ona H. **Ramiadantsoa**

Parc Botanique et Zoologique Tsimbazaza, Antananarivo 101, Madagascar

📕 (+261) 34 43 352 24 | 💌 tanjona.ramiadantsoa@gmail.com | 👑 August 14th, 1985 | 🧥 https://ramiadantsoa.github.io | 🖸 ramiadantsoa | ORCID: 0000-0003-4689-0267

"Theory at the service of conservation."

Education

University of Helsinki Helsinki, Finland

Ph.D. IN ECOLOGY AND EVOLUTIONARY BIOLOGY

May. 2010 - Nov. 2015

• Title: Spatial processes in ecology and evolution, and implications for conservation • Advisors: Ilkka Hanski, Prof. & Otso Ovaskainen, Prof.

University of Antananarivo Antananarivo, Madagascar

M.Sc. IN COMBINATORICS

Jan. 2008 - Apr. 2010 • Title: Flag major index on colored permutation group

• Advisor: Arthur Randrianarivony, Prof.

University of Antananarivo Antananarivo, Madagascar

B.Sc. IN NUMERICAL ANALYSIS Dec. 2004 - Dec. 2007

Appointments.

Madagascar Biodiversity Center Antananarivo, Madagascar

Mar. 2022 - Present SCIENTIFIC DIRECTOR & GRADUATE PROGRAM COORDINATOR

• Topic: Training the next generation of Malagasy scientists

University of Montpellier Montpellier, France

POSTDOC. IRD-MIVEGEC Dec. 2020 - Dec. 2021

· Topic: Supporting responses to COVID-19 epidemic in Africa · Advisors: Benjamin Roche, Associate Prof.

University of Fianarantsoa Fianarantsoa, Madagascar

LECTURER. DEPARTMENT OF LIFE SCIENCE Aug. 2019 - Mar. 2022

· MSc Supervisor & teaching

POSTDOC., DEPARTMENT OF INTEGRATIVE BIOLOGY Oct. 2016 - Jul. 2019

Madison, WI, USA

• Topic: Abrupt Changes in Ecological Systems (ACES)

• Advisors: Monica Turner, Prof. Anthony Ives, Prof.

University of Minnesota-Twin Cities Twin Cities, MN, USA

POSTDOC., DEPARTMENT OF ECOLOGY, EVOLUTION, AND BEHAVIOR Nov. 2014 - Sep. 2016

• Topic: Energy budget models and phylogenetic comparative methods

· Advisor: Emma Goldberg, Assistant Professor

University of Wisconsin-Madison

Research interests

Theoretical ecology, Statistics, Conservation biology, Entomology, Edible Insects, Resilience, Madagascar

Peer review

Bioscience, Conservation Letters, Ecology, Epidemics. Folia Primatologica, Functional Ecology, Global Ecology and Biogeography, International Journal of Infectious Diseases, International Journal of Primatology, Journal of Applied Ecology, Nature, npj Biodiversity, Oikos, Plos ONE, Population Ecology, National Science Foundation, The American Naturalist, ZooKeys

