# CURRICULUM VITAE FOR PROFESSOR JOSEPH Y.T. MUGISHA

## PERSONAL DATA


Name Professor Joseph Y.T. Mugisha
Current Position Professor of Biomathematics
Nationality Ugandan
Department of Mathematics, Makerere University,
P.O. Box 7062, Kampala Tel: +256 772 415 999, jytmugisha@cns.mak.ac.ug
FELLOW of Uganda National Academy of Sciences (FUNAS)


QUALIFICATIONS

**2000 PhD (Biomathematics) Thesis:** The Spread of HIV/AIDS Pandemic in (Age-) Structured Populations. **Supervisor:** Professor Livingstone Serwadda Luboobi

**1992 MSc (Biomathematics) Thesis:** Mathematical Models for the spread of HIV/AIDS in a Three-age groups population. **Supervisor:** Professor Livingstone Serwadda Luboobi

WORKING EXPERIENCE

### Administrative Experience

| | |
|---|---|
| 2011 - Present | Principal, College of Natural Sciences, Makerere University |
| 2009 – 2010 | Dean, Faculty of Science Makerere University |
| 2003 - Aug 2005 | Deputy Director, Institute of Computer Science Makerere University |
| 2003 Aug & Dec. | Ag. Director, Institute of Computer Science Makerere University |

++ I have acted as Deputy Vice Chancellor, Makerere University on several occasions

### Employment Record

| | | | |
|---|---|---|---|
| 2008 July - Present | Department of Mathematics | Makerere University | Professor |
| 2005 - 2008 | Department of Mathematics | Makerere University | Assoc. Professor |
| 2001- 2005 | Department of Mathematics | Makerere University | Senior Lecturer |
| 1993- 2000 | Department of Mathematics | Makerere University | Lecturer |
| 1987- 1992 | Department of Mathematics | Makerere University | Teaching Assistant |

**PUBLICATIONS**

1. Mbabazi, Fulgensia Kamugisha; **Mugisha, J. Y. T.**; Kimathi, M. (2019). Hopf-Bifurcation analysis of Pneumococcal Pneumonia with time delays. *Abstract and Applied Analysis* 1 – 21 **doi.org/10.1155/2019/3757036**

2. Francis Mugabi, **Joseph Mugisha**, Betty Nannyonga, Henry Kasumba & Margaret Tusiime (2019) Parameter-dependent transmission dynamics and optimal control of foot and mouth disease in a contaminated environment. *Journal of the Egyptian Mathematical Society*. 27:53, 1-21

3. Nannyonga, Betty; Ssebuliba, Joseph; Nakakawa, Juliet; Nabiyonga, Betty; **Mugisha, J. Y. T.** (2018). To apprehend or not to apprehend: a mathematical model for ending student strikes in a university. *Applied Mathematics & Computation.* **339:** 607–621.

4. Mbabazi, Fulgensia Kamugisha; **Mugisha, J. Y. T.**; Kimathi, M. (2018). Modeling the within-host co-infection of influenza A virus and pneumococcus. *Applied Mathematics & Computation.* **339:** 488–506.

5. Nampala H., Luboobi L.S., **Mugisha J.Y.T**., Obua C., Jablonska-Sabuka M. (2018) Modelling Hepatotoxicity and antiretroviral therapeutic effect in HIV/HBV coinfection. *Mathematical Biosciences* **302**: 67 - 79

6. Mbava, W., **Mugisha, J.Y.T.** and Gonsalves, J.W. (2017). Prey, Predator and Super-predator model with disease in the super-predator. *Applied Mathematics & Computation*, **297**: 92 – 114

7. Nakakawa, J., **Mugisha, J.Y.T**., Shaw, M.W., Tinzaara, W. and Karamura, E. (2017**)** Banana *Xanthomonas* Wilt infection: the role of debudding and roguing as control options within a mixed cultivar plantation. *Int. J. Math. Math. Sci.* 2017, Art. ID 4865015, 13 pp.

