Dr. VICTORIA MILANEZ FERNANDES

victoria.milanezfernandes@monash.edu | +61 450 949 240

PROFESSIONAL RESEARCH EXPERIENCE & EDUCATION

Oct 2025 – present **Assistant Lecturer, Monash University**
Teaching and research position

May 2022 – May 2025 **Postdoctoral Research, GFZ Potsdam**
ERC Grant – GyroSCoPe: Geomorphic and Sedimentary Responses to Climate Periodicity
PI: Prof. Taylor Schildgen | Patagonia® sponsorship | CGC Argentina Industry-Research partnership

Feb 2021 – Apr 2022 **Postdoctoral Research Associate, Imperial College London**
NERC Large Grant – Mantle Circulation Constrained (MC2): A multidisciplinary 4D Earth framework for understanding mantle upwellings | PI: Dr. Gareth Roberts

Apr 2017 – Jan 2021 **PhD, Imperial College London**
Dissertation: Understanding Continental-Scale Landscape Evolution: A Multi-Proxy Approach
Supervisor: Dr. Gareth Roberts, Dr. Alex Whittaker

Jul 2017 – Jul 2019 **Dukes Education**
Academic tutor for high-school level Physics, Chemistry and Mathematics

Aug 2016 – Nov 2016 **Research Internship, Schlumberger**
Petrel gridding team, generated geological test cases for developing new software algorithms

Sep 2015 – Jun 2016 **MSci Geological Sciences, Newnham College, University of Cambridge**
Dissertation: Subsidence History of the Parnaíba Cratonic Basin, NE Brazil
Supervisor: Prof. Nicky White | Funding and data: £10 000 (BP)

Jul 2013 – Sep 2013 **Technical Internship, CENPES Petrobras**
Educational internship at the Petrobras National Research Centre

Sep 2012 – Jun 2015 **BA Natural Sciences, Newnham College, University of Cambridge**
Undergraduate Geological Mapping Project - Serra da Capivara National Park, NE Brazil.
Funding: £30 000 (Shell, BP, and Chevron Research Grants, Santander South America Travel Grant, Royal Geological Society Award, Newnham College Travel Grant, Earth Science Department Field Grant)
Supervisor: Prof. Nicky White

––––––––– AWARDS & DISTINCTIONS

2020 **Graduate Teaching Assistant of the Year** for Engineering Faculty, Imperial College London
2020 **Outstanding Graduate Teaching Assistant** Imperial Student Union Choice Award
2019 **Janet Watson Research Prize** for excellence in research, Imperial College London
2019 **Imperial Trust Award** for invited conference talk by PhD student
2018 **AGU Fall Meeting - Outstanding Student Presentation Award**

––––––––– CONTINUING EDUCATION

2024 **International Teaching Professionals Certificate** University of Potsdam
2023 **Doctoral Supervision Training** GFZ Potsdam
2019 **Doctoral Summer School for Advanced Spatial Modelling** UCL Bartlett Centre for Spatial Analytics
2017 **Teaching in Higher Education** Imperial College London, Graduate School

RESEARCH OUTPUT

––––––––– PUBLICATIONS

**student first author*

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[1] * Ruby, A., McNab, F., Schildgen, T., Wickert, A. S., & **Fernandes, V. M.** (2026, *accepted*). How sediment supply, sea-level, and glacial isostatic oscillations affect river long-profile evolution and terrace formation, *AGU Advances*, 7, e2025AV002035, https://doi.org/10.1029/2025AV002035.

[2] **Fernandes, V. M.**, Ruby, A., McNab, F., Wittmann, H., Wickert, A. D., Grimm, L., & Schildgen, T. (2026). Mantle-driven, climatically modulated landscape evolution in Southern Patagonia, *Geology*, 54(2), 117–122, https://doi.org/10.1130/G53764.1.

[3] * Grimm, L., McNab, F., **Fernandes, V. M.**, & Schildgen, T. (2025, *submitted*) Morphological Dating of Fluvial Terrace Risers Across Spatial and Temporal Scales, Journal of Geophysical Research: Earth Surface, Paper #2025JF008926.

