

<b>CURRICULUM VITAE</b>
-------------------------

1. **Family name:** MAINA
2. **First names:** Esther Njoki Mwangi
3. **Date of Birth:** 13<sup>th</sup> March 1978
4. **Nationality:** Kenyan
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6. **Present position:** Senior Lecturer, Department of Biochemistry, Chiromo Campus, University of Nairobi (Kenya) - **(2015-present)**
- Years with the organisation:** 12 years

## 7. EDUCATION:

<b>Institution:</b>	University of Birmingham (UK), Division of Paediatrics and Child Health
<b>Date:</b>	2000-2004
<b>Degree/Diploma:</b>	<b>Ph.D.</b> (Medical and Molecular Genetics)
<b>Institution:</b>	University of Essex (UK)
<b>Date:</b>	1997-2000
<b>Degree/Diploma:</b>	<b>B.Sc. Hons.</b> (Biochemistry and Molecular Medicine, <b>2:1</b> )

## 8. EMPLOYMENT RECORD:

<b>Date:</b>	Senior Lecturer (2015-Present, Lecturer (2009-2015)
<b>Location:</b>	Nairobi (Kenya)
<b>Company:</b>	University of Nairobi,
<b>Position:</b>	Lecturer & Senior Lecturer, Department of Biochemistry, UoN
<b>Description:</b>	Teaching biochemistry, genetics and molecular biology to both undergraduate and postgraduate students; actively involved in proposal writing for research grants; departmental representative on university Committees on Curriculum Development, Postgraduate Studies, and Timetabling; member of departmental committees on Strategic Planning and Higher Degrees.

<b>Date:</b>	April-October 2009
<b>Location:</b>	Kampala (Uganda)
<b>Company:</b>	Kampala International University
<b>Position:</b>	Lecturer, Department of Biochemistry
<b>Description:</b>	Teaching genetics and molecular biology to both undergraduate (MBChB) and postgraduate (master's level) students; prepared curriculum for the course and actively involved in proposal writing for research grants.
<b>Date:</b>	February-November 2008
<b>Location:</b>	Birmingham (UK)
<b>Company:</b>	University of Birmingham
<b>Position:</b>	Post-Doctoral Research Fellow CRUK/Lecturer
<b>Description:</b>	Working to establish the role of the transcription factor Oct-1 in chronic lymphoblastic lymphoma, and its effect on the integrity of the DNA repair machinery with respect to Ataxia Telangiectasia Mutated (ATM), a protein that is recruited to sites of DNA damage for repair purposes.
<b>Date:</b>	2006-2008
<b>Location:</b>	Birmingham (UK)
<b>Company:</b>	University of Birmingham
<b>Position:</b>	Post-Doctoral Research Fellow CRUK/Lecturer
<b>Description:</b>	Worked on the role of EBV in Hodgkin's Lymphoma (HL), including work towards establishing the relationship between EBV infection of HL precursor cells, Hodgkin-Reed Sternberg (HRS) cells, and the integrity of DNA repair.
<b>Date:</b>	2004-2006
<b>Location:</b>	Birmingham and Cambridge (UK)
<b>Company:</b>	University of Birmingham and Cambridge University
<b>Position:</b>	Post-Doctoral Joint Fellowship
<b>Description:</b>	Worked on Prader-Willi syndrome (PWS), A complex human genetic disease (imprinting disorder) arising from lack of expression/mutations of paternally inherited and imprinted genes on chromosome 15q11-q13. Work included mutation analyses and gene-expression studies on putative PWS genes.
<b>Date:</b>	2003-2004
<b>Location:</b>	Birmingham (UK)
<b>Company:</b>	University of Birmingham
<b>Position:</b>	Post-Doctoral Research Associate
<b>Description:</b>	Carried out functional studies on novel, pVHL target genes, including siRNA, cloning, cell culture, transfections, growth suppression and migration assays.
<b>Date:</b>	2000-2003
<b>Location:</b>	Birmingham (UK)

<b>Company:</b>	Pfizer Genetic Technology
<b>Position:</b>	Ph.D. industrial placement , Genetic Technology Department
<b>Description:</b>	Conducted experiments in a Good Laboratory Practice (GLP)-compliant research laboratory; gained experience in teamwork, organisational and communication skills, problem-solving, and meeting tight deadlines.

