Rindra H. Nantenaina

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EDUCATION

2016: MSc. in Environmental Analysis and Ecosystem Monitoring and Management
University of Antananarivo, Madagascar
Thesis topic: Characterizing the optimal conditions for the production of Darutoside in *Sigesbeckia orientalis*; under the supervision of Drs. E. Roger and V.Rafidison

2013: BSc. in Plant Biology
University of Antananarivo, Madagascar

2011: AS in Natural Sciences
University of Antananarivo, Madagascar

RESEARCH EXPERIENCES

2018-present: Research Coordinator. Complex Torotorofotsy-Ihofa, Madagascar. Principal collaborator: Dr. Onja Razafindratsima. Conducted PhD field research, untitled "Exploring the benefit from gall plants".

2018: Research Consultant. Mahamavo Forest, Madagascar
Conducted ant inventory and identification of associate plants, in collaboration with the project "Opération Wallacea".

2018: Research Consultant. Sahamalaza-Iles Radama National Park (SIRNP), north west Madagascar

Conducted reforestation project in the site, in collaboration with Institute of Conservation Science and learning Bristol Zoological society

2016- 2017: Research Assistant. Complex Torotofotsy-Ihofa, Madagascar
P.I: Dr. Onja Razafindratsima (Harvard University). Supervised and contributed in the training of field research team (4 people). Assisted the research team in various data collection efforts, including setting up and monitoring transects for animal surveys and botanical plots, observing frugivore-plant networks and monitoring phenology. Managed research campsite.

2016: Research Consultant. Mahamavo Forest, Madagascar
Conducted plant inventory and measurement within botanical plots and estimation of forest structure, in collaboration with the project "Opération Wallacea".

2015: **Intern.** SOTRAMEX Madagascar
Conducted laboratory analyses of medicinal plants. MSc thesis research, in collaboration with the company Yves Rocher Paris.

RELEVANT TRAINING and WORKSHOPS

2018: -Seed Dispersal in Madagascar: From Concepts to Applications in Human-dominated Landscapes organized by Ary Saina and Department of Zoology and Animal Biodiversity (University of Antananarivo), Madagascar in Andasibe, Moramanga, Madagascar

-Introduction to R and Statistical Analyses organized by Ikala STEM Annual Workshop in collaboration with TReND, The Company of Biologists, Ecology Konstanz and International Max Planck Research School for Organismal Biology in Antananarivo, Madagascar

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

CONTRIBUTED CONFERENCE PRESENTATIONS

Nantenaina, R.H., Roger, E., and Rafidison, V. (**2016**).Variation du Darutoside chez *Sigesbeckia orientalis* L. suivant quelques conditions éco-biologiques et suivant le mode de séchage des échantillons. *Symposium International Chimie Verte,* Antananarivo, Madagascar

Nantenaina, R.H., Roger, E., and Rafidison, V. (**2017**). Caractérisation des conditions optimales pour la production de Darutoside chez *Siegesbeckia orientalis*. *Forum de la recherche 5ème Edition Agrobiodiversité*, Fianarantsoa, Madagascar

Nantenaina, R.H., Roger, E., and Rafidison, V. (**2018**). Characterizing the optimal conditions for the production of Darutoside in Sigesbeckia orientalis. *Annual Meeting of Association for Tropical Biology and Conservation*, Kuching Sarawak Malaysia

SERVICES

2018-Presnet: Active member of Asity Madagascar Association

2017-Present: Research officer of Ary Saina Association

2017-Present: Permanent member of Ikala STEM Association

2017-Present: Active member of Tontolo Isainana Association

FELLOWSHIP and GRANT AWARDED

2108: £ 5 000 by Rufford Small Grant (RSG) Fund Raising
2018: US$ 840 by Association for Tropical Biology and Conservation (ATBC)
2017: US$ 500 by Association for Tropical Biology and Conservation (ATBC)

SKILLS

Language skills

- **Malagasy:** mother tongue
- **French:** professional proficiency
- **English :** professional proficiency
- **Dutch:** basic knowledge