8. Kitayimbwa, J.M. **Mugisha, J.Y.T**. & Saenz, R.A. (2016). Etimation of the HIV-1 backward mutation rate from transmitted drug-resistant strains. *Theoretical Population Biology*, **112**: 33 – 42

9. Nakakawa, J., **Mugisha, J.Y.T**., Shaw, M.W., and Karamura, E. (2016) A Mathematical Model for the dynamics of Banana *Xanthomonas Wilt* with vertical transmission and Inflorescence infection. *Journal of Biological Systems* **24**(1): 147 - 165

10. Switkes, J., Nannyonga, B., **Mugisha, J.Y.T**., and Nakakawa, J. (2016). A mathematical model for Crimean-Congo haemorrhagic fever: tick-borne dynamics with conferred host immunity. *Journal of Biological Dynamics* **10**(1):59-70.

11. Gamukama, E.A, Larson, A., Popov, O., and **Mugisha, J.Y.T**. (2015). The Decision Model for the Internet Services in the Context of Development. *Procedia Computer Science* **55**: 622 – 631.

12. Nampala H., Luboobi L.S., **Mugisha J.Y.T**., Obua C., Jablonska-Sabuka M., and Matti Heilio (2015) Modelling Effective Antiretroviral Therapy that Inhibits HIV

Production in the Liver. *Journal of Antivirals and Antiretrovirals* **7**: 43-51.

13. Nampala, H., Luboobi, L.S**.,** **Mugisha J.Y.T**., Obua C. (2014). Modelling Hepatotoxicity of Antiretroviral Therapy in the Liver during HIV Monoinfection. *International Journal of Computational Mathematics* 1 – 18. Paper ID 659675

14. Kajunguri, D, Hargrove, J.W, Rachid Ouifki, R., **Mugisha, J.Y.T**, Coleman, P.G., Susan C. Welburn, S.C. (2014). Modelling the Use of Insecticide-Treated Cattle to Control Tsetse and *Trypanosoma brucei rhodesiense* in a Multi-host Population. *Bulletin of Mathematical Biology* **76**(3):673-696

15. Otieno, J., **Mugisha, J.Y.T**., Nannyonga, B.K. (2014). Parameter Driven Dynamics of Trypanosomiasis in Cattle population. *Applied Mathematical Sciences* **8**(54): 2665 – 2685

16. Ong"ala Jacob Otieno, **Mugisha, Joseph**, Oleche, Paul (2014). A probabilistic estimation of the basic reproduction number: A case of control strategy of pneumonia. *Science Journal of Applied Mathematics and Statistics* **2**(2): 53 – 59

17. Kitayimbwa, JM, **Mugisha, J.Y.T**, Saenz, RA (2013).The role of backward mutations on the within-host dynamics of HIV-1**.** *Journal of Mathematical Biology* **67**(5): 1111-1139

18. Akinyi, OC, **Mugisha, J.Y.T**, Manyonge, A, Ouma, C (2013). Modelling the Impact of Misdiagnosis and Treatment on the Dynamics of Malaria Concurrent and Co-infection with Pneumonia. *Applied Mathematical Sciences*. 7(126):6275-6296

*19.* Ddumba**,** H., **Mugisha**, **J.Y.T.,** J.W. Gonsalves, G.I.H. Kerley (2013). Periodicity and limit cycle perturbation analysis of a predator-prey model with interspecific species' interference, predator additional food and dispersal. *Applied Mathematics and Computation.* **219**: 8338-8357

20. Onga'la Jacob Otieno, **Mugisha Joseph Y.T.**, Oleche Paul (2013) Mathematical Model for Pneumonia dynamics with Carriers. *International Journal of Mathematical Analysis*, **7**(50):2457 - 2473

21. Ibrahim M. ELmojtaba, **J.Y.T. Mugisha** and Mohsin H.A. Hashim (2013). Vaccination model for visceral leishmaniasis with infective immigrants. *Mathematical Methods in Applied Sciences*. **36**:216-226

22. Hasifa Nampala, Livingstone S. Luboobi, Joseph **Y.T. Mugisha**, Celestino Obua (2013). Mathematical modeling of liver enzyme elevation in HIV mono-infection. *Mathematical Biosciences* **242**:77–85

23. Rugumisa, T.H., Charles, W.M. and **Mugisha, J.Y.T.** (2012). Modeling of a Predator prey dynamic system with harvesting using the lattice gas approach. *African Journal of Mathematical and Computer Science Research*. **5**(8):135-147.