[4] Davies, H., Panton, J., Altoe, I., Andersen, M., Béguelin, P., Biggin, A., Davies, C., Elliott, T., Engbers, Y. A., **Fernandes, V. M.**, Ferreira, A. M. G., Fowler, S., Ghelichkhan, S., Koelemeijer, P., Latallerie, F., Li, W., Morgan, G., Mason, S., Myhill, R., Nowacki, A., Récalde, N., O'Malley, C. P., Plimmer, A., Porcelli, D., Roberts, G. G., Rodney, J., Shorttle, O., Sturgeon, W., Walker, A. M., Ward, J., & Wookey, J. (2025). How to assess similarities and differences between mantle circulation models and Earth using disparate independent observations, *Proceedings of the Royal Society A*, 481(2315), https://doi.org/10.1098/rspa.2024.0827.

[5] **Fernandes, V. M.**, Roberts, G. G., & Richards, F. (2024). Testing mantle convection simulations with paleobiology and other stratigraphic observations: Examples from Western North America. *Geochemistry, Geophysics, Geosystems*, 25, e2023GC011381. https://doi.org/10.1029/2023GC011381.

[6] O'Malley, C. P. B., Roberts, G. G., Panton, J., Richards, F. D., Davies, J. H., **Fernandes, V. M.**, & Ghelichkhan, S. (2024, accepted). Reconciling Surface Deflections From Simulations of Global Mantle Convection, *Geoscientific Model Developments*, preprint: https://doi.org/10.5194/egusphere-2024-1893.

[7] Basilone, L., Roberts, G. G., Maia de Almeida, N., **Fernandes, V. M.**, Souza, A. C. B., Alves, D. P. V., & Jovane, L. (2023). Cretaceous to Recent tectono-sedimentary history and subsidence of the Barreirinhas, Ceará and Potiguar Basins, Brazilian Equatorial Margin, *Basin Research*. https:/doi.org/10.1111/bre.12810.

[8] Lipp, A. G., Roberts, G. G., Whittaker, A., Gowing, C. & **Fernandes, V. M.** (2021). Source Region Geochemistry from Unmixing Downstream Sedimentary Elemental Compositions, *Geochemistry, Geophysics, Geosystems*, 22(10), e2021GC009838. https://doi.org/10.1029/2021GC009838.

[9] * Wapenhans, I., **Fernandes, V. M.**, O'Malley, C. & Roberts, G. (2021). Scale-Dependent Contributors to River Profile Geometry, *Journal of Geophysical Research: Earth Surface*, 126(6), e2020JF005879. https://doi.org/10.1029/2020JF005879.

[10] Lipp, A.G., Roberts, G.G., Whittaker, A.C., Gowing, C.J.B., & **Fernandes, V. M.** (2020). River sediment geochemistry as a conservative mixture of source regions: Observations and predictions from the Cairngorms, UK. *Journal of Geophysical Research: Earth Surface*, 125, e2020JF005700. https://doi.org/10.1029/2020JF005700.

[11] **Fernandes, V. M.** & G. Roberts (2021). Cretaceous to Recent net continental uplift from paleobiological data: Insights into sub-plate support, *Geological Society of America Bulletin*, 133(5-6), pp. 1217–1236. https://doi.org/10.1130/B35739.1.

[12] * Morris, M., **Fernandes, V. M.** & Roberts, G. G. (2020). Extricating dynamic topography from subsidence patterns: Examples from Eastern North America's passive margin, *Earth and Planetary Science Letters*, 530. https://doi.org/10.1016/j.epsl.2019.115840.

[13] **Fernandes, V. M.**, Roberts, G. G., White, N., & Whittaker, A. (2019). Continental-Scale Landscape Evolution: A History of North American Topography, *Journal of Geophysical Research: Earth Surface*, 124(11), pp. 2689–2722. https://doi.org/10.1029/2018JF004979.

[14] Stucky de Quay, G., Roberts, G. G., Rood, D. H. & **Fernandes, V. M.** (2019). Holocene uplift and rapid fluvial erosion of Iceland: A record of post-glacial landscape evolution, *Earth and Planetary Science Letters*, 505, pp. 118–130. https://doi.org/10.1016/j.epsl.2018.10.026.