Publications

- 1. Solofondranohatra, C. L., Andrianorosoa, C. T. O., Ramiadantsoa, T., Ravelomanana, A., Ramanampamonjy, R. N., Hugel, S. & Fisher, B. L. (2024). Effect of Cricket Frass Fertilizer on growth and pod production of green beans (*Phaseolus vulgaris L.*). **Plos one**, 19(5), e0303080. https://doi.org/10.1371/journal.pone.0303080
- 2. Ramiadantsoa, T., Ratajczak, Z. & Turner, M. G. (2023). Regeneration strategies and forest resilience to changing fire regimes: insights from a Goldilocks model. **Ecology**, 104(6), e4041. https://doi.org/10.1002/ecy.4041
- 3. Evans, M. V., Ramiadantsoa, T., Kauffman, K., Moody, J., Nunn, C. L., Rabezara, J. Y., ... & Roche, B. (2023). Sociodemographic Variables Can Guide Prioritized Testing Strategies for Epidemic Control in Resource-Limited Contexts. **The Journal of Infectious Diseases**, 228(9), 1189-1197. https://doi.org/10.1093/infdis/jiad076
- 4. Twombly, S., Hastings, A., Miller, T., Cortez, M., Abbott, K., Ramiadantsoa, T., Blackwood, J., & Prosper, O. (2022). New Theory for Increasingly Tangled Banks. **Issues in Science and Technology**, 38(4), 39-44
- 5. Rasambainarivo, F., Ramiadantsoa, T., Raherinandrasana, A., Randrianarisoa, S., Rice, B. L., Evans, M. V., Roche, B., Randriatsarafara, F. M., Wesolowski, A. & Metcalf, J. C. (2022). Prioritizing COVID-19 vaccination efforts and dose allocation within Madagascar. **BMC Public Health**, 22(1), 724. https://doi.org/10.1186/s12889-022-13150-8
- Ramiadantsoa, T., Metcalf, C. J. E., Raherinandrasana, A. H., Randrianarisoa, S., Rice, B. L., Wesolowski, A., Randriatsarafara, F. M. & Rasambainarivo, F. (2022). Existing human mobility data sources poorly predicted the spatial spread of SARS-CoV-2 in Madagascar. **Epidemics**, 38, 100534. https://doi.org/10.1016/j.epidem.2021.100534
- 7. Perrotti, A. G., Ramiadantsoa, T., O'Keefe, J. & Otaño, N. N. (2022). Uncertainty in coprophilous fungal spore concentration estimates. **Frontiers in Ecology and Evolution**, 10, 1086109. https://doi.org/10.3389/fevo.2022.1086109
- 8. Culbertson, K. A., Treuer, T. L. H., Mondragon-Botero, A., Ramiadantsoa, T. & Reid, J. L. (2022). The ecoevolutionary history of Madagascar presents unique challenges to tropical forest restoration. **Biotropica**, 54(4), 1081-1102. https://doi.org/10.1111/btp.13124
- 9. Rice, B. L., Annapragada, A., Baker, R. E., Bruijning, M., Dotse-Gborgbortsi, W., Mensah, K., Miller, I. F., Motaze, N. V., Raherinandrasana, A., Rajeev, M., Rakotonirina, J., Ramiadantsoa, T., Rasambainarivo, F., Yu, W., Grenfell, B. T., Tatem, A. J. & Metcalf, C. J. E. (2021). Variation in SARS-CoV-2 outbreaks across sub-Saharan Africa. **Nature Medicine**, 27(3), 447-453. https://doi.org/10.1038/s41591-021-01234-8
- 10. Rasambainarivo, F., Rasoanomenjanahary, A., Rabarison, J. H., Ramiadantsoa, T., Ratovoson, R., Randremanana, R., Randrianarisoa, S., Rajeev, M., Masquelier, B., Heraud, J. M., Metcalf, C. J. E. & Rice, B. L. (2021). Monitoring for outbreak-associated excess mortality in an African city: Detection limits in Antananarivo, Madagascar. International Journal of Infectious Diseases, 103, 338-342. https://doi.org/10.1016/j.ijid.2020.11.182
- 11. Ramiadantsoa, T. & Solofondranohatra, C. L. (2021). Nontrivial responses of vegetation to compound disturbances: A case of Malagasy grassland. **Malagasy Nature**, 15, 29-40
- 12. McCary, M. A., Phillips, J. S., Ramiadantsoa, T., Nell, L. A., McCormick, A. R. & Botsch, J. C. (2021). Transient top-down and bottom-up effects of resources pulsed to multiple trophic levels. **Ecology**, 102(1). https://doi.org/10.1002/ecy.3197
- 13. Kucharik, C. J., Ramiadantsoa, T., Zhang, J. & Ives, A. R. (2020). Spatiotemporal trends in crop yields, yield variability, and yield gaps across the USA. **Crop Science**, 60(4), 2085-2101. https://doi.org/10.1002/csc2.20089
- 14. 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). https://doi.org/10.1002/ecy.2579
- 15. Ratajczak, Z., Carpenter, S. R., Ives, A. R., Kucharik, C. J., Ramiadantsoa, T., Stegner, M. A., Williams, J. W., Zhang, J. & Turner, M. G. (2018). Abrupt Change in Ecological Systems: Inference and Diagnosis. **Trends in Ecology & Evolution**, 33(7), 513-526. https://doi.org/10.1016/j.tree.2018.04.013
- 16. Ramiadantsoa, T., Hanski, I. & Ovaskainen, O. (2018). Responses of generalist and specialist species to fragmented landscapes. **Theoretical Population Biology**, 124, 31-40. https://doi.org/10.1016/j.tpb.2018.08.001