Computer skills: MS Office package, Photoshop, QGis, ArcGIS, R, XL-STAT

RESEARCH ABSTRACT

While galls on leaves or twigs of plants are often considered as detrimental for the host, they may also provide benefits to the plants by attracting frugivores, which play vital role as seed dispersers. However, we don't know about the validity of such concept, but it could provide us important insights in understanding the mechanism of plant-frugivore interactions. In this project, I propose to investigate how plant galls influence plant-frugivore interactions and plant fitness. Using seed dispersal by lemur frugivores in the Eastern rainforests of Madagascar, where lemurs are the primary dispersal of many plant species, I will address the following specific goals, first of all, characterize how gall conspicuousness affect frugivore attractions to infected plants; second investigate the importance of galls in frugivore diet; finally determine the ecological consequences of galls on plant fitness. To do this, I will use data on field observations of seed dispersal by two lemur species (*Varecia variegata* and *Eulemur fulvus*) and analyses of gall trait in the field and in laboratory (morphological and nutritional). Modeling data process will progress to pertinent results. This project is expected to advance the field of tropical ecology and plant science by providing novel perspectives in our understanding of plant-animal interactions in Madagascar's tropical ecosystems. It will also provide important information on macronutrient and energy provided by galls to animal frugivores.

STATEMENT OF INTEREST AND INTENT

I am a student from the Department of Plant Biology and Ecology, particularly interested in studying relationship between plant and frugivore lemur and insect. A few studies of this subject have been conducted so far. This study is not so many yet in Madagascar Biodiversity.

I am so excited about the possibility of attending the annual E^2M^2: Ecological and Epidemiological Modeling in Madagascar will happen in January 2019. Attending such workshop is particularly important for the professional development of a student in science and early career ecologist, like me. I believe this will benefit my professional skills in many ways. It will provide me an opportunity to learn more about work being done by interconnecting with scientists in the field of modeling scientific research data. Currently, I am starting my PhD program with a project on "Exploring the benefits of plant galls", and I see attending this E^2M^2 will greatly help me in addressing my own research ideas and will allow me to widen my horizon in developing my modeling skills and in identifying new ideas if necessary. The various

presentations at the annual E^2M^2 will also give me ideas to improve my scientific research skills.

This Ecological and Epidemiological Modeling in Madagascar will also offer an opportunity to exchange and engage with other researchers, sharing similar interests, in different stages of their career. I expect such interaction to not only improve my own research, but also to foster potential future collaborations. It will also be crucial in providing me new precious knowledge to improve my communication skills.

As I say previously, I am already starting my PhD program and currently I am collecting field data in the Eastern part of Madagascar, in Complex Torotorofotsy-Ihofa rainforest, in Andasibe Moramanga, and I surely have many data to be treated during or after the workshop venue. The E^2M^2 will be an opportunity for me to be able to manage and handle data processing. I am planning to publish papers of the current research. However, I have had lack of understanding on how to model data. Hopefully, the skills gained from E^2M^2 are expected to be useful in getting pertinent results, in understanding the meaning of these results and help me in writing good conclusion.

Besides, Statistical analysis like R is very crucial for data analysis and interpretations. Therefore, I think I will be able to use these tools into my on-going project and also on how to treat geographical data with Geographical Information System. Hopefully E^2M^2 will really help me to train with these modelling tools, and will provide me more exercises, so that any difficulty on writing research outcome will not happen in the future. My participation on the E^2M^2 program will provide me a great opportunity to exchange ideas with professional leaders in the field and to hear about my current research and potentially foster new collaborations. In addition, being engaged with a diverse community of intellectuals will help me develop and enrich my interpersonal skills and will offer a chance to exchange ideas and diverse perspectives.

One of the most important facts that I won't ignore, as an ecologist, is to visit our National Parks, which I didn't have before. Attending the E^2M^2 is an opportunity for me to visit one of them, which is the National Park in Ranomafana rainforest, one of my ecologist field dreams.