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## EDUCATION

**2018: PhD candidate in Mention Zoologie et Biodiveristé Animale**

Université d'Antananarivo, Faculté des Sciences, Antananarivo, Madagascar

**2016: MSc. in Animal Conservation Biology**
Université d'Antananarivo, Faculté des Sciences, Antananarivo, Madagascar
Thesis topic: Structure and spatial distribution of herpetofaunal communities in Malagasy eastern rainforests; under the supervision of Pr. Achille Raselimanana

**2014: BSc in Animal Biology, Ecology and Conservation**
Université d'Antananarivo, Faculté des Sciences, Antananarivo, Madagascar

**2012: AS in Natural Sciences**.
Université d'Antananarivo, Madagascar

## RESEARCH EXPERIENCES

**2016 - present: Research Coordinator.** Complex Torotofotsy-Ihofa, Madagascar
Assisted Dr. Onja Razafindratsima (Harvard University) in various data collection efforts, including setting up and monitoring transects for animal surveys and botanical plots, observing frugivore-plant networks and monitoring phenology. Supervised and contributed in the training of field research team (7 people). Managed research campsite.

**April 2018 - September 2018: Research Assistant.** Kianjavato Ahmanson Field Station, Madagascar. Assisting Nicola Guthrie, PhD Candidate, in various data collection efforts on a project investigating the range expansion of Microcebus jollaye in reforestation area

**2015: Principal Investigator.** Mangerivola Special Reserve, Madagascar
Inventory of amphibians and reptiles. MSc thesis research.

## OTHER EXPERIENCES

**2015: Teaching assistant** for a Biodiversity class at the University of Antananarivo, Madagascar for three months

**2014: Animal caretaker** at Parc Botanique et Zoologique de Tsimbazaza, Madagascar for two months

## RELEVANT TRAINING AND WORKSHOPS

**2018:** Workshop participant; seed dispersal ecology, organized by ary Saina and the Université d'Antananarivo in Andasibe

**2016:** Professional development workshops (writing and publishing scientific articles, and mastering the power of negotiation) organized by COACh (University of Oregon) and Tontolo Isainana in Antananarivo, Madagascar

**2015:** One-month training on various field methods in ecology, including inventory of terrestrial vertebrates and assessment of anthropogenic pressures, in Tsimanampetsotsa National Park, Tulear, Madagascar. Projet SuLaMa and Association Vahatra

**2015:** One-week application of several ecological field methods at the New Protected Area of Maromizaha, Madagascar

**2014:** Applied training on Ecological survey and monitoring in Ankarafantsika National Park, Madagascar. Educational trip organized by the University of Antananarivo.

**2012:** Advanced Communications in Natural Sciences (one-year). Université d'Antananarivo, Madagascar

## SERVICES AND OUTREACH

**2017:** Developed environmental education for elementary schools near field sites in the Complex Torotofotsy-Ihofa.

**2015: Volunteer** for the social organization « Youth For Christ » in Madagascar

## FELLOWSHIPS AND AWARDS

**2018:** Travel grant to present at the annual meeting of Association of Tropical Biology and Conservation ($880)

**2018:** Best Poster Presentation New Phytologist, Association for Tropical Biology and Conservation

**2018:** Rufford Grant for Nature Conservation ($6,544.9)

**2017:** Travel grant to present at the annual meeting of Association of Tropical Biology and Conservation ($500)

**2017:** Travel grant to present at the Madagascar Primatological Society Congress ($66)

**2017:** Best Student Poster Presentation, Madagascar Primatological Society Congress

## SKILLS

**Language skills**

- **Malagasy:** mother tongue
- **French:** professional proficiency
- **English :** professional proficiency

**Computer skills**: MS Office package, Photoshop, QGis, ArcGIS, R

## Abstract

Frugivores play important ecological roles in the ecosystem in seed dispersal interactions, which are vital for maintaining biological diversity and for ecosystem functioning. Unfortunately, anthropogenic activities, such as habitat fragmentation, put these interactions at high risk of disruption. The disruption of these frugivores-plant mutualistic networks can be have cascading impacts on the ecosystem, because if they are lost, their ecological functions are also lost. Here, we consider bird, lemur and eventual secondary seed disperser as a frugivore. To advance our knowledge of the magnitude of this mutualistic disruption and to find better ways for holistic conservation of the frugivore-plant interactions in fragmented landscapes, we need a better understanding of the nature, structure and strength of such interactions. In this project, I investigate the ecological basis and strength of frugivore-plant mutualistic networks along an environmental gradient of forest edge and interior habitats in a Malagasy rainforest. To do this, an integrative approach are used that combines field data with trait-based analyses and modelling. I collect field data on frugivore-plant networks through direct observations of frugivory and using movement-triggered camera traps. We will also gather plant trait data from measurements in the field as well as using plant vouchers in herbaria. I will develop models parameterized with these empirical data to quantify how loss of primate affects the stability of the networks. The models will take into account the quantity of seed/fruit removed from the parent tree, the identity of the frugivory species and their visitation rates as well as the composition of frugivores species in forest edge vs. interior habitat. These models will assess the three network parameters describing the structure of the network (nestedness, robustness and weight) under different scenarios of frugivore loss, looking at how the absence of either of the frugivore species from the landscape would influence the networks.

## Statement of Interest and Intent

My research goal is to examine the ecological basis and strength of plant-frugivore mutualistic networks along an environmental gradient of forest edge and interior habitats in the Malagasy rainforest located in the eastern. One of my objectives is to determine how the loss of frugivores may impact plant ecology, plant communities, and the strength of the network of the plant-frugivore mutualistic network. I am interested and hope to attend the epidemiological and ecological modeling in Madagascar workshop on 2019 because I will incorporate modeling into my work to support or reject my hypothesis: loss of frugivore disrupts the plant-frugivore interaction on decreasing the strength of the link between both interacting species.

I have a basic notion on modeling but I would like to improve my knowledge and skills. Courses and training that I will obtain during this workshop will help me to advance in the field of modeling. Before, I just use R software to do modeling, but after attending the workshop, I am persuaded that I will know and practice with another software to complete that and to enrich the skills in terms of modeling and these help me to understand ecological data. This workshop will allow me to start developing my own models on my project research. As a PhD student, I will use the experience and skills I gain from this workshop to analyze my results. Aside from building on my modeling skills during this workshop, I can also benefit from having the opportunity to work and create connections with experts and scientific leaders on modeling.

Currently, modeling is one of the tools that can help to predict the future of one event and it is an important tool for conservation too. My expected result after using modeling will show the future of the plant-frugivore mutualistic network without frugivores after many years and to determine what species is the most vulnerable. Thus, this tool can help us to suggest the best action plan for the preservation of such interaction which allow to conserve better the forest and both interacting species frugivores and plants which are continually threatened by anthropogenic pressures.

I believe that after undertaking the courses, teachings, and practice in this workshop, I will have progressed from a beginner to an advanced student in modeling. I think it is more difficult to self-learning than to learn and train with experts and specialists. That's way this workshop is an opportunity for me to learn and to practice with them. It will be a very important experience to me to attend this workshop as it will make me progress in this field and I will bring all skills and experiences from it to do modeling with my ecological data.

As I am still currently working in the field to gather and continue to complete data for my PhD program, I can enrich what kind of data maybe I need to add in the field after this training. I can enrich my long term research goal after this workshop.

Also, I see that there are many disciplines that the workshop will teach. Thus, I can gain knowledge in the field of epidemiology as an epidemiological data and other disciplines that the training will give during the workshop. These will help me in the future opportunity on my professional development and academic development.