BRUNA MIORA RAMAMONJIHARISOA

Local address
II A 122 FCA Nanisana
Antananarivo 101- Madagascar
Mobile : +261-32-49-253-67
E-mail : miorabruna@gmail.com

Team work, Well-organized, hard working and self-motivated as a Medical Biochemistry graduate (Master degree) majoring in Health and Biodiversity- Option: Biology and technology, with broad comprehensive knowledge and understanding of public health, biochemistry, and laboratory techniques. Experienced in poliomyelitis outbreaks surveillance in favor of the public health in Madagascar (Institut pasteur of Madagascar). Currently certified in English for specific purposes with good knowledge of communication strategy, business sector area, dynamic leadership, effective management, strategic planning of project, good spoken/ written English and French, quite good in Germanic.

OBJECTIVE

To contribute to the improvement of human health via research

EDUCATION

- 2014-2015: -University of Antananarivo-Master's degree in Medical Science

Major: **Biochemistry Biodiversity and Health**

1st Semester:

- Toxicology
- Chemistry and Biochemistry techniques to study biomoleculs
- Immunopathology and Immunodiagnostics
- Virology and bacteriology
- Molecular Biology

2nd Semester:

- Internship in laboratory in order to present a Master's dissertation (topic: "Isolation of *Enterovirus* in cell-culture and identification of *poliovirus* from childrens who were in close contact with a poliomyelitic case patient discovers in October, 2014").

-University of Antananarivo-Bachelor's degree in English (ongoing)

Major: **English for Specific Purposes**

- Management
- Business communication
- Leadership
- Marketing
- Tourism
- Academic Writing
- Listening and Speaking

- 2013-2014: -University of Antananarivo-Master1 in Scientific research
- 2012-2013: -Bachelor's degree in Natural Sciences

  Major: Medical Biochemistry
- 2009: CHRIST-ROI high school-Baccalaureate (Science stream)

WORK AND TRAINING EXPERIENCES

2016-2015 **Techniques acquisition and research experiences**

- Worked for the LNR Polio in the virology unit (Institut Pasteur of Madagascar)
  For the routine surveillance of poliomyelitis cases (cell culture, viral isolation)
- Worked for a project studying the seroprevalence of rubella and measles in Madagascar via ELISA (suspected samples from 2004 to 2015) in the Pasteur Institute of Madagascar.
- Familiarized with virological laboratory techniques such as cell-culture isolation, PCR, and sequence analysis, experienced in research by identifying circulating poliovirus among healthy children within the context of the virological surveillance of poliovirus to prevent outbreaks. This is for the preparation of my Master's degree at the Institut pasteur of Madagascar (IPM) which is the laboratory reference of Madagascar.

Activity Manager and leader

- Achieved a successful conference event about "Education in USA" with a collaboration with the US Embassy within the context of our leadership project course, which shows our capacity for an efficient leadership and management because for such a success, we had to promote our event, to call for collaborations, to show team spirit, to persuade followers, to manage our time and last to be objective.

2014 **In-laboratory and onto-ground professional training**

- Acquired ELISA and PCR techniques through an internship at the Institut pasteur of Madagascar during the holiday (Hepatitis virus tests)

• September 2017: Cell Culture Refresher Course (By the WHO/CDC/AFRO Polio Laboratory Network/at the National Institute for Communicable Diseases (NICD), Johannesburg, South Africa).

• June 2017: Genetics and Bioinformatics workshop (By Dr George PERRY, PhD, associate professor of Anthropology and Biology at Pennsylvania State University/at HABAKA- Antananarivo-Madagascar).

• November-December 2016: Ecological and Epidemiological Modeling in Madagascar (E 2M2) (By the Center for Health and Wellbeing-Princeton University, PIVOT, VALBIO center/ at VALBIO center in Ranomafana National Park-Madagascar).

- 24 september-25 september 2018: Technology nanopore course (Organisateurs et Formateurs Duke University, ONG vahatra-Antananarivo/Madagascar).
- 27 september - 30 september 2018: R and statistical analyses workshop (Organisateurs et Formateurs: Ikala stem, Eva Malcor de l'université Konstanz-Germany/University of Antananarivo-Madagascar).

COMPUTER SKILLS AND LANGUAGES

- Microsoft software: Word, Excel, PowerPoint
- Scientific software: CEQ2000, MEGA 5
- Other: Internet explorer and e-mail
- French (good spoken and written), English (good spoken and written), German (upper intermediate)

ACTIVITIES AND INTERESTS

- Member in SMS's choir (French choir in a catholic church), that helps me to communicate easily and effectively with various people and to take responsibilities.
- Volley-ball

PUBLICATIONS

• « Measles immunity in Madagascar: a long honey moon is still possible.» Keitly MENSAH1,2, Miora Bruna Ramamonjiharisoa1, Miora Andria1, Richter Razafindratsimandresy1, C. Jessica E. Metcalf3,4, Jean-Michel Heraud1,1Virology Unit, Madagascar Pasteur Institute, Antananarivo, Madagascar,2Service d'Hygiène, Epidémiologie et Prévention, Hôpital Edouard Herriot,Hospices Civils de Lyon, Lyon,France,3Department of Ecology and Evolutionary Biology, Princeton University, Princeton, USA,4. Office of Population Research, Woodrow Wilson School, Princeton University, Princeton, USA.