- 17. Ihantamalala, F. A., Rakotoarimanana, F. M. J., Ramiadantsoa, T., Rakotondramanga, J. M., Pennober, G., Rakotomanana, F., Cauchemez, S., Metcalf, C. J. E., Herbreteau, V. & Wesolowski, A. (2018). Spatial and temporal dynamics of malaria in Madagascar. Malaria Journal, 17(1), 58. https://doi.org/10.1186/s12936-018-2206-8
- 18. Ramiadantsoa, T., Sirén, J. & Hanski, I. (2017). Phylogenetic Comparative Method for Geographical Radiation. **Annales Zoologici Fennici**, 54(1-4), 237-257. https://doi.org/10.5735/086.054.0121
- 19. 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. https://doi.org/10.1371/journal.pone.0132126

Submitted and in prep. ____

- 1. Rakotondrasoa, J. F., Ramiadantsoa, T., Becker, L. J., Ravelomanana, A., Van Itterbeeck, J., Hugel, S. & Fisher, B. L. Education: an efficient tool to increase the willingness of children to consume farmed cricket in Madagascar. Under revision for Journal of Insects as Food and Feed.
- 2. Rasoarimalala N. F., Ramiadantsoa, T., Rakotonirina, J. C. & Fisher, B. F. Linear morphometry of male genitalia distinguishes the ant genera Monomorium and Syllophopsis (Hymenoptera: Formicidae) in Madagascar. Submitted to Insects
- 3. Kostandova, N., Schluth, C., ..., Ramiadantsoa, T., ..., Cummings, D. A. T., & Wesolowski, A. A systematic review of using population-level human mobility data to understand SARS-CoV-2 transmission. Submitted to Nature Communications.
- 4. Ramiadantsoa, T., Nantenaina, R. H., Rakotoniaina, H. J., Rakotonirina, H., Rakouth, H., Ramahandrison, A. T., Ramananjato, V., Randimbiarison, F., Raselimanana, M., Razafimandimby, D. N. & Temba, E. M. Biodiversity decline in Madagascar: the elephant in the room? In prep for Biotropica.
- 5. Phelps, L. N., Razanatsoa, E., Davis, D., Hackel, J., Rasolondrainy, T., Tiley, G. P., ..., Ramiadantsoa, T., ..., Vorontsova, M. S., Douglass, K. & Lehmann, C. Advancing transdisciplinary research on grassy biomes to support resilience in tropical ecosystems and livelihoods. In prep.
- 6. Ramiadantsoa, T. & Ives, A. R. Shaky ball vs. shaky cup: relationships between characteristic return and stability in variable environments. In prep for Ecology Letters.

Grants

2023-25	Darwin Initiative , Protecting Biodiversity by improving community wellbeing in Southeast Madagascar. PI	£493.018
	Sakib Burza - Health in Harmony	1493 018
2023	Global Faculty Award, University of Chicago, A quantitative biology training program for students from	\$ 29 998
	Madagascar. PI Cara Brook - University of Chicago	\$ 29 998
2022-2025	U.S. National Science Foundation, BCS , Collaborative Research: Mapping the materiality of past human	\$ 371 187
	responses to climate change. PI Kristina Douglass - University of Columbia	\$ 3/1 10/
2020	Ecologists in Africa, British Ecological Society, How pristine are grasslands in Madagascar?	£7 801
	Reconstructing vegetations of the central highlands before and after human settlements	
2019	HILIFE BIORESILIENCE, University of Helsinki, Beyond the species-area relationship: theoretical	\$ 12 000
	advances and empirical testing	
2015	Institute on the Environment (IonE), University of Minnesota , Using experiments to root mathematical	\$ 2 000
	models of environmental niches	\$ 2 000

