

**PERSONAL
INFORMATION**

DR. JOYCE KAGENDO NTHIIRI

 P.O.Box 190- 50100,KAKAMEGA,KENYA +254721871429 jnthiiri@mmust.ac.ke**Sex** Female | **Date of birth** 03/06/1982 **Nationality** Kenyan**Marital Status:** Married**WORK EXPERIENCE**1st April 2021 to date

Senior Lecturer Department of Mathematics , MMUST.

Duties & Responsibilities: Teaching & supervision of undergraduate & postgraduate students, Participate in Examination preparation an management, Reviewing and Development of Academic Programmes, Engaging in research activities, participate in Community outreach activities, attending and participating in academic conferences and seminars

24th September 2013 to 1st
April 2021

Lecturer Department of Mathematics , MMUST.

Duties & Responsibilities: Teaching & supervision of undergraduate students, Academic adviser for mathematics students, setting, moderating and marking examinations, Teaching & Supervision of MSc and PhD students in mathematics, engaging in research activities, participate in Community outreach activities, attending and participating in academic conferences and seminars

23rd Feb 2015 to 23rd Feb
2021

Chairman Mathematics Department, MMUST

Administrative duties such as curriculum review and development

20th October 2010 to
23rd September, 2013

Ass. Lecturer- Department of Mathematics, MMUST

Teaching undergraduate students, academic adviser for second year mathematics students, setting, moderating and marking examinations and performing any other duty assigned to me by the chairman of department

2nd July 2007

to 19th Oct 2010

Graduate Assistant – Mathematics Department, MMUST

invigilating examinations, Marking examinations and CATS, performing any other duty assigned to me by the chairman of the department

EDUCATION AND TRAINING

2011-2016

PhD (Applied Mathematics-Biomathematics)- Thesis title
“MATHEMATICAL MODELLING OF HIV/AIDS CO-
INFECTION WITH TUBERCULOSIS AND PNEUMONIA
INCORPORATING PROTECTION” Maseno University, Kenya.

2007-2010

MSc(Applied Mathematics) -THESIS TITLE: SPLIT OPERATOR TECHNIQUE
FOR PARABOLIC PARTIAL DIFFERENTIAL EQUATIONS
MMUST, Kenya

2002 - 2006

BEd(Science): (Maths & Chem), Moi University, Kenya. Awarded a First Class
Honours

PERSONAL SKILLS

Training	<ul style="list-style-type: none">✓ Quality Management Systems Documentation & risk Management Training, MMUST, 2018✓ Transition change and Impact Awareness Training for Implementors, MMUST, 2018✓ Formulating & Monitoring of Quality Objectives, Corrective/Preventive actions and Root cause Analysis of non-conformities, MMUST,2016✓ Discipline management and Industrial Relations by FKE, MMUST, 2016✓ KEBS Standard Sensitization Workshop, MMUST, 2015✓ confidentiality and security of information by NIS, at MMUST, 2015✓ performance contracting in MMUST, 2015✓ Curriculum Development and review for public Universities: Implementation & Accreditation, MMUST, 2014✓ Curriculum Development, review & Implementation for the Faculty of Science, MMUST, 2014
Communication skills	Good communication skills gained through training & experience
Organisational / managerial skills	<p>Chairperson of Mathematics Department, MMUST, 2015 to date</p> <p>Chair of Chairmen of Departments representative at the University Management board, MMUST, 2018/2019 Academic Year</p> <p>Chairperson of the MMUST Customer Care Centre Board(ongoing)</p>

Job-related skills	Lecturer and a good team player, research skills
Computer skills	Competent in most Microsoft packages, MATLAB, Latex & Mathematica

PUBLICATIONS IN REFEREED JOURNALS

B. Mobisa, G. O. Lawi and **J. K. Nthiiri**, An Immuno-Epidemiological Model for HIV/AIDS Incorporating Viral and Cellular Transmission with Antiretroviral Treatment *Applied Mathematical Sciences*, Vol. 13, 2019, no. 23, 1129 – 1145. ISSN 1314-7552

B. Mobisa, G. O. Lawi and **J. K. Nthiiri**, Modelling In Vivo HIV Dynamics under Combined Antiretroviral Treatment, *Journal of Applied Mathematics*, Vol. 2018, Article ID 8276317, 11 pages, doi.org/10.1155/2018/8276317 ISSN: 1110-757X (Print); ISSN: 1687-0042 (Online)

Apima S.B., Lawi G.O., and **Kagendo N.J.**, Density Dependent Delayed Migration for Rosenzweig-MacAurther Model with Holling Type II Predator Functional Response. *Asian Research Journal of Mathematics*, 2019, 15(3)1-12. ISSN: 2456-477X.

