

Tanjona H. Ramiadantsoa

CONTACT INFORMATION	Lecturer, University of Fianarantsoa Department of Life Science & Department of Mathematics BP 1135, 301 Fianarantsoa, Madagascar tanjona.ramiadantsoa@gmail.com Honorary Fellow, University of Wisconsin-Madison Department of Integrative Biology 458 Lincoln Dr, Madison, WI 53706 USA
EDUCATION	University of Helsinki , Helsinki, Finland Ph.D., Ecology and Evolutionary Biology, November 2015 <ul style="list-style-type: none">• Title: “Spatial processes in ecology and evolution, and implications for conservation.”• Advisors: Otso Ovaskainen, Prof. and Ilkka Hanski, Prof. University of Antananarivo , Madagascar M.Sc., Combinatorics, April 2010 <ul style="list-style-type: none">• Topic: <i>Flag major index on colored permutation group</i>• Advisor: Arthur Randrianarivony, Prof. B.Sc., Numerical Analysis, Decembre 2007
APPOINTMENTS	University of Montpellier , Montpellier, France Postdoc., IRD-MIVEGEC, 2020-present <ul style="list-style-type: none">• Topics: <i>Supporting responses to COVID-19 epidemic in Africa</i>• Advisors: Benjamin Roche, Associate Prof. University of Wisconsin-Madison , Madison, WI, USA Postdoc., Department of Integrative Biology, 2016-2019 <ul style="list-style-type: none">• Topics: <i>Abrupt Changes in Ecological Systems (ACES)</i>• Advisors: Monica Turner, Prof. Anthony Ives, Prof. University of Minnesota , Twin Cities, MN, USA Postdoc. Department of Ecology, Evolution, and Behavior, 2014-2016 <ul style="list-style-type: none">• Topics: <i>Energy budget models and phylogenetic comparative methods</i>• Advisor: Emma Goldberg, Assistant Professor
RESEARCH INTERESTS	Theoretical ecology, Conservation biology, Landscape ecology, Paleoecology, Biogeography, Metapopulation, Metacommunity, Metabolic Theory, Disturbance, Abrupt change, Regime shift, Statistics
PEER REVIEWING	Bioscience, Conservation Letters, Ecology, Epidemics, Functional Ecology, Global Ecology and Biogeography, International Journal of Infectious Diseases, Journal of Applied Ecology, Nature, Oikos, Plos ONE, Population Ecology, National Science Foundation, The American Naturalist
REFEREED JOURNAL PUBLICATIONS	<ol style="list-style-type: none">1. Ramiadantsoa, T. and Solofondranohatra, C. L. “Nontrivial responses of vegetation to compound disturbances : a case of Malagasy grassland.” In press <i>Malagasy Nature</i>2. Rasambainarivo, F., ..., Ramiadantsoa, T., ..., Rice, B. L. “Monitoring for outbreak-associated excess mortality in an African city: Detection limits in Antananarivo, Madagascar.” <i>International Journal of Infectious Diseases</i>, 103, 338-342.

3. Rice, B. L., ..., **Ramiadantsoa, T.**, ..., Metcalf, C. J. E. "Variation in SARS-CoV-2 outbreaks across sub-Saharan Africa." *Nature Medicine*, 27(3), 447-453.
4. McCary, M.A., Phillips, J., **Ramiadantsoa, T.**, Nell, L.A., McCormick, A.R., Botsch, J.C., "Transient top-down and bottom-up effects on resources pulsed to multiple trophic levels." *Ecology*, 102(1): e03197
5. Kucharik, C.J, **Ramiadantsoa, T.**, Zhang, J., and Ives, A.R., 2020. "Spatiotemporal trends in crop yields, yield variability, and yield gaps across the USA." *Crop Science*, 60(4), 2085-2101
6. **Ramiadantsoa, T.**, Stegner, M.A, Williams, J.W., Ives, A.R., 2019. "The potential role of intrinsic processes in generating abrupt and quasi-synchronous tree declines during the Holocene." *Ecology*, 100(2): e02579
7. **Ramiadantsoa, T.**, Hanski, I., Ovaskainen, O., 2018. "Responses of generalist and specialist species to fragmented landscapes." *Theoretical Population Biology*, 124:31-40
8. Ratajczak, Z., Carpenter, S.R., Ives, A.R., Kucharik, C.J., **Ramiadantsoa, T.**, Stegner, M.A., Williams, J.W., Zhang, J. and Turner, M.G., 2018. "Abrupt change in ecological systems: inference and diagnosis." *Trends in ecology and evolution*, 33(7): 513-526
9. Ithantamalala, F.A., Rakotoarimanana, F.M., **Ramiadantsoa, T.**, Rakotondramanga, J.M., Pennober, G., Rakotomanana, F., Cauchemez, S., Metcalf, C.J., Herbreteau, V. and Wesolowski, A., 2018. "Spatial and temporal dynamics of malaria in Madagascar." *Malaria journal*, 17(1): 58
10. **Ramiadantsoa, T.**, Sirén, J., Hanski, I. 2017 "Phylogenetic comparative method for geographical radiation." *Annales Zoologica Fennici*, 54:237-257
11. **Ramiadantsoa, T.**, Ovaskainen, O., Rybicki J., Hanski, I., 2015 "Large-scale habitat corridors for biodiversity conservation: a forest corridor in Madagascar." *PLoS ONE*, 10(7): e0132126