24. Betty Nannyonga, David J. T. Sumpter, **Joseph Y. T. Mugisha** and Livingstone S.

Luboobi1 (2012). The Dynamics, Causes and Possible Prevention of Hepatitis E Outbreaks *Plos One* July 2012 | Volume 7 | Issue 7 | e41135

25. Nannyonga**, B., J.Y.T. Mugisha** and L.S. Luboobi (2011) Evaluating the effectiveness of DDT house spraying in persistent and re-emerging malaria. *Afrika Matematika*. Online version DOI: 10.1007/s13370-011-0053-7

26. Ddumba, H., **Mugisha, J.Y.T**., Gonsalves, J.W. & Kerley, G.I.H. (2012) The role of predator fertility and prey threshold bounds on the global and local dynamics of a predator-prey model with a prey out-flux dilution effect. *Applied Mathematics and Computation* **218**(15): 9169 – 9186

27. Nannyonga, B., **Mugisha, J.Y.T**. & Luboobi, L.S. (2012). Does co-infection with malaria boost persist of trypanosomiasis? *Nonlinear Analysis: Real World Applications* **13(**3**):** 1379-1390.

28. Nabasirye, M., **Mugisha, J.Y.T**., Tibayungwa, F. & Kyarisima, C.C. (2011). Optimization of input in animal production: A linear programming approach to the ration formulation problem. *International Research Journal of Agric & Soil Sciences*, **1**(7): 221 – 226.

29. Nannyonga, B., **Mugisha, J.Y.T**. & Luboobi, L.S. (2011). Modelling the role of HIV-positive immigrants and dual protection in a co-infection of malaria and HIV/AIDS. *Applied Mathematical Sciences*, **5**(59): 2919 – 2942

30. Lawi G. O., **Mugisha J. Y. T**. and Omolo - Ongati , N. (2011) Mathematical Model for Malaria and Meningitis Co-infection among Children. *Applied Mathematical Sciences*, **5**(47):2337 – 2359

31. Tibayungwa, F., **Mugisha, J.Y.T.** & Nabasirye, M. (2011). Modelling the effect of supplementing elephant grass with lablab and desmodium on weight gain of dairy heifers under stall-feeding system. *African Journal of Agric. Research*, **6**(14): 3232-3239.

32. Tibayungwa, F., **Mugisha, J.Y.T.** & Nabasirye, M. (2011). Qualitative analysis of livestock-forage system in the stall-feeding smallholder dairy cattle system. *African Journal of Agric. Research*, **6**(4): 834-843.

33. Tibayungwa, F., **Mugisha, J.Y.T.** & Nabasirye, M. (2010). Modeling nitrogen excretion, elephant grass growth and animal production in stall-feeding dairy system, *African Journal of Agric. Research*, **5**(15): 2039-2044.

34. Tibayungwa, F.,**Mugisha, J.Y.T.** & Nabasirye, M. (2010). Modeling growth of dairy cattle heifers fed on elephant grass under stall-feeding system in Uganda, *African Journal of Agric. Research*, **5**(11): 1220 – 1227

35. Ibrahim M. ELmojtaba, **Mugisha, J.Y.T**. & Mohsin H.A. Hashim (2010). Mathematical Analysis of the dynamics of visceral leishmaniasis in the Sudan. *Applied Mathematics and Computation*, **217(**6**)**: 2567-2578

36. Ibrahim M. ELmojtaba, **Mugisha, J.Y.T**. & Mohsin H.A. Hashim (2010). Modelling

the role of cross-immunity between two different strains of leishmania. *Nonlinear Analysis: Real World Applications*, **11(**3**)**: 2175 – 2189

37. Tumwiine J., **Mugisha, J.Y.T**. & Luboobi, L.S. (2010). A host-vector model for malaria with infective immigrants *J. Math. Anal. Appl.* **361**(1) 139–149

38. Tumwiine J., **Mugisha, J.Y.T**. & Luboobi, L.S. (2008) . Threshold and stability results for a malaria model in a population with protective intervention among high-risk groups. *Math. Model. Anal*. **13**(3): 443-460

39. Tumwiine, J. **Mugisha, J.Y.T**. and Luboobi, L.S. (2008). On global stability of the intra-host dynamics of malaria and the immune system. *J. Math. Analy. Appl*. **341**(2): 855-869

40. Tumwiine, J. Luckhaus, S., **Mugisha, J.Y.T**. and Luboobi, L.S. (2008). An age-structured mathematical model for within host dynamics of malaria and the immune system. *J. Math. Model. & Algorithms*,**7**: 79-97

