

CURRICULUM VITAE



Prof. Mathew Piero Ngugi

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PROFESSIONAL PROFILE

I am an **Associate Professor in the Department of Biochemistry, Microbiology and Biotechnology at Kenyatta University, Kenya**. With a PhD in Biochemistry and over a decade of experience in academia and research, I specialize in **Medical Biochemistry, Molecular Biology, and Phytomedicine**. My extensive research interests encompass forensic biology, focusing on the intersection of biological sciences and medical applications.

I have made significant contributions to the field, including the development of innovative protocols for cassava regeneration and genetic transformation, as well as exploring the therapeutic potential of various plant extracts. I have authored and co-authored over **68 papers in reputable refereed journals**, highlighting my commitment to advancing knowledge and promoting scientific inquiry.

My collaborative approach extends beyond research, having played a pivotal role in the development and operationalization of curricula for undergraduate and graduate programs in **Biochemistry, Biotechnology, Molecular Biology, and Forensic Sciences** at Kenyatta University. I have successfully supervised **74 MSc and 20 PhD students**, fostering the next generation of scientists.

Beyond teaching and research, I bring a wealth of **administrative and leadership experience**. I have served as **Departmental Examinations Coordinator, Chairman of Department, and Section Head for the Medical Biochemistry Section**. Currently, I am the **Executive Dean of the School of Pure and Applied Sciences**, where I provide strategic leadership, drive academic excellence, and oversee the school's operations and growth.

As a proactive participant in the scientific community, I have attended numerous conferences, secured research grants, and contributed to consultancy projects focused on the efficacy of phytomedicine and other pharmaceutical products, as well as safety assessments. With a strong foundation in both theoretical and practical aspects of Biochemistry and Molecular Biology, I am dedicated to **bridging the gap between research and its application in real-world scenarios, particularly in health and environmental contexts**.

EDUCATION

- 12/2013** **PhD in Biochemistry**
Department of Biochemistry, Microbiology and Biotechnology
Kenyatta University, Kenya
Thesis title: “Regeneration and RNAi-Mediated Downregulation of Cyano-Glycoside Biosynthesis in Cassava (*Manihot esculenta*, Crantz)”
Thesis supervisors: Professor Jesse Machuka and Dr. Richard Cheruiyot
- 07/2006** **MSc in Biochemistry**
Department of Biochemistry, Microbiology and Biotechnology
Kenyatta University, Kenya
Thesis title: “Hypoglycemic Activity of Some Kenyan Plants Traditionally used to Manage Diabetes Mellitus in Eastern Province”
Thesis supervisors: Professor Eliud Njagi, Dr. Joseph Ngeranwa, Professor Wilson Njue and Professor Peter Gathumbi
- 10/2002** **BSc (Biochemistry Major)**
Department of Biochemistry, Microbiology and Biotechnology
Kenyatta University, Kenya
Graduated with First Class Honors

PROFESSIONAL APPOINTMENTS

- **07/2025 – Current: Associate Professor, Biochemistry**
Department of Biochemistry, Microbiology and Biotechnology
Kenyatta University, Kenya

DUTIES

- **Teaching and Instruction**
 - ✓ Preparing course materials, delivering lectures, leading discussions, and grading assignments and exams.
- **Research and Scholarship**
 - ✓ Conducting original research, publishing findings in peer-reviewed journals, and presenting research at academic conferences are key duties.
- **Mentorship and Advising**
 - ✓ Mentoring graduate students, supervise theses and dissertations, and providing guidance on research projects.
 - ✓ Advising undergraduate students on academic and career matters.
- **Service to the Institution**
 - ✓ Contributing to the academic community by serving on departmental committees, participating in faculty meetings, and assisting with curriculum development.
 - ✓ Engaging in activities related to accreditation or strategic planning.
- **Professional Development and Service**
 - ✓ Staying current with developments in their field, attending conferences, and networking with other professionals are important.
 - ✓ Engaging in academic service outside the university, such as peer review for journals or participation in professional organizations.

- 09/2019 – 10/2024: Senior Lecturer, Biochemistry**
Department of Biochemistry, Microbiology and Biotechnology
Kenyatta University, Kenya

DUTIES

- Deliver undergraduate and graduate courses via classroom, online and hybrid methodologies to satisfy course curricula and meet student needs.

- Evaluate and revise lesson plans and course content to achieve student-centered learning.
- Use variety of learning modalities and support materials to facilitate learning process and accentuate presentations.
- Advise on department hiring actions to help build cohesive and successful lecturing team.
- Employ advanced knowledge of biochemistry to teach challenging high-level courses to graduate students.
- Supervise postgraduate students' research
- Conduct research with in-person and remote collaborators and presented results in scholarly publications to further enhance knowledge.
- Stayed abreast of developments within biochemistry to improve curriculum, develop new research and share with colleagues and students
- Met with students to dispense study and career advice and provide guidance and potential opportunities within chosen field.
- Community service

04/2014 – 09/2019: Lecturer, Biochemistry
 Department of Biochemistry, Microbiology and Biotechnology
 Kenyatta University, Kenya

DUTIES

- Evaluated and revised lesson plans and course content to achieve student-centered learning.
- Used variety of learning modalities and support materials to facilitate learning process and accentuate presentations.
- Conducted individual research projects to actively contribute to institution's research work.
- Mentored undergraduate and graduate students in effective next-steps for education and career preparedness.
- Created and designed quizzes, tests and projects to assess student knowledge.
- Delivered lectures at appropriate pace for optimal audience comprehension by non-native English-speaking students.
- Conducted in-class discussions to facilitate learning and encourage participation.
- Graded quizzes, tests, homework and projects to provide students with timely academic progress information and feedback.
- Stayed abreast of developments within biochemistry to improve curriculum, develop new research and share with colleagues and students
- Met with students to dispense study and career advice and provide guidance and potential opportunities within chosen field.
- Community service

09/2010 – 03/2014: Tutorial Fellow, Biochemistry
 Department of Biochemistry, Microbiology and Biotechnology
 Kenyatta University, Kenya