Presentations

University of Hohenheim Virtual

ECOLOGY COLLOQUIUM

Nov 2022

Aug. 2022

· Goldilocks model to infer disturbance-niche

California Academy of Sciences

San Francisco, CA, USA

Goldilocks models in Ecology and Evolution

Ecological Society of America (ESA) & Canadian Society for Ecology and Evolution (CSEE)

Montréal, Québec, Canada

Aug. 2022

Density-dependence and stability in stochastic environments: Shaky-ball vs. shaky-bowl

• Density-dependence and stability in stochastic environments. Shaky-batt vs. shaky-bowt

University of Sherbrooke Sherbrooke, Québec, Canada

ECOLOGY SEMINAR Aug. 2022

• Ecological patterns: stochasticity is more than just noise

Duke UniversityVirtual

ECOLOGY SEMINAR Sep. 2021

Puzzles in Madagascar: what does math say?

JOIN ANNUAL MEETING

Kansas State University Virtual

ECOLOGY SEMINAR Apr. 2021

• Biodiversity paradox and puzzles in Madagascar

University of Helsinki Helsinki, Finland

RESEARCH CENTER FOR ECOLOGICAL CHANGE (REC) SEMINAR

Mar. 2020

• Importance of randomness and variability in ecology?

Finnish Institue for the Environment (SYKE)

Helsinki, Finland

WEEKLY SEMINAR Mar. 2020

· Comparing education, research, and cultures in Europe, United States and Madagascar from a Malagasy perspective

Institut Pasteur de Madagascar (IPM)

Antananarivo, Madagascar

FINAL SYMPOSIUM E2M2 Jan. 2020

• Diversification des insectes bousiers à Madagascar

Association for Tropical Biology and Conservation (ATBC)

Antananarivo, Madagascar

ANNUAL CONFERENCE Aug. 2019

• Community dynamics in stochastic environments and implications for biodiversity conservation

Ecological Society of America (ESA)

New Orleans, LO, USA

Annual meeting Aug. 2018

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

Institut Pasteur de Madagascar (IPM)

Antananarivo, Madagascar

SEMINAR Jan. 2018

• Importance of large scale habitat corridor for biodiversity conservation

Ecological Society of America (ESA)Portland, OR, USA

ANNUAL MEETING Aug. 2017

• Community-level modeling of abrupt changes in paleoforests

University of Wisconsin-Madison Madison, WI, USA

BIOLOGICAL COLLOQUIUM Mar. 2017

• A generalist approach to niche specialization

Kellog Biological Station Kellog, MI, USA

Seminar Aug. 2016

• Species' responses to habitat destruction

Ecological Society of America (ESA) Fort Lauderdale, FL, USA

Annual meeting Aug. 2016

• Exploring the potential of energy budget models and body size in determining species' niche

Midwest Mathematical Biology

La Crosse, WI, USA

CONFERENCE May. 2016

• Exploring the potential of energy budget models and body size in determining species' niche

University of Minnesota Twin cities, MN, USA

EVOLUTION SEMINAR Apr. 2014

• Phylogenetic inference of geographical radiation

University of Helsinki Helsinki, Finland

SPRING SYMPOSIUM Mar. 2014

• The efficiency of a habitat corridor between two large national parks in Madagascar

