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Co-Director Foresta Nativa Initiative
www.forestanativa.cl

1. Academic Positions:

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| 2021 (October) to Present | Assistant Professor (Full time)
Department of Soil and Crop Sciences
College of Agricultural and Life Sciences
Texas A&M University |
| 2019 to 2021(September) | Associate Professor (Full time)
Department of Forestry
Faculty of Forest Sciences
Universidad de Concepción |
| 2014 to 2019 | Assistant Professor (Full time)
Department of Forestry
Faculty of Forest Sciences
Universidad de Concepción |
| 2008 to 2013 | Instructor (Ad-honorem)
Department of Soil and Water Engineering
Faculty of Agricultural Sciences
Universidad de Chile |

2. Degrees

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| 2014 | Ph.D. in Soil and Biogeochemistry. Emphasis: Pedology, Mineralogy and Geomorphology. University of California, Davis, USA. GPA: 3.94/4 |
| 2011 | Master in Sciences in Soil and Biogeochemistry. University of California, Davis, USA. GPA: 3.97/4 |
| 2007 | Agriculture Engineer, Minor in Soil and Water Management. (Professional Degree) Faculty of Agricultural Sciences, University of Chile. Suma Cum Laude (“distinción máxima”) |
| 2007 | Bachelor in Agricultural Sciences, Faculty of Agricultural Sciences, University of Chile. |

3. Honors and Awards

2020	Outstanding Academic Award (Asignación al mérito académico) - Universidad de Concepción, 2020-2023
2019	Outstanding technical editor. Soil Science Society of America Journal.
2008	Fulbright- CONICYT. Full Scholarship for Doctoral Degree. Programa Igualdad de Oportunidades Fulbright- National Committee of Research and Technology (covered fees and stipend in the US).
2011 - 2012	Henry Jastro Research Graduate Scholarship. University of California.
2013	Jastro and Shield Graduate Research Fellowship. University of California
2013	Lloyd Brown Award for Excellence in Research. College of Graduate Studies University of California, Davis.

4. Teaching

4.1 Undergraduate Level at University of Concepción

- **Soil and Geomorphology:** 2018 and 2021 (Responsible every other year)
Created syllabus, course material, class activities, assignments, grading rubrics. Adapted and designed field and laboratory activities, and updated field and laboratory manuals and handouts.
- **Introduction to Forest Soils:** 2015 to 2020 (Responsible every other year)
Updated syllabus, course material, class activities, evaluations, assignment grading rubrics, field and laboratory activities, and updated field and laboratory manuals and handouts.
- **Soil Conservation and Rehabilitation:** 2014 to 2020 (Responsible every year)
Created syllabus, course material, class activities, evaluations and assignment grading rubrics. Designed field teaching activities considering interactions with government, NGO and industry operators to expose students to real-world problems. Created applied laboratory activities, field and laboratory manuals and handouts.
- **Nutrition and Fertilization:** 2015 to 2021 (Responsible every other year)
Updated syllabus, created new course material, class activities, evaluations and assignment grading rubrics. Designed field and laboratory activities, field and laboratory manuals and handouts.
- **Field Forest Engineer Practicum (III):** 2017 to 2021 (Responsible every year)
Created syllabus, course material, class activities, evaluations, assignments, and grading rubrics. Designed field and laboratory activities and created field handouts. Coordinated activities in the field with collaborators.
- **Geomorphology:** 2015, 2016 (Collaborator)
Created course materials and class activities. Designed field activities and handouts.
- **Forest Site Productivity:** 2014 to 2020 (Collaborator)
Created course materials and class activities.
- **Ecology:** 2016 and 2017 (Collaborator)
Created course materials and class activities.

- **Climate change and Conservation:** 2016 (Collaborator)
Created course materials and class activities for specific section
- **Introduction to Natural Resource Conservation Engineering:** 2017 to 2021 (Collaborator)
Created course materials and class activities for specific section. Design field activities and collaborate on evaluations.
- **Introduction to Forest Engineering:** 2017 to 2021 (Collaborator)
Created course materials and class activities for specific section. Designed field activities and collaborated on evaluations.

4.2 Graduate Level at University of Concepción

- **Field Soil Description, Classification, and Mapping:** 2016, 2018, 2019 (Responsible)
Created an adapted summer field class in Chile based on the UC Davis's SSC 105/205 summer field class. Brought in international collaborators Dr. R. Southard (UC Davis), S. Southard (NRCS-FS), Dr. J. Padarian (U. Sidney) and Dr. H. Neidhard (U. Tübingen) to co-teach course. This course is taught in English and has been taken by graduate students of several universities in Chile, professional, government, environmental consultants and industry operators from Chile and Colombia.
- **Soil and Forest Biogeochemistry:** 2018 and 2019 (Responsible)
Created syllabus, course material, class activities, assignments, grading rubrics. Designed field activities, participatory discussions, rubrics for project and outreach proposals.
- **Global Climate Change and Sustainability 2021** (Collaborator)
Created class and discussion materials. Collaborator in the creation of this Integrative multidisciplinary course that receive students from different graduate groups and institutions.
- **Forest Nutrition Fertilization and Productivity** (Collaborator)
Created course materials and class activities.