Samuel A.B., George L.O., and **Kagendo N.J.**, Rosenzweig-MacAurther Model with Holling type II Predator Functional Response for Constant Delayed Migration. *Asian Research Journal of Mathematics*, 2019, 15(1)1-14. ISSN: 2456-477X,

Jacinta M. Mutwiwa, **Joyce K. Nthiiri** and Bonface O. Kwach. Mathematical Modelling of the role of Interference on the Transmission Dynamics and Management of HIV and Aids. *Journal of Advances in Mathematics and Computer Science*. 28(6): 1-11, 2018: Article no. JAMCS.42819. ISSN 2456-9968.

O.M Nathan, G.O Lawi and **J.K. Nthiiri**. Modelling the Dynamics of Radicalization with Government Intervention. *Neural, Paralle and Scientific Computations*, 26, no.2(2018), 211-224. ISSN : 1061-5369

Onyango Brenda Achieng, Owuor George Lawi, **Kagendo Joyce Nthiiri**. Modelling the impact of delay in Media Coverage on the dynamics of Ebola in a logistically growing

population. *International Journal for Pure and Applied Mathematics* Vol. 110(1)2016, ISSN 1311-8080, PG 125 – 141

J.K Nthiiri. Global Stability of Equilibrium Points of Typhoid Fever Model with Protection. *British Journal of Mathematics and Computer Science.*14(1), 1-10, **2017**. ISSN: 2231- 0851

J.K Nthiiri. Mathematical Modelling of Jigger infection incorporating treatment as a control strategy. *International Electronic Journal of Pure and Applied Mathematics-IEJPAM.*11(2), 87 - 97, **2017**. ISSN:1314- 0744

J. K. Nthiiri, G. O. Lawi, C. O. Akinyi, D. O. Oganga, W. C. Muriuki¹, M. J. Musyoka, P. O. Otieno and L. Koech. Mathematical Modelling of Typhoid Fever Disease Incorporating Protection against Infection, *British Journal of Mathematics & Computer Science* 14(1): 1-10, **2016**, Article no.BJMCS.23325 ISSN: 2231-0851

Joyce K. Nthiiri, George O. Lawi and Alfred Manyonge. Mathematical modelling of tuberculosis as an opportunistic respiratory co-infection in hiv/aids in the presence of protection. *Applied Mathematical Sciences,* Vol. 9, **2015**, no. 105, ISSN:5215 5233

Joyce K. Nthiiri, George O. Lawi and Alfred Manyonge Mathematical Model of Pneumonia and HIV/AIDS Co-Infection in the Presence of Protection. *International Journal of Mathematical Analysis,* Vol. 9, **2015**, no. 42,ISSN: 2069 – 2085

Duncan O. Oganga, Michael O. Okoya, Shem O. Aywa, George O Lawi and **Joyce K. Nthiiri** .Finite difference solution of the third order viscous wave equation. *International Journal of Engineering, Science and Mathematics.* Vol 3 Issue 4(**2014**). pgs 56-65 ISSN 2320-0294

BOOK PUBLICATION; book chapter

Advances in Mathematics and computer Science Vol. 3, Chapter 5: On the Local & Global Stability. **J.K Nthiiri** & G.O Lawi, 978-93-89562-49-1. October 23, 2019.

<http://bp.bookpi.org/index.php/bpi/catalog/book/81>

SUPERVISION OF POSTGRADUATE STUDENTS TO COMPLETION

A) MSc

1. Achieng Brenda Onyango *Modelling the impact of delay in media coverage on the Dynamics of Ebola in a logistically growing population, MSc Applied Mathematics MMUST (Completed 2016).*
2. Nathan Oigo Mokaya *Modelling the Dynamics of Radicalisation with Government Intervention, MSc Applied Mathematics MMUST (Completed 2018).*
3. Jacinta Mutwiwa *Mathematical Modelling on the role of interference on the transmission dynamics and management of HIV & AIDS; KIBABII(Completed 2019)*

B) PhD

4. Mobisa Benson *An Immunoepidemiological Model for HIV incorporating Viral and Cellular Transmission with ARV treatment. PhD Applied Mathematics MMUST, (Completed 2020)*
2. Apima Samuel *A Predator-Prey Model With Logistic Growth For Constant And Variable Delayed Migration. PhD Applied Mathematics MMUST, (Completed, 2020)*

ONGOING SUPERVISIONS

1. Protus Wabuti *Mathematical Modelling of a co-infection between Helocobacter Pylori and Hepatitis C Virus Incorporating Awareness(PHD)*

2. Jacinta Mutwiwa A coupled cervical cancer model linking within and between host model interactions incorporating diffusion equation and delayed diagnosis(**PHD**)
3. Lucian Talu Mayabi SIR model for Covid-19 dynamics incorporating Clinical Management(**Masters**)

