Tanyaradzwa Rodgers Ngara

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Profile

A highly enthusiastic and motivated research scientist with a professional attitude who enjoys being part of a team and working to make it successful and productive. I grasp new ideas and concepts quickly and am innovative as well as creative in thinking up solutions to problems. I have demonstrated proficiency in conducting independent research, analyzing data, and presenting findings. I seek opportunities to utilize my knowledge and skills professionally to contribute to the scientific community.

Professional Summary

The ultimate goal of my research is to study microbial communities' function, structure, and dynamics to understand their role in human health, biogeochemical and agricultural processes, and the environment. A comprehensive understanding of microbial communities' activities and dynamics holds promise for their exploitation in a wide range of challenges facing humanity today, such as enhancing crop production, biofuel and human medicine production, and environmental bioremediation. To achieve this goal, I have been pursuing interdisciplinary research and unifying the techniques from biotechnology, microbiology, metagenomics, molecular biology, droplet microfluidics, environmental sciences, and ecological risk assessment.

Skills

Possess the technical skills and attributes necessary within a dynamic scientific research environment:

- Expertise in database development, data mining, and data analysis.
- Strong understanding of biodegradation processes and mechanisms.
- Experience in microfluidic device fabrication and droplet generation for single-cell assays.
- Ability to work independently and collaboratively in a team environment.
- Excellent communication and interpersonal skills, including experience in collaborating with interdisciplinary teams.
- Strong scientific writing and presentation skills, including peer-reviewed publications.
- Ability to work independently under challenging conditions with minimum supervision.
- Self-motivated and ambitious individual driven by the need to face new challenges.

Education

Huazhong University of Science and Technology **Wuhan, China**

Ph.D.in Biomedical Engineering *09/2019 – Current*

– Academic advisor: Prof. Houjin Zhang

– Dissertation title: Development of Databases for the Biodegradation of Representative Pollutants in Wastewater

Huazhong University of Science and Technology **Wuhan, China**

M.Eng. in Biomedical Engineering (Magna cum laude) 02/2017 – *01/2019*

– Academic advisor: Prof. Houjin Zhang

– Thesis title: Design, Fabrication, and Characterization of Microfluidic Chips used for the Production of Monodisperse Double Emulsions

Chinhoyi University of Technology **Chinhoyi, Zimbabwe**

BSc. in Biotechnology *08/2011 – 07/2015*

– Academic advisors: Dr. Joice Ndlovu and Dr. Tawanda Chisango

– Thesis title: Identification and characterization of nitrogen-fixing bacteria isolated from root nodules of *Acacia tortilis* to enable the introduction of suitable and effective symbionts of legume crop plants

Research Experience

Huazhong University of Science and Technology **Wuhan, China**
Graduate Student Researcher 02/2017 – *Present*
Affiliation: Department of Biotechnology, College of Life Science and Technology and MOE Key Laboratory of Molecular Biophysics

Chinhoyi University of Technology **Chinhoyi, Zimbabwe**
Research Assistant *06/2014 – 06/2015*
Affiliation: School of Health Sciences and Technology

Work Experience

Huazhong University of Science and Technology **Wuhan, China**
Biology Teaching Assistant 09/2021 – 01/2022

- Collaborating with the professor: Working closely with the biology professor to develop lesson plans and ensure that course materials are up-to-date and relevant.
- Managing course materials, including updating and organizing lecture notes, laboratory manuals, and other instructional materials.
- Grading and providing feedback on assignments, quizzes, and exams.

Agri-biotech Pvt Ltd **Harare, Zimbabwe**
Agricultural Biotechnology Researcher 09/2015 – 01/2017

- Using biotechnology techniques to develop disease-free, drought-resistant, high-yielding varieties of traditional crops such as cassava.
- Experiments to attempt cotton *Gossypium hirsutum L.* regeneration via somatic embryogenesis.
- Regeneration and transformation of various crops, including maize, cotton, and potato.
- Identification and molecular characterization of the cassava mosaic brown streak virus coat protein

Honor Awards

HUST Academic Excellence Award 2022
Huazhong University of Science and Technology

Publications

[3] **Ngara, T.R.**, Zeng, P., and Zhang, H. (2022). "mibPOPdb: An online database for microbial biodegradation of persistent organic pollutants", *iMeta*, 1(4), e45.

[2] **Ngara, T.R.**, Zeng, P., and Zhang, H. (2022). "Biological Nitrogen Removal Database: A Manually Curated Data Resource", *Microorganisms*, 10(2), 431.

[1] **Ngara, T.R.**, and Zhang, H. (2022). "Recent Advances in Function-based Metagenomic Screening", *Genomics, Proteomics & Bioinformatics*, 16(6), 405-415.

Interests

Volunteering and community involvement | Reading | History | Listening to music

Languages

English ●●●●●

Chinese ●●○○○

Shona ●●●●○

References

Prof Houjin Zhang
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Dr Joice Ndlovu
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Dr Nancy Muringai
Contact: nmuringai1@sheffield.ac.uk