SUBMITTED AND
IN PREP.

1. Rasambainarivo, F., **Ramiadantsoa, T.**,..., Metcalf C.J.E. "Prioritizing COVID-19 vaccination efforts and dose allocation within Madagascar." Submitted to *BMC Public Health*
2. **Ramiadantsoa, T.**, ..., Rasambainarivo, F. "Existing human mobility data sources poorly predicted the spatial spread of SARS-CoV-2 in Madagascar". Under revision for *Epidemics*
3. Abbott, K. C.,..., **Ramiadantsoa, T.**, ..., Twombly, S. The Ever-Increasing Need for Theory. Under revision for *Biology Letters*
4. **Ramiadantsoa, T.**, Ratajczak, Z., and Turner, M.G., "Regeneration strategies and forest resilience to changing fire regimes: insights from a model that balances theory and realism". Under revision for *Ecology*
5. Culbertson, K., Mondragon-Botero, A., Treuer, T., **Ramiadantsoa, T.**, Reid, L. "What do we know about the biological and ecological challenges of native forest restoration in Madagascar?" In prep. for *Biotropica*
6. DeAngelis, D., ... , **Ramiadantsoa, T.**,..., Fortin M. J. "Theory to integrate internal ecological processes and external driving forces: What we know versus what we think we know." In prep.
7. **Ramiadantsoa, T.**, Garchitorena, A., and Roche, B. "Controlling superspreaders may dramatically improve control of COVID-19." In prep.

8. **Ramiadantsoa, T.** and Ives, A.R., “Consequences of the structure of environmental variability on population and community stability.” in prep. for Ecology Letters
9. **Ramiadantsoa, T.** and Goldberg, E.E., “Exploring the role of body size in shaping thermal performance of insects.”
10. Perrotti, A.G., Traschel, M., **Ramiadantsoa, T.**, ..., Williams, J.W., “Optimal counting methods for coprophilous fungal spore analysis.”
11. **Ramiadantsoa, T.**, Fritsch, C., “Modeling the transient dynamics of orphaned plants.”
12. **Ramiadantsoa, T.**, Temba, E.M., Rakouth, H., Rakotoniriana, H.J., Raselimanana, M. “Evidence of biodiversity loss in Madagascar? A multi-taxa review.”

TEACHING AND
MENTORING

Founder and co-founder

-
- Visualization and statistics with R October 2021
CURSA, Antalaha, Madagascar
 - Logics and the world of science March 2021
CURSA, Antalaha, Madagascar
 - MalagasySTEM November 2019
 - Applied statistics for ecologists November 2019
University of Fianarantsoa, Madagascar
 - Mathematics, Statistics, Computer Sciences: Applications to Ecology and Conservation Biology September 2019
University of Fianarantsoa, Madagascar
 - E^2M^2 : Ecological and Epidemiological Modeling in Madagascar 2016–2019
Centre ValBio, Ranomafana, Madagascar
 - Introduction to Mathematical Ecology January 2014
Université d’Antananarivo, Madagascar

Lecturer

-
- Data manipulation and visualization with R August 2019
Instructors: Finaritra Randimbiarison, Veronarindra Ramananjato University of Antananarivo, Madagascar
 - Reserve Planning in the Tropics. Finnish study abroad Fall 2011 & 2012
Instructor: Mar Cabeza, Prof.
Centre ValBio, Ranomafana, Madagascar
 - Conservation Biology in Fragmented Landscapes Fall 2011–2013
Topics: Extinction, Spatially Realistic Metapopulation Models
University of Helsinki, Finland

PROFESSIONAL
ACTIVITIES

Organizing committee

-
- Workshop, University of Helsinki January 2020
Theme: “Beyond Species-Area Relationship”
 - Workshop, ATBC, Antananarivo, Madagascar August 2019
Theme: “E2M3: Ecological and Epidemiological Mini Modeling in Madagascar”
 - Inspire session, ESA, New Orleans August 2018
Theme: “Understanding extreme events: linking empirical observation to concepts and theory”
 - Spring Symposium March 2012
University of Helsinki, Finland

Field assistant

- Grand Teton and Yellowstone National Parks, USA Summer 2017
Post fire forest regeneration (Monica Turner, Prof.)
- Mulu National Park, Borneo Spring 2013
Dung beetles survey (Ilkka Hanski, Prof.)
- Sundsvall, Sweden Fall 2010
Wood-decaying fungi survey (Otso Ovaskainen, Prof.)