DUTIES

- Developed easy and open rapport with students to encourage engagement and academic progress.
- Evaluated and revised lesson plans and course content to achieve student-centered learning.
- Used variety of learning modalities and support materials to facilitate learning process and accentuate presentations.
- Provided constructive and timely feedback to students to advise on areas of concern and suggest improvements.
- Prepared and organized different teaching aids for use in classroom.
- Met with students during and after office hours to address concerns and offer feedback.
- Initiated and facilitated classroom discussions.
- Continued with PhD research study
- Community service

01/2010 – 08/2010: Assistant Lecturer, Biochemistry
Department of Pure and Applied Sciences
Technical University of Mombasa (Formerly Mombasa Polytechnic University
College), Kenya

DUTIES

- Developed easy and open rapport with students to encourage engagement and academic progress.
- Evaluated and revised lesson plans and course content to achieve student-centered learning.
- Used variety of learning modalities and support materials to facilitate learning process and accentuate presentations.
- Provided constructive and timely feedback to students to advise on areas of concern and suggest improvements.
- Prepared and organized different teaching aids for use in classroom.
- Met with students during and after office hours to address concerns and offer feedback.
- Initiated and facilitated classroom discussions.
- Continued with PhD research study
- Community service

ADMINISTRATIVE APPOINTMENTS

09/2024 – Current: Executive Dean, School of Pure and Applied Sciences

RESPONSIBILITIES

- Academic Leadership and Management
 - ✓ Curriculum Development
 - ✓ Academic Quality Assurance
 - ✓ Policy Development and Implementation:
 - ✓ Accreditation and Compliance
- Faculty and Staff Management
 - ✓ Recruitment and Appointment
 - ✓ Professional Development
 - ✓ Performance Management
- Student Affairs
 - ✓ Student Recruitment and Retention
 - ✓ Student Welfare and Support
 - ✓ Conflict Resolution
- Research and Innovation
 - ✓ Promote Research
 - ✓ Research Development
 - ✓ Publications and Conferences
- Budget and Resource Management
 - ✓ Financial Oversight
 - ✓ Fundraising and Grants
 - ✓ Resource Allocation
- Strategic Planning and Development
 - ✓ Long-Term Vision
 - ✓ Stakeholder Engagement
 - ✓ Marketing and External Relations
- Governance and Administrative Oversight
 - ✓ University Committees
 - ✓ Administrative Oversight
 - ✓ Reporting and Accountability
- Community Engagement and External Relations
 - ✓ Building Partnerships
 - ✓ Industry Collaboration
 - ✓ Alumni Relations

- Crisis Management and Decision-Making
 - ✓ Crisis Leadership
 - ✓ Decision Making

10/2020 - 09/2024: Chairman, Department of Biochemistry, Microbiology and Biotechnology.

RESPONSIBILITIES

- Chairman of departmental board meetings
- Chief departmental examinations officer
- Make recommendations with respect to probation, advancement and promotion of academic staff within the department
- Representing the department on the appropriate university committees and other bodies as required
- Ensure that proper and acceptable standards of teaching and instruction are maintained in the department
- Serve as executive officer of the department in the implementation of departmental policy, as determined by the departmental board and other university authorities and being responsible for the day-to-day administration of the department

04/2020 - 09/2024: Section Head, Medical Biochemistry Section in School of Medicine

RESPONSIBILITIES

- To coordinate teaching and examination of Medical Biochemistry students in the schools of Medicine and Pharmacy.
- Identify appropriate lecturers for Medical Biochemistry course in schools of Medicine and Pharmacy.
- To coordinate review of Medical Biochemistry curricula

06/2015 - 01/ 2019: Examinations Coordinator, Department of Biochemistry, Microbiology and Biotechnology

RESPONSIBILITIES

- Drafting and implementing examination procedures policies
- Oversee the development and implementation of Examination
- Supervising administration of examinations
- Coordinate the production of draft/final examination papers and ensure that examination papers and documentation are securely stored as per examination board requirements
- Liaise with the External Examiner(s) to obtain feedback on the draft examination papers
- Coordinate Marking and Grading of Examinations
- Liaise with Departmental Board of Examiners on the approval process and procedures for examination marks and grades
- Dealing with post results enquiries, processing and communicating this to departments and parents
- Coordinate the Board of examiners on exam and departmental chairperson on irregularities
- In Liaison with the Departmental Chairman, organize for examination calendar
- Managing examination results, including posting the same on student portal

03/2014 – 11/2016: Chairman, Departmental Board of Postgraduate Studies (DBPS)

RESPONSIBILITIES

- Organizing and chairing departmental postgraduate studies board meetings
- Presenting policy changes to the departmental postgraduate studies board meetings
- Representing the department at school postgraduate studies board meetings
- Maintaining postgraduate admissions standards

- General advising and mentoring of incoming students and of students who wish to switch programs
- Presenting curricular proposals to the Department Curriculum Development Committee
- Facilitating processing of proposals and thesis for students in preparation for examinations
- Organizing seminars for postgraduate students in the department