4.3 Previous teaching experience (pre- University of Concepción)

- 2013 Teaching Assistantship SSC 100, Principles of Soil Science. University of California, Davis
- 2011 Teaching Assistantship SSC 105/205, Soil Field Studies of Soil in California Ecosystems. University of California, Davis
- 2011 Teaching Assistantship SSC 118, Soil land-use and the Environment, University of California, Davis
- 2011 Reader SSC 111, Soil Microbiology, University of California, Davis

4.4 Academic Mentoring

4.4.1 Undergraduate final research projects

Advisor for final undergraduate research project. Francisco Salazar. "Nursery growth and nutrient acquisition evaluation of native sympatric tree species growing in post-fire soils Status: Finished

Advisor for final undergraduate research project. Oscar Crovo "Soil quality changes as a result of uncontrolled grazing in araucaria native forest. Ralco National Reserve". Status: Finished

Advisor for final undergraduate research project. Francisco Montecinos. "Grazing effect on *Araucaria araucana* regeneration in the Ralco National Reserve". Status: Finished

Advisor for final undergraduate research project. Helmut Puschmann "Structural characterization of temperate forest affected by anthropic induced degradation processes". Status: Finished

Advisor for final undergraduate research project. Natalia Aguilera Rojas "Facilitation and nutrient transfer evaluation between complementary tree species in post-fire soils". Status: Finished

Advisor for final undergraduate research project. Sr. Santiago Contreras "Nutrient and C stocks characterizations in contrasting soils under pine plantation and temperate broadleaf forests". Status: Finished

Advisor for final undergraduate research project. Sr. Tomas Espinoza "Soil hydraulic properties and surface flows in a gradient of evergreen and deciduous temperate forest in the Andes Range". Status: ongoing

Advisor for final undergraduate research project. Sr. Christian Torres "Sediment and runoff production in fly-ash landfill reclaimed soils under different cover treatments". Status: ongoing

Advisor for final undergraduate research project. Sr. Michele Acosta "Water stress and growth of five native species growing in reconstructed soils under different soil cover treatments". Status: ongoing.

4.4.2 Advised graduate research projects, thesis and dissertation

Advisor Master in Forest Sciences, UdeC. Fabiola Leal "Effect of forest degradation over litter decomposition, mesofauna and nutrient fluxes in mountainous temperate forest in south central Chile". Status: On going

Advisor Master in Forest Sciences, UdeC. Alejandro Atenas "Alterations in Nutrient cycling, microbiological activity and diversity in a forest degradation gradient in mountainous temperate forest". Status: On going

Committee Member Master in Agricultural Sciences, UdeC. Nataly Hermosilla Villablanca. "Water relationship characterization of new blueberry varieties under plastic". Status: On going

Advisor Master in Forest Sciences, UdeC. Natalia Aguilera "Evaluation of the effect of species assemblages with differential nutrient acquisition strategies in soil nutrient availability and acquisition". Status: Finished

Co-Advisor Master in Forest Sciences, UdeC. Natalia Navarro "Water relationship and drought tolerance of *Quillaja saponaria* forest plantations in sandy soils". Status: Finished

Advisor Master in Forest Sciences, UdeC. Oscar Crovo "Evaluation of deep carbon and nutrient reservoirs and dynamics in native and planted forest in contrasting soils in South-Central Chile". Status: Finished

Co-Advisor Master in Forest Sciences UDeC. Camilo Navarro "Modeling bird habitat presence using LIDAR technologies in degraded forest". Status: Finished

Committee Member Doctoral Dissertation in Forest Sciences, UdeC. Cynthia Vanlerbergue "Forest Restoration ecology of methodological approximations at multiple landscape levels" Status: On going

Committee Member Doctoral Dissertation in Natural Resources, Universidad de la Frontera. Dalia Lopez Gomez "Snow melting effects on microbial community and andic properties in temperate rain forest of southern Chile" Status: Finished

Committee Member Doctoral Dissertation in Biological Sciences, Botany, UdeC. Antonio Escandón. "Ecological rol and subsidy of root sprouts in the light niche of tree species of the temperate rainforest" Status: Finished

Committee Member Doctoral Dissertation in Geological Sciences. Universidad de Chile. Sra. Pamela Castillo Lagos. "Rock-Soil- Plant System Biogeochemistry in four vineyards of Central Chile (33-36°S) : Pedogenic, lithogenetic and anthropic influences. Status: Finished

5. Academic Professional Development

5.1 Pedagogical training

Dates	Pedagogical training courses
8/16/18	Learning how to effectively present in public. Academic and teaching affairs, UdeC. 2h
08/29/18	Teaching strategies: games in the classroom. Academic and teaching affairs, UdeC. 3h
10/24/18	CMAP TOOLS: Tools for creating conceptual maps, Academic and teaching affairs,, UdeC. 2h
05/30/17	Evaluation tools: KPSI form, C-Q-A matrix, Income box, Academic and teaching affairs, UdeC. 2h
05/22/17	Skills to manage the classroom. Academic and teaching affairs, UdeC. 2h
08/25/17	Use of study cases. Academic and teaching affairs, UdeC. 2h
07/25-07/29/16	Fundamentals of the UdeC teaching model generic macro-skills. Academic and teaching affairs, UdeC. 20h
07/28/2016	Class development through cooperative learning. Academic and teaching affairs, UdeC. 6h
05/25/ 2016	Teaching strategies for class closure: Summary matrix y Cognitive map. Academic and teaching affairs, UdeC. 4h
05/25/2016	Evaluation techniques: (CATs: Classroom assessment techniques). Directed paraphrases and double entrance registers. Techniques for communication and reading comprehension. Academic and teaching affairs, UdeC. 4h
01/11/2016	Evaluation academic career models. Academic and teaching affairs, UdeC. 6h
08/24/2015	Designing course programs. Academic and teaching affairs, UdeC. 4h
14/11/2014	Syllabus creation. Academic and teaching affairs, UdeC. 4h
22/10/2014	Designing course curriculum. Academic and teaching affairs, UdeC. 4h

5.2 Other Academic Professional Training

2017 Radiocarbon Short Course "Radiocarbon in the Earth System System".
We look forward to welcoming you at the Max Planck Institute for Biogeochemistry (September 24-29, 2017)

