

## A Career Dedicated to Ecology and Sustainability: Dr. Pascaline NYIRABUHORO's Remarkable Journey

---



Dr. Pascaline Nyirabuhoro is a distinguished environmental scientist whose career has been defined by a profound commitment to understanding and addressing the complexities of ecological systems and sustainability challenges. Born in Rwanda in 1984, her career trajectory has been shaped by a deep passion for preserving the natural environment and promoting sustainable development. Through groundbreaking research, innovative teaching, and impactful community engagement, Dr. Nyirabuhoro has emerged as a leading figure in environmental science, particularly in the fields of microbial ecology and ecosystem resilience.

### Academic Foundations: Building Expertise Across Disciplines

Dr. Nyirabuhoro's academic journey began in Rwanda, where she earned her **Bachelor of Science in Environmental Health Sciences** from **Kigali Health Institute** in 2011. This foundational degree ignited her interest in the interplay between human health and the environment, laying the groundwork for her

future career. Her academic curiosity led her to further studies in **geology, public health, and exploration in the oil and gas** at **Annamalai University** in India, where she completed a **Master of Science in Geology** and postgraduate diplomas in **Public Health** and **Petroleum Exploration**.

In 2015, Dr. Nyirabuhoro moved to China to pursue a **Doctor of Philosophy in Environmental Sciences** at the **University of Chinese Academy of Sciences (UCAS)** in Beijing and Xiamen. Her doctoral research, titled "**Temporal Dynamics and Community Assembly Mechanisms of Rare and Abundant Bacterioplankton in Subtropical Reservoirs**", delved into the intricacies of microbial community interactions and their response to environmental disturbances. Her research, widely published in peer-reviewed journals such as **FEMS Microbiology Ecology** and **Microbial Ecology**, has established her as a leader in the field of **Aquatic microbial ecology**.

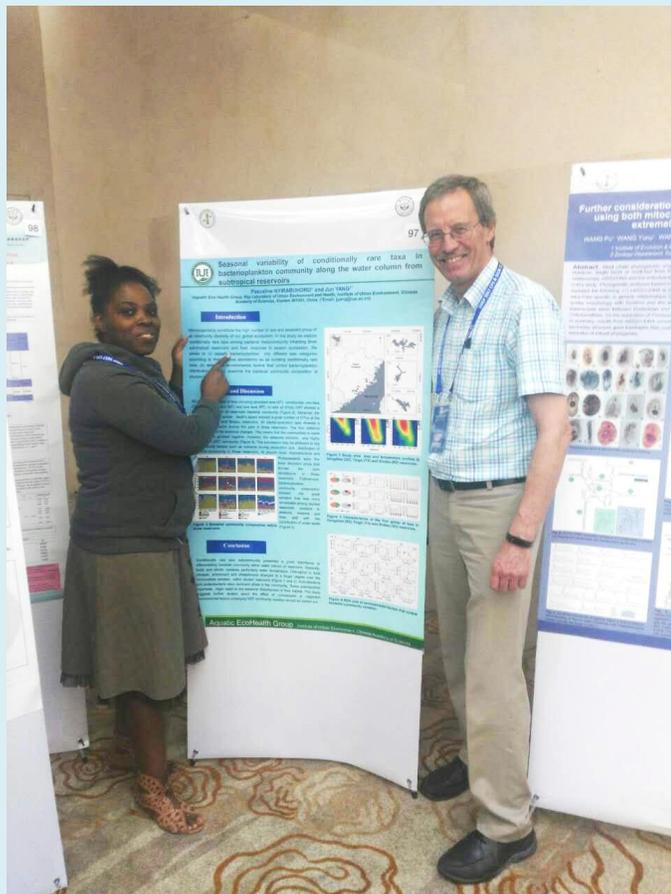


Dr. Pascaline Nyirabuhoro with her doctoral supervisor, Prof. Jun Yang from the Institute of Urban Environment (IUE), Chinese Academy of Sciences, and her labmates during the visit of Prof. David M. Wilkinson from the University of Lincoln (UK) on October 30, 2015.

### Research Excellence: Advancing Knowledge in Microbial Ecology

Dr. Nyirabuhoro's research has made substantial contributions to the understanding of **aquatic microbial communities and their role** in maintaining ecosystem resilience. Her work has focused on the temporal dynamics of **bacterial communities** in subtropical

reservoirs and **testate amoeba communities** in both subtropical reservoirs and urban parks.