OTHER ADMINISTRATIVE APPOINTMENTS

- 13th May, 2026:** Appointed member of 2026 Agricultural Society of Kenya Nairobi International Trade Fair Planning Committee
- 19th March, 2026:** Appointed Chairman, Committee to Spearhead the Piloting, Scaling and Refinement of Check-in Student Attendance App
- 13th February, 2026:** Appointed Chairman, Committee to Review Student Disciplinary regulations and Policy
- 11th February, 2026:** Co-opted Member to the Technical Committee – Somali Graduate Master’s Degree Programme
- 22nd January, 2026:** Appointed as a Member to the Disaster Response and Recovery Committee
- 20th September, 2025:** Appointed as a Member to the Main Campus Corruption Prevention Committee
- 26th August, 2025:** Nominated to Attend the 69th International Atomic Energy Agency (IAEA) General Conference (15th – 19th September, 2025) in Vienna, Austria
- 31st January, 2025:** Appointed Chairman, Kenyatta University Bursary Committee
- 7th March, 2022:** Appointed as Member to a Committee to Investigate Loss of Examination Booklets in the Department of Agricultural and Biosystems Engineering
- 18th February, 2022:** Appointed as Chairman to Committee of DAAD Scholarships Interviewing Panel for 2022 PhD Biotechnology Candidates
- 14th February, 2022:** Appointed as Member to DAAD Scholarships Pre-Selection and Shortlisting Committee
- 7th January, 2022:** Appointed to Stand-in for the Dean, School of Pure and Applied Sciences
- 2nd December, 2021:** Appointed as Chairman to a Committee to Investigate Alleged Chronic University Money Theft by a Faculty Staff
- 9th September, 2021:** Appointed as Member to Committee to Receive, Process and Rank Application for EAC-KFW Scholarships
- 28th October, 2020:** Appointed as Reviewer of Proposal for the 2019/2020 Kenyatta University Vice-Chancellor’s Research and Innovation Grant
- 9th March, 2020:** Appointed as Member to Committee for Implementation of Recommendations of Joint EAC Partner States National Medical and Dental Practitioners Boards and Councils
- 24th February, 2020:** Appointed as Member to DAAD Scholarships Interviewing Committee
- 3rd February, 2020:** Appointed as Advisory Board Member of African Journal of Pure and Applied Sciences (AJPAS)

OTHER APPOINTMENTS

- June, 2026 to date:** External Examiner, Department of Biomedical Sciences, Medical College, Aga Khan University
- 2022 – 2024:** External Examiner, Department of Biological Sciences, Masinde Muliro University of Science and Technology
- 2022 – 2026** External Examiner, Moi University, School of Medicine
- 03/2022:** Doctoral thesis External Examiner, Faculty of Science, University of Johannesburg, South Africa
- 2021 – Current:** Editorial Board Member, Advances in Clinical Toxicology (ACT)
<https://medwinpublishers.com/open-access.php>
- 10/2021:** PhD thesis External Examiner, Department of Botany, University of Fort Hare, South Africa
- 2020 - Current:** Editorial Board Member, Journal of Advanced Biotechnology and Experimental

	Therapeutics (JABET) https://www.bsmiab.org/jabet
2020 - 2022:	External Examiner, Uzima University, School of Medicine
2018 - 2021:	External Examiner, Technical University of Mombasa, Department of Pure and Applied Sciences.
2016 - 2018:	External Examiner, Jomo Kenyatta University of Agriculture Technology (JKUAT), Mombasa CBD Campus
03/2016:	DPhil Thesis External Examiner, Department of Pharmacy, University of Zimbabwe.
2016- Current:	Editorial Board Member, Archives of Microbiology and Immunology
2015 – 2020:	Occasionally taught biochemistry to BSc (Forensic Sciences) students at National Police College, Rwanda

ACADEMIC LEADERSHIP

2017:	Principal Investigator for a collaborative research project funded by The National Research Fund (NRF) of Kenya and National Research Foundation (NRF) of South Africa to research on Proteomics and Contained Laboratory Assessment of Locally Developed Transgenic Drought Tolerant Maize”
2017:	Principal Investigator for research on “Advancing Locally Developed Biotech Drought Tolerant Maize towards Commercialization for Enhanced Food Security” funded under Vice chancellor’s Research Grant in Kenyatta University
2015:	Review of Bsc (Biochemistry) and Bsc (Molecular and Cellular Biology) programmes
2016:	Review of Bsc (Forensic Science) programme
2014:	Developed Bsc (Forensic Science) Curriculum for the University of Rwanda to be offered to Senior Police Officers at Rwanda National Police College
2011:	Development of Diploma (Forensic Science) and Postgraduate Diploma (Forensic Science) Courses

POSTGRADUATE SUPERVISION

Completed PhD

- **Nzaro Gona Makenzi (I84/21326/2010):** “*In vitro* Regeneration and Evaluation of Salt Stress Tolerance of Selected Kenyan Sweetpotato (*Ipomoea batatas*) Genotypes”
- **Purity Gacheri Limbua (I84/28502/2014):** “*Agrobacterium tumefaciens*-Mediated Introgression of IPT Gene in Selected Kenyan Ground Nut Genotypes to Enhance Drought Tolerance”.
- **Wycliffe Arika Makori (I84/37010/2016):** “Antiobesity, Cognitive Enhancing, Neurobehavioral, Antioxidant Effects and Phytochemical Profile of Dichloromethane Leaf Extracts of *Gnidia glauca* (Fresen)”.
- **Njoroge Gideon Kimani (I84/27460/2014):** “*In vivo* Hypoglycemic activity and Safety of *Tricum aestivum*, *Hordeum vulgare*, *Urtica massaica* and *Cynanchum viminale*”.
- **Kiambi Joseph Mworio (I84/37011/2016):** “Antipyretic, Antinociceptive and Antiinflammatory Potential of Dichloromethane Leaf Extracts of *Eucalyptus globulus* and *Senna didymobotrya* in Animal Models”.
- **Wambani Japheth Rapando (P97/33760/2015):** “*In Vitro* Antibacterial, *In Vivo* Immunomodulatory and Safety Properties of Ethylacetate Leaf Extracts of *Ocimum basilicum*”.
- **Stephen Maina Gitahi (I84/33763/2015):** “Phytochemical Profiles and Bioefficacy of Organic Leaf Extracts of *Tithonia diversifolia* and *Vernonia lasiopis* against *Sitophilus zeamais*”.
- **Mwangi Boniface Maina (I84/33169/15):** “Phytochemical Quantification, Anthelmintic, Antioxidant and Acute Toxicity Properties of Dichloromethane Extracts of *Maytenus senegalensis* and *Dalbergia melanoxylon*”.