## 11. GRANTS AND AWARDS

**1997-2021:** Awarded several Grants and Awards

## 12. CURRENT RESEARCH ACTIVITIES

- Identification and Characterization of molecular markers for Breast and Prostate Cancers in Kenya.

**Collaborators: Prof Peter Mungai Ngugi, Kenyatta National Hospital, Prof Ronald Wasike, The Aga Khan Hospital, Nairobi**

Evaluation of traditional medicinal plants for anti-cancer activities and subsequent evaluation of molecular mechanisms of action on prostate cancer cell lines-

**Collaborator Dr Tim Forshew,( UCL, UK), Dr Yahaya Gavamukulya, (Busitema University, Uganda)**

## 13. STUDENTS' THESIS/DISSERTATION SUPERVISION

- 6 PhD Theses supervised to completion
- 8 MSc Dissertations supervised to completion

## 14. STUDENT' THESES EXAMINATION

- Appointed for both External and Internal theses examinations (20)

## 15. MEMBERSHIP OF PROFESSIONAL BODIES:

- International Federation of University Women (**IFUW**)
- Third World Organization for Women in Science (**TWOWS**)
- African Women's Forum on Science and Technology (**AWFST**)
- African Technology Policy Studies Network (**ATPS**)
- Biochemical Society of Kenya (**BSK**)

## 16. UNIVERSITY AND DEPARTMENTAL APPOINTMENTS (Administrative)

- Course Coordinator, is several Units within the Department of Biochemistry MSc Biochemistry
- Member of several university committees representing Department of Biochemistry

## 17. OTHER:

- Trained and certified in the ethics of scientific research. Certification attained include: Animal Care and Use (ACU) Biosafety and Biosecurity (BSS) Good Laboratory Practice (GLP) Human Subjects Research (HSR) Information Privacy and Security (IPS) - Certificate Course in Bio-Ethics and Research Ethics, College of Health Sciences, University of Nairobi, Kenya. 26<sup>th</sup> to 30<sup>th</sup> November **2012**
- Mentorship: Mentoring young people and empowering young women ( Mothers & Daughters and Akili Dada initiatives) in S.T.E.M
- Board Member of Green Belt Movement (**2019-** present)
- B.O.M Ole Tipis Girls High School (**2019-** present)
  - Journal Reviewer :
  - **Cancer and Oncology Research**
  - **Ethnobotany Research and Applications**

## 18. SCIENTIFIC PUBLICATIONS

**2022.** Mwanasiti Mwakumanya\*, Florence A. Ng'ong'a, Mutinda C. Kyama, **Esther N. Maina** Phytochemical analysis and safety evaluation of ethanol roots extract of *Erythrina sadleuxii* hua in Wistar albino rats. **Journal of Medicinal Plants Research** Article Number - E4FC7E469038 Vol.16 (4), pp. 126-140, April 2022

**2021.** Ahmed A. Abdille\*, Josephine Kimani, Fred Wamunyokoli, Wallace Bulimo, Yahaya Gavamukulya, **Esther N. Maina** Dermaseptin B2's Anti-Proliferative Activity and down Regulation of Anti-Proliferative, Angiogenic and Metastatic Genes in Rhabdomyosarcoma RD Cells *in Vitro*. **Advances in Bioscience and Biotechnology**, 2021, 12, 337-359

**2021.** Hillary Bor, **Esther N. Maina**, Benson Nyambega, Kirtika Tushar Patel, Charles Ochieng' Olwal, Walter Nalanyanya and Yahaya Gavamukulya\* The Potential of Differentiation-Related Gene-1 (DRG1) as a Biomarker for Metastasis of Estrogen Receptor-Positive Breast Cancer. **JAMMR**, 33(20): 162-169, 2021

**2021.** Yvonne A. