



**Dr Savannah Nuwagaba**

Student at Stellenbosch University, Cape town South Africa

savannah@aims.ac.za

Educational Curriculum	<p>2006 - 2009, Undergraduate in education (Mathematics and Chemistry), Makerere University, Kampala, Uganda.</p> <p>2010 - 2011, Postgraduate diploma in mathematical Sciences, AIMS-South Africa, Cape Town, South Africa.</p> <p>2011 - 2013, Masters' in biomathematics, Stellenbosch University, Cape Town, South Africa.</p> <p>2013-2017, PhD in Biomathematics, Stellenbosch University, Cape Town, South Africa.</p>
Professional Experience	<p>2009 to 2010, Teacher at Bweranyangi girls'school</p> <p>2013, Tutor at Stellenbosch University</p> <p>2017, Tutor at AIMS-Rwanda</p>
Current research interest	<ul style="list-style-type: none"> <li>- Eco-evolutionary dynamics of complex adaptive networks</li> <li>- Ecological network structure</li> </ul>
Research methods	<ul style="list-style-type: none"> <li>- Mathematical modelling and data analysis</li> </ul>
Publications	<p>Hui, C., Minoarivelo, H.O., <b>Nuwagaba, S.</b> and Ramanantoanina, A. (2015) Adaptive diversification in coevolutionary systems. In: P. Pontarotti (ed.) Evolutionary Biology: Biodiversification from Genotype to Phenotype. Springer, Berlin, pp.167-186. ISBN: 978-3-319-19932-0.</p> <p><b>Nuwagaba, S.</b>, Zhang, F. and Hui, C. (2017) Robustness of rigid and adaptive networks to species loss. PLoS ONE, 12: e0189086.</p>

**Title of the talk:** The role of non-linear functional response on predator's body size evolution.

**Abstract:** Predator - prey interactions shape food web structure, the functioning of ecosystems and the response to perturbations. However, the interplay between their ecological and evolutionary dynamics and how these contribute to regulate food web dynamics have received less attention. Using adaptive dynamics, a mathematical tool has been developed to study feedbacks between ecological and evolutionary processes, we investigate the influence of non-linear functional response on the evolution of a predator's body size and allow for polymorphism to show how food webs emerge from a single ancestor through the process of mutation and natural selection. We also allow potential invaders into the coevolving food webs to test how invasion success depends on difference properties and parameters.