

# Curriculum Vitae

Dr. Wachira Charles Muriuki

P. O. Box 190

50100 Kakamega +254 717 274 209 # [cwachira@mmust.ac.ke](mailto:cwachira@mmust.ac.ke)



## Personal Data

**Date of Birth:** 26/06/1991 **Marital Status:** Single **Religion:** Christian  
**Nationality:** Kenyan **ID No.** 28283233 **Gender:** Male

## Research Interests

- *Modeling:* Modeling Disease Transmission Dynamics, Modeling Dynamical and Ecological Systems, Stochastic Modeling, Economic Modeling and Analysis of PDEs and ODEs.
- *Analysis:* Statistical Analysis using R, SPSS, STATA e.t.c

## Career Objective

- *To be part of a progressive organization/institution that indulges professional growth and allows me to utilize my knowledge and skills.*

## Teaching and Work Experience

Sept. 2016 - **Part-time Lecturer**, Masinde Muliro University of Science and Technology to  
Date (MMUST), Kakamega, Kenya

Detailed responsibilities:

- Teaching and assessment undergraduate Mathematics courses.
- Prepare course content, set examination and grade exams in Mathematics courses.

Jan. 2019 - **Part-time Lecturer**, Kaimosi Friends University (KAFU), Kaimosi, Kenya to

Date Detailed responsibilities:

- Teaching and assessment undergraduate Mathematics courses.
- Prepare course content, set examination and grade exams in Mathematics courses.

**Courses Taught:(MMUST & KAFU)**

MAT 853: PDE I, MAT 854: PDE II, MAT 427: Numerical Analysis III,  
MAT 421: PDE I, MAT 422: PDE II, MAT 423: ODE II, MAT 426: Fourier  
Series/Analysis, MAT 301: Engineering Mathematics III, MAT 302: Differential  
Equations, MAT 104/201: Linear Algebra, MAT 428: Mathematical Modeling, MAT  
432: Bifurcations and Dynamics, MAT 121: Differential Calculus, MAT 124: Integral  
Calculus, MAT 101: Pure Mathematics I, MAT 103: Pure Mathematics II, DIT 017:  
Discrete Mathematics, DND 054: Basic Mathematics.

July 2024 - **Senior Technician**, Masinde Muliro University of Science and Technology, To  
Date *Mathematics Department*, Kakamega, Kenya.

Detailed responsibilities:

- Teaching undergraduate courses and assisting students in mathematics laboratory (Online and Distance e-Learning).

Nov. 2020 - **Staff Development**, *Masinde Muliro University of Science and Technology*,  
Nov. 2022 *Mathematics Department*, Kakamega, Kenya.

Detailed responsibilities:

- Teaching (2 undergraduate courses) and assisting in office administration for at least 12 hrs per week.

April. 2020 - **Instructional Designer**, *Masinde Muliro University of Science and Tech-*

Oct. 2020 *nology, Directorate of Open and Distance e-learning (ODEL)*, Kakamega, Kenya.

Detailed responsibilities:

- Online student support and assisting in online teaching.
- Conduct students and lecturer's training and co-ordination of online exams.

July. 2016 - **Internship**, *Masinde Muliro University of Science and Technology*, MatheJan.  
2018 *Mathematics Department*, Kakamega, Kenya.

Detailed responsibilities:

- Clerical duties such as filing of documents.
- Office administration.
- Any other duties as assigned by the head of department.

Feb. - April. **Industrial Attachment**, *KTDA-Ragati Tea Factory*, Karatina, Kenya

2015 Detailed responsibilities:

- Procurement Department: Auditing of financial reports on daily, weekly and monthly basis.
- Finance/Accounts Department: Entering cheques in the cheque vouchers.

Aug. 2010 - **Draughtsman**, *MAK Consulting Engineers*, Nairobi, Kenya

Sept. 2011 Detailed responsibilities:

- Preparation of working drawings in mechanical and electrical engineering using AutoCAD and Autodesk software.
- Mathematical Verification of priced BQ's for tender applicants.

May - July **An Ungraded Teacher**, *Kabiru-ini Secondary School*, Karatina, Kenya

2010 Detailed responsibilities:

- Teaching and Evaluation in Mathematics and Physics subjects.

---

## Education Background

Feb. 2019 - **Doctor of Philosophy in Applied Mathematics**, *Masinde Muliro*

Dec. 2022 *University of Science and Technology*, Kakamega, Kenya

Thesis Title: *Modeling and Analysis of COVID-19 Dynamics with intervention*

Sept. 2016 - **Master of Science in Applied Mathematics**, *Masinde Muliro University Dec.*

2018 *of Science and Technology*, Kakamega, Kenya

Thesis Title: *A Spatiotemporal Model for the Transmission Dynamics of Zika Virus Disease*

Aug. 2011 - **Bachelor of Science in Mathematics** - (*First Class Honours*),

Dec. 2015 *Masinde Muliro University of Science and Technology*, Kakamega, Kenya

Project Title: *Mathematical Modelling of Typhoid Fever Disease Incorporating Protection against Infection.*

2006 - 2009 **Kenya Certificate of Secondary Education (KCSE)**, *Kabiru-ini Secondary School*, Karatina, Kenya, *Grade B+ (68 Points)*

Subjects: English, Kiswahili, Mathematics, Physics, Biology, History and Government, Christian Religious Education, and Agriculture

1998 – 2005 **Kenya Certificate of Primary Education (KCPE)**, *Gathu-ini Primary School*, Karatina, Kenya, 345 Marks

Subjects: English, Kiswahili, Mathematics, Science, and Geography, History&Civics and Religious Education.