---------- **INVITED TALKS**

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2024 **Landscapes Live** https://www.youtube.com/watch?v=dCzNCwaOdrI&ab_channel=LandscapesLive
2024 **University of Cambridge** Bullard Laboratories, Department of Earth sciences
2024 **Imperial College London** Surface Processes Group, Department of Earth Science and Engineering
2023 **University of Potsdam** SMURF seminar Institute for Geosciences
2023 **AGU Fall Meeting** Session: Landscapes Beneath & Beyond Ice
2023 **ENS-LGL Lyon 1** Laboratory of Geology of Lyon: Earth, Planets and Environments
2022 **GFZ Potsdam** Section 4.6 Geomorphology
2022 **University of Colorado Boulder** Department of Geological Sciences
2022 **University College London** Department of Earth Sciences
2022 **Harvard University** Mitrovica Group, Department of Earth and Planetary Sciences
2022 **EGU General Assembly** Session: Tracing plate and plume modes of mantle convection across scales
2019 **AGU Fall Meeting** Session: Outstanding Student Presentation Award Winners
2018 **University of Chicago** Department of the Geophysical Sciences
2017 **Schlumberger** Abingdon Research Centre, UK

––––––––– SELECTED CONFERENCE ABSTRACTS

[1] **Fernandes, V. M.**, Schildgen, T., Ruby, A., Wittmann, H., & McNab, F. (2023, December). Quantifying Pleistocene Incision of the Southern Patagonian Steppe, Argentina. In AGU Fall Meeting Abstracts (Vol. 2023, EP024). **Invited**

[2] **Fernandes, V. M.**, & Roberts, G. G. (2022, May). Global geologic and geomorphic observations of mantle convection. In EGU General Assembly Conference Abstracts (pp. EGU22-4069). **Invited**

[3] **Fernandes, V. M.**, Whittaker, A., & Roberts, G. (2021, December). Cenozoic landscape evolution of the Middle Appalachian Mountains: How to get an erosional pulse from an ancient orogen. In AGU Fall Meeting Abstracts (Vol. 2021, pp. EP15F-1373).

[4] Pont, C., Whittaker, A. C., Roberts, G. G., & **Fernandes, V. M.** (2019, December). Quantifying landscape response times to active faulting and bedrock erodibility: Field insights from Calabria, Italy. In AGU Fall Meeting, San Francisco CA, USA, EP31C-2284.

[5] **Fernandes, V. M.**, Roberts, G. G., White, N., & Whittaker, A. C. (2019, December). A Multi-Proxy Approach to Understanding Continental-scale Landscape Evolution: A North American Example. In AGU Fall Meeting Abstracts (Vol. 2019, pp. U13C-15). **Winner Outstanding Student Presentation Award**

TEACHING & MENTORING

––––––––– LECTURER

2026 **Monash University *(upcoming)***
Data Analysis in Earth Sciences – Vic Institute of Earth & Planetary Sciences (VIEPS) *(MSc–PhD)*
EAE1022: The Earth system – Changing Environments and Climates *(Y1)*
EAE3331: Water – Hydrology, Landscapes and Risk *(Y3)*
EAE3540: Geology and Geomorphology in the Field *(Y4/Hons)*

2023–24 University of Potsdam
Structural Geology – Active Tectonics *(Y3)*

––––––––– STUDENT SUPERVISION

PhD
2026 **I. Gaulke** Global Controls on Banded Vegetation Systems
2025 **J. Evans** Aeolian Geomorphological evolution of impact craters and erosional scald landforms

Masters
2024 **L. Grimm** Dating of Patagonian fluvial terraces by modelling their riser profiles

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2020 **I. Wapenhans** North American rivers: Scale-dependence, scale-variance and environmental correlation
2019 **M. Morris** Neogene evolution of the New Jersey margin
S. Mitchell Long-term response to faulting: Insights from tectonic and landscape evolution modelling
2018 **B. Conway-Jones** Neogene Epeirogeny of Iberia.

––––––––– **TEACHING ASSISTANT** Earth Science and Engineering, Imperial College London

2018 Graphics Workshop *(Y1)*
2019 Stratigraphy and Geomaterials *(Y1)*
2018 Physical Processes *(Y1)*
2017–19 Deforming Earth *(Y1)*
2017 Global Geophysics *(Y2)*
2017–20 Continental Tectonics *(Y3)*
2017–21 Basin Analysis (*Petroleum MSc)*
2019 Seismic Data Analysis (*Petroleum MSc)*
2019 Applied Geomorphology (*Geosci. MSci)*

––––––––– **FIELD TEACHING ASSISTANT** Imperial College London

2018–19 **Pyrenees, Spain** Petroleum Geoscience Masters
2019–20 **Apennines, Italy** Geoscience Masters (incl. virtual field trip)

