

# Peterson FAINA

Lamont-Doherty Earth Observatory

61 Route 9W Geoscience 205 PALISADES, NY 10964

[pf2471@columbia.edu](mailto:pf2471@columbia.edu)

## EDUCATION

- 2023 **Doctoral Dissertation (Ph.D.) in Vertebrate Paleontology & Paleoclimatology**  
University of Antananarivo, Faculty of Sciences
- 2015 **Diploma of Advanced Study (D.E.A.) in Earth and Evolutionary Science**  
University of Antananarivo, Faculty of Sciences
- 2014 **Attestation of Advanced Studies (A.E.A.) in Earth and Evolutionary Science**  
University of Antananarivo, Faculty of Sciences
- 2013 **Master of Research in Earth and Evolutionary Science**  
University of Antananarivo, Faculty of Sciences
- 2013 **TOEFL (Test of English as a Foreign Language)**
- 2012 **Advanced 1 Certificate (A1C)**  
English Teaching Program (ETP) Antananarivo
- 2011 **DUES 2 (University Diploma of Scientific Studies)**  
University of Antananarivo, Faculty of Sciences
- 2008 **DUES 1 (University Diploma of Scientific Study)**  
University of Antananarivo, Faculty of Sciences

## PROFESSIONAL EXPERIENCE

- Septembre 2023 Postdoctoral Research Scientist in the Postdoctoral Research Program of the Columbia Climate School
- July-October 2022 Lab work « Stable Isotope Laboratory » Geosciences Department and Anthropology Department, University of Massachusetts, Amherst, MA (UMASS) and MIT (Boston)
- February 2022-July 2023 Regional Director of Transportation and Weather in the DIANA Region
- October 2021-February 2022 Senior Program Officer at Community Centered Conservation (C3) Madagascar
- February-September 2020 Lab work « Stable Isotope Laboratory » Geosciences Department and Anthropology Department, University of Massachusetts, Amherst, MA (UMASS)
- January-April 2019 Lab work « Stable Isotope Laboratory » Geosciences Department and Anthropology Department, University of Massachusetts, Amherst, MA (UMASS) and at MIT (Boston)
- January 2017 Coordinator of Research Project on the Strengths of Ecological Network Interactions at Ankaragna National Park (Ambilobe)
- August-October 2015 Coordinator of Research Project on the Strengths of Ecological Network Interactions at Ankaragna National Park (Ambilobe)
- January-February 2015 Lab work in Geoscience and Anthropology on the interaction between climate change and the extinction of Madagascar's megafauna, at UMASS

July-August 2014

Research Assistant on Strengths of Ecological Network Interactions at Ankaragna National Park (Ambilobe)

June 2014

Field School in Tsinjoarivo with UMASS/NIU/SADABE

## RESEARCH EXPERIENCE

- 2015 to present: Member of team conducting field and laboratory research on the evolution of climate in Madagascar, with implications for future climate change. Determination of the late Pleistocene and Holocene paleoclimates of Madagascar through analyses of stable isotopes of carbon <sup>13</sup>C and oxygen <sup>18</sup>O, taken from stalagmites in caves of central (Andranomilitsy), northwestern (Anjohibe), and southwestern (Morombe and Tsimanampesotse) Madagascar. Member of team conducting field research on the evolution of climate in Madagascar based on the analysis of sediments; field work in central Madagascar (Lake Tritrivakely, Lake Andraikiba).
- Research on the strengths of ecological network interactions at Ankarana National Park, 2014-2017.

