

Pedro Val

pedroval07@gmail.com

www.pedroval.com

Office: +55-31-3559-1879

Mobile: +55-31-97182-3006

Department of Geology
Federal University of Ouro Preto

EDUCATION

- Syracuse University 2012 - 2016
Ph.D. in Earth Sciences (focus area: **Tectonic Geomorphology**)
Fellowship (4 years). Sponsor: CAPES – Science without Borders (Brazilian Government)
- Amazon Federal University 2006 - 2012
B.S. in Geology (Manaus, Amazonas, Brasil)
- Washington & Lee University 2009
Superior Education Consortia Program: Academic Exchange program
Sponsor: CAPES/FIPSE Brazil-USA

PROFESSIONAL EXPERIENCE

- Queens College, City University of New York – starting 08/2022
Assistant Professor
- Federal University of Ouro Preto (UFOP) 08/2018 – 08/2022
Assistant Professor (tenured since July 2021)
Teaching: Geochemistry; Advanced Geomorphology. Research: Landscape evolution
- Hydrobiology Pty Ltd 05/2022 - present
Consultant in Environmental Science
- Hydrobiology Pty Ltd 08/2017 - 2018
Subconsultant in Environmental Science
- Scripps Institution of Oceanography (UCSD) 09/2016 – 07/2018
Postdoctoral Scholar in Geomorphology and Landscape Evolution
(supervisor: Jane K. Willenbring)
- Syracuse University 2015 - 2016
Academic Consultant at Student Support Services
Provide individual and group tutoring for under-represented and academically-at-risk students
(supervisor: Chris Weiss)
- PETROBRAS 2011
Internship: Sedimentology & Stratigraphy
Provide support to the sedimentology and stratigraphy sector. Describe drill-cores, build stratigraphic sections, provide field support in oil/gas-producing fields in the Amazon rainforest.

INTERNATIONAL PANELS

- **Science Panel for the Amazon** (*United Nations Sustainable Development Solutions Network*)
Coordinating Author of Chapter 1 – Geological history and geodiversity of Amazonia.

RESEARCH

Peer-reviewed publications (journals and book chapters):

Schaefer, JM; Codilean, AT; Willenbring, JK; Lu, Z-T; Keisling, B; Fülöp, R-H; **Val, P**, 2022

Cosmogenic Nuclide Techniques, *Nature Reviews Methods Primers*, **2**, 18, doi: 10.1038/s43586-022-00096-9

- Val, P.**, Willenbring, JK, 2022 Subduction Zone Dynamics and the Topography of Cordilleran Orogens. In: Shroder, J.J.F. (Ed.), *Treatise on Geomorphology*, vol. 2. Elsevier, Academic Press, pp. 68–86. <https://dx.doi.org/10.1016/B978-0-12-818234-5.00090-0>.
- Hoorn, C; Boschman, LM; Kukla, T; Sciumbata, M; **Val, P.**, 2022 The Miocene wetland of western Amazonia and its role in biogeography, *Perspective Article*, Botanical Journal of the Linnean Society, doi: 10.1093/botlinnean/boab098
- Hoorn, C; Kukla, T; Bogotá-Angel, G.; van Soelen, E; González-Arango, C; Wesselingh, FP; Vonhof, H; **Val, P.**; Morcote-Rios, G; Roddaz, M; Dantas, EL; Santos, RV; Damsté, JSS; Kim J-H; Morley, RJ, 2022 Cyclic sediment deposition by orbital forcing in the Miocene wetland of western Amazonia? New insights from a multidisciplinary approach. *Global and Planetary Change*, 210, doi: 10.1016/j.gloplacha.2021.103717
- Val, P.**; Lyons, N; Gasparini, N; Willenbring, J; Albert, J 2022 Landscape evolution as a diversification driver in freshwater fishes, *Frontiers in Ecology and Evolution*, 9, doi: 10.3389/fevo.2021.788328
- Sá Leitão, CS; Souza, É; Santos, CH; **Val, P.**; Val, AL; Almeida-Val, VMF. 2021 River reorganization affects populations of dwarf cichlid species (*Apistogramma* genus) in the lower Negro River, Brazil. *Frontiers in Ecology and Evolution*, 9, doi: 10.3389/fevo.2021.760287
- Val, P.**; Figueiredo, J; Melo, G; Flantua, SGA; Quesada CA; Fan, Y; Albert, JA; Guayasamin, JM; Hoorn, C, 2021 Geology and geodiversity of the Amazon: Three billion years of history, *The Amazon Report* (Chapter 1) <https://www.theamazonwewant.org/spa-reports/>
- Lyons, N; **Val, P.**; Albert, J; Willenbring, J; Gasparini, N. 2020 Topographic controls on divide migration, stream capture, and diversification in riverine life. *Earth Surf. Dynam. Discuss.*, doi: 10.5194/esurf-8-893-2020
- Albert, J; **Val, P.**; Hoorn, C. 2018 The changing course of the Amazon River in the Neogene: center stage for Neotropical diversification. *Neotropical Ichthyology*. 16, n.3, doi: 10.1590/1982-0224-20180033
- Ruetenik, G; Moucha, R; Hoke, G; **Val, P.** 2018 Regional landscape response to thrust belt dynamics: The Iglesia basin, Argentina. *Basin Research*. 30, 6, 1141-1154
- Val, P.**; Venerdini AL; Ouimet W; Alvarado P; Hoke GD. 2018 Tectonic control of erosion rates in the southern Central Andes, *Earth Planet. Sci. Lett.* 482, 160-170, doi: 10.1016/j.epsl.2017.11.0004
- Leitão, CS; Santos, CH; Souza, EM; **Val, P.**; Vilarinho, G; Silva, MN; Val, AL; Almeida-Val, VMF; 2017 Development and characterization of microsatellite loci in Amazonian dwarf cichlids *Apistogramma* spp. (Peciformes: Cichlidae): uncovering geological influence on Amazonian fish population. *Journal of Applied Ichthyology* 33, 6, 1196-1199, doi: 10.1111/jai.13490
- Val, P.**; Hoke, GD. 2016 A practical tool for examining paleo-erosion rates from sedimentary deposits using cosmogenic radionuclides: examples from hypothetical scenarios and data. *Geochemistry, Geophysics, Geosystems* 17, 1-11, doi: 10.1002/2016GC006608
- Val, P.**; Hoke, GD; Fosdick, JC; Wittmann H. 2016 Reconciling tectonic shortening, sedimentation and spatial patterns of erosion from ¹⁰Be paleo-erosion rates in the Argentine Precordillera. *Earth Planet. Sci. Lett.* 450, 173–185 doi: 10.1016/j.epsl.2016.06.015
- Val, P.**; Silva, CL; Harbor, DJ; Morales, N; Maia, TFA; Amaral, FR. 2014 Erosion of an active fault scarp leads to drainage capture in the Amazon region, Brazil. *Earth Surface Processes and Landforms*, Vol. 39, p. 1062-1074, doi: 10.1002/esp.3507