41. Baryarama, F. and **Mugisha, J.Y.T**. (2007). Comparison of Single-Stage and Staged Progression models for HIV/AIDS Transmission. *Intern. J. Math. Math. Sci.* **2007:** 1 – 11

42. Tumwiine, J., **Mugisha, J.Y.T**. and Luboobi, L.S. (2007): A mathematical model for the dynamics of malaria in a human host and mosquito vector with temporary immunity. *Applied Mathematics and Computation,* **189**(2): 1953-1965

43. Tumwiine, J., **Mugisha, J.Y.T**. and Luboobi, L.S. (2007): On Oscillatory pattern of malaria dynamics in a population with temporary immunity. *Computational and Mathematical Methods in Medicine,* **8**(3): 191 – 203

44. **Mugisha, J.Y.T**. and Ddumba, H. (2007): The Dynamics of a Fisheries Model with Feeding Patterns and Harvesting: *Lates niloticus* **&** *Oreochromis niloticus* in Lake Victoria. *Applied Mathematics and Computation,* **186**(1): 142 – 158 .

45. Baryarama, F., **Mugisha, J.Y.T.** and Luboobi, L.S. (2006): A Mathematical Model for the Dynamics of HIV/AIDS with Gradual Behaviour Change. *Computational and Mathematical Methods in Medicine* **7**(1): 15-26

46. Baryarama, F., Mugisha, J.Y.T. and Luboobi, L.S. (2006): Mathematical Model for HIV/AIDS with Complacency in a population with declining prevalence. *Computational and Mathematical Methods in Medicine* **7**(1): 27-35

47. **Mugisha, J.Y.T.** (2005): Balancing Treatment and Prevention: The Case of HIV/AIDS. *Amer. J. Appl. Sci.* **2**(10):1380-1388

48. Ssematimba, A., Mugisha, J.Y.T. and L.S. Luboobi (2005). Mathematical Models for the Dynamics of Tuberculosis in Density-Dependent Populations: The Case of Internally Displaced Peoples' Camps (IDPCs) in Uganda. *J. Math. & Stat.* **1**(3): 217-224

49. Simwa, R.O. and Mugisha, J.Y.T. (2005): A Model for the CD4 cells counts in an

HIV/AIDS patient and its application in treatment interventions. *Amer. J. Infect. Dis.*, **1**(1):61-64

50. Baryarama, F., Mugisha, J.Y.T. and Luboobi, L.S. (2005): An HIV/AIDS Model with variable force of infection and its application to the epidemic in Uganda. *Amer. J. Appl. Sci.* **2**(9): 1274-1278

51. Kakooza, R., Luboobi, L.S. and Mugisha, J.Y.T. (2005): Modelling Traffic flow and Management at Un-signalized, signalized and Roundabout road intersections. *J. Math & Stat.* **1**(3):194-202.

52. Luboobi, L.S., Namusoke, S.S. and Mugisha, J.Y.T. (2005). Modeling Pulse-type System Response to Human Immunodeficiency Virus (HIV). *Intern. J. Mgt. & Syst.*, **21**(3): 213-224

53. Tumwiine, J., Luboobi, L.S. & Mugisha, J.Y.T. (2005). Modeling the Determinants of anti malarial drug resistance. *Intern. J. Mgt. & Syst*., **21**(2): 125-146

54. **Mugisha, J.Y.T.** (2005): On the dynamics of S-I-S Epidemic in a two-age groups population. *Intern. J. Mgt. & Syst*.,**21**(2): 166-182

55. **Mugisha, J.Y.T.** and L. S. Luboobi (2003): Modelling the Effect of Vertical Transmission in the Dynamics of HIV/AIDS in an Age-structured Population. *South Pac. J. Nat. Sci.* **Vol. 21:** 82 - 90**.**

56. **Mugisha, J.Y.T.** and Luboobi, L.S. (2002): The Effect of Treatment of HIV/AIDS patient in a Two-Age Groups Population. *SAMSA Journal* **Vol. 2**: 106 – 130.

57. **Mugisha, J.Y.T.** and Luboobi, L.S. (2000): The Endemicity of HIV/AIDS in a Three-Age Structured Population. *Intern. J. Mgt & Syst*. **Vol. 16(2):** 126-136.