- **Carolyn Wanjira Muruthi (I84/33333/2015):** “Phytochemical Profiles, Antiproliferative and Antioxidant Activities of *Carissa edulis* and *Pappea capensis* Extracts”
- **Joel Okoyo Masanga (I84/38221/2016):** “Taxonomy, Distribution and Host Range of *Cuscuta* Species Across Kenyan Ecosystems”
- **Gaichu Daniel Muthee (I84/37994/2017):** “Phytochemical Profile, Cardioprotective Effects and Safety of Aqueous Leaf Extracts of *Ximenia americana* (Linn.). and *Pappea capensis* (Eckl. And Zeyh.)”.
- **Osano Kenneth Onyango (I84/39115/2016):** “Nutritional Analysis, *In Vitro* Antioxidant Activity and Hepatoprotective Potential of Methanol Leaf Extracts of *Solanum villosum* Linn. and *Solanum scabrum* Mill”.
- **Kimuni Susan Nyawira (I84/31988/2015):** “Phytochemical Properties and Bioefficacy of Methanol Extracts of *Cissampelos pareira* *Lantana camara* and *Ocimum gratissimum* against Inflammation, Pain and Fever”.
- **Muchemi Kariuki Peterson (I84/33218/2015):** “Introgressing Genes for Maize Lethal Necrosis Disease Tolerance to Maize Inbred Lines and Awareness Evaluation in Selected Counties in Kenya”.
- **David Nyaga Ngai (I84/38985/2017):** “Cognitive Enhancing Effects and Antioxidant Activities of Crude Methanol Extracts of *Prunus Africana* in Scopolamine-Induced Alzheimer’s Disease Mice”.
- **Kamau Kimani James (I84/38844/2016):** “Phytochemical Composition, Anti-Rheumatoid Arthritis Potential and Toxicity Profiles of Methanol Extracts of *Zanthoxylum usambarense* Engl. and *Rhamnus prinoides* L’Hér”.
- **Ogolla Phillip Einstein (I84/39447/2016):** “Cancer Risks Associated with Exposure to Background Ionizing Radiation in Human Habitat, Soil and Food in Kenya”.
- **Athanas Alexander Katoo (I84/22246/2022):** “Phytometabolite Characterization and Bioefficacy of *Croton dichogamus* and *Warbugia ugandensis* Extracts Against *Calllosobruchus maculatus* in Stored *Cajanus cajan* Grains”
- **Gervason Apiri Moriasi (I84/21286/2021):** “Targeting Prostate and Cervical Cancers Using Antioxidant-Rich Medicinal Plant Extracts: Cytotoxic and Molecular Approaches”
- **Michael Musila Ndile (I84/26596/2018):** “Phytochemical Fingerprinting, Mineral Element Composition and Bioscreening of Dichloromethane Extract of *Xerophyta spekei* (Baker) For Antioxidant Potential, Antidiabetic Activities and Safety”

Completed MSc

- **Gitahi Stephen Maina (I56/CE/24660/2012):** “Antipyretic and Antinociceptive Properties of Dichloromethane: Methanolic Leaf and Root Bark Extracts of *Carisa edulis* (Forssk.) Vahl in Rats”.
- **Njagi Jim Muriithi (I56/1014/2008):** “Determination of Hematological Effects of Methanolic Leaf Extracts of *Vernonia lasiopus* (O. Hoffman) and Seeds Extracts of *Solanum incanum* (Linnaeus) in Mice”.
- **Marigi N. Emma (I56/21971/2012):** “Transformation of selected cassava germplasm for enhanced resistant to CBSD”.
- **Mwangi Boniface Maina (I56/CE/24661/2012):** “Evaluation of Antinociceptive and Antiinflammatory Properties of Dichloromethane: Methanolic Extracts of *Caesalpinia volkensii* and *Maytenus obscura* in Rats Models”.
- **Mawia Amos Musyoki (I56/25517/2013):** “Diversity Studies and Molecular Characterization of Kenyan Rice (*Oryza sativa* L.) Varieties Based on Amylose Content and Gelatinization Temperature”.
- **Joseph Kiambi Mworio (I56/CE/24613/2012):** “Determination of antinociceptive activity of acetone leaf extracts of *Caesalpinia volkensii* and *Carissa spinarum* in mice models”.
- **Wambua Festus Kioko (I56/27393/2013):** “Diversity Studies and Molecular Characterization of Kenyan Rice (*Oryza sativa* L.) Based on Aroma and Kernel Elongation”.