Currently in review (* denotes student author):

- Fadul, C.M.*; Oliveira, P.*; **Val, P.**, Ongoing landscape transience in the eastern Amazon craton consistent with lithologic control of base level, *in review at Earth Surface Processes and Landforms*

Val, P.; Willenbring, J. K. 2022, Across-strike asymmetry of the Andes linked to the age and geometry of the Nazca plate, *In Review in Geology, EarthArXiv preprint, doi 10.31223/osf.io/awug4*

Doctoral dissertation

Val, P. 2016 The pace and timing of changing landscapes as viewed through cosmogenic radionuclides: synthetic and real examples from the Central Andes and Amazonia. *Syracuse University*

Published in conferences - Selected:

Ruetenik, G. R.; Jansen, J.; **Val, P.** 2022. Understanding landscape evolution parameters using global ¹⁰Be erosion rates. EGU General Assembly

Willenbring, J. K.; **Val, P.** 2021. When do tectonic take the back seat? A macroscopic view of Earth's Surface (Invited). AGU Fall Meeting

Oliveira, P.; **Val, P.;** Hoke, D. 2020. Spatial distribution and quantification of surface uplift in the South-Central Andes and Precordillera. AGU Fall Meeting 2020.

Val, P.; Willenbring, J. K. 2020. Across-strike asymmetry of the Andes orogen linked to the age and geometry of the Nazca plate. AGU Fall Meeting

Fadul, C.M.*; **Val, P.** 2020. River capture and transient incision across lithologically controlled topographic barriers in Amazonia's eastern Guiana Shield. Geological Society of America. Annual Meeting

Val, P.; Willenbring, J. K. 2020. Building and moving mountains: Subduction zone imprints on the heights and asymmetries of cordilleran mountains. Geological Society of America. Annual Meeting

Val, P.; Willenbring, J. K. 2019. The tail doesn't wag the dog: Asymmetry of the Andes orogen driven by the geometry of the subducting Nazca slab. Regional Conference in Geomorphology, Athens 2019

Val, P.; Willenbring, J. K. 2019. Asymmetry of the Andes orogen, geometry of the subducting Nazca slab, and topographic trends across rain shadows. CLAST 2019 Penrose Conference, Juneau AK 2019

Lyons, N.; Gasparini, N.; Albert, J.; **Val, P.;** Willenbring, J. K. 2018. Isolating the conditions of drainage reorganizations and its impacts on species evolution using numerical models. American Geophysical Union – Fall Meeting, Washington, D.C.