## PUBLICATIONS

- Robin Dawson, Stephen J. Burns, Nick Scroxton, David McGee, Benjamin H. Tiger, **Peterson Faina**, Laurie R. Godfrey, and Lovasoa Ranivoharimanana, (In prep). Zonal control on Holocene precipitation in Northwestern Madagascar based on a stalagmite from Anjohibe. Being prepared for Scientific Reports (Anticipated submission to a special issue on Holocene Paleoclimate: July 2023).
- Robin Dawson, Stephen J. Burns, Nick Scroxton, David McGee, Benjamin H. Tiger, **Peterson Faina**, Laurie R. Godfrey, and Lovasoa Ranivoharimanana, (In prep). Reconstructing the temperature and hydrologic history of western Madagascar using speleothem fluid inclusions. Being prepared for Geophysical Research Letters.
- Berry Williams, Stephen J. Burns, Nick Scroxton, Laurie R. Godfrey, Benjamin H. Tiger, Brian Yellen, Robin Dawson, **Peterson Faina**, David McGee, Lovasoa Ranivoharimanana, In prep. A speleothem record of hydroclimate variability in Northwestern Madagascar during the Mid-Late Holocene. The Holocene. (To be submitted in June, 2023)
- Benjamin H. Tiger, Stephen J. Burns, Robin Dawson, Nick Scroxton, Laurie R. Godfrey, Lovasoa Ranivoharimanana, **Peterson Faina**, David McGee, (In review). Zonal Indian Ocean sea surface temperature gradients drive deglacial millennial-scale hydroclimate variability in tropical southeast Africa. *Paleoceanography and Paleoclimatology*.
- Nick Scroxton, Stephen J. Burns, David McGee, Laurie R. Godfrey, Lovasoa Ranivoharimanana, **Peterson Faina**, Benjamin Tiger, (2023). Hydroclimate variability in the Madagascar and Southeast African summer monsoons at the mid- to late-Holocene Transition. *Quaternary Science Reviews* 300: 107874. <https://doi.org/10.1016/j.quascirev.2022.107874>
- Nick Scroxton, Stephen J. Burns, David McGee, Laurie R. Godfrey, Lovasoa Ranivoharimanana, **Peterson Faina**, Benjamin Tiger, (2023). Tropical Indian Ocean basin hydroclimate at the Mid- to Late-Holocene transition and the Double Drying hypothesis. *Quaternary Science Reviews* 300: 107837. <https://doi.org/10.1016/j.quascirev.2022.107837>
- Stephen J. Burns, David McGee, Nick Scroxton, Chris W. Kinsley, Laurie R. Godfrey, **Peterson Faina**, and Lovasoa Ranivoharimanana, (2022). Southern Hemisphere Controls on ITCZ Variability in southwest Madagascar over the past 117,000 years. *Quaternary Science Reviews* 276: 107317. <https://doi.org/10.1016/j.quascirev.2021.107317>
- Benjamin H. Tiger, Stephen J. Burns, David McGee, Robin R. Dawson, Nick Scroxton, Laurie Godfrey, Lovasoa Ranivoharimanana, and **Peterson Faina**, (2021). Reconstructing glacial Indian Ocean hydroclimate from a Madagascan speleothem. AGU Fall Meeting, New Orleans. Poster PP25E-0962 Online.
- Laurie R. Godfrey, Brooke E. Crowley, Kathleen M. Muldoon, Stephen J. Burns, Nick Scroxton, Zachary S. Klukkert, Lovasoa Ranivoharimanana, Jamie Alumbaugh, Matthew Borths, Ryan Dart, **Peterson Faina**, Steven M. Goodman, Isaac J. Gutierrez, James P. Hansford, Evon R. Hekkala,

Christopher W. Kinsley, Phillip Lehman, Margaret E. Lewis, David McGee, Ventura R. Pérez, Noromamy J. Rahantaharivao, Mamy Rakotoarijaona, Harimanjaka A. M. Rasolonjatovo, Karen E. Samonds, Samuel T. Turvey, Natalie Vasey, and Patrick Widmann, (2021). Teasing apart impacts of human activity and regional drought on Madagascar's large-bodied vertebrates: insights from new excavations at Tsimanampesotse and Antsirafaly. *Frontiers in Ecology and Evolution* 9: 742203. <https://doi.org/10.3389/fevo.2021.742203>