- **Aliyu Umar (I56F/23555/2013):** “Evaluation of Anti-Aphids properties of Aqueous Ripen Fruit Sap Extract of *Solanum incanum*”.
- **Makori Wycliffe Arika (I56/20181/2012).** “Bioprospecting of Plants used Traditionally in the Management of Diabetes Mellitus”.
- **Jorum Humphrey Obel (I56/CTY/PT/24942/2013):** “Effects of Dichloromethane: Methanolic Leaf Extracts of *Carissa edulis* (forsk.) Vahl on Hematological and Serum Lipid Profiles in Rat Models”.
- **Anne W. Njoroge (I56/26837/2013):** “Determination of *in vitro* Anti-cholinesterase Activities of *Carphaela glaucescens* and *Gnidia glauca* in Stem Borer (*Chilo partellus*)”.
- **Wanyonyi Christine Nakhumicha (I56/20412/2012):** “Tissue Culture Responsiveness and *Agrobacterium*-Mediated Transformability of Selected Kenya Cassava Varieties”.
- **David Easter Syombua (I56/21974/2012):** “Optimization of Regeneration Protocol and Evaluation of *Agrobacterium* Infectivity of Selected Kenyan Cassava Genotypes”.
- **Ogola Philip Einstein (I56/20183/2012):** “Levels of Background Ionizing Radiations from Human Premises and Selected Quarries around Nairobi County”.
- **Onyango Kenneth Osano (I56/24933/2013):** “*In vivo* Toxicity of Dichloromethane and Methanol Leaf Extracts of *Prosopis juliflora*”.
- **Lagat Rose Chemutai (I56/28992/2013):** “Physicochemical Characterization and Selected Quality Trait-Based Genetic Diversity Studies on Selected Kenyan and Tanzanian Rice (*Orya sativa* L.) Varieties”.
- **Njagi Shadrack Mwenda (I56/24935/2013):** “*In Vitro* Antiproliferative Activity of Aqueous Root Bark Extract of *Cassia abbreviate*”.
- **Felix Matheri (I56/26862/2013):** “Determination of Genetic Variability of *Passiflora edulis* (Sims) f. *flavicarpa* (Deg) in Mbeere South Sub-County”.
- **Mwangi Peter Nthiga (I56/27046/2014):** “Antipyretic and Antinociceptive Properties of *Harrisonia abyssinica* and *Landolphia buchananii* in Animal Models”.
- **Milcah Wagio Kigoni (I56/22433/2012):** “Evaluation of Molecular Interfaces to Identify Immune Responsive Epitopes in *Theileria parva* and the Tick Vector *Rhipicephalus appendiculatus*”.
- **Kamau Kimani James (I56/27066/2014):** “Antipyretic and Antiinflammatory Properties of Methanolic Extracts of *Kigelia africana* and *Acacia hockii* in Rat Models”.
- **Duncan Maina Kariuki (I56/CTY/PT/27310/2014):** *In Vivo* Safety of Dichloromethane: Methanolic Extracts of *Allium sativum* in Rat Models.
- **Gaichu Daniel Muthee (I56/CTY/PT/27105/2014):** “Antipyretic and Antiinflammatory Potential of Dichloromethane: Methanolic Leaf and Stem Bark Extracts of *Ximenia americana* in Laboratory Animals”.
- **Samson Koech Cheruiyot (I56/28505/2014):** “Analgesic, Antipyretic and Anti-inflammatory Potential of Dichloromethane Root Extract of *Clusia abyssinica* in Rats and Mice Models”.
- **Robert O. Odhiambo (I56/28877/2014):** Bioefficacy of Organic Blend Extracts of *Allium sativum* L. and *Ocimum basilicum* L. Against Maize Weevils (*Sitophilus zeamais*)”.
- **Ngai David Nyaga (I56/CE/28568/2013):** “Antioxidant Effects of Dichloromethane:Methanolic Extracts of *Pappea capensis* in Alloxan-induced Diabetic Rats”.
- **Stephen K. Mwihia (I56/CE/25292/2014):** “Antibacterial and Antioxidant Activities of Seed Extracts of *Annona squamosa* Collected from Kirinyaga County, Kenya”.
- **Muia Prominah Kavinya (I56/CE/20256/2012):** “Performance of Genexpert Test in Detecting Pulmonary Tuberculosis and Rifampicin Resistance in Patients Attending Kitui County Hospital, Kenya”.

- **Onyango Tonny Omondi (I56/CTY/PT/24940/2013):** “Effects of Maalaox Plus^R Antacid and Purecal^R Calcium Supplements on Liver and Kidney Functions Following Heavy Alcohol Intake in Rats”.
- **Ndile Michael Musila (I56/CE/24317/2013):** “*In Vivo* Toxicity of Methanolic Extracts of *Caesalpinia volkensii* (Harms) and *Vernonia lasiopus* (O. Hoffman) in Rat Models”.
- **Veronica A. Sindani (I56/28876/2014):** “*In Vivo* Antiinflammatory, Analgesic and Antipyretic Effects of Dichloromethane Stem Bark Extracts of *Acacia mellifera* (Vahl) Benth”.
- **Kibiwott Scholar Jepkorir (I56/28828/2013):** “Antioxidant Activity of Dichloromethane and Methanol Blend Extracts of *Carissa edulis* and *Caesalpinia volkensii* in Alloxan-induced Diabetic Rats”.
- **Maoga Jane Bosibori (I56/28879/2014):** “*In Vitro* Antioxidant Effects of Dichloromethane:Methanolic Extracts of *Clusia abyssinica* and *Maytenus obscura*”.
- **Fridah Machani (I56/27937/2013):** “Genetic Variation Among *Sclerocarya birrea* (Marula) Populations Using AFLP Markers”.
- **Ngari Loise Ngithi (I56/24137/2013):** “Phenotypic and Genotypic Diversity of *Catha edulis* (Vahl) Grown in Embu County, Kenya”.
- **Wilhelmy Marion Jebet (I56/CTY/PT/33457/2014):** “Bioefficacy of Organic Extracts of Fish Poison Bush (*Gnidia glauca*, Fresen) Against Cowpea Weevil (*Callosobruchus maculatus*, Fabricius)”
- **Sieberi Berick Moturi (I56/CE/26345/2014):** “*In Vitro* Antibacterial Activities of Dichloromethane:Methanol Extracts of *Fuerstia africana*, *Polygala sphegoptera* and *Centella asiatica* against Selected Bacteria”.
- **Kenedy W. Wafula (I56/CE/24744/2011):** Antioxidant Activities of Dichloromethane Extracts of *Strychnos heningsii* and *Ficus sycomorus* in Pancreas of Alloxan-Induced Diabetic Mice.
- **Ochola Celestine Anyango (I56/28567/2013):** “Antibacterial Effects of Methanolic Leaf Extracts of *Acacia ataxacantha* and *Pilostigma thonningii*”.
- **Wambua Rachel Kitondo (I56/CE/25790/2014):** “*In Vitro* Antibacterial Activities of Dichloromethane: Methanolic Extracts of *Croton megalocarpus* Hutch, *Strychnos henningsii* Gilg and *Psorospermum febrifugum* Spach”
- **Audrey Chepkemai (I56/27773/2014):** “Antiinflammatory, Antinociceptive and Antipyretic Activities of Acetone Stem Bark Extracts of *Pappea capensis* in Animal Models”.
- **Kakuta George Musyoki (I56/CE/20543/2012):** “Determination of Reference Intervals for Selected Biochemical Parameters for Adolescents in Kilifi County, Kenya”.
- **Ayienda C. Kerubo (I56/CTY/PT/27774/2014):** Antimicrobial Activities of Dichloromethane:Methanolic Leaf and Stem Bark Extracts of *Psidium guajava* (Linn).
- **Ireru Moses Munene (I56/CE/26169/2014):** “Analgesic and Antiinflammatory Potential of Methanolic Extracts of *Pistacia aethiopica* and *Warbugia ugandensis* in Mice Models”.
- **Mwangi Elias Kihara (I56/CTY/PT/26870/2013):** “Effects of Selected Carrier Materials and Storage Temperatures on Survival, Viability and Efficacy of Rhizobia Biofertilizers”.
- **Gervason Apiri Moriasi (I56/CE/29078/2015):** “Cognitive Enhancing and Antioxidant Activities of Methanolic and Aqueous Extracts of *Philiostigma thonningii* (Schum.) and *Londocarpus eriocalyx* (Harms.)”.
- **Awino Duncan (I56/CE/25502/2011):** “Development of Health Associated Reference Intervals for Commonly Requested Haematological Parameters in Adolescents Living in Kilifi County, Kenya”.
- **Guchu Beatrice Muthoni (I56/CE/25204/2014):** “*In Vitro* Antioxidant Activity of Methanolic Extracts of *Caesalpinia volkensii*, *Acacia hockii* and *Vernonia lasiopus*”.