2018 CPESC (Certified Professional in Erosion and Sediment Control) certification course. Envirocert International Inc. IECA Iberoamerica (25th of September of 2018)

6. Research experience

6.1 Research projects participation

Start	End	Function	Project title and funding agency
11-01-19	11-1-22	Principal Investigator	ForCARE, Forest Carbon Associative Research: Quantifying the effect of forest use intensification on soil carbon stabilization processes. International Cooperation program (PCI) CONICYT (National Committee of Research and Technology) – Max Planck Institute, Germany.
09-01-19	09-01-22	Academic Sponsor	BIOWEATH: Biotic controls on Fe and Al dynamics during deep mineral weathering processes. 330534 National Fund for Research and Technology (FONDECYT) Postdoctoral 2019
10-12-18	10-12-21	Collaborator	Biogeochemistry: Microbial element cycling as a driver of soil formation. Deep Earthshape - Project 12. DFG-SPP Program 1803-2. EARTHSHAPE Earth Surface Shaping by Biota. (Phase 2). PI: Spohn, M. (U. Bayreuth, Alemania). https://esdynamics.geo.uni-tuebingen.de/earthshape/index.php?id=149
10-12-18	10-12-21	Collaborator	Connecting the green and the grey world: an experimental approach to separating climate, vegetation and geochemical effects on nutrient cycling along a climate gradient. DFG-SPP 1803-2. EARTHSHAPE Earth Surface Shaping by Biota. (Phase 2). Project 2 PI: Oelmann, Y. Neidhar, H, Tielbörger, K. (U. Tübingen, Alemania). https://esdynamics.geo.uni-tuebingen.de/earthshape/index.php?id=137
10-12-18	10-12-21	Collaborator	Biogeomorphic feedbacks and their role for sediment erosion and connectivity along a climatic gradient in Chile. Project 6. DFG-SPP Program 1803. DFG-SPP 1803-2 EARTHSHAPE Earth Surface Shaping by Biota. (Phase 2). PI: Hoffmann, T. (BFG y U. Bonn, Alemania) https://esdynamics.geo.uni-tuebingen.de/earthshape/index.php?id=141
06-03-20	06-08-22	Director	Proyecto de investigación e implementación del plan de Revegetación en el Vertedero de cenizas de la Central termoeléctrica Bocamina. Convenio Investigación Enel-UdeC.
08-01-19	08-01-22	Collaborator	018/2019 Design and evaluation of ecological restoration in degraded <i>Araucaria araucana</i> forests in the Andes and Nahuelbuta cordilleraen. X National Fund for Native Forest Research (FIBN), National Forest Corporation (CONAF).. PI: Paula Gatica (UdeC)

04-24-18	04-24-21	Collaborator	036/2018 Ecological restoration strategies in Acacia melanoxylon invaded ecosystems in the coast of Biobío Region. National Fund for Native Forest Research (FIBN), – National Forest Corporation (CONAF). PI: Cristian Echeverría
03-12-18	30-04-20	Director	Proyecto Investigación - Implementación del Plan Piloto de Revegetación Vertedero de Cenizas CT Bocamina. Convenio Investigación ENEL - UDEC
11-01-16	11-01-19	Principal Investigator	Effects of soil mineral -organic interactions on the long-term soil carbon stability in temperate forest systems -To what extent does soil mineralogy modulates carbon turnover in natural and managed forest ecosystems? CONICYT (National Committee of Research and Technology) – National Fund for Research and Innovation FONDECYT Initiation 2016.
06-01-18	08-01-20	Collaborator	Effect of drying and thawing cycles on soil carbon sequestration along soil development gradients formed in extreme environments of Chile. Network for Extreme Environment Research (NEXER). Ministry of Education. PI: Francisco Matus (UFRO) http://www.nexerchile.cl/
01-01-18	12-01-18	Director	CONAF. Phase II: Anthropic disturbances effect evaluation in the regeneration of endangered Araucaria Araucana, Biobío Region. National Forest Corporation (CONAF).
11-01-16	11-01-19	Collaborator	Characterization of seasonal water use, plant water relations, microclimate conditions, fruit quality, and orchard productivity in protected cultivation of kiwifruit (<i>Actinidia deliciosa</i>): Responses to sustained deficit irrigation in commercial production. National Committee for Research and Technology (CONICYT)- National Fund for Research and Innovation (FONDECYT) Initiation. PI: Arturo Calderón.
01-01-16	01-01-19	Collaborator	Phosphorus solubilization by microorganisms and plants at different stages of soil development. DFG-SPP Program 1803. EARTHSHAPE Earth Surface Shaping by Biota. Project IV Bioscapes: Project 10. PI: M, Spohn. University of Bayreuth.
01-22-16	01-22-21	Principal Investigator	Environmental compensation mechanisms for ecosystem services restoration through reforestation of native species (Roble, Raulí y Coihue). National Electric Company (ENEL) and University of Concepción Agreement.
11-01-15	06-01-17	Co-Coordinator	Incorporation of an IRMS platform for isotopic and nutritional determination to evaluate forest hydrological and nutritional sustainability. National Committee of Research and Technology (CONICYT), Equipment National Fund (FONDEQUIP). Coordinators (R. Rubilar and F. Aburto) Fac. Cs. Forestales, UdeC.
03-14-16	03-14-17	Collaborator	Deficit irrigation and eddy covariance to increase water use efficiency in table grapes (<i>Vitis vinifera</i> L.) cv. Red Globe in the Metropolitan Region, Chile. National Committee of Research and Technology