CONFERENCE ORGANIZATION

- i) Organized the First Pan African International Research Congress on Knowledge Generation and Dissemination (**PAIRC 2018**) held on 18th – 21st June 2018.
- ii) Organized a conference on "Exploring Biophysics Diversity for sustainable Industrial and Economic Development" held in Masinde Muliro University of Science and Technology on 3rd July 2019 to 4th July 2019.
- iii) Organized a sensitization seminar for women in science and engineering held in MMUST on 27th April, 2017

CONFERENCE ATTENDANCE & PRESENTATION

- i) Attended and co-presented **two (2)** papers during the Exploring Biophysics Diversity for Sustainable Industrial and Economic Development Conference, 3rd to 4th July 2019: i) A Predator-Prey Model with Logistic Growth for constant Migration, ii) Modelling in Vivo HIV Dynamics under Combined Antiretroviral Treatment
- ii) **Attended and presented a** paper on the Local and Global stability analysis for the Typhoid Fever Disease with Protection on the First Pan African International Research Congress on Knowledge Generation and Dissemination (**PAIRC 2018**) held on 18th – 21st June 2018. (*See attached certificate*)
- iii) Attended and **presented** an academic poster on Mathematical Modelling of HIV coinfection with TB and won a certificate of merit during Hands - on Research in Complex Systems School, July 2016, ICTP, Trieste, Italy. *Jury's choice Poster(See attached certificates)*
- iv) **Attended and participated** in the International School on Dynamical Systems in Biomedical Sciences held in Strathmore University on 26th to 30th September 2016. (*See attached certificate*)
- v) Attended and **Presented a** paper on Modelling Tuberculosis with Protection during the 3rd Strathmore International Mathematics Conference, SIMC 2015. (*See attached certificate*)
- vi) Attended and co-**Presented a** paper on a Basic HIV Transmission Model in Heterosexual Settings during the Cimpa - Kenya school on Mathematical modelling and analysis of complex systems, Naivasha, July 2015. (*See attached certificate*)
- vii) **Attended and participated** in the Bio-Mathematical Modelling session of the 5th Strathmore International Mathematics Conference on 12th to 16th August 2019. (*See attached certificate*)
- viii) **Attended and participated** in the International School of Mathematical Epidemiology, Strathmore University on 1st to 5th September, 2014. (*See attached certificate*)
- ix) **Attended a** Grant witting and Resource Mobilization Strategy Capacity Building Workshop, MMUST, 2015
- x) **Participated** in The National Cohesion and Values Sensitization workshop, MMUST, 2016

- xi) Attended and **Participated** in the African Women in Science and Engineering and International Network for Women in Engineering and Science, Western Region – MMUST Chapter, seminar and Launch on 27th April 2017 (*See attached letter of invitation*)

THESIS EXAMINATION

I have served as internal examiner for MSc theses from MMUST

RESEARCH GRANTS SUCCESSFULLY APPLIED FOR

1. NACOSTI PhD Grant SELF(Joyce Kagendo Nthiiri)(Maseno Univ) 2014/15 Ksh 450,000
2. AAU 2016 GRADUATE INTERNSHIP GRANT Masters Student Ms. Brenda Achieng US\$600
3. USD AMMSI postgraduate Scholarship awards - 2016 Masters Student Ms.Brenda Achieng US\$1000
- 4.AAU 2015 GRADUATE INTERNSHIP GRANT – 2015 for my Masters Student Jacob Owande US\$1000
5. Association of African Universities Grant for Brenda Onyango (MMUST) 2015/16 Ksh 100,000
6. NRF PhD Grant for Mobisa Benson (MMUST) 2018/19 Ksh 392,700
8. NRF PhD Grant for Wabuti Protus (MMUST) 2018/19 Ksh 745,200

EDITORIAL WORK AND REVIEWER

Reviewer for the following International Journals:

- a) British Journal of Mathematics and Computer Science (BJMCS)(see attached certificate)
- b) Asian Journal of Mathematics & Computer Research(see Attached Certificate)
- c) Science International Domain(see Attached Certificate)

Community Service:

- i) Daughters of Faith Planning team, Deliverance church, Kakamega
- ii) Member, Deliverance church, Kakamega
- iii) PTA member, 2019 class 5, Fesbeth Academy
- iv) Visited Lusengeli high school under AWSE, MMUST Chapter, for community outreach

MEMBERSHIP TO PROFESSIONAL BODIES

- i) African Women in Science and Engineering
- ii) **European** Women Mathematician (EWM)
- iii) Society for Mathematical Biology

Referees

(1) Dr. George Lawi (+256 722 292635), Department of Mathematics , Masinde Muliro University, P.O.Box 190 Kakamega.

(2) Prof. David Malonza (+254 723 271122), Department of Mathematics, Kenyatta University, P.O Box 43844, Nairobi

(3) Prof. Alfred W. Manyonge (+254 722 259163), School of Mathematics, Maseno