



**Jomar Rabajante**  
**Associate Professor**  
**Applied Mathematics, Institute of Mathematical Sciences and Physics, UPLB**  
**Junior Associate**  
**Quantitative Life Sciences Group, The Abdus Salam International Centre for Theoretical**  
**Physics, Italy**  
*[jfrabajante@up.edu.ph](mailto:jfrabajante@up.edu.ph); [www.jfratup.weebly.com](http://www.jfratup.weebly.com)*



With Biomathematics and Complex Systems as my fields of specialization, I use mathematical techniques to model biological and social phenomena. My specific research interests are evolutionary parasitology, pollination management and population epigenetics.

My research in evolutionary parasitology mainly focuses on the Red Queen dynamics, which illustrates winnerless host-parasite co-evolution. This study started during my Ph.D. studies in Japan, which I am now extending to include stochasticity. My experience in investigating host-parasite interaction has also led me to study epidemiology and control of diseases in plants and animals (especially vector-borne diseases) using quantitative systems approach. I am currently modeling the aggregation of macroparasites in host populations in collaboration with Filipino and foreign biologists.

Mathematical modeling of the foraging behavior of pollinators is also one of the major research areas that I work on. I have been part of the research staff of the UPLB Bee Program since 2009. We focus on Philippine native bee species, such as stingless bees, especially in pollinating high-value crops. In addition to conducting research, I also contribute to the Extension activities of the Bee Program in training beekeepers and crop farmers.

My interest in Biomathematics kicked off when Dr. Baltazar Aguda introduced to us the mathematical modeling of cellular regulation during his visit as Balik Scientist in 2009/2010. Dr. Aguda was one of my advisers for my M.S. thesis on epigenetics and cellular reprogramming. Since then, I have continued the research to include cancer network modeling and population epigenetics. I also currently supervise the *in silico* team under the PCARI-CHED project, “Glycoproteomics of Filipino Lung Cancer Cell Lines for Biomarker Discovery and Anti-Cancer Screening of Natural Products”.

The logo for PAASE consists of the word "PAASE" in a bold, black, sans-serif font, centered within a white rectangular box. This box is itself centered within a larger, solid blue rectangular frame. To the right of this logo, a thick, solid blue horizontal bar extends across the width of the page.

**PAASE**

**Connect. Create. Contribute.**