			(CONICYT) Associative research program (PIA) 821320062 PI: A. Calderón (UdeC).
12-01-14	12-01-17	Principal Investigator	Anthropic disturbances effect evaluation in the regeneration of endangered Araucaria Araucana, Biobío Region. National Forest Corporation (CONAF).
01-02-10	08-20-14	Graduate Student	Mineral weathering and soil formation in an alpine glacial chronosequence in the Sierra Nevada, California. LAWR. UC Davis.
07-17-12	08-10-12	Field research assistant	Paleoseismic research on Althyn Tagh, Xinjiang-Uygur Autonomous Region, China. Department of Earth and Planetary Sciences UC Davis
15-09-09	01-02-10	Junior research assistant	Chevron -UC Davis Joint Biofuel Research Agreement. Department of Plant Sciences. Van Kessel Lab. Universidad de California, Davis
05-05-08	12-12-08	Associate Researcher	"Norte Chico soil genesis under paleoclimatic change during the quaternary and soil classification implications, Region of Coquimbo, Chile." Universidad de Chile.
08-12-05	15-09-07	Undergraduate research assistant	"Specialized substrates elaboration for agricultural use from bioprocessing organic residues". Faculty of Agronomical Sciences, Universidad de Chile. PI: Pablo Alvarado. FONDEF D03I1063

7. Publications

7.1 Published articles (WOS)

- 2021 Spohn M*. **Aburto F.** Ehlers, T.A. Farwig N. Frings P.J. Hartmann H., Hoffmann T., Larsen A. Oelmann Y. Terrestrial ecosystems buffer inputs through storage and recycling of elements. **Biogeochemistry**. Quantile: Q1, IF: 4.535, H Index: 140. BIOG-20-S-371. <https://doi.org/10.1007/s10533-021-00848-x>
- 2021 Crovo, O. **Aburto, F.*** Da Costa, C., Montecino, O., y Rodriguez, R. Livestock grazing reduces soil quality and threatens recovery of a degraded Andean Araucaria forest. **Land Degradation and Development**. Quantile: Q1, IF: 3.775, H Index: 68. <https://doi.org/10.1002/ldr.4079>
- 2021 Spohn, M*. Diáková, K. **Aburto, F.** Doetterl, S. Borovec, J. Sorption and desorption of organic matter in soils as affected by phosphate. **Geoderma**. Vol. 405 (1) January 2022, 115377. Quantile: Q1, IF: 4.336 H Index: 141. <https://doi.org/10.1016/j.geoderma.2021.115377>

- 2021 Oelmann, Y*.; Leimer, S.; Roscher, D.; **Aburto, F.**; Alt, F.; Berner, D.; Boch, S.; Boeddinghaus, R.S.; Busch, V.; Buscot, F.; Ebeling, A.; Eisenhauer, N.; Fischer, M.; Gleixner, G.; Hacker, N.; Hölzel, N.; Jochum, M.; Kandeler, E.; Klaus, V.H.; Kleinebecker, T.; Lange, M.; Le Provost, G.; Manning, P.; Marhan, S.; Prati, D.; Schäfer, D.; Schönig, I.; Schrumpf, M.; Sorkau, E.; Wagg, C.; Wubet, T.; Wilcke, W. Above- and belowground biodiversity jointly tighten the P cycle. **Nature Communications**. Quantile: Q1, IF: 11.880, H Index: 298. <https://www.nature.com/articles/s41467-021-24714-4>
- 2021 Calderon-Orellana, A.*., Silva, D. Bastias, R.M. Bambach, N. **Aburto, F.** Late-season plastic covering delays the occurrence of severe water stress and improves intrinsic water use efficiency and fruit quality in kiwifruit vines. **Agriculture Water Management**. Vol. 249 (30). Q1 IF: 4.021, H Index: 119 <https://doi.org/10.1016/j.agwat.2021.106795>
- 2021 Crovo, O.; **Aburto, F.*.**; Alborno, M. F.; Southard, R. Soil type modulates the response of C, N, P stocks and stoichiometry after native forest substitution by exotic plantations **Catena**. Quantile: Q1, IF: 4.333, H Index: 106. <https://doi.org/10.1016/j.catena.2020.104997>
- 2021 Castillo, P., Serra, I., Townley, B.*., **Aburto, F.**, Lopez, S., Tapia, J., Contreras, M. Biogeochemistry of plant essential mineral nutrients across rock, soil, water and fruits in vineyards of Central Chile. **Catena**. 196 Quantile: Q1, IF: 4.333. H Index: 117. DOI: <https://doi.org/10.1016/j.catena.2020.104905>
- 2020 Urbina, M., Correa, F., **Aburto F.** and Ferrio, J. P*. Food crops wrapped in plastic: Adsorption of polyethylene microbeads and physiological effects on Maize. **Science of the Total Environment**. Quantile: Q1, IF: 4.984, H Index: 224 DOI: <https://www.sciencedirect.com/science/article/pii/S0048969720337372>
- 2020 **Aburto, F.**, Rubilar, F*., Cartes, E., y Mardones, O. Soil erosion and mobility under native forests and radiate pine stands of contrasting age in a granitic soil of the Biobío Region, Chile. **Land Degradation and Development**. Quantile: Q1, IF: 3.775, H Index: 68. DOI: <https://doi.org/10.1002/ldr.3700>
- 2020 Zúñiga, P.E. Castañeda, Y. Arrey-Salas, O. Fuentes, L. **Aburto, F.** Figueroa, C.R. Methyl jasmonate applications from flowering to ripe fruit stages of strawberry (Fragaria ananassa X 'Camarosa') reinforce the fruit antioxidant response at postharvest. **Frontiers in Plant Sciences**. Quantile Q1, IF: 4.298, H Index: 83 DOI: <https://doi.org/10.3389/fpls.2020.00538>
- 2020 Spohn, M.*; Zeiðig, I.; Brucker, E.; Widdig, M.; Lacher, U.; **Aburto, F.** Phosphorus solubilization in the rhizosphere in two saporolites with contrasting phosphorus fractions. **Geoderma**. Quantile: Q1, IF: 4.336 H Index: 141. DOI: <https://doi.org/10.1016/j.geoderma.2020.114245>
- 2019 Pfeiffer, M.; Padarian, J.; Osorio, R.; Bustamante, N.; Olmedo G.F., Guevara, M.; **Aburto, F.**; Anitlen, M.; ...Zagal, E. CHLSOC: The Chilean Soil Organic Carbon database, a multi-institutional collaborative effort. **Earth System Science Data**. Quantile: Q1, IF: 5.339, H Index = 38. DOI: <https://doi.org/10.5194/essd-2019-161>

- 2018 Calderon, A. Bambach, N, **Aburto, F.** Calderon, M. (2018) Post-veraison Water Deficits Synchronize Color Development among Berries in Crimson Seedless. 70(1). Grapevines. **American Journal of Enology and Viticulture**. *Quantile: Q1*, IF: 1.783, H Index = 38. DOI: [10.5344/ajev.2018.17070](https://doi.org/10.5344/ajev.2018.17070)
- 2018 Bernhard, N., Moskwa, L.-M., Schmidt, K., Oeser, R. A., **Aburto, F.**, Bader, M. Y., ...Ehlers, T. A.,... & Kühn, P. Pedogenic and microbial interrelations to regional climate and local topography: new insights from a climate gradient (arid to humid) along the Coastal Cordillera of Chile. **Catena**.170, 335-355 *Quantile: Q1*, IF: 3.851 H Index= 106. DOI: <https://doi.org/10.1016/j.catena.2018.06.018>
- 2017 Aburto, F. and Southard, R. Refined Geomorphologic Interpretation of Glacial Deposits using Combined Soil Development Indices and LiDAR Terrain Analysis. *Soil Science Society of America Journal*. **Soil Science Society of America Journal**. 81(1):109–123. *Quantile: Q1*, IF: 1.997, H Index= 125 DOI: [doi:10.2136/sssaj2016.07.0211](https://doi.org/10.2136/sssaj2016.07.0211)
- 2017 León-Muñoz, J. Echeverría, C., Fuentes, R., **Aburto, F.** How is the land use-cover changing in drinking water catchments in the coastal range of south-central Chile (35° – 38.5°S)? **Bosque** 38(1):203-209. *Quantile: Q3*, H Index = 10. DOI: 10.4067/S0717-92002017000100020.
- 2016 **Aburto, F.** and Southard, R. Thermal Analysis quantification of gibbsite and kaolinite in bulk soils and applications as a relative dating tool in two moraine chronosequences. **Soil Science Society of America Journal**. 80 (2) :502-515. *Quantile: Q1*, IF: 1.997 H Index= 125. <https://doi.org/10.2136/sssaj2015.08.0307>
- 2012 Pfeiffer, M., **Aburto, F.**, Le Roux, J.P., Kemnitz, H. Sedov, S. Solleiro-Rebolledo, E. Seguel, O. Development of a Pleistocene calcrete over a sequence of marine terraces at Tongoy (north-central Chile) and its palaeoenvironmental implications. **Catena**. Volume 97,0,104-118. *Quantile: Q1*, IF: 4.333. H Index: 117. <https://doi.org/10.1016/j.catena.2012.05.008>
- 2010 Pfeiffer, M., Mascayano, C., **Aburto, F.** Soils of Chilean Patagonia in glacial and periglacial environments. **Eurasian Soil Science**. Volume 43, Number 13, 1430-1438. *Quantile: Q2*, H Index= 14. <https://doi.org/10.1134/S106422931013003X>

7.2 Submitted Publication (WOS)

Navarro-Fuenzalida, N. P, Rubilar, R.A*, Gavilán, E., **Aburto, F.** (En Revisión) Effect of the addition of water and nutrients on growth efficiency, gas exchange and establishment of Quillaja saponaria Molina (Quillajaceae) under field conditions. **New Forests**. NEFO-D-20-00235

Aguilera N., **Aburto F.***, Bustamante M., Acevedo M., González, M., Oelmann Y., Schoebitz, M., Spohn, M. Schwerdtner, U. (En Revisión). Effects of the co-cultivation of tree species with complementary nutrient acquisition strategies on nutrient availability and acquisition in a post-fire soil. **Journal and Soil and Plant Nutrition**. *Quantile: Q2*, IF: 2.271, H index: 33. JSSP-D-21-00901

7.3 Other publications

- 2015 **Aburto, F.** Soil development, mineral weathering patterns, and weathering rates in Pleistocene glacial deposits in the Lake Tahoe basin, CA. PhD. Dissertation. University of California, Davis. 136p
- 2008 **Aburto F.**, Hernández C., Pfeiffer M., Casanova M., Luzio W. 2008. *Northern Field – Guide. The International Conference and Field Workshops on Soil Classification. Soil: A work of art of the nature.* (Casanova M., Luzio W., Eds.). 76 p.
- 2006 **Aburto, F.**, Prat, L. y Canaves, L. Substrate evaluation obtained from a bioprocessing organic residue for Mexicola cv. Avocado propagation. *Revista Simiente*, Number 76 (3-4), 2006, 88-89.

7.4 Publications in preparation

Atenas Navarrete A., **Aburto, F***, Gonzáles-Rocha, G., Merino Guzmán, C., Schmidt, R., Scow, K. Andean forest degradation alters surface soil biogeochemical pools and microbial diversity. **Science of the total environment**. Quantile: Q1, IF: 7.963, H Index: 244 (Expected submission: October 2021).

Gatica, P. Rojas, P. Echeverría, C. **Aburto, F***. A critical review of common soil indicators for forest restoration. **Restoration Ecology**. Quantile: Q1, IF: 2.721, H Index: 95. (Expected submission: November 2021).

Waterhouse, H. **Aburto, F** Griffin-LaHue, D. Rees,G., Katelin Aldritt, Salls,W.B., Rippner, D.A. Scow, K. O'Geen, A. T. (en prep). Soil health indicators of common ecostates within an organic cattle ranch in California. **Land Degradation and Development**. Quantile: Q1, IF: 3.775, H Index: 68 (Expected submission: November 2021).

Aburto F.*, Czimckzik C., Matus F., Rubilar R., Sierra, C. Trumbore S. Radiocarbon unravel deep carbon alteration after native forest conversion to plantations. **Biogeochemistry**. Quantile: Q1, IF: 4.535, H Index: 140. (Expected submission: December 2021).

7.5 Oral and Poster Communications (last 5 years)

- 2021 Crovo, O. **Aburto, F.** Montencino, F. (2021) Effectiveness of Soil Covers on Soil Quality Recovery, Nutrient Cycling and Runoff Control after Three Years of Rehabilitation and Revegetation of a Fly-Ash Landfill. [Abstract]. ASA, CSSA, SSSA International Annual Meeting, Salt Lake City, UT. <https://scisoc.confex.com/scisoc/2021am/meetingapp.cgi/Paper/138284>
- 2021 Alborno, M. F. **Aburto, F.** (2021) Stoichiometry of C:N:P Deep Along an Extreme Vegetation Gradient and Its Relation with Iron Structures [Abstract]. ASA, CSSA, SSSA International Annual Meeting, Salt Lake City, UT. <https://scisoc.confex.com/scisoc/2021am/meetingapp.cgi/Paper/137147>
- 2021 Atenas, A. and Aburto, F. (2021) Effects of Anthropogenic Degradation of an Andean Temperate Forest on Major Nutrients, Soil Enzyme Activity and the Diversity and Function of the Soil Microbial Community [Abstract]. ASA, CSSA, SSSA International Annual Meeting, Salt Lake City, UT. <https://scisoc.confex.com/scisoc/2021am/meetingapp.cgi/Paper/137102>

- 2021 **Aburto, F.**, Castillo, P., Alborno, M.F. Crovo, O. Sourthard, R. (2021) Soil Mineralogical, Physical, and Chemical Alterations By Forest Use Intensification at Different Parent Materials of South-Central Chile [Abstract]. ASA, CSSA, SSSA International Annual Meeting, Salt Lake City, UT. <https://scisoc.confex.com/scisoc/2021am/meetingapp.cgi/Paper/137138>
- 2021 Leal Monsalvez, F. and **Aburto, F.** (2021) Nutrient Cycling Dynamics and the Role of Soil Mesofauna in Litter Decomposition in Temperate Forests with Different Conservation States [Abstract]. ASA, CSSA, SSSA International Annual Meeting, Salt Lake City, UT. <https://scisoc.confex.com/scisoc/2021am/meetingapp.cgi/Paper/134364>
- 2021 Effects of native forest replacement to exotic plantations on forest C, N, and P pools and dynamics in south-central Chile. **Aburto, F.***, Crovo, O., Alborno, M.F. and Sourthard, R. EGU General Assembly 2021, online, 19–30 Apr 2021, EGU21-13749, <https://doi.org/10.5194/egusphere-egu21-13749>.
- 2021 Effectiveness of erosion control covers on soil quality recovery, runoff, and sediment production after forest restoration in a fly-ash landfill. Crovo, O., Alborno, M.F., Rubilar, R., Sourthard, R. **Aburto, F.*** EGU General Assembly 2021, online, 19–30 Apr 2021, EGU21-13844, <https://doi.org/10.5194/egusphere-egu21-13844>. .
- 2021 Effects of anthropogenic degradation of an Andean temperate forest on the soil nutrients and on the diversity and function of the soil microbial community. Atenas, A., **Aburto, F.***, Hasbun, R., and Merino, C. EGU General Assembly 2021, online, 19–30 Apr 2021, EGU21-14004, <https://doi.org/10.5194/egusphere-egu21-14004>.
- 2020 Evaluation of the enzymatic activity and diversity of soil microorganism in Andean temperate forests degradation gradient. Atenas, A., **Aburto, F.+**, Hasbun, R. , and Merino, C. 04 May, ID D2224. <https://meetingorganizer.copernicus.org/EGU2020/EGU2020-21058.html>
- 2020 Differential responses of soil Carbon, Nitrogen and Phosphorus stocks and available pools to conversion from native forest to exotic plant plantation in soils of contrasting origin. Crovo, O., **Aburto, F.***, Alborno, M., and Sourthard, R. 04 May, 08:30–10:15, ID D2304. <https://meetingorganizer.copernicus.org/EGU2020/EGU2020-20760.html>
- 2020 Effect of tree native species assemblages on C, N & P contents of burned soils. Aguilera, N. **Aburto, F.**, Salazar, F. Bustamante, M Acevedo, M., Gonzalez, M. Schwerdtner, U. and Oelmann, Y. 07 Ma, ID D2092. <https://meetingorganizer.copernicus.org/EGU2020/EGU2020-20202.html>
- 2020 Assessment of the potential for long-term soil carbon sequestration and stabilization in contrasting soils after native forest conversion to planted forests. **Felipe Aburto**, Oscar Crovo, Claudia Czimczik, Carlos Sierra, Susan Trumbore, and Xiaomei Xu 05 May, 14:00–15:45, ID D795. <https://meetingorganizer.copernicus.org/EGU2020/EGU2020-20965.html>
- 2019 Effect of three native species assemblages on C, N & P contents of burned soils and nutrient acquisition Aguilera N., Salazar F, Bustamante M., Acevedo M., González M. & **Aburto F***. VII National Conference of Forest Sciences, 8-10 October, Concepción, Chile
- 2019 Nutrient forest floor contribution in an Andean broadleaf forest, Biobío región, Chile. Aguilera N., Montecino F., **Aburto F***. VII National Conference of Forest Sciences, 8-10 October, Concepción, Chile