- **Peterson Faina**, Stephen J. Burns, Laurie R. Godfrey, Crowley, B. E., Nick Scroxton., David McGee, Michael R. Sutherland, and Lovasoa Ranivoharimanana, (2021). Comparing the paleoclimates of northwestern and southwestern Madagascar during the late Holocene: Implications for the role of climate in megafaunal extinction, eds. Kristina Douglass, Laurie R. Godfrey and David A. Burney. *Malagasy Nature*, 15: 108-127.
- **Peterson Faina**, Stephen J. Burns, Nick Scroxton, David McGee, Laurie R. Godfrey, and Lovasoa Ranivoharimanana, (2020). New speleothem records from Madagascar and their implications for the role of climate and humans in megafaunal extinction. *American Journal of Physical Anthropology* 171: 83. [Abstract, American Association of Physical Anthropologists, national meeting.]
- Laurie R. Godfrey, Zachary S. Klukkert, Margaret E. Lewis, Noromamy J. Rahantaharivao, Lovasoa Ranivoharimanana, **Peterson Faina**, Nick Scroxton, Stephen J. Burns, (2019). Night and day: Subfossil faunal representation in neighboring Malagasy caves illustrates interaction and exclusion by predator and prey. *American Journal of Physical Anthropology* 168: 87. [Abstract, American Association of Physical Anthropologists, national meeting.]
- Nick Scroxton, Stephen J. Burns, David McGee, Laurie R. Godfrey, Lovasoa Ranivoharimanana, **Peterson Faina**, (2019). Indian Ocean monsoon behavior during the 4.2 kyr event from Madagascan stalagmites. [Abstract, International Union for Quaternary Research (INQUA) international conference.]
- Laurie R. Godfrey, Nick Scroxton, Brooke E. Crowley, Stephen J. Burns, Michael R. Sutherland, Ventura R. Pérez, **Peterson Faina**, David McGee, and Lovasoa Ranivoharimanana, (2019). A new interpretation of Madagascar's megafaunal decline: the "Subsistence Shift Hypothesis." *Journal of Human Evolution* 130: 126-140. <https://doi.org/10.1016/j.jhevol.2019.03.002>
- Nick Scroxton, Stephen J. Burns, David McGee, Ben Hardt, Laurie R. Godfrey, Lovasoa Ranivoharimanana, and **Peterson Faina**, (2019). Competing temperature and atmospheric circulation effects on southwest Madagascan rainfall during the last deglaciation. *Paleoceanography and Paleoclimatology*. 34 (2): 275-286. <https://doi.org/10.1029/2018PA003466>
- Laurie R. Godfrey, Nick Scroxton, Brooke E. Crowley, Stephen J. Burns, Michael R. Sutherland, Ventura R. Perez, **Peterson Faina**, and Lovasoa Ranivoharimanana, (2018). A new interpretation of Madagascar's megafaunal decline: the "Subsistence Shift Hypothesis". *American Journal of Physical Anthropology* 165: 100. Supplement 66. [Abstract, American Association of Physical Anthropologists, national meeting.]
- Nick Scroxton, Stephen J. Burns, David McGee, Ben Hardt, Laurie R. Godfrey, Lovasoa Ranivoharimanana, **Peterson Faina**, (2017). Hemispherically in-phase precipitation variability over the last 1700 years in a Madagascar speleothem record. *Quaternary Science Reviews* 164: 25-36. <https://doi.org/10.1016/j.quascirev.2017.03.017>
- Stephen J. Burns, Laurie R. Godfrey, **Peterson Faina**, David McGee, Ben Hardt, Lovasoa Ranivoharimanana, Jeannot Randrianasy, (2016). Rapid human-induced landscape transformation in Madagascar at the end of the first millennium of the Common Era. *Quaternary Science Reviews* 134: 92-99. <https://doi.org/10.1016/j.quascirev.2016.01.007>

## LANGUAGES

Malagasy: Native

French: Conversational, can read/write

English: Conversational, can read/write with a dictionary (TOEFL)