Dr. Pascaline Nyirabuhoro with Prof. Alan Warren from the Natural History Museum, UK, during her poster presentation at the 2017 International Symposium on Biodiversity and Evolution of Protozoa, held from November 17–21, 2017, in Guangzhou, China.

One of her key studies examined the **seasonal variability** of bacterioplankton communities in subtropical reservoirs, revealing how different microbial taxa respond to environmental changes, with implications for **water resource management** and **biodiversity conservation**. Dr. Nyirabuhoro's collaborative work on **urban ecology** also shed light on the impacts of human-induced disturbances on microbial communities, highlighting the complex interplay of **stochastic** and **deterministic processes** in shaping microbial diversity in urban parks. This work, published in journals such as **Urban Ecosystems** and **Science of the Total Environment Science**, has informed strategies for sustainable urban development. Her research on **testate amoebae** in **alpine lakes**

and **subtropical reservoirs** has also made notable contributions to understanding the resilience of ecosystems over long timescales. By studying how microbial communities respond to natural and human-induced changes, Dr. Nyirabuhoro has provided critical insights into the long-term effects of disturbances on ecosystem stability.



Dr. Pascaline Nyirabuhoro conducting experiments using a vacuum filtration system for general filtration in the lab to concentrate bacterial samples for molecular analysis. The above photo was taken at the Institute of Urban Environment, Chinese Academy of Sciences, in May 2019, while the below photo was taken at Shenzhen MSU-BIT University on August 12, 2022.

### Teaching and Mentorship: Inspiring the Next Generation

Dr. Nyirabuhoro's dedication to fostering the next generation of scientists is evident in both her teaching and mentorship. At **Shenzhen MSU-BIT University**, she has designed and delivered postgraduate courses such as **Aquatic Microbiology** and **Practical Biology**, incorporating a blend of lectures, laboratory work, and field studies. Her multi-faceted approach has enabled students to receive a well-rounded and comprehensive learning experience, bridging theoretical knowledge with practical application. Her commitment to active

learning is also reflected in her innovative teaching methods, which emphasize student engagement, critical thinking, and hands-on problem-solving. Dr. Nyirabuhoro's efforts to create a student-centered environment have earned her widespread recognition, with students appreciating her ability to inspire and challenge them to think independently while also providing the guidance necessary for their academic and professional growth.

have successfully defended their Master's theses at **Lomonosov Moscow State University**, and many are currently preparing papers for publication in peer-reviewed journals. Her supervision of theses on the **Determinants of Bacterial Community Composition in a Subtropical Endorheic Urban Pond** and **Dynamics And Assembly Mechanisms of Microbial Communities in Subtropical Urban Ponds** showcases her ability to guide students toward successful academic and professional outcomes. Dr. Nyirabuhoro's commitment to student success goes beyond research supervision; she has also conducted workshops and guest lectures on data analysis and GIS applications, providing students with valuable practical skills for their future careers.



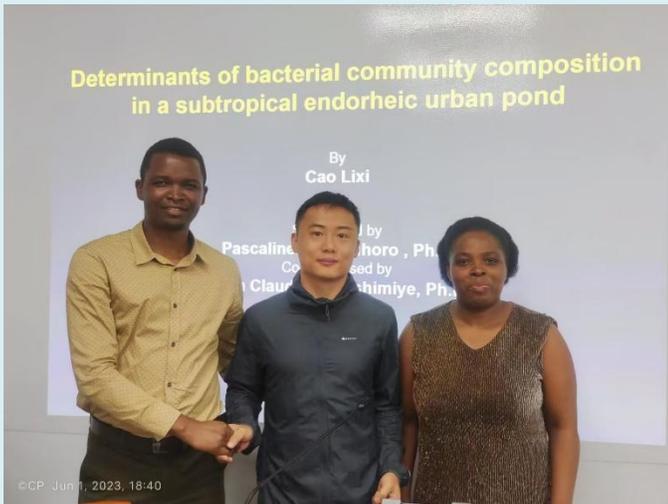
Dr. Pascaline Nyirabuhoro with her students during a discussion on “Advances on Aquatic Microbiology” and her research projects on “Water and Soil Microbial Community Dynamics” on November 3, 2022, at Shenzhen MSU-BIT University, Shenzhen, China.