- 2019 Atenas, N.A.; **Aburto, F***; Alvarez L.E.; Hasbun Z.R.; Merino G. C. Enzymatic activity and microbial diversity evaluation in a high-altitude temperate forest degradation gradient, Ñuble region, Chile. VII National Conference of Forest Sciences, 8-10 October, Concepción, Chile
- 2019 Crovo, O*.; **Aburto, F***., Alborno, F.; Southard, R. . Evidence of mineralogical controls on C, N and P reservoirs and distributions in natural temperate deciduous forest and exotic pine plantations. VII National Conference of Forest Sciences, 8-10th October, Concepción, Chile
- 2019 Crovo, O. Alborno, M.F., Southard, R. Atenas, A. Montecino, **F. Aburto, F***. Evidence of Mineralogical Controls on C, N and P Reservoirs and Distributions in Natural Temperate Deciduous Forest and Exotic Pine Plantations Forests in Soils of Contrasting Mineralogy. Annual Meeting Soil Science Society of America. San Diego, California. 5 -9th of January 2019 (Oral)
- 2019 Aguilera, N. Bustamente, M Atenas, A. Gonzalez, M Acevedo, M. **Aburto, F***. Nutritional Effects of Complemental Species Assemblages and Potential for Ecological Restoration of Post-Fire Soils. Soil Science Society of America. San Diego, California. 5 -9th of January 2019 (Oral)
- 2019 **Aburto, F.** Exploring Thresholds in Soil Development and Clay Mineralogy Along Climatic and Environmental Gradients in Central Chile. Soil Science Society of America. San Diego, California. 5 -9th of January 2019 (Oral)
- 2018 **Aburto F***, Crovo, O., Da Costa, C. , Müller-Using, B. , Rodríguez, R. Effects of uncontrolled grazing in soil ecosystem functions and regeneration of endangered Araucaria araucana K. Koch natural forests. Hispano-American Conference of Ecology, Erosion and Sediment control. IX CICES y II ISI. 26-28th of September, 2018
- 2018 **Aburto, F***. Rubilar, R., Cartes, E. Mardones, O. Soil loss under native forests and radiate pine stands of contrasting age in a granitic soil of the Biobío Región, Chile. Hispanoamerican Conference of Ecology, Erosion and Sediment control. IX CICES y II ISI. 26-28th of September, 2018
- 2017 Crovo, P. Montecino, F. Da Costa, C. y **Aburto, F***. Effect of uncontrolled grazing on the ecosystem functioning of Araucaria Araucana forests' soils. National Congress of Soil Sciences, 20-23rd November, Santiago, Chile.
- 2017 **Aburto, F*** , Crovo, O. Contreras, S. C; N, P stocks and depth distribution patterns in natural forest and pine plantations in south central Chile. Chilean Congress of Soil Sciences, 20 – 23rd November, Santiago, Chile
- 2016 **Aburto, F***., Crovo, O., Da Costa, C., Atenas, A. 1) ¿How to incorporate soil conservation in protected lands? Quantifying the hidden effect of grazing in endangered Araucaria forests. . 1st National Conference in Protected Lands. 22 – 25 of November, Temuco, Chile
- 2016 **Aburto, F***., Montecinos, F. Da Costa, C. Rodriguez, R., Müller-Using, B. Seed predation and regeneration of Araucaria Araucana forest in the Ralco National Research, potential threat to this endangered species conservation 1st National Conference in Protected Lands. 22 – 25th of November, Temuco, Chile
- 2016 **Aburto, F***. and Southard, R. Soil mineralogical trends and weathering rates in quaternary tills in the lake Tahoe basin – California, USA. 1st National Conference of Young Soil Science Researchers. 28-30th of September, Valdivia, Chile.
- 2015 Southard, S*. Southard, R. **Aburto, F.** Soil Survey Field Methods and Soil Interpretation Outreach to Chilean Soil Survey. 2015 National Cooperative Soil Survey National Conference. "Soils and a Changing Climate: Future Trends of the NCSS" Duluth, Minnesota, June 7-11th , 2015

- 2014 **Aburto, F***. and Southard, R. Mineralogical and geochemical patterns in soils on tills in California's Lake Tahoe Basin. Goldschmidt 2014. Sacramento California. June 9th , 2014. DOI: 10.13140/2.1.1912.1607.
- 2014 O'Geen, T; **Aburto, F**; Alldritt, K; Deng, Y. D'Elia, A; Felice, M; Griffin, D.E; Rippner, D; Rees, D.L; Salls, W; Scow, K.M; Southard, R; Tian, Z; and Waterhouse, H. Broadening student involvement in research and extension of rangeland soil ecosystem services. SSSA Ecosystem Services Conference. 6 -9th of March, Sacramento, California. DOI:10.13140/2.1.5156.1928