58. Mugisha, J.Y.T. (2003): *Elements of Probability and Statistics*. Published by Department of Distance Education, Makerere University. Kampala. **ISBN 9970 423 11 2**

59. Mugisha, J.Y.T. and Luboobi, L.S. (2003): *Ordinary Differential Equations.* Published by Department of Distance Education, Makerere University. Kampala. **ISBN 9970 423 19 5.**

**List of Graduate Students Supervised**

**PhD Students Supervised**

1. Tumwiine, Julius: *Mathematical Models for Malaria: The role of immune Response, temporary immunity and preventive interventions.* PhD Mathematics (MUST) [with Professor L.S. Luboobi] [**Completed 2008] (Mbarara University of Science & Technology)**

2. Baryarama, Flugentius: *Mathematical Models for HIV/AIDS: Incorporating Behaviour Change, Staged Progression and Complacency*. PhD Mathematics [with Professor L.S. Luboobi] [**Completed 2006] (Makerere University)**

3. Agnes Rwashana: *Application of Systems Dynamics modeling to immunization policy analysis* [with Dr. Ddembe & Dr. Neema] (PhD Computer Science) [**Completed 2008] (Makerere University)**

4. Tibayungwa, F. *Modeling nitrogen cycling in livestock-forage systems: Incorporating storage losses of excreted nitrogen, animal and forage performance, and sustainability. PhD Agriculture* [with Dr. M. Nabasirye] [**Completed 2010] (Makerere University)**

5. Ibrahim Mohammed El Mojtaba. *Modelling the dynamics of Leishmaniasis in a population with Reservoir Hosts in Sudan* PhD (Mathematics) [with Dr. Hashim] (**Completed 2011**) (**University of Khartoum**)

6. Betty Nannyonga. *Modelling the severity of Malaria co-infection and dual infection with persistent and re-emerging infections* PhD (Mathematics] [with Prof. L.S. Luboobi] (**Completed 2011**) (**Makerere University**)

7. Hassan Ddumba. *Modelling the dynamics of two-prey- two-predator systems: The case of Oddo National park* (PhD Mathematics) [with Prof. John Gonsalves & Prof. G. Kelly] (**Completed 2012**) (**Nelson Mandela Metropolitan University, Port Elizabeth**)

8. Damian Kajunguri *Modelling the control of tsetse and African trypanosomiasis through application of insecticides on cattle in Southeastern Uganda* (PhD Mathematics)[with Prof. C. Waiswa, and Prof. J. Hargrove) [**Completed 2012**] (**University of Stellenbosch**).

9. Lawi George *Modelling the pediatric co-infections with malaria among children in Kenya.* (PhD Mathematics) Maseno University, Kenya [with Prof. Omolo-Ongati] [**Completed 2013**](Maseno University, Kenya)

10. John M. Kitayimbwa. Modelling Viral dynamics of HIV during combinational therapy amidst possible emergence of drug-resistant strains. (PhD Mathematics) (with Dr. Roberto Saez) [**Completed 2014**] (Makerere University)

11. Colleta Akinyi Okaka *Modelling the impact of misdiagnosis and treatment on the dynamics of malaria concurrent and with Pneumonia* (PhD Mathematics) Maseno University, Kenya [with Prof. Manyonge, Prof. Ouma] [**Completed 2014**] (Maseno University, Kenya)

12. Hasifa Nampala *Modelling Hepatotoxicity and Antiretroviral Therapeutic effect in HIV Monoinfection and Coinfection with HBV.* (PhD Mathematics) [With Prof. L.S. Luboobi And Prof C Obua)](**Completed 2015**) (Makerere University)

13. Otieno Joyce Oduor *Optimal Control of trypanosomiasis in Cattle in the cattle corridor of central Kenya. (*PhD Mathematics) [with Prof. Oleche, P. Dr. Nannyonga, Betty.] (**Completed 2015**] (Maseno University, Kenya)

14. Willard Mbava *Modelling Dispersal Processes in Impala-Cheetah-Lion Ecosysytem with Infection in Lions* (PhD Mathematics) Nelson Mandela **Completed 2016 [**with Prof. John Gonsalves] Nelson Mandela Metropolitan University, Port Elizabeth, South Africa

15. Ong'ala Jacob Otieno *Modeling the Dynamics of Bacteremic Pneumonia: The role of Control Strategies, Case Detection and Prophylaxis* (PhD Mathematics) [with Prof. Oleche P], (**Completed 2016**) (Maseno University, Kenya)

16. Juliet Nakakawa Modelling the Dynamics of Banana *Xanthomonas Wilt: Incorporating Disease Drivers and Resurgence in Smallholder Systems in Uganda.* PhD Mathematics [with Dr. Eldard Karamura and Professor Michael Shaw] (**Completed 2018**), (Makerere University).