Dr. Pascaline Nyirabuhoro, alongside the students under her guidance, testing the quality and quantity of DNA in environmental samples in the laboratory at Shenzhen MSU-BIT University, Shenzhen, China, on December 19, 2022.

Dr. Pascaline Nyirabuhoro, alongside her teammate (above) and students (above and below), planning research activities in the laboratory at Shenzhen MSU-BIT University, Shenzhen, China, on December 19, 2023.

As a mentor, **Dr. Nyirabuhoro** has guided numerous postgraduate students. Her mentees



Dr. Pascaline Nyirabuhoro with her Master's student, Mr. Cao Lixi, after his thesis defense on June 1, 2023, at Shenzhen MSU-BIT University, Shenzhen, China.

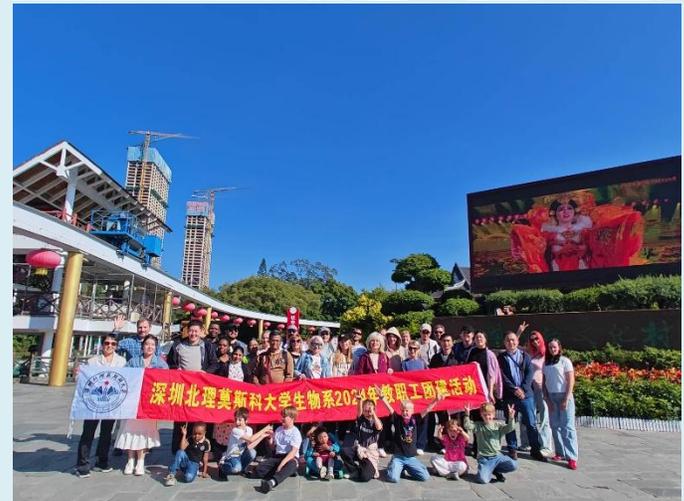
Dr. Nyirabuhoro's commitment to student success extends beyond research supervision as she has also led **workshops** and delivered **guest lectures** on data analysis and GIS applications, equipping students with valuable practical skills for their future careers.



Dr. Pascaline Nyirabuhoro, alongside fellow faculty members from Shenzhen MSU-BIT University and Lomonosov Moscow State University, after the thesis

defense of Master's students in Ecology on June 1, 2023 (above photo), and during the certificate distribution ceremony (below photo) at Shenzhen MSU-BIT University, Shenzhen, China.

### Leadership and Community Engagement: Driving Change Beyond Academia



Dr. Pascaline Nyirabuhoro with colleagues during Shenzhen MSU-BIT University team-building activities in Shenzhen, China. The photos capture moments at the botanical garden (above) and the museum (below), showcasing their collaborative spirit and shared commitment to fostering a vibrant academic community.

Dr. Nyirabuhoro's leadership extends beyond academia. She is the founder of two influential organizations that have made significant contributions to environmental research and sustainable development: the **Rwanda Geoscientists Society (RGS)**, a professional body that unites geoscientists to advance research and innovation in geology, hydrology, and environmental science in Rwanda; and the **Center for Earth and Natural Resource Sciences (CENRS)**, a multidisciplinary research center focused on environmental sustainability, natural resource

management, and innovative technologies for pollution control.

Her leadership extends beyond institutional initiatives. Dr. Nyirabuhoro has been actively involved in organizing and participating in outreach programs aimed at empowering local communities to address environmental challenges, such as **water pollution** and **biodiversity loss**. These programs have raised awareness about the importance of sustainable practices and contributed to meaningful change in communities across **Rwanda, India, and China**.

## Awards and Recognition: A Testament to Excellence

Dr. Nyirabuhoro's contributions to environmental science have been recognized through numerous awards and grants, including the **Yongqing Environmental Protection Award** from the **Chinese Academy of Sciences** for her exceptional contributions to environmental conservation. She has also received research grants totaling **41,370.00 USD** from the **Department of Education of Guangdong Province in China** and the **National Natural Science Foundation of China**, which have supported her **urban microbiome research projects** in Shenzhen and Xiamen (**China**), Moscow (**Russia**), and Musanze (**Rwanda**).