PROFESSIONAL SERVICES

- Member of the Association for the Tropical Biology and Conservation (ATBC)
- Student judge award, theory section ESA
- Member of Ecological Society of America (ESA)
- President of Finland-Madagascar Association 2012–2015

CONFERENCES AND PRESENTATIONS

2021

Ecology seminar, Duke University

Virtual, 7 September 2021

Title: “Puzzles in Madagascar: what does math say?”

Ecology seminar, Kansas State University

Virtual, 1 April 2021

Title: “Biodiversity paradox and puzzles in Madagascar”

2020

Finnish Institute for the Environment (SYKE)

Helsinki, Finland, 2 March 2020

Title: “Comparing education, research, and cultures in Europe, United States and Madagascar from a Malagasy perspective”

2019

Association for Tropical Biology and Conservation conference

Antananarivo, Madagascar, 30 July–3 August 2018

Title: “Community dynamics in stochastic environments and implications for biodiversity conservation”

2018

Ecological Society of America annual meeting

New Orleans, LO, USA, 5–10 August 2018

Title: “Developing Goldilocks models to understand ecological responses to extreme events: fire and trees in Yellowstone National Park”

Institut Pasteur de Madagascar

Antananarivo, Madagascar, 22 January 2018

Title: “Importance of large scale habitat corridor for biodiversity conservation”

2017

Ecological Society of America annual meeting

Portland, OR, USA. 5–11 August 2017

Title: “Community-level modeling of abrupt changes in paleoforests”

Biological Colloquium, University of Wisconsin-Madison

Madison, WI, USA. 2 March 2017
Title: “A generalist approach to niche specialization”

2016

Kellog Biological Station

Kellog, MI, USA. 15 August 2016
Title: “Species’ responses to habitat destruction”

Ecological Society of America annual meeting

Fort Lauderdale, FL, USA. 7–12 August 2016
Title: “Exploring the potential of energy budget models and body size in determining species’ niche”

Midwest Mathematical Biology Conference

La Crosse, WI, USA. 21–22 May 2016
Title: “Exploring the potential of energy budget models and body size in determining species’ niche”

2014

Evolution seminar, University of Minnesota

Twin cities, MN, USA. 21 April 2014
Title: “Phylogenetic inference of geographical radiation”

Spring Symposium, University of Helsinki

Helsinki, Finland. 3–5 March 2014
Title: “The efficiency of a habitat corridor between two large national parks in Madagascar”

2013

Spring Symposium, University of Helsinki

Helsinki, Finland. 4–6 March 2013
Title: “Geographical radiation in Malagasy dung beetles”

Biomathematics day, University of Helsinki

Helsinki, Finland. 23 October 2013
Title: “Model of evolutionary radiation and geographical range dynamics applied to Malagasy dung beetles”

International Prosimian Congress

Ranomafana, Madagascar. 5–9 August 2013
Attendee

2012

Biomathematics day, University of Helsinki

Helsinki, Finland. 18 April 2012
Title: “Parsimonious mechanisms behind community- level patterns”

2011

Spring Symposium, University of Helsinki

Helsinki, Finland. 7–9 March 2011
Title: “Competitive species communities in spatially heterogeneous habitats”

2007

Study abroad seminar US embassy, Antananarivo

Antananarivo, Madagascar. November 2007

Title: “Deforestation in Ambodiaviavy community forest”

**WORKSHOPS
ATTENDED**

Malagasy Grassy Biomes

Virtual, 27–30 July 2021

Organizers: Leanne Phelps (U of Edinburgh), Jan Hackel (RBG, Kew), Estelle Razanatsoa (U of Cape Town), George Tiley (Duke U), Dylan Davis (Penn State U)

Beyond Species-Area Relationship

University of Helsinki, Helsinki, Finland. 29–30 January 2020

Organizers: Tanjona Ramiadantsoa (U of Fianarantsoa) and Mar Cabeza (U of Helsinki)

Advancing Ecological Theory

Pennsylvania State University, PA, USA. 23–25 October 2019

Organizers: Saran Twombly (Colorado SU), Katriona Shea (Penn State U), Alan Hastings (UC Davis)