- **Wanjira Michael Mumbi (I56/CE/25172/2014):** “Phenotypic and Genetic Characterization of Selected Kenyan Groundnuts (*Arachis hypogaea*. L) Varieties”.
- **Oloo Quenter Pendo (I56/CTY/PT/28573/2013):** “Effects of Paracetamol on the Liver and Kidney Functions of Rats Following Alcohol Intake”.
- **Mwangi Jedidah Wangari (I56/37494/2016):** “Phenotypic and Genetic Characterization of Selected Kenyan *Vigna Radiata* (L.) Wilczek (Mung Bean) Genotypes”.
- **Kibet Willy Kiprotich (I56/28650/2014):** “Strigolactone Profile of Selected Legumes and their Potential for Use as Trap Crops for *Striga*”
- **Manyasa Joy Kabaka (I56/27918/2014):** “Behavioral and Molecular Responses of *Glossina Morsitans Morsitans* and *Glossina Pallidipes* Tsetse Flies to Selected Odor Cues”
- **Mwaeni Victoria Kiwasi (I56/39116/2016):** “Effects of Coadministered Coenzyme Q10 and Dimercaptosuccinic Acid on Arsenic-Induced Toxicity in a Mouse Model”
- **Hezron Mutisya Muindi (I56/CE/26162/2014):** “Relative Astringent and Hemostatic Activities of Methanolic Leaf Extracts of *Croton Megalocarpus* Hutch and *Lantana Camara* Linn”
- **Biwott Kipchumba (I56/32940/2015):** “Effects of Administered Cyanocobalamin and Ubidecarenone Against Alcohol Mediated Toxicity in a Mouse Model”
- **Kimari Moses Kariuki (I56/CTY/PT/22251/2012):** “Effects of Targeted Organ Specific Knockdown of Multi-Drug Resistance Protein-1 on Lipid, Carbohydrate Levels and Feeding Patterns of *Drosophila melanogaster*”.
- **Were Yvonne Nyambura (I56/22991/2012):** “Nutritional and Phytochemical Analysis of Different Dried and Fresh African Indigenous Leafy Vegetables Grown in Nairobi, Kenya”.
- **Evans Kapanat Akimat (I56/CE/29192/2015):** “Anti-Inflammatory Activity, Antioxidant Activity, Toxicity and Phytochemical Screening of Aqueous Root Extract of *Launaea Cornuta* (Hochst. Ex Oliv. & Hiern)”
- **Paul Ochieng Nyalo (I56/27698/2018):** “*In Vitro* Antibacterial and Antioxidant Activities of Ethyl Acetate Extracts of *Xerophyta spekei* (Baker) *Senna singueana* (Delile) and *Grewia tembensis* (Fresen)”.
- **Athanas Katoo Alexander (I56/CE/24523/2012):** “Morphological and Genetic Characterization of Pigeon Pea (*Cajanus cajan* L) Using Simple Sequence Repeat Markers”.
- **Rose Mweru Muruo (I56/CTY/PT/32757/2015):** “Performance and Nutritional Assessment of Transgenic Tropical Maize (*Zea mays* L) Harboring *Isopentenyl Transferase* Gene Under Drought Stress”.
- **Mavanza Spora Aloyce (I56EA/26542/2019):** “Antibacterial, Antioxidant Activities, Acute Toxicity Effects and Phytochemical Profile of Ethanol Extracts of Selected Plant Species Grown in Tanzania”.
- **Kipkemai Daisy Jepkosgei (I56/27498/2018):** “Cognitive Enhancing Effects of Aqueous Extracts of *Amaranthus dubius* Mart. Ex Thell and *Vigna unguiculata* (L.) Walp. In Mice”
- **Samoei Chemutai Judith (I56/32938/2015):** “Phytochemical Composition, *In Vitro* Antimicrobial Activity, and Cytotoxicity of Essential Oils of *Ocimum gratissimum*, *Ocimum kilimandscharicum* and *Lippia javanica*”.
- **Kariuki Ibrahim Waweru (I56/38032/2017):** “Antibacterial, Antioxidant, Phytochemical Profile and Toxicological Effects of Aqueous Extract of *Rhaphiolepis bibas* (Lour.)”.
- **Okioga Farida Moraa (I56/CTY/PT/25140/2018):** “*In Vivo* Antiobesity Effects and Phytochemical Profiles of Dichloromethane Stem Bark Extracts of *Philiostigma thonningii* (Schum.) and *Londocarpus eriocalyx* (Harms.) in Mice”.