• « Revealing Measles Outbreak Risk with a Nested IgG Serosurvey in Madagascar » American Journal of Epidemiology. (Not yet published, final revision scheduled before 16 march).

PLANNED RESEARCH PROJECT

In the future, I would like to lead a research project consisting to the improvement of the public health. Above all, in Africa where infectious diseases constitute generally the major problem of public health. Malnutrition for example as it has likely a link to immunodeficiency, could constitute the principal cause of many other diseases and could be the cause of the resistance of many pathogenic microorganisms to drug's action, it may also affect the efficacy of vaccines. As for the hypothesis we have put for the emergence of poliovirus in Madagascar for example, when preparing my Master degree during which I have worked on poliovirus, and when we have noticed that, despite all the efforts done for the reinforcement of the vaccination campaign to increase the immunization coverage, many poliomyelitis cases remain and cause outbreaks in communities where malnutrition reign (generally in the south of Madagascar). So the question arises, why? Is it because these populations don't respond to polio vaccines? For answering to that, investigation through a serology project within underfed children of Madagascar is ongoing.

In addition to this remaining poliomyelitis cases, we have also noticed that in parallel of the fight against poliomyelitis by massive vaccination program, other outbreaks appear, such as VDPV or vaccine derived poliovirus outbreak (poliovirus which drifted genetically by mutation and/or recombination with other enteroviruses through inter human and environmental circulation). I prefer to note that for this first, 1% of the carriage only conduct to acute flaccid paralysis. Why? I think it will be interesting to investigate on that by evaluating for example the possible relation between intestinal microbiota, vaccination, AFP. Cases of non polio acute flaccid paralysis (NPAFP) also have increased other the time of poliovirus eradication ex: poliomyelitis-like disease caused by EV-71**(Wang *et al.* 2009)**. Indeed, a study about the relation between the rise of OPV doses (linked to the reinforcement of the vaccination campaign) and the rise of NPAFP rate in India has shown a highly significant correlation ($P<0.001$) **(Vashisht *et al.* 2015)**. Here in the virology unit, we also notice this rise of NPAFP rate in the routine surveillance of AFP case for the eradication of poliovirus policy.

I think that by using modeling, these facts can be studied as ambitious research projects for the improvement of public health.

REFERENCES:

Vashisht N, Puliyel J et Sreenivas V (2015). Trends in Nonpolio Acute Flaccid Paralysis Incidence in India 2000 to 2013. Pediatrics **135**(Supplement 1): S16-S17.

Wang S-M et Liu C-C (2009). Enterovirus 71: epidemiology, pathogenesis and management. Expert review of anti-infective therapy **7**(6): 735-742.

Mrs RAMAMONJIHARISOA Miora Bruna Marielle

Antananarivo-Madagascar
II A 122 FCA Nanisana

Tél: +261-32-49-253-67
E-mail: miorabruna@gmail.com
rbmiora@pasteur.mg

I am a recent graduate from the University of Antananarivo Madagascar, with a master degree in Biology (majoring in Biochemistry, Biodiversity and Health) and an ongoing bachelor degree in English (majoring in English for specific purpose).

I have undertaken internships in the Institutes Pasteur of Madagascar which is the reference laboratory of Madagascar, One of them allowed me to acquire diagnostic techniques used for virology field (mainly detection of HBS by ELISA test) and one was a 6 months Master grant for what, my theme was about "Isolation of Enteroviruses and characterization of polioviruses isolated from 356 healthy children living in the district of Analalava-Madagascar". These placements have enabled me to develop not only technical experience (such as Virus isolation, cell-culture, Microscopy, PCR, sequence analysis) but a valuable skill in the area of research and communication also. After I have finished my Master degree training, I have worked as technician within the "Modeling infectious disease dynamics and control in Madagascar" project which consists on checking IgG anti-Rubella and anti-Measles in suspected serum collected in the virology unit for the surveillance of Measles and Rubella infection in Madagascar from 2004 to 2015.

I really desire to pursue my study for a PhD. Indeed, I have already applied for some proposals but any satisfied responses until now. So meanwhile, I continue to work in the virology unit at the Institut Pasteur of Madagascar for broaden my experiences and for being ready for a PhD research, hopefully soon.

Being aware of the complexity of scientific research, I have always been passionate about Science. Especially when it is in favor of human health that is why I have opted for Biochemistry, Biodiversity and Health major and English language in parallel, for preparing me to the research area. I have judged English language as fundamental for scientific research subject.

Thus, I consider that attending the E^2M^2 workshop is a great opportunity which arises for me; it should prepare me for my future research project, linking likely to the improvement of public health in the way that it will teach me the basis of data modeling which I consider as compulsory for a PhD research. Moreover, I admit that I am data modeling challenged, as for many Malagasy students, because at the university for example, we didn't have possibility to make statistical analysis training but only a general theoretical lecture. Then, for our Master degree which mainly consists on techniques acquisition, unfortunately we did not have the possibility to experience data modeling, although for advanced scientific researches, no one can't escape it. This kind of training is my first and unique chance to supplement the lack and to overcome my modeling challenged.

So, please accept my application for this workshop, which would be a huge step of a scientific development for me.