17. Mbabazi Fulgensia. *Mathematical Models for Influenza a Virus and Pneumococcus: Within-Host and Between-Host Infection* [with Dr. (**Completed 2019**) Pan African University, Nairobi

18. Senoga Abubaker (2018) PhD Student, Makerere University: Modelling varroa mite Honeybee infestation (On going)

19. Nabiyonga Betty Kirenga (2017) PhD Student Makerere University: Models for Asthma (On going)

20. Gift Tapedzesa (2018) PhD Student Nelson Mandela University: Age-Structure Models for Foot-and-Mouth Disease: The role of wildlife, deasonal variations and vaccination with loss of immunity.

21. Pumelela Vincent Zembe (2018) PhD Student Nelson Mandela University: Modelling the dynamics of lion-buffalo predator prey interaction with feline immunodeficiency virus and bovine tuberculosis co-infection in the lion population

**MSc Thesis**

1. Mugabi, Francis (2018). Modelling Environmental transimission of Foot-and-Mouth Disease with emergency vaccination and physical barriers. (MSc. Math. Modelling) Makerere University) (**Completed**)

2. Walter Okongo (2018) A Cost-Utility Model for Pre-and-Post infection dynamics of Foot-and-Mouth disease in selected districts of Uganda. (MSc. Math. Modelling). Makerere University (**Completed**)

3. James Kyanda (2018). Mathematical Model for Hepatitis B virus: Quantifying disease burden and economic evaluation of intervention programmes in Uganda (MSc. Math. Modelling) Makerere University (**Completed**)

4. Tresia Holtzhausen (2011) *Modelling the impact of hiv status and mixed sexual orientation partnerships in a model of hpv 16,18 transmission dynamics and vaccination* (MSc Math Modelling) Nelson Mandela Metropolitan University (**Completed**)

5. Alfred Dratele (2010) *Mathematical model for analysing the Transmission dynamics of plague epidemic in Okoro County, Nebbi district Northwest Uganda* ((MSc Math Modelling) (**Completed**)**.**

6. Alex Tumwesigye (2010) *On the applications of Poincare Bendixson theorem*. M. Mathematics) Makerere University [**Completed**]

7. Michael Samson (2010) Harvesting of a Single-Species (Nile Tilapia) *System Incorporating Stage Structure and Toxicity Using a Delay Model* (MSc Math Modelling) University of Dar es Salaam [**Completed**]

8. Rugumisa, Terentius (2009): *A stochastic approach to the prey predator dynamic system with harvesting using Lattice Gas Model* (MSc Math Modelling) University of Dar es Salaam [**Completed**]

*9.* Kira Justine William (2010): ***M****odelling the effect of Optimizing Clean Renewable Energy*
*Revenues Over Rotation Ages.* (MSc Math Modelling) University of Dar es Salaam [**Completed**]

10. Qanne, Slaa (2009) *Modelling the dynamics of TB in sanatorium with detective interventions* (MSc Math Modelling) University of Dar es Salaam [**Completed**]

11. Sanga, Stephano (2009) *Modeling the dynamics of malaria with Temperature variations in Tanzania* (MSc Math Modelling) University of Dar es Salaam [**Completed**]

12. Swai, Mary (2009) *Models for assessing the role of Government interventions on HIV/AIDS* (MSc Math Modelling) University of Dar es Salaam [**Completed** ]

13. Akugizibwe Edwin (2008) Analysis of a one-predator two-preys system with harvesting,Holling type II and ratio-dependent responses [MSc Mathematics] [**Completed** ]

14. Arinaitwe Nicholas (2008) *Modelling transmission and control of human Onchocerciasis in Uganda* [MSc Mathematics] [**Completed**]

15. Mbabazi, Fulgencia (2007).*Mathematical Models for the transmission dynamics of human African Tripanosomiasis with open vector populations*. [MSc Mathematics]. [**Completed**]

16. Ssematimba, Amos (2005).*Mathematical Models for the Dynamics of Tuberculosis in Density-Dependent Populations: The Case of Internally Displaced Peoples' Camps (IDPCs) in Uganda.* MSc Mathematics [with Professor L.S. Luboobi] **(Completed)**

17. Ddumba, Hassan (2005).*The dynamics of a Fisheries model with Harvesting and Feeding habits: The Nile Perch and Tilapia in Lake Victoria.* MSc Mathematics [with Prof. P.E. Mugambi] (**Completed**).