University of Helsinki Helsinki, Finland SPRING SYMPOSIUM Mar. 2013 · Geographical radiation in Malagasy dung beetles **University of Helsinki** Helsinki, Finland BIOMATHEMATICS DAY Oct. 2013 · Model of evolutionary radiation and geographical range dynamics applied to Malagasy dung beetles **University of Helsinki** Helsinki, Finland BIOMATHEMATICS DAY Apr. 2012 • Parsimonious mechanisms behind community- level patterns **University of Helsinki** Helsinki, Finland SPRING SYMPOSIUM Mar. 2011 • Competitive species communities in spatially heterogeneous habitats **US Embassy** Antananarivo, Madagascar STUDY ABROAD SEMINAR Nov. 2007 · Deforestation in Ambodiaviavy community forest **Outreach** Ilkka Hanskin Luontoverkko **Finland** BLOG ON THE LEGACY OF ILKKA HANSKI August 2020 • Beyond measurable legacies Direction Regional de l'Education Nationale, Matsiatra Ambony Madagascar SENSIBILIZATION TO PURSUE GRADUATE STUDY August 2020 **ExplorerHome Madagascar** Madagascar ASK A SCIENTIST: MATHEMATICS AND ECOLOGY July 2020 Video link **Consultant for Radio France Internationale** Madagascar UNDERSTANDING EVOLUTION OF COVID 19 IN MADAGASCAR **University of Wisconsin-Madison** Madison, WI, USA INTERVIEW AND APPEARANCE IN THE UW-MADISON NEWS June 2019 • From Helsinki to Minneapolis to Madison, scientist gives back in Madagascar by Kelly Tyrell **Ecole B.I.R.D. Antananarivo** Antananarivo, Madagascar THE LIFE OF A SCIENTIST AND RESEARCHER January 2018 • Half a day seminar organized by T. Ramiadantsoa and N. Ratsimbason **University of Minnesota-Twin Cities** Twin Cities, MN, USA GIRLS SOLVE IT June 2017 Introduction to Mathematical Biology

WHAT IS THEORETICAL ECOLOGY?

University of Wisconsin-Madison Madison, WI, USA

UW SCIENCE EXPEDITIONS April 2017

· Holding the ecology stand during UW-Madison open house

Ecole B.I.R.D. Antananarivo Antananarivo, Madagascar

• Half a day seminar organized by T. Ramiadantsoa and N. Ratsimbason

Swedish speaking High school Helsinki, Finland

INTRODUCTION TO MADAGASCAR November 2011 · Half a day seminar

Madagascar-Finland Assocation

FUNDRAISING TO HELPING UNDERPRIVILEDGED STUDENTS IN MADAGASCAR May 2010

Helsinki, Finland

Helsinki, Finland

Teaching & Mentoring

DEVELOPING COURSES

Apr–Jun 2024	Madagascar Biodiversity Center, Introduction to frequentist statistics, open course	Antananarivo, Madagascar
2014-24	Centre ValBio, E2M2, Ecological and Epidemiological Modeling in Madagascar	Ranomafana, Madagascar
Dec 2023	Madagascar Biodiversity Center , Faux pas in CVs and Figures: Towards a successful publication, funding, and graduate school application with Benjamin Rice- Princeton University	Antananarivo, Madagascar
Oct–Nov 2023	Madagascar Biodiversity Center, Programming in R, for L3 Biology students, University of Antananarivo	Antananarivo, Madagascar
Oct 2021	CURSA , Visulization and statistics with R	Antalaha, Madagascar
Mar 2021	CURSA , Critical thinking and introduction the life of academics	Antalaha, Madagascar
Nov 2019	University of Fianarantsoa, Applied statistics for ecologists	Fianarantsoa, Madagascar
Sep 2019	University of Fianarantsoa , Maths, stats, computer science: applications to ecology and conservation biology	Fianarantsoa, Madagascar
Jan 2014	University of Antananarivo, Introduction to Mathematical Ecology	Antananarivo, Madagascar
INVITED	Lecturer	
Dec 2023	Ecole Supérieure des Sciences Agronomiques, Statistics, R, and R Studio	Antananarivo, Madagascar
Sep 2023	Women Rise Wildlife Research, Initiation à l'utilisation de RStudio pour la recherche scientifique	Antananarivo, Madagascar
Jun 2023	ZaraHay, Scientific poster presentation with Jadelys Tonos	Antananarivo, Madagascar
2021	University of Antananarivo, Data manipulation and visualization with R	Antananarivo, Madagascar
Nov 2020	University of Antananarivo, Introduction to R for graduate botany students	Antananarivo, Madagascar
Aug 2019	University of Antananarivo, Introduction to R	Antananarivo, Madagascar
Fall 2011–2012	Reserve Planning in the Tropics, Finnish study abroad	Centre ValBio, Ranomafana, Madagascar
Fall 2011–2013	Conservation Biology in Fragmented Landscapes, Extinction, Spatially Realistic Metapopulation Models	University of Helsinki, Finland