Willenbring, J.; **Val, P.** 2018 Not feeling the buzz: tectonic-not climate-sets mountain heights (Invited Presentation). In: GSA Meeting, 2018, Indianapolis. GSA Annual Meeting in Indianapolis, Indiana, USA – 2018

Lyons, N; **Val, P.;** Albert, J; Gasparini, N; Willenbring, J. K. Stream captures: Dynamics and impacts on biodiversity. In: European Geosciences Union General Assembly 2018, 2017, Vienna. European Geosciences Union General Assembly 2018.

Val, P.; Venerdini AL; Ouimet W; Alvarado P; Hoke, GD. 2016 Surface uplift governs millennial and decennial erosion rates in the southern Central Andes. Poster presentation, paper #T31A-2890. American Geophysical Union – Fall Meeting, San Francisco, CA.

Val, P.; Hoke, GD; Fosdick, JC; Wittmann, H. 2015 Dynamics of erosion in a compressional mountain range revealed by ¹⁰Be paleoerosion rates. Oral presentation, paper #T12B-04. American Geophysical Union – Fall Meeting, San Francisco, CA

Val, P.; Hoke, G. D. 2015 Surface uplift of the Frontal Cordillera at 30.5° - 31°S constrained through river profile analysis of the Castaño and Calingasta catchments, south-central Argentina. Poster #311-2 Geological Society of America 2015 – *Baltimore, MD Meeting.*

UNDERGOING FUNDED PROJECTS

- AMERICAS - *AMazon Evolution by RIVER CApture eventS*

- Cosmogenic nuclide dating of drainage captures; Fish Phylogenomics; Detrital Zircon Provenance (funded by CNPq and Instituto Serrapilheira) - Institutions: UFOP; Scripps/UCSD; Tulane University; University of Louisiana, Lafayette; Rutgers University; National Institute for Amazonian Research (INPA)

GRANTS AND AWARDS

- 2019 Grant: AMazon Evolution driven by RIver CAPture eventS** - Instituto Serrapilheira (R\$99,274)
- 2019** Federal University of Ouro Preto (R\$3,500)
- 2018 Grant: Detrital zircon provenance in the Guiana Shield.** CNPq (R\$20,000 + R\$4,800 REU scholarship for an undergraduate student at UFOP) #438735/2018-8.
- 2015** Newton E Chute Award for Outstanding Graduate Scholarship, Service to the Department and Professional Promise. Dpt. of Earth Sciences (Syracuse U.)
- 2015** John J Prucha Research Fund (U\$3,000) - Dpt. of Earth Sciences (Syracuse U.)
- 2014** John J Prucha Research Fund (U\$3,000) - Dpt. of Earth Sciences (Syracuse U.)
- 2014** Graduate Student Travel Grant (U\$900) - Geological Society of America (GSA)
- 2013** John J Prucha Research Fund (U\$3,000) - Dpt. of Earth Sciences (Syracuse U.)
- 2012** Full-time Ph.D. fellowship – CAPES – Science Without Borders (duration: 4 years)
- 2009** CAPES-FIPSE Superior Consortia Program - Environmental Studies at Washington & Lee University.

EDITORIAL BOARDS

Editorial Advisor (honorary) – Earth Surface Processes and Landforms (since 2022)

Review Editor – Frontiers in Earth Sciences (Sedimentology, Stratigraphy and Diagenesis Section) (since 2018)

PEER-REVIEW

Reviewer for: NSF | Journal of Geophysical Research: Earth Surface | Geology | Earth and Planetary Science Letters | Frontiers in Earth Science | Quaternary Science Reviews | Earth Surface Processes and Landforms | Geomorphology | Tectonophysics | Scientific Reports | Brazilian Journal of Geomorphology | Brazilian Journal of Geology | Journal of South American Earth Sciences | Hydrological Processes | Journal of Maps

INVITED TALKS

- 2022** Landscapes Live Seminar Series *Widespread topographic transience in intraplate settings: it's "just" a lithologic effect*
- 2021** Amazon Cooperation Treaty Organization (ACTO) – *The Amazon Assessment Report Part 1*
50° CONGRESSO BRASILEIRO DE GEOLOGIA *Elevação e assimetria de orógenos*
Cordilheiranos: da zona de subducção ao feedback climático
CUNY-QC *Building and moving mountains: Are the heights and asymmetries of Cordilleran mountains controlled by climate?*
- 2020** GEAFS *Cosmogenic nuclide applications in surface processes*
UBG *Landscape evolution modeling in quantitative geomorphology*
- 2019** UFMG *Quantitative Geomorphology: theory and application*
- 2018** CUNY-QC *Dynamics of landscape change in space and time*
- 2017** TULANE *Catching up with Topography: Dynamics of erosion during mountain building*
UCLA *Erosion during mountain building: insights from the southern Central Andes*
ADAPTA (INPA – Brazil) *The AMERICAS Project: AMazon Evolution by RIver CApture eventS*
- 2016** SCRIPPS *Erosion during mountain building: insights from the southern Central Andes*