18. Kakooza, Ronald (2005). *Modelling Traffic flow and Management at Un-signalized, Signalized and Roundabout road Intersections*. MSc Mathematics [with Professor L.S. Luboobi] (**Completed )**

19. Nabiyonga, Betty (2004): *Modelling the Immune system response to Malaria parasites*. MSc Mathematics [with Professor L.S. Luboobi] **(Completed)**

20. Tumwiine, Julius (2002). *Mathematical Models for Quantifying Resistance of Malaria Parasites to Drugs.* MSc Mathematics [with Professor L.S. Luboobi (**Completed**)

21. Nakiyimba, Irene (2005). *Performance Monitoring and evaluation system for telecentres in Uganda.* MSc (Computer Science). **(Completed)**

22. Mwebaze Ernest (2005). *A Thin Client Open Source Model for a Rural Health Facility*. MSc (Computer Science) **(Completed)**

23. Mbabazi, Mary (2005).*On Efficient Delivery of Multimedia Streams in Packet Switched Networks.* MSc Computer Science**. (Completed)**

24. Sanya, Rahman (2005).*A Framework for Hospital Workflow Systems*. MSc Computer Science (**Completed**)

25. Kivunike, Florence (2003): *A framework for an improved intranet Development Process in higher institutions of learning*. MSc Computer Science (**Completed**)

26. Tumwine, Elly (2003) The *Impact of Automated Management Systems On Secondary Schools Administration*. MSc Computer Science (**Completed**)

27. Kiwana, David (2003) *Designing and developing a Finance Management system.* MSc Computer Science (**Completed)**

**Makerere University Activities and Committees**

- Senate Member, Makerere University - 2009 – Present
- Member Makerere University Staff Tribunal - 2015 - present
- Chairperson, Makerere University Deputy Vice Chancellor (F&A) Search Committee- 2012, 2013, 2018
- Member, Makerere University Vice Chancellor Search Committee - 2017
- Chairperson, Principals Forum - 2012
- Representative of Principals on Senate - 2012 - 2021
- Acted as Deputy Vice Chancellor (Academic Affairs) and F&A - Many times
- Departmental Representative Faculty Research and Higher Degrees
- Programmes Developed and presented until final approval: MSc in Mathematical Modelling
- Co-opted member Establishment and Appointments committee – College of Education and External Studies on three occasions, CEDAT, CEES and in COBAMS
- Board Member, Institute of Statistics and Applied Economics 2009, 2010
- Chairperson/Team Leader/Expert National Council for Higher Education Visitation Committee to Cavendish University 2016

**Some Other Committees**

- Chairperson and Member, Adhoc Committee on streamlining Makerere University Examination Results Management

- Member, Steering Committee on African Development Bank IV Project, Makerere University
- Team Leader/Focal Point Officer, Northern Corridor Integration Projects Human Capacity Building Cluster Skills Audit 2017
- Chairperson, Northern Corridor Integration Projects Centre of Excellence Committee 2015 – present
- Chaired Public Universities Joint Admissions Board on a couple of times
- Member Uganda National Academy of Sciences Fellows Advisory Committee 2014
- Board Member National Council for Science and technology 2019 - 2023

**Professional Assignments**

- Research Associate, Faculty of Science, Nelson Mandela Metropolitan University, 2011-2013, 2014 - 2016
- Examinations Moderator/External Examiner, Nelson Mandela Metropolitan University 2008, 2009, 2010
- External Examiner, National University of Science and Technology, Bulawayo, Zimbabwe, 2013, 2014, 2015, 2016
- External Examiner, Stellenbosch University 2008, 2010 (MSc & PhD Theses)
- External Examiner, University of Nairobi, Kenya 2008, 2009, 2010, 2013, 2014, 2015
- External Examiner, Moi University, 2015, 2016, 2017
- External Examiner, Mbarara University of Science and Technology 2008, 2009, 2010, 2013, 2014, 2015
- External Examiner, University of Botswana, Botswana 2007, 2009 ( MSc & PhD Thesis)
- External Examiner, Kenyatta University, Kenya 2007, 2008, 2009, 2010 (and theses)
- Visiting Professor, University of Dar es Salaam 2008, 2010
- Reviewer for Research Proposal for DST, South Africa 2009
- Team member for Selection of Research grants to African Biomathematics Graduate Students, University of Rutgers & Princeton University USA, 2008, 2009
- Consultant International Mathematical Union 2008 and 2012
- United Nations Volunteer on ICT in charge of recruit of UNV participants in Uganda 2006