- **Fiona Muthoni Githaiga (I56/37506/2017):** “In Vivo Ameliorative Effects of Vitamin E against Hydralazine-Induced Lupus”.
- **Emma Clarice Ajwang (I56/CE/20960/2020):** “In vivo antidiarrheal effect and phytochemical characterization of *Plectranthus barbatus* Andrews”.
- **Elizabeth Chesang (I56/CTY/PT/21776/2012):** “Influence of Seasonal and Zonal Variations on Tick Burden, Distribution, Diversity and Seroprevalence of Coxiellosis in Tana River County, Kenya”
- **Florah Mshai Mlaghui (I56/CE/28500/2013):** “Isolation and Characterization of Polycyclic Aromatic Hydrocarbons-Degrading Bacteria from Mangrove Habitat Sediments in Makupa Creek, Mombasa County, Kenya”
- **Stephen Mwaniki Kamande (I56/CTY/PT/38083/2017):** “Bioethanol Production by *Saccharomyces cerevisiae* Using Lignocellulose Substrates Saccharified by Fungal Isolates from Karura Forest, Nairobi County, Kenya”
- **Stephen Ngigi Mburu (P154/CTY/PT/28403/2019):** “Cardioprotective and Anti-atherosclerotic Effects of *Solanum incanum* (L) and *Rhamnus prinoides* Extracts in Animal Models”
- **Sally Wambui Kamau (I56/28150/2019):** “Phytochemical Profile, *In Silico* Molecular Docking Analysis and AntiCervical Cancer Effects of *Rhamnus prinoides* and *Grewia vilosa* Extracts”
- **Muthee Eunice Wothaya (I56/38031/2017):** “Antiinflammatory Activities of Methanolic and Dichloromethane Extracts of *Ficus sycomorus* L. in Swiss Albino Mice”.
- **Maina Emma Wangari (I56/20410/2021):** “Evaluation of Phytochemical Composition and Allelopathic Effects of Aqueous Stem Bark Extracts of *Balnites aegyptica* on Germination, Growth and Yield of *Phaseolus vulgaris*”.
- **Noella Kagehi (I56/21562/2020):** “Improvement of Green Sprouting Broccoli Variety Production and Soil Microbial Regime using Black Soldier Fly Composted Fertilizer”.

Ongoing Supervision

- Currently supervising 10 MSc and 6 PhD students in Medical Biochemistry and Molecular Biology

SELECTED PUBLICATIONS

Peer-Reviewed Journal Articles

- Kagehi N, Beesigamukama D, Tanga CM, **Ngugi MP**, Subramanian S and Khamis FM (2025) Contribution of Different Frass Fertilizer Products on Enhanced Growth, Yield and Nutrient Quality of Broccoli [*Brassica oleracea*]. *Frontiers in Plant Science* 16:1613814. doi: 10.3389/fpls.2025.1613814
- Munyakanage D, Niyituma E, Mutabazi A, Misago X, Musanabaganwa C, Remera E, Rutayisire E, Ingabire MM, Majambere S, Mbituyumuremyi A, **Ngugi MP**, Kokwaro E, Hakizimana E and Muvunyi CM (2025). Factors Affecting Community Participation in Drone-Based Larviciding using *Bacillus thuringiensis* var. israelensis (Bti) for Bio-control of Malaria Vectors in Rwanda. *Malaria Journal* 24, 67. <https://doi.org/10.1186/s12936-025-05310-z>
- Ndile, MM., Makori, WA, Kibiti, CM and **Ngugi MP** (2025). In vivo Antidiabetic and Ex-vivo Antioxidant Activities of Dichloromethane Extract of *Xerophyta spekei*. *Clinical Phytoscience* 11, 2. <https://doi.org/10.1186/s40816-024-00387-6>
- Kamau JK **Ngugi, MP** and Ngeranwa, JN (2025) Anti-arthritis Potential and Mechanistic Insights of Methanol Extract of *Rhamnus prinoides* Engl. in Complete Freund's Adjuvant-Induced Rats. *Inflammopharmacology*. <https://doi.org/10.1007/s10787-025-01770-6>
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- Munyakanage D, Niyituma E, Mutabazi A, Misago X, Musanabaganwa C, Remera E, Rutayisire E, Ingabire MM, Majambere S, Mbituyumuremyi A, **Ngugi MP**, Kokwaro E, Hakizimana E and Muvunyi CM (2024): The Impact of *Bacillus Thuringiensis* Var. *Israelensis* (Vectobac® WDG) Larvicide Sprayed with Drones on the Bio-Control of Malaria Vectors in Rice Fields of Sub-Urban Kigali, Rwanda. *Malaria Journal*, 23:281. <https://doi.org/10.1186/s12936-024-05104-9>
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- Kamande SM, Omwenga GI and **Ngugi MP**(2024): Production of Cellulases by *Xylaria* Sp. and *Nemania* Sp. using Lignocellulose Substrates for Bioethanol Production from Maize Cobs. *Heliyon* 10, e36802. <https://doi.org/10.1016/j.heliyon.2024.e36802>
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Book Chapter

- Richard Oduor, **Mathew Ngugi**, Vivian Tuei, Trizah Milugo and Joel Ochieng (2015). Chapter Title: How Ready is Sub-Saharan Africa to Adopt Biotech Crops? Lessons from Kenya (Chapter Six). In: Emma Arogundade (2015): USHEPiA Crossing Boundaries: Knowledges from the Continent. Siber Ink, South Africa, ISBN: 9781928309079.