SERVICE & POSITIONS OF RESPONSIBILITY

2024 – 25 **Geomorphology Section Seminars** – Lead Organizer, GFZ Potsdam

Convener **AGU Fall Meeting 2022** – Deciphering the Stratigraphic Record of Surface Processes: New Insights into Ancient Dynamics of Earth and Other Planetary Bodies

AGU Fall Meeting 2021, 2022 – (Invited repeat session) Quantifying drivers of landscape change across spatial and temporal scales

Peer review Basin Research, Earth Surface Dynamics, G-cubed, Geology

2022 – 23 Geomorphica Journal EDI Committee
2021 – 22 Imperial College Earth Science and Engineering Department EDI committee
2019 – 22 Imperial College Athena SWAN Working Group
2018 – 19 Imperial College Graduate Society Committee

OUTREACH & PUBLIC ENGAGEMENT

2024 – 26 **Cosmo Cookbook** Art-Science Project (Funding: Goethe Institut, Associação Estufa)
2023 **Traces.Dreams Podcast** Guest speaker
2021 **Coffee & Geography Podcast** Guest speaker
2021 **Native Scientist** Events communicating science to children in their native language (Portuguese)
2021 **Imperial Earth Science and Engineering Round Table**
2021 **Women in Engineering Event** Imperial College London | Q&A for girls aspiring to study STEM
2021 – 22 **Watson Forum** Manager of social media channels for promoting women in STEM
2019 **4Cs of Science Public Speaking Competition**
2019 **Imperial Lates** Imperial College London | Theme: “Science Without Borders”, Stand Manager
2019 **European Researchers Night** Natural History Museum, London | featured talk
2019 **Great Exhibition Road Festival** London | “Blast from the Past”, showcasing IODP projects
2019 **Kingston Grammar School** London | student activity lead: workshop on landscape evolution models
2018 **Geologist’s Association Festival of Geology** – UCL, London. Helper at multiple stands.

KEY SCIENTIFIC COMPETENCIES

––––––––– **FIELDWORK**

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Total 200+ days of fieldwork, leading 4 expeditions to work in UNESCO World Heritage Areas:

Feb 2026 **Tasmanian Widerness World Heritage Area, Australia** Cosmogenic ^{10}Be dating, paleomagnetic analysis and LiDAR data collection of fluvial terraces

Apr 2024 **Patagonia, Los Glaciares National Park, Argentina** Low-temperature thermochronology, basalt geochronology and field geomorphic mapping | Joint trip with Prof. A. Wickert (U. Minnesota)

Aug 2023 **Kyrgyzstan** Cosmogenic ^{10}Be dating of glacial moraines

Mar 2023 **Patagonia, Santa Cruz, Argentina** Cosmogenic ^{10}Be dating of river terraces and differential GPS elevations of fluvial terrace risers

Mar 2022 **Patagonia, Los Glaciares National Park, Argentina** Low-temperature thermochronology of glacial valleys and cosmogenic ^{10}Be dating of river terraces

Aug 2019 **Aberdeenshire, Scotland** Geochemical analysis of fluvial sediments

Jun 2018 **Calabria, Italy** Rock hardness and fracture characterisation (Schmidt hammer)

Jun 2017 **Vatnajökull National Park, Iceland** Cosmogenic He dating of river terraces

Aug 2014 **Serra da Capivara National Park, Brazil** Geological mapping

–––––––– LABWORK

Mineral Separation – Crushing, grinding, sieving, frantzing. Heavy liquid separation (bromoform, diodomethane). Chemical mineral purification (HCl, HF).

Cosmogenic Nuclide Dating, ^{10}Be HELGES Lab, GFZ Potsdam (100+ samples in clean lab)

Apatite-Zircon Picking for thermochronology (100+ packed grains)

–––––––– COMPUTING

Theory Forward and inverse fluvial modelling; Open-source Landscape Evolution Modelling (Badlands, LandLab, FastScape); Database management; Plate rotation (GPlates); Isostatic modelling; Backstripping and subsidence modelling; Dynamic topography calculation from mantle convection models; Statistical analysis; Low-temperature Thermochronology modelling (QTQt, PeCUBE).

Software Office Package (including Word, Excel, Powerpoint, etc.); Adobe Creative Suite (Photoshop, Illustrator); QGIS, ESRI ArcGIS, GRASS; Schlumberger Petrel; LaTeX; Bash shell scripting; GMT; Python; R; SQL.