8. Extension and Outreach Activities (not specialty conferences)

8.1 Talks, Seminar and exhibitions (last 5 years)

- 2020 Soil mineralogy and type controls on long term carbon cycling, stocks and dynamics in temperate deciduous forest and pine plantation in central Chile. International Webinar Forcare: Soil Carbon Cycling in Forest Ecosystems and Radiocarbon Tools. 3rd of September of 2020.
- 2020 Experiencias Prácticas e Investigación en Proyectos de Reforestación y Restauración Ecológica. IV Seminario Annual de la Red Chilena de Restauración Ecológica 5th of August of 2020
- 2020 Mineral controls on the C cycling response after forest substitution. Guest Seminar. Radiocarbon Group. Max Planck Institute of Biogeochemistry, Jena, Germany, 8th of July of 2020.
- 2019 Aburto, F. Seminar (special Guest): Evidence of Mineralogical Control on C, N, and P reservoirs and distribution in Natural temperate deciduous forests and exotic pine plantations forest in soils of contrasting mineralogy. Department of Earth System Sciences, University of California, Irvine. 9th of January of 2019.
- 2018 Aburto, F. Talk: 1000 Scientists- 1000 Classroom. "Soils, source and life regulator". EXPLORA National Program, CONICYT. Special School for Autism and Down syndrome, Chile España, Chiguayante, Chile. 4th of December
- 2017 Aburto, F. Talk and Exhibit: Soils and Art. Biodiversity Science and Art Colloquium. Facultad de Ciencias Forestales. Universidad de Concepción 7th of November of 2017
- 2017 Aburto, F. "Effect of uncontrolled grazing in soil and Araucaria forest health". Biology and Fertility of Soil Seminar, Facultad de Ciencias Agronómicas, Universidad de Concepción, Concepción 2nd of June of 2017. "
- 2017 Aburto, F., Da Costa, C., Crovo, O., Montecino, F., and Rodriguez, R. Effects of uncontrolled grazing on soil ecosystem functioning and regeneration of endangered monkey puzzle natural forests. Soil Ecology Seminar. University of Bayreuth, Germany. 4th of April of 2017.
- 2016 Aburto, F. Introduction to isotopic ratio mass spectrometry and applications in soil and ecology. Postgraduate Multidisciplinary Summer Course: Stable Isotopes, Fundamentals and Applications in Natural Sciences. Universidad de Concepción. 16th – 20th of January of 2016.
- 2016 Aburto, F. Possibilities for soil and forest related research in Chile. Strengthening the Chilean-Californian Partnership. University of California, Berkeley, USA 29th of January 2016

- 2016 Aburto, F. Possibilities for soil and forest related research in Chile. Strengthening the Chilean-Californian Partnership. University of California, Davis, USA 26th of January of 2016
- 2016 Aburto, F. Uses of Isotope Ratio Mass Spectrometry for environmental analysis.. Proyecto FONDEQUIP 150018. Facultad de Ciencias Forestales, Concepción. 19th of October 2016.
- 2015 Aburto, F. Speaker and launching of campaign: “Soil is Life”, Facultad de Ciencias Forestales. Universidad de Concepción. 12th of January of 2015
- 2015 Aburto, F. Guest Speaker and round table. Earth day celebration, Auditorio Facultad de Ciencias Forestales, Universidad de Concepción. 22nd of April of 2015

8.2 Creative and Audiovisual Material

- 2019 Special open TV documentary. Understanding Forest and Soil Dynamics Ranchillo Alto, Protected Land – TVU Chanel – Programa Ciencia Sin Ficción (Science without fiction). <https://www.tvu.cl/programas/ciencia-sin-ficcion/2019/05/10/regeneracion-del-bosque-nativo-degradado-por-el-hombre-en-sector-ranchillo-alto-de-yungay.html>
- 2018 Painted Mural Creation: Soil is alive!. Differential School Chile –España, Chiguayante. Direction of a school community mural painted with soils with soils as the central theme.
- 2016 Video Creation: Soil conservation and rehabilitation techniques for degraded soils in impoverished rural areas. FAO Video Contest. Aburto, H. Salazar, H. Kramsac, X. Echeverria, C. Second Place “Soil International Day ONU-FAO TECA: Sustainable Soil Practice Video Contest 2016”. Price. Mention and display in the International Soil Day Conference in ROME and USD\$ 2000. Video available: <https://www.youtube.com/watch?v=6X3WXfgnJMQ>

9. Editorial board , Reviewer and Research Committees Participation

- 2021 to present **Technical Editor, Soil Science Society of America Journal (WOS).**
Section: Pedology, Soil Mineralogy and Wetlands Soils
- 2018 to present **Member of the Agronomy Study Group (Board) of the National Fund for Science and Technology (FONDECYT),** National Committee of Science and Technology (CONICYT).
- 2015 to present **Ad-hoc reviewer. Journal of Soil Science and Plant Nutrition (WOS).**
- 2017 to 2021 **Associate Editor, Soil Science Society of America Journal (WOS).**
Section: Pedology and Mineralogy.
- 2021 to present **Ad-hoc reviewer. Perspective in Ecology and Conservation (WOS)**
- 2021 to present **Review Editor, Frontier in Soil Science (WOS).** Section: Soil Biogeochemistry & Nutrient Cycling

10. Scientific Affiliation and Memberships

Soil Science Society of America (SSSA). Member since 2013

Soil Science Society of Chile (SChSS). Member since 2017

European Geophysical Society (EGU). Member since 2019 to 2021

11. Research and Analytical Skills

Analytical Techniques: XRD on oriented slides for clay identification and quantitative mineralogy, Scanning Electron Microscopy and Electron Microprobe, Differential Scanning Calorimetry, FTIR (DRIFT and ATR), AAS, Mass Spectrometry (ICP-MS and IRMS) and basic training in sample prep for Accelerated Mass Spectrometry (AMS) for ^{14}C analysis.

Soil and Plant Analyses: In depth knowledge and experience with most of the physical, chemical and biological standard methods for soil characterization and nutrient analysis in plant tissues.

Field Skills: Soil description and sampling. Soil classification and mapping. Geomorphologic reconnaissance and mapping. Weather stations, soil moisture and temperature sensors installation and monitoring (Campbell and Decagon), LICOR gas CO_2 measurements and gas sampling.

Statistics and Data Analysis: Experimental Design, Multivariate and Univariate Statistics. Main software platforms: R and JMP (SAS) for stats, ArcGIS, and Q-GIS for GIS analysis.