AWARDS AND HONORS

09/2002:	Awarded Msc Scholarship by Kenyatta University
10/2002:	Awarded a Certificate of Merit by the Biochemical Society of Kenya (BSK) for being the Best Overall Biochemistry student in Kenyatta university in 2001/2002 Academic year.
022007:	Awarded PhD Scholarship by Danish International Development Agency (DANIDA)

CONFERENCES AND WORKSHOPS

- Njagi J.M, **Ngugi M.P**, Ngeranwa, J.J.N. and Njagi, E.N.M. (2008). Hypoglycemic effects of some Kenyan plants that traditionally manage Diabetes mellitus. 5th International Congress of the African Association of Physiological Sciences (AAPS). 27th July-1st August 2008.
- **Ngugi, M.P.**, Machuka, J.S. and Cheruiyot R.C (2013). Regeneration and RNAi-mediated down-regulation of cyanoglycoside biosynthesis in Cassava. 27th Kenyatta university Postgraduate seminars. 26th November, 2013.
- Mwangi B. Maina, Gitahi S. Maina, Njagi J. Muriithi, Mworio J. Kiambi, Aliyu Umar, Njoroge W. Ann, Mwonjoria K. John, **Ngugi M. Piero**, Mburu N. David (2016). Antinociceptive And Antiinflammatory Potential of Dichloromethane: Methanolic Leaf Extracts of *Caesalpinia volkensii* and *Maytenus obscura* in Animal Models. 2nd Africa International Biotechnology and Biomedical conference at African Population Health Research Center (APHRC), Westlands, Nairobi, Kenya. 17th – 18th September, 2015. **(Poster Presentation)**.
- Gitahi S. Maina, Mwangi B. Maina, Njagi J. Muriithi, Mworio J. Kiambi, Juma K. Kelvin, Aliyu Umar, Mwonjoria K. John, Njoroge W. Ann, **Ngugi M. Piero**, Mburu N. David (2015). Antipyretic Properties of Dichloromethane: Methanolic Leaf and Root Bark Extracts of *Carissa edulis* in Rats. 2nd Africa International Biotechnology and Biomedical conference at African Population Health Research Center (APHRC), Westlands, Nairobi, Kenya on 17th -18th September, 2015 **(Poster Presentation)**.
- Muchemi PK, Kamau JW, Nchore SB, **Ngugi MP**, Kimaru, SK. Mwangi. JW, Joyce W, Florence M. (2019). Genetic Response of Selected Maize Germplasm Screening for MLND Resistance in Kenya. Kenyatta University Biennial Research and Innovation Conference, Kenyatta University, Nairobi, Kenya, 23-25 October 2019.
- Muchemi PK, Kamau JW, Nchore SB, **Ngugi MP**, Kimaru, SK. Mwangi. JW, Joyce W, Florence M, Munguti F. (2019.). Relationship between Level of Education, Farmers Varietal Prevalence, control and distribution of Maize Lethal Necrosis in Bomet County. Kenyatta University Biennial Research and Innovation Conference, Kenyatta University, Nairobi, Kenya, 23-25 October 2019.
- Muchemi PK, Kamau, JW, Nchore SB, Omwoyo RO, Kimaru SK, **Ngugi MP**, (2019). Use of low Tissue Culture Technology Towards Food Sustainability in Kenya. Kenyatta University Biennial Research and Innovation Conference, Kenyatta University, Nairobi, Kenya, 23-25 October 2019.
- Muchemi PK, Kamau, JW, Nchore SB, **Ngugi MP**, Omwoyo RO, Kimaru SK. (2018). Use of low Tissue Culture Technology Towards Food Sustainability in Kenya. RUFORUM Biennial Conference
- Muchemi PK, Kamau JW, **Ngugi MP**, Nchore SB. Mwangi. JW (2018) The Currents Status of Maize Lethal Necrosis Disease in Nyandarua County, Kenya. Horticultural Association of Kenya

NETWORKING AND COLLABORATION WITH EXTERNAL ORGANIZATIONS

2018 to Current: Carrying out a joint research with Jomo Kenyatta University of Agriculture and Technology (JKUAT) and Pwani University on “Pathogen Diversity, Host-Plant Resistance and Disease Management Strategies of Finger Millet Blast in Kenya”

2016 to 2020: Carrying out a joint research with Agricultural Research Council (ARC) of South Africa on “Proteomics and Contained Laboratory Assessment of Locally Developed Transgenic Drought Tolerant Maize”

RESEARCH GRANTS

- 2022 to date:** Awarded KSh 20 Million (as a Co-Principal Investigator) from National Research Fund, Kenya to undertake a Multi-Disciplinary Research on **“Optimizing Parameters for the Use of Face Masks to Reduce Severity of Underlying Infections for Enhanced Tolerance to COVID-19”**
- 2018 to 2020:** Awarded **KSh 1 Million** (as a Principal Investigator) by Kenyatta University under Vice chancellor’s Research Grant for research on **“Advancing Locally Developed Biotech Drought Tolerant Maize towards Commercialization for Enhanced Food Security”**
- 2018 to date:** Jointly awarded **KSh 17,505,000** (as a Co-Principal Investigator) from National Research Fund, Kenya to undertake a Multi-Disciplinary Research on **“Pathogen Diversity, Host-Plant Resistance and Disease Management Strategies of Finger Millet Blast in Kenya”**
- 2018 to 2021:** Awarded **USD 29,681** (as a Co-Principal Investigator) by the Third World Academy of Sciences (TWAS) to undertake research on **Generation of Cyanogen Free Cassava through Gene-Specific Genome Editing** (Grant No. 18-175-RG/BIO/AF/AC_G-FR3240303653)
- 2017 to date:** Awarded **KSh 19 930 000** (as a Co-Principal Investigator) by NRF multidisciplinary project on **“Determination of levels of ionizing radiation in Human Habitat, Water, and Food: a potential cause of the rising cancer incidences in Kenya”**.
- 2016 to 2020:** Awarded **KSh 3 Million** research grant from the 5th Kenya-South Africa Joint Call for proposals awarded by the National Research Fund (NRF) of Kenya and National Research Foundation (NRF) of South Africa to research on **Proteomics and Contained Laboratory Assessment of Locally Developed Transgenic Drought Tolerant Maize**

COMMUNITY SERVICE AND LEADERSHIP

- Chairman, Kenyatta University Biochemistry and Biotechnology Staff Welfare Association (KUBBSWA)
- Chief Guest, Prize Giving Days several junior academic institutions
- Chief Guest in several fundraisers to raise money for schools, churches and needy students
- Routine delivery of motivation talks to high school students and youth
- Chairman, Board of Management for two secondary schools

MEMBERSHIP TO SOCIETIES

- Member, Kenya Chemical Society
- Member, Kenya Biochemical Society

LANGUAGE

- Bilingual in English and Swahili with fluency and facility

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