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STATEMENT OF INTEREST AND INTENT

With a Master's degree in Biochemistry, Biodiversity and Health, my studies were focused on Biochemistry (structural and fundamental), Genetics (expression and regulation of genes), Immunology and Immunopathology, Virology, Bioinformatics, Microbiology and Infectiology. I have performed internships in analysis laboratories. I did my laboratory works for preparing my Master's degree at the Unit of Virology at the Institut Pasteur de Madagascar (IPM) by optimizing molecular methods for the detection of *Herpesvirus* and *Mycoplasma* from endemics tortoises of Madagascar. I have got skills of laboratory techniques such as DNA Extraction, PCR, sequences analysis and serology. After my training at IPM, I work at the NGO Durrell Wildlife Conservation Trust (DWCT) as a Conservation Biologist. DWCT focuses on the conservation of endangered fauna in the world. My work is about data management and data analysis of patrol data in protected area in Baie de Baly, site on the West of Madagascar. This site is the location of the native habitat of one endemic tortoise species named *Astrochelys yniphora* or Angonoka. Patrols data in the field are collected and centralized. These data are analysed using the software SMART (Spatial Monitoring And Reporting Tool) to assess the human pressures observed in the protected area.

In order to improve my knowledges about bioinformatics, I have assisted to workshops in title "Bioinformatics and genetics" and "introduction on genome analysis and bioinformatics" in 2017. I realize that my knowledges about bioinformatics and biostatistics are far from enough. As our cursus at the University are especially for theoretical courses bioinformatics, I couldn't perform more practice on this and no course in modeling. However, modeling is useful for my work and my future research.

I am preparing my proposal for my PhD project which will be focused on molecular biology of pathogens from tortoises and on the assessment of human pressures in the native habitat of endemic tortoises. All results of this research should be analysed using biostatistics and modeling. First, the one part of my future research will be focused on the prevalence of *Herpesvirus* and *Mycoplasma* from endemic tortoises in Madagascar. The results of this work will be used for statistical analysis in order to value the results obtained. For data of human pressures in the native habitat of endemic tortoises, the location of these pressures observed should be represented on a map. Being a Conservationist, I am passionate for Science and the preservation of nature. I would like to be able to establish a map of one area or sector and to do a spatial representation of scientific results. I really need these skills for my future research.

In this case, I would like to apply for the workshop E2M2 Ecological and Epidemiological Modeling in Madagascar to be held in Ranomafana National Park on January 2018 to improve my skills and to enhance scientific results in the future research. I think after this workshop, I can analyse easily all the research results. I hope also to be able to create a map of one conservation area, to put comments and to present results in this map. Having knowledges about Geographic Information Systems is also helpful for my case to develop myself in the Conservation area.

Please, accept my application for this workshop which would be important for my future research. I am looking forward to having a positive response from you.

RESEARCH ABTRACT

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My current work focuses on the conservation of Madagascar tortoises. Endemics tortoises are endangered and their native habitat is threatened due to bush fires (Mandimbihasina *et al*., 2018). For this case, our organization aims for the protection of endemic tortoises of Madagascar. Indeed, captured tortoises for an attempt of illegal export are in captivity in Centres of breeding to increase the number of these tortoises and to protect them against poaching in the wild (Curl *et al*., 1985). However, many pathogens such as viruses, bacteria, fungi and parasites were identified causes of epidemic from the population of tortoises in the world. Theses pathogens can cause serious diseases and collective mortality especially from tortoises in captivity (Warwick *et al*., 2012). During the preparation for obtaining my Master's degree, I did an optimization of molecular methods for the detection of *Herpesvirus* and *Mycoplasma* from endemics tortoises in Madagascar. These two pathogens were the most identified responsible of decline of tortoises in the world (Salinas *et al*., 2011). My future research will be based on the prevalence of these two pathogens from tortoises in captivity in the centres of breeding. The results of this future research will be analysed by statistical methods.

Another part of my work is the analysis of patrol data in protected area. Indeed, patrols were done in the native habitat where this place is protected. Patrols aim to protect tortoises in the wild against human pressures. During the patrols, patrollers save all types of infractions such as fire, footprint or other indirect signs of circulation in the protected area. These data were analysed to show all types of pressures in the protected areas. Patrol data are analysed using software Spatial Monitoring And Reporting Tool (SMART). The future work will be concerned to assessment of human pressures in the protected areas. Works will be focused on what kind of pressures are more presents in the field, when the human pressures are most observed, which technic is most suitable to fight against poachers and which actions will be taken for each pressure observed. The analysis of these results needs good skills of Geographic Information System (GIS).