Professional activities

Workshop, University of Helsinki

BEYOND SPECIES-AREA RELATIONSHIP

Inspire session, ESA

Helsinki, Finland January 2020

Understanding extreme events: Linking empirical observation to concepts and theory

New Orleans, LO, USA

Spring Symposium, University of Helsinki

Annual Graduate student by the Faculty of Biosciences

Helsinki, Finland

March 2012

August 2018

	work	
2017	Grand Teton and Yellowstone National Parks , Post fire forest regeneration (M. Turner, Prof.), summer	USA
2013	Mulu National Park, Borneo, Dung beetles survey (I. Hanski, Prof.), spring	Malaysia
2010	Sundsvall , Wood-decaying fungi survey (O. Ovaskainen, Prof.), fall	Sweden
Profe	ssional services	
2023	Duke University internal grant , Reviewing student's Applications for Duke Lemur Center	
2019	IkalaSTEM , Review Applications for the competition essay on the role of women in science	
2019-23	BES, Member of the British Ecological Society	
2019	ATBC, Member of the Association for the Tropical Biology and Conservation	
2016-	ESA , Student judge award, theory section	
2016-22	ESA , Member of Ecological Society of America	
2012–15	SMS, President of Suomi-Madagascar Seura (Finland-Madagascar Association)	
Work	shops & Courses	
Beyond S	Species-Area Relationship	Helsinki, Finland
University o	of Helsinki. Organizers: Tanjona Ramiadantsoa (U of Fianarantsoa) and Mar Cabeza (U of Helsinki)	29–30 January 2020
Advancir	ng Ecological Theory	State College, PA, USA
Pennsylvannia State University. Organizers: Saran Twombly (NSF), Katriona Shea (Penn State U),		00.050.11.0040
Alan Hastin	gs (U of Davis)	23–25 October 2019
Dynamic	s and Differential Equations	Minneapolis, MN, USA
-	of Minnesota, Organizers: Michael Jolly (Indiana U), Peter Polacik (U of Minnesota, Twin Cities), Geneviève	22. 25. /// 2016

Dynamics and Differential Equations	Minneapolis, MN, USA
University of Minnesota, 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)	22–25 June 2016
Mathematics for an Evolving Biodiversity	Montréal, Canada

Qualitative Behaviour of Stochastic Systems and Applications	Bielefeld, Germany	
Organizers: Leonid Bogachev (Leeds, GBR), Benjamin Bolker (Hamilton, CAN), Yuri Kondratiev (Bielefeld, GER), Otso	18-20 June 2012	
Ovaskainen (Helsinki, FIN)	10-20 Julie 2012	

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

Stochastic Demography in Fluctuating Environments: Theory and Empirical Patterns

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

23–27 April 2012

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

Antangagive Madagascar

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

Organizers: Conservation International, WWF, WCS and USAID

28–31 January 2008

Species Distribution Modeling: Methods for Conservation BiologistsAntananarivo, MadagascarOrganizers: ReBioMa and Univeristy of Berkley, California21–25 January 2008

EXTERNAL COURSES

Issues in Diversity
Organizer: University of Oulu
3-7 September 2012

Theory of Speciation

Turku, Finland

Theory of SpeciationTurku, FinlandHelsinki Summer School 2012. Organizers: Biomathematics Group, University of Helsinki19–26 August 2012Markov Chain Stability and ApplicationsJyväskylä, Finland

22nd Jyväskylä Summer School. Faculty of Mathematics and Science and the Faculty of Information Technology

13–17 August 2012

16-20 September 2013

Stochastic Differential Equations

Lammi, Finland

Organizers: Finnish Doctoral Programme in Computational Sciences and National Graduate School in Materials Physics

13–17 August 2012

Study abroad Madagascar

Organizer: SUNY Stony Book University

Ranomafana, Madagascar

September-November 2007