HIGHER EDUCATION TRAINING

2018-2022

Sala Aberta – Training for tenure-track professors (UFOP)

2016-2018

EPIC Program - Educator Training Path

2017 Course Design Studio @ Center for Engaged Teaching (UCSD)

2017 Pathways to Scientific Teaching with Diane Ebert-May (UCSD)

SCIENCE COMMUNICATION (pt)

2022 [A queda do paredão em Capitólio era uma questão de tempo](#) (*The rockfall in Capitólio was a matter of time*)

2021 [Como a Terra construiu a Amazônia?](#) (*How did Earth build the Amazon?*)

[O chão que pisamos é uma janela para o passado](#) (*The ground we step on is a window to the past*)

2020 [A revisão por pares é um trabalho fundamental](#) (*Peer review is a fundamental job*)

[Poderia o clima acelerar os motores tectônicos da Terra?](#) (*Could climate accelerate Earth's tectonic motors?*)

[O silenciamento do submundo](#) (*The silencing of the underworld*)

VOLUNTEER, OUTREACH, AND SERVICE

2022 **DELTA H** (Creator and Coordinator) – Brazil's one-day scientific meeting on landscape evolution

2020 Science for those in need (Creator) – *Free science presentations in exchange for donations to NGOs battling COVID-19*

2017 Syracuse University Project Advance (SUPA) – *The Earth System for High School Teachers / Invited speaker*

Soil Kitchen: Free lead-screening for urban residents – *XRF operator and science educator*

Scripps Community Outreach Program for Education (SCOPE) – *SIO Pier/Geology tour guide*

Student-led Brazilian Students and Scholars' Conference (BRASCON) – *Editor*

2015 Central New York Earth Science Student Symposium – *Coordinator*

2013 Central New York Earth Science Student Symposium – *Sponsorship Agent*

2009 First Geology-Week of the Amazon Federal University (student-led) – *Program Chair*

2007 Spreading the knowledge of Earth Sciences at public schools in Manaus – *Speaker*

2006-2012

The Brazilian Science and Technology Week, Manaus – *Geology Presenter*

ADVISING AND ADVISORY COMMITTEES

Graduate level

2021 Camila Fadul – MSc – *Universidade Federal de Ouro Preto* (Advisor)

Ongoing:

Caio Augusto Crelier Cubas – MSc – *Universidade Federal de Ouro Preto* (Advisor)

Jéssica Miranda – PhD Candidate – *Universidade Federal do Rio Grande do Sul* (Coadvisor)

Undegraduate level

2018-2022

Pedro Dutra Drummond (Climatic influences on the morphology of coastal basins in Brazil)

Arthur Lima Eugênio (Topographic analysis and numerical modeling of river captures in SE Brazil)

Matheus Parreiras (Using drones to quantify gully erosion)

Mariana Vilela (Landscape evolution modeling knickpoint distributions in chi-space using Landlab)

Luane Ferreira (Detecting climatic imprints on the topography of the Peruvian Andes)

Pedro Silvestre (Landscape evolution modeling of the Precordillera thrust belt using Landlab)

COURSES AND WORKSHOPS TAUGHT

2018 – 2019

Quantitative Geomorphology (Workshops May/19 and October/19)

Undergrad courses @ UFOP: Geochemistry; Advanced Quantitative Geomorphology: Theory and Practice; Introduction to Geology; Macroscopic Petrography; Analytical techniques in environmental geochemistry; Environmental Geochemistry

BACKGROUND AND TOOLS

Scientific Programming: **Matlab**

Geographic Information System and Remote Sensing: **ArcGIS, QGIS**

Laboratory experience: Mineral separation techniques; *In-situ* and meteoric cosmogenic nuclide extraction and packing

PRESS

2022 [Como a Terra construiu a Amazônia?](#) (interview in Portuguese)

2020 [From DNA to Geology](#) (interview in Portuguese)

2019 [Pesquisador investiga mudanças em paisagens pelo DNA dos peixes](#)

Translation (own): Researcher investigates landscape changes in fish DNA

<http://minasfazciencia.com.br/2019/09/23/pesquisador-investiga-mudancas-em-paisagens-pelo-dna-dos-peixes/>

2016 [Huge time-lag between erosion and mountain building.](#)

(<https://phys.org/news/2016-07-huge-time-lag-erosion-mountain.html>)

IDIOMS

English – Fluent | Spanish – Regular | Portuguese – Native Language