Dynamics and Differential Equations

Minneapolis, MN, USA. 22–25 June 2016

Organizers: Michael Jolly (Indiana U), Peter Polacik (U of Minnesota, Twin Cities), Geneviève Raugel (U de Paris XI), Roger Temam (Indiana U), Edriss Titi (Texas A & M U), Yingfei Yi (U of Alberta)

Mathematics for an Evolving Biodiversity

Montréal, Canada. 16–20 September 2013

Organizers: Jonathan Davies (McGill), Amaury Lambert (UMPC Paris 6), Nicolas Lartillot (Montréal)

Qualitative Behaviour of Stochastic Systems and Applications

Bielefeld, Germany. 18–20 June 2012

Organizers: Leonid Bogachev (Leeds, GBR), Benjamin Bolker (Hamilton, CAN), Yuri Kondratiev (Bielefeld, GER), Otso Ovaskainen (Helsinki, FIN)

Stochastic Demography in Fluctuating Environments: Theory and Empirical Patterns

Lovund, Norway. 23–27 April 2012

Organizers: Norwegian University of Science and Technology, Centre for Conservation Biology

Assessing the Impacts of Climate Change on Madagascar’s Biodiversity and Livelihoods

Antananarivo, Madagascar. 28–31 January 2008

Organizers: Conservation International, WWF, WCS and USAID

Species Distribution Modeling: Methods for Conservation Biologists

Antananarivo, Madagascar. 21–25 January 2008

Organizers: ReBioMa and University of Berkeley, California

**EXTERNAL
COURSES**

Issues in Diversity

Oulu, Finland. 3–7 September 2012

Organizer: University of Oulu

Theory of Speciation: Helsinki Summer School 2012

Turku, Finland. 19–26 August 2012

Organizers: Biomathematics Group, University of Helsinki

Markov Chain Stability and Applications: 22nd Jyväskylä Summer School
 Jyväskylä, Finland. 13–17 August 2012
 Organizer: Faculty of Mathematics and Science and the Faculty of Information Technology at the University of Jyväskylä

Stochastic Differential Equations
 Lammi, Finland. 25–27 September 2010
 Organizers: Finnish Doctoral Programme in Computational Sciences and National Graduate School in Materials Physics

Study abroad Madagascar
 Ranomafana, Madagascar. September–November 2007
 Organizers: SUNY Stony Brook University

GRANTS	Ecologists in Africa, British Ecological Society	2020
	How pristine are grasslands in Madagascar? Reconstructing vegetations of the central highlands before and after human settlements (£7,801)	
	HiLIFE BIORESILIENCE, University of Helsinki	2019
	Beyond the species-area relationship: theoretical advances and empirical testing (€12,000)	
	Institute on the Environment (IonE), University of Minnesota	2015
	Using experiments to root mathematical models of environmental niches (\$2,000)	
OUTREACH	• DREN Matsiatra Ambony	August 2020
	Organizers: IkalaSTEM Fianarantsoa	
	Pursuing academic study	
	• Ask a scientist	July 2020
	Organizers: ExplorerHome Madagascar	
	Mathematics and Ecology	
	• Happy place	May 2020
	Organizers: ExplorerHome Madagascar	
	Theoretical Ecology	
	• Blog on the legacy of Ilkka Hanski	August 2020
	Ilkka Hanski Nature Network	
	Beyond measurable legacies	
	• Interview with Radio France Internationale on the status of COVID-19 in Madagascar	July 2020
	• Interview and appearance in the UW-Madison news	June 2019
	By Kelly April Tyrell, UW-Madison	
	From Helsinki to Minneapolis to Madison, scientist gives back in Madagascar	
	• The life of a scientist and researcher	January 2018
	Organizers: T. Ramiadantsoa, N. Ratsimbason	
	Ecole B.I.R.D. Antananarivo, Madagascar	
	• Girl solve It! With Mathematical Biology	June 2017
	University of Minnesota-Twin Cities, USA	
	• UW Science Expeditions, scientific open-house	April 2017
	Organizers: University of Wisconsin-Madison	

- What is theoretical ecology? January 2013
Organizers: T. Ramiadantsoa, N. Ratsimbason
Ecole B.I.R.D. Antananarivo, Madagascar
- Introduction to Madagascar November 2011
High school, Helsinki, Finland
- Fundraising to helping underprivileged students in Madagascar May 2010
Organizers: Madagascar-Finland Association Helsinki, Finland
- Interview and appearance in the journal Finlands natur 2010

COMPUTER SKILL C++, R, Mathematica, L^AT_EX, GitHub, ArcMap.

LANGUAGE SKILL Malagasy: Native
French: Fluent
English: Fluent