Curriculum Vitae

Betty Nannyonga

Makerere University
Department of Mathematics
P.O. Box 7062, Kampala
+256-772-347-347
bnk@math.mak.ac.ug

Education

PhD-Mathematics, Makerere University, 2011

- Title of thesis: "Modelling the severity of dual and co-infection with malaria in populations with persistent and re-emerging infections"

Licentiate -Mathematics, Uppsala University, 2011
Courses taken: Mathematical Bioeconomics, Differential Equations II, Applied Dynamical Systems, Mathematical Biology, Mathematical Modelling and Ecology.

- Title of thesis: "Data driven mathematical models for policy making"

MSc. Mathematics -Makerere University 2000
Course units studied: Mathematical Ecology, Mathematical Epidemiology, Mathematical Bioeconomics, Differential Equations, Computer Science.
Master's thesis: Mathematical models for single or multi-dose administration of drugs for the treatment of malaria and the role of immunity.

Research interests

Mathematical Bioeconomics, Mathematical modelling, Stochastic processes, Applied dynamical systems, Operations research, Ecology and Epidemiology.

Research experience

Currently undertaking joint research with the Department of Mathematics and Physics, Lappeenranta University of Technology.

Papers written, submitted and accepted by journals with their links

1. The role of HIV Positive Immigrants and Dual Protection in a Co-Infection of Malaria and HIV/AIDS.
   www.m-hikari.com/ams/ams-2011/ams.../nannyongaAMS57-60-2011.pdf.

2. Does Co-infection with Malaria Boost Persistence of Trypanosomiasis?
   www.sciencedirect.com/science/article/pii/S1468121811003087.

3. Modelling Within-host Immune Response to Visceral Helminthiasis and Malaria Co-Infection with Prophylaxis.
   eprintweb.org/S/article/q-bio/1106.0506/bibtex.

4. The dynamics, causes and possible prevention of Hepatitis E outbreaks.
   PLOS ONE: PLoS ONE PONE-D-12-11475R1 10.1371/journal.pone.0041135

5. Mathematical Models for the Dynamics of Malaria and Trypanosomiasis Co-Infection.
   (Submitted to Applied Mathematics and Computation).

6. Evaluating the effectiveness of DDT house spraying in persistent and re-emerging malaria.
   www.springerlink.com/index/r2533q042k44122j.pdf.

7. A dynamical systems approach to social and economic development. Part of a bigger project: Development Space http://www.devspace.org//DevelopmentSpace/Home.html: **Accepted as a book chapter in A Treatise of Biological Models; https:www.novapublishers.com/catalog/product-info.php?products-id=35620: Chapter 8.**

8. Spread of Antimalaria drug resistance in a Population with Superinfection.
   Applied Mathematical Sciences- Vol 6. 2012 No. 118, 5877-5900. http://www.m-hikari.com/ams/forth/mwangaAMS117-120-2012.pdf

Supervisory roles

Currently working with three PhD students: In Lappeenranta University of Technology Finland; Makerere Univerisity, Uganda and Maseno University, School of Mathematics and Applied Statistics and Actuarial Science, Kenya.

Supervising four masters' students at Makerere University.

Seminars /Workshops/Conferences/Mini-Courses attended

- Presented a paper at the Workshop on Mathematical Methods in Systems Biology and Population Dynamics at AIMS Muizenberg, South Africa January 3-7 2012.

- Presented a paper at the SAMSA Conference on The Role of Mathematical Sciences in Sustainable Development in Livingstone, Zambia November 28-December 2 2011.

- Presented a paper at the 1st Kennyata University International Mathematical Conference, Kennyata University June 8 -11 2011.

- Attended the second Swedish Conference on Mathematical biology- Gothenburg University Sweden December 18th to 20th 2010.

- Certificate in research management and scholarly writing by School of Graduate Studies Makerere University.

- Certificate in information and management competence cross-cutting course by the School of Graduate Studies Makerere University.

- Certificate course in Geology offered by the Department of Geology

- Attended a mini-course in mathematical biology- Adaptive Dynamics and Pattern Formation in Biology and Medicine. Uppsala University Sweden December 17th to 18th 2009.

- Presented a poster on the role of sanitation and endemic malaria in disease outbreaks at the first Swedish meeting on Theory and Mathematics in Biology and Medicine, December 17th and 18th, 2009.

- Took research courses on modelling infectious diseases in humans and animals at the Center for Interdisciplinary Mathematics, Uppsala University Sweden, August 18th to December 18th 2009.

- Participated in the Summer Institute and International Workshop in Mathematical Epidemiology July 18th to 31st at Makerere University.

- Co-authored papers at the Economic Epidemiology Workshop organized by DIMACS, SACEMA, AIMS, at Makerere University from August 3 to August 5 2009.

- Participated in research and discussion at the University of Bath June 29th - July 16 2009.

- Presented a paper on within-host immune response to visceral helmnithiasis and malaria co-infection with chemotherapy at the BICS Conference -Multiply Structured Populations in Biology. University of Bath, UK July 1 - July 3 2009.

- Public lecture : The war on malaria; can we win it? By the United Nations Association of Uganda, Makerere University Chapter in conjunction with Uganda health communication alliance. Makerere University 23rd April 2009.

- Workshop on teaching in higher education and pedagogy -by the Quality Assurance Department, Makerere University February 11- 14 2009.

- From bases to Google algorithm- Linear Algebra Class at Bandari College Mombasa-by East African University Mathematics Program (EAUMP), Dec 02- 14 2008.

- Symposium on African Women and Mathematics in Maputo- by African Millennium Mathematics Science Initiative (AMMSI), Presented a paper on "Malaria and HIV-how do they exist: a Mathematical analysis" Nov 28th - Dec 01 2008.

- Hot topics in Infection and Immunity held at the Faculty of Food Science and Technology, by Uganda Virus Research Institute-Medical Research Council, (UVRI-MRC) at Makerere University August 2008.

- Mosquitoes and Malaria Parasite Interactions held at the Department of Zoology, Makerere University, July 2008.

- EAUMP/ICTP School- Linear Algebra school held at the Department of Mathematics Makerere University, April 2008.

- East African School of Algebra and Combinatorics held at the Department of Mathematics Makerere University, January 2007.

Teaching experience

Lecturer-Makerere University August 2008- Current. Teaching Linear Algebra I, Elements of Probability and Statistics and Foundations of Mathematics and Modelling Biological Systems.

Lecturer- Kyambogo University (2005-2007) Taught Biomathematics and Linear Algebra. Taught mechanics.