---

## Professional Certificates

July – *Certificate in AutoCAD Level 1* - Diverse Computer Systems, Nairobi, August 2010 Kenya.

March – *Certificate in Computer Packages* - Kabiru-ini Computer Training Center, April 2010 Karatina, Kenya.

---

## List of Publications

- [1] J. K. Nthiiri, G. O. Lawi, C. O. Akinyi, D. O. Oganga, **W. C. Muriuki**, 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.
- [2] H.O.Nyaberi and **C.M. Wachira**, *Mathematical model on the impact of protection against Tungiasis transmission dynamics* Journal of Mathematics Comput. Sci. 10 (2020), No. 6, 2808-2819
- [3] **Wachira M. Charles**, Lawi O. George and J. Malinzi, *A Spatiotemporal Model on the Transmission Dynamics of Zika Virus Disease* Asian Research Journal of Mathematics 10(4): 1-15, 2018; Article no.ARJOM.43944 ISSN: 2456-477X.
- [4] H.O.Nyaberi and **C.M. Wachira**, *Mathematical modeling of COVID-19 transmission dynamics with Social Distance as an Intevention* I. J. Math. Comput. Sci. 10 (2022), No. 8(2), 4-13.
- [5] **C.M.Wachira**, G. O. Lawi and L.O. Omondi, *Sensitivity and Optimal Control Analysis of an Extended SEIR COVID-19 Mathematical Model*, Journal of Applied Mathematics, Volume 2022, Article ID 1476607, 9 pages. <https://doi.org/10.1155/2022/1476607>
- [6] **C.M.Wachira**, G. O. Lawi and L.O. Omondi, *Travelling Wave Analysis of a Diffusive COVID-19 Model*, Journal of Applied Mathematics, Volume 2022, Article ID 6052274, 7 pages. <https://doi.org/10.1155/2022/6052274>
- [7] **B. Okumu**, C.M.Wachira , G. O. Lawi and R. Opiyo, *Modeling and Analysis of a Diffusive Ebola Virus Transmission Dynamics*, Journal of Applied Mathematics, (Final Review)

---

## Conferences, Workshops, Seminars and Summer-schools

March 2024                      The 7<sup>th</sup> African Council for Distance Education Conference 2024, held at Masinde Muliro University of Science and Technology (MMUST) from 26<sup>th</sup> - 28<sup>th</sup> March, 2024.

June 2023                      1<sup>st</sup> African STACK conference for Undergraduate Mathematics, held at

Masinde Muliro University of Science and Technology (MMUST) from 19<sup>th</sup> - 23<sup>rd</sup> June, 2023.

March 2023 *Volkswagen Sponsored Summer School on Biostatistics and Biomathematics*, held at Eldoret, Kenya 13<sup>th</sup> – 25<sup>th</sup> March, 2023. I presented on *Infectious Disease Models: Spatial-temporal Analysis Approach with Application to COVID-19*

July 2022 *STACK Training*, held at Maseno University, Kenya. 4<sup>th</sup> – 8<sup>th</sup> July, 2022.

Feb. 2019 *Grant Proposal Writing Workshop*, held at Masinde Muliro University of Science and Technology on 28<sup>th</sup> February, 2019.

Dec. 2018 *Postgraduate Research Findings Seminar - Melting Point*, held at Masinde Muliro University of Science and Technology on December 2018.

Oct. 2018 *Workshop on Module Writing and Moodle training*, held at Masinde Muliro University of Science and Technology on 17<sup>th</sup> - 20<sup>th</sup> October, 2018.

---

## Community Outreach/Service

March 2010 Volunteer Tutor and Academic Advisor in Science and Mathematics, Kabiruini Secondary School

2016-to 2022 Member of St. Sebastian, Mary Seat of Wisdom, MMUST Chaplaincy

2023 - April 2024 Bs-Dad of Holy Cross Bible study, Mary Seat of Wisdom, MMUST Chaplaincy

2019-to Date Reviewer in various Journals of Mathematics and Statistics

Jan 2023-to Date Facilitating the mathematics strand of the STEM project-MMUST MiniSTEM Centre.

---

## Professional Membership

2018-to Date Member of the Kenya Mathematical Society (KMS).

2011-2015 Member of the Mathematics Students Association of MMUST.

---

## Computer Packages and Software Skills

- Microsoft Office, WordPress, Excel and Desktop Publisher.
- AutoCAD level I & II, Typing in Latex, ERP System
- Data Analysis using SPSS, STATA, MATLAB, and R programs.

---

## Honors and Awards

2015 Certificate of Merit, MMUST, 2015 (Awarded to the graduating student with the highest GPA, in the Department)

2020 Ph.D Merit Scholarship Award - to pursue Ph.D degree in Applied Mathematics at Masinde Muliro University of Science and Technology

---

## Languages

**English** Fluent Speaker, Advanced Reading and Writing

**Kikuyu** Fluent Speaker

**Swahili** Fluent Speaker, Advanced Reading and Writing

---

## Referees

- [1] **Dr. Joyce Nthiiri**, Senior Lecturer, Mathematics Department, MMUST, P.O. Box 190-50100, Kakamega, Kenya, Tel: +254721871429,  
Email: jnthiiri@mmust.ac.ke
- [2] **Dr. Frankline Tireito**, Senior Lecturer, Mathematics Department, MMUST, P.O. Box 190-50100, Kakamega, Kenya, Tel: +254720515162  
Email: ftireito@mmust.ac.ke
- [3] **Dr. David Angwenyi**, Senior Lecturer, Mathematics Department, MMUST, P.O. Box 190-50100, Kakamega, Kenya Tel: +254706908474.  
Email: kipkoej@gmail.com