References :

Curl D. (1986) : A recovery programme for the Madagascar ploughshare tortoise. *Dodo, Jersey Wildlife Preservation Trust* 23 : 68 - 79.

Mandimbihasina A. R., Woolaver L. G., Concannon L. E., Milner-Gulland E. J., Lewis R., Terry A. M. R., Filazaha N., Rabetafika L. L. and Young R. P. (2018) The illegal pet trade is driving Madagascar's ploughshare tortoise to extinction. *Oryx*. Doi : 10.1017/S0030605317001880.

Warwick C., Arena P. C. and Steedman C. (2012) Visitor behaviour and public health implications associated with exotic pet markets : an observational study. *JRSM Short reports*, 3 : 1 - 9.

Salinas M., Francino O., Sánchez A. and Altet L. (2011) *Mycoplasma* and *Herpesvirus* PCR detection in tortoises with rhinitis - stomatitis complex in Spain. *Journal of Wildlife Diseases* 47 : 195 - 200.

CURRICULUM VITAE

RASOANARIVO
Liantsoa Sahazaniaina Anjaralahatra Fifaliana

Date of birth : 06th February 1994 in Antananarivo, Madagascar
Address : Lot IVE 89 Ambodimita, Antananarivo, Madagascar
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DIPLOMA

2015 - 2016 : Master's degree in Biochemistry, Biodiversity and Health at the University of Antananarivo, Madagascar (with First Class honours)
2013 - 2014 : Bachelor's degree in Biochemistry and Molecular Biology at the University of Antananarivo, Madagascar
2012 - 2013 : University Diploma of Scientific Studies (D.U.E.S. II) in Natural Sciences at the University of Antananarivo, Madagascar
2010 - 2011 : Baccalaureate / Scientific (series D)
2009 - 2010 : Baccalaureate / Literary (series A2, with honours)

WORK EXPERIENCES

- 1st July 2018 up to now : Conservation Biologist at the NGO Durrell Wildlife Conservation Trust (DWCT), Madagascar
- Audio retranscription freelance
- Vacation job : sales manager and hostess
- July – August 2014 : media operator at Vivetic (call center)
- March 2013 : Donor in French association

EDUCATION

- 24th - 25th September 2018 : workshop in title "DNA sequencing in Madagascar using a mobile genetics lab" at Vahatra office Ankatso, Antananarivo, on collaboration with Duke University (USA) and Duke Lemur Center (USA)
- 30th July - 03rd August 2018 : training courses on Law Enforcement Monitoring (LEM) and Spatial Monitoring And Reporting Tool (SMART) in Mahajanga, on collaboration with Wildlife Conservation Society (WCS) and Programme d'Appui à la Gestion de l'Environnement (PAGE GIZ)
- 1st December 2017 - 30th June 2018 : internship in Data Management at DWCT Madagascar
- January 2017 - August 2018 : English courses at "National Centre for the Teaching of English" (CNELA), Antananarivo, Madagascar

- 2nd - 6th October 2017 : workshop in title "Introduction to Genome Analysis and Bioinformatics" at Institut Pasteur de Madagascar (IPM), on collaboration with H3Bionet and the University of Mauritius
- 19th - 21st June 2017 : workshop in title "Bioinformatics and Genetics" at HABAKA innovation hub Tsimbazaza, Antananarivo, on collaboration with Pennsylvania State University (USA)
- 1st December 2016 - 30th November 2017 : internship at the Unit of Virology, IPM, Antananarivo, Madagascar for the preparation of Master's degree in Biochemistry, Biodiversity and Health
- 2nd May - 5th June 2016 : internship in a medical laboratory : "Centre Techniques Biomoléculaires" (CTB), Antananarivo, Madagascar
- Leadership's training (scouts' education)

KNOWLEDGES IN SCIENCES' AREAS

Biochemistry and Molecular Biology, Microbiology, Toxicology, Genetics, Bioinformatics, Biotechnology, Immunology, Virology, Vegetable Biology, Animal Biology

SKILLS AND COMPETENCES

- Native language : malagasy
- Other languages : french, high intermediate ; english, intermediate
- Softwares competences : Microsoft office (Word, Excel, Powerpoint) ; language R ; Spatial Monitoring And Reporting Tool (SMART) ; Mega 7 software

ACTIVITIES

- Scouts : TILY eto Madagasikara, Head of Unit
- Volunteer at « Volontariat FJKM »

HOBBIES

- Swimming
- Music
- Dance