To reach Dr. Pascaline Nyirabuhoro for inquiries related to her research, teaching, or collaborations, you can contact her through her official email or connect with her via her professional social media profiles or academic platforms

Mobile: +250783328472/18850183974

E-mail: [pnwirabuhoro@cenrs.org](mailto:pnwirabuhoro@cenrs.org)

Academic platforms:  
<https://www.cenrs.org/index.php/about/team>

## 中国科学院城市环境研究所

### 2019-2020 学年永清环保奖学金评选结果公示

根据《关于开展 2019-2020 学年永清环保奖学金评选工作的通知》，经中心推荐、所级专家组评审，评选出 2019-2020 学年研究生永清环保奖学金获奖学生 26 名，名单如下：

特等奖学金：李曦、郑润茂

一等奖学金：汪文东、陈希、林晓丹、李鹏辉

二等奖学金：PASCALINE NYIRABUHORO、秦艺菲、杨诗诗、陈占、郝敏、王岚、朱娜、白睿

三等奖学金：周昕原、高肖飞、杨凯、吴直颖、曹翠辉、郭立坤、汤林彬、李彦昊、祝薇、FRANCOIS NKINAHAMIRA、史秋月、吴鑫

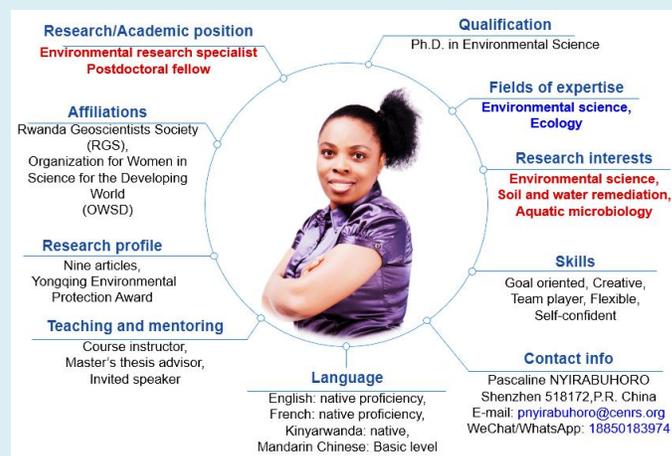
公示期自今日起至 6 月 15 日，期间如有任何意见或建议，请与研究生部联系。

联系电话：0592-6190967、6190965

2020 年 6 月 3 日

Dr. Pascaline Nyirabuhoro received the 2019-2020 Yongqing Environmental Protection Award from the Institute of Urban Environment, Chinese Academy of Sciences, on June 3, 2020, in recognition of her outstanding contributions to environmental protection and research.

## Vision for the Future: A Sustainable and Resilient World



Dr. Pascaline Nyirabuhoro is a dedicated environmental scientist and educator, passionate about advancing sustainable development and empowering future generations.

Looking ahead, Dr. Pascaline Nyirabuhoro remains resolute in her commitment to advancing sustainable development and addressing the world's most pressing environmental challenges. Her vision for the future is deeply rooted in the belief that science, innovation, and collaboration can be powerful drivers of transformative change, ultimately creating a more sustainable and resilient world. Her vision is demonstrated through her ongoing projects and initiatives, which focus on three essential pillars: biodiversity conservation, climate resilience, and empowering future generations.

Dr. Nyirabuhoro is particularly dedicated to the protection and restoration of biodiversity, recognizing it as a cornerstone of a sustainable future. She envisions a world where human activities coexist with nature in balance, fostering ecosystems that are resilient to disturbances such as climate change. Her work in this area focuses on developing strategies that safeguard biodiversity, ensuring that ecosystems are not only preserved but also able to recover and thrive in the face of evolving environmental challenges.

In addition to biodiversity, Dr. Nyirabuhoro's vision emphasizes the importance of climate resilience. With the accelerating impacts of climate change, she aims to contribute to the development of solutions that help both human communities and ecosystems adapt to a changing climate. Through her efforts, she seeks to build climate resilience by developing strategies that mitigate risks, reduce vulnerabilities, and enhance the adaptive capacity of vulnerable regions, particularly urban and subtropical environments.

At the heart of Dr. Nyirabuhoro's vision is the empowerment of the next generation of environmental leaders. She is deeply committed to educating and mentoring young scientists, equipping them with the skills, knowledge, and passion necessary to tackle the environmental challenges of tomorrow. Her work in education, whether through direct mentorship, workshops, or lectures, focuses on fostering critical thinking, scientific curiosity, and a hands-on approach to problem-solving.

By nurturing the talents and aspirations of students and early-career professionals, Dr. Nyirabuhoro is helping to cultivate the leaders who will drive global sustainability efforts in the years to come.