significant Career Accomplishments (limit to 5)

- I'm a first-generation college graduate. I obtained a Fulbright-CONICYT Scholarship to support my graduate education at UC Davis
- I was offered an Assistant Professor position at Universidad de Concepción and was promoted to Associate Professor in 2020. I was conferred one of the University's Outstanding Academic Merit awards in 2019. I joined TAMU in October of 2021.
- I have mentored eight graduate students and am currently advising 4 and co-advising or as a committee member of 5 additional graduate students at TAMU and 3 in other institutions.
- I have participated in over 22 national and international projects and co-led and led 10, raising a total of USD 10,4 million (~ USD 7 million at UDeC and ~1 since at TAMU to my research group).
- I have authored or coauthored 28 papers and have given dozens of presentations at scientific conferences.

Other Significant Accomplishments Since 2016

The number of citations of my articles has increased exponentially since 2018, as well as my harmonized index (H-index =11). My adjusted field citation ratio (FCR) is 4.3 times larger than the average for publications in my field and higher than the FCR for Agriculture, Life, and Veterinary science papers at TAMU (FCR 4.3 vs. 2.8). I served as Associate Editor in the Pedology division of the Soil Science Society of America Journal from 2018 to 2020 and as Technical Editor of the Pedology, Mineralogy, and Wetlands Soils division since 2020.

Program Funding (since 2016)

Total Federal Funding before TAMU [my share]: 299,993 (In Chile); since at TAMU: 846,000
Total Private Funding before TAMU [my share]: 5,880,465 (In Chile); since at TAMU: 217,987
Total Internal Funding since at TAMU: 87,137
Total Funding since 2016 [my share]: 6,180,398 (In Chile); since at TAMU: 1,151,124

Google Scholar Metrics (updated November 2023)

Citations		H index		i10 index	
Total	2018 - 2022	Total	2018 - 2022	Total	2018 - 2022
532	514	12	11	16	16

Publications (since 2021, * Corresponding author, #supervised or co-supervised student)

1.- Waterhouse, H*. **Aburto, F.** Griffin-La Hue, D. Salls, W. Rippner, D. Zhiyuan, T. Scow, K. O'Geen, T. (Accepted). Diversified vegetation types on rangelands promote multiple soil-based ecosystem services. **Land Degradation and Development (LDD).**

2.- Matus, F.* Mendoza, D. Najera, F. Merino, C. Kuziakov, Y. Wilheim, K. Boy, J. Aburto, F. Jofré, I. Dippold, M. 2023. Freezing-Thawing Cycles Affect Organic Matter Decomposition in Periglacial Maritime Antarctic Soils. **Biogeochemistry**

3.-Erazo-Mora, K[#]. Montalvan-Burbano, N. **Aburto, F**. Matus-Baeza, F. Jofre, I. Duran-Cuevas, P. Dorner, J. Dippold, M. Merino, C*. 2023. Four Decades in Fires Research - a Bibliometric Analysis About the Impact on Mineralogy and Nutrients. Catena.

4.- Wyatt, B. **Aburto, F**. Howe, J. A. and Smith, A.P. 2023. Benefits and challenges of online teaching: lessons and perspectives gained during the COVID-19 pandemic. **Natural Sciences Education**

5.- Leal, F[#]. **Aburto, F*.** Navarro, N. Echeverría, C and Gatica-Saavedra, P. 2023. Forest degradation modifies litter production, quality, and decomposition dynamics in Southern temperate forests. **Frontiers in Soil Sciences.**

6.- Gatica-Saavedra, P[#]*. **Aburto, F.*,** Rojas, P. and Echeverría, C. 2022. Soil health indicators for monitoring forest ecological restoration: a critical review. **Restoration Ecology**.

7.- Calabrese, S*. Wild, B. Bertagni, M.B. Bourg, I.C. White, C. **Aburto, F**. Cipolla, G., Noto L.V., and Porporato A. 2022. Nano- to Global-Scale Uncertainties in Terrestrial Enhanced Weathering. **Environmental Science & Technology**

8.- Atenas Navarrete, A[#]. **Aburto, F.*** González-Rocha, G. Merino Guzmán, C. Schmidt, R. Scow, K. 2022. Anthropogenic degradation alter surface soil biogeochemical pools and microbial communities in an Andean temperate forest. **Science of the Total Environment** (STOTEN).

9.- Spohn M*. **Aburto F.** Ehlers, T.A. Farwig N. Frings P.J. Hartmann H., Hoffmann T., Larsen A. Oelmann Y. 2022. Terrestrial ecosystems buffer inputs through storage and recycling of elements. **Biogeochemistry.**

10.- Crovo, O[#]. **Aburto, F.*** Da Costa, C., Montecino, O., y Rodríguez, R**.** 2021. Livestock grazing reduces soil quality and threatens the recovery of a degraded Andean Araucaria forest. **Land Degradation and Development** (LDD).

11.- Spohn, M*. Diáková, K. A**burto, F**. Doetterl*, S.* Borovec*,* J. 2021*.* Sorption and desorption of organic matter in soils as affected by phosphate. **Geoderma**.

12.- Oelmann, Y*.; Leimer, S.; Roscher, D.; **Aburto, F**.; Alt, F.; Berner, D.;…; Wilcke, W. 2021. Above- and belowground biodiversity jointly tighten the P cycle. **Nature Communications.**

13.- Crovo, O[#].; **Aburto, F***.; Albornoz, M. F.; Southard, R. 2021. Soil type modulates the response of C, N, P stocks and stoichiometry after native forest substitution by exotic plantations **Catena**.

14.- Castillo, P[#]., Serra, I., Townley, B.*, **Aburto, F.,** Lopez, S., Tapia, J., Contreras, M. 2021. Biogeochemistry of plant essential mineral nutrients across rock, soil, water and fruits in vineyards of Central Chile. **Catena.**

Honors and Awards Since 2016

2023 USDA E. Kika de la Garza Research Fellowship
2020 Outstanding Academic Merit Award - Universidad de Concepción, 2020-2023
2019 Outstanding Associate Editor. Soil Science Society of America Journal.
2013 Jastro and Shield Graduate Research Fellowship. University of California
2013 Lloyd Brown Award for Excellence in Research. College of Graduate Studies U. of California, Davis.
2011 - 2012 Henry Jastro Research Graduate Scholarship. University of California.
2008 Fulbright- CONICYT. Full Scholarship for Doctoral Degree. Programa Igualdad de Oportunidades Fulbright- National Committee of Research and Technology (covered tuition, fees, benefits, and stipend from 2009-2013).

Professional Experience

I have successfully created partnerships with government agencies and private companies to fund research in forest and soil sciences. I have taught over ten courses focused on soil sciences in Chile and the USA, always obtaining positive student reviews. I created and led an international field course in Soil Description, Classification, and Mapping. I co-created the Foresta Nativa, Chile's largest academic-private native forest restoration initiative. I was one of the scientific coordinators of the Chilean Soil Protection Law. I lead the TAMU Soil Judging team. I have led multiple workshops and community outreach activities in Chile and the USA to raise awareness about the relevance of soil for sustaining life and human wellbeing.