**Post Doctoral Research**

11th June - 11th Aug 2001 Cornell University, Ithaca, NY:- A Two-Months Postdoctoral research at The Mathematical and Theoretical Biology Summer Institute (MTBI)

1sbt September – 30th October 2002 University of Bergen, Norway:- A Two-Months Postdoctoral Research Support by NUFU, at Department of Mathematics, University of Bergen.

**Journal Reviewer**

Worked as Reviewer for the following International Journals:

- Mathematical Biosciences – Elsevier
- Journal of Agricultural, Biological and Ecological Statistics, American Statistical Society
- Ecological Modelling
- Mathematical Modelling and Analysis

- Africa Journal of Science and Technology
- South African Journal of Sciences
- Mathematical Biosciences and Engineering
- Computers and Mathematics with Applications
- Computational and Applied Mathematics
- Mathematical and Computer Modelling

**Membership to professional bodies**

| Year | Society |
|---|---|
| 2009 | President African Society for Biomathematics |
| 2008 | Steering Committee member, African Society for Biomathematics |
| 2003 – Present | Founder member, African Society for Biomathematics |
| 1996 - Present | Member American Mathematical Society |
| 1990 - Present | Member Uganda Mathematical Society |
| 1998 - Present | Member Uganda Biometric Society |

**SOME CONFERENCES / SEMINARS / COURSES ATTENDED**

- 18 – 20 August 2010 Strathmore University Ist Conference in Mathematics Invited speaker and Scientific Organising Committee member
- 20 – 26 November 2011 Stellenbosch University Biomathematics Conference Invited Speaker
- 28 – 04 December 2010 University of Botswana SAMSA Confernce Contributed Speaker
- 13 – 17 July 2010 AIMS Cape Town Mathematics Conference on Diversity in Mathematics invited Speaker
- 3rd – 8th January 2008 Marrakech International conference and workshop on Mathematical Biology, Cadi Ayyad University, Marrakech, Morocco
- 12th - 15th March 2007 Mathematical Biology Workshop, Mathematical Biosciences Institute, The Ohio State University, USA
- 23rd – 26th January, 2007 Biomathematics Conference, Department of Mathematics and Applied Mathematics, University of Cape Town, South Africa
- 03rd – 10th December, 2006 East African Mathematics conference and Mathematical Biology Workshop, University of Nairobi, Kenya
- 15th – 22nd June, 2006: International Conference on Differential Equations and Applications, University of Marrakech, Morocco
- 31st Jan. – 2nd Feb. 2006: Conference on Mathematical Biology and Biocomplexity in Africa, Department of Mathematics and Applied Mathematics, University of Cape Town, South Africa

**SOME CONFERENCE ORGANIZATION**

- Member Organizing and Scientific Committee, Pan African Congress of Mathematicians RABAT Morocco, July 2017
- Scientific Committee, Marrakech International Conference and workshop on Mathematical Biology, 3-8 January 2008
- Co-Organizer and Host, with Professor Abba Gumel, Canada-African Biomathematics

Initiative meeting, 11-13 November 2007, Kampala, Uganda

- Co-Organizer of the 2nd Biomathematics Conference 23 – 26 January, 2007 at University of Cape Town, South Africa

- Co-Director (with Professor Abba Gumel of University of Manitoba), Mini-course on Mathematical Biology, Mathematical Biology Workshop, University of Nairobi, Kenya, 07 – 10 December 2006

- International Scientific Committee member of Mathematical Biology Workshop organized by AMMSI, 07 – 10 December 2006, University of Nairobi

- Secretary, Local Organizing Committee (Chairman: Professor L.S. Luboobi) for the 1st Pan African Biomathematics Congress that took place on 8th –12th December, 2003 where I was elected the Pioneer Secretary of the African Biomathematics Society (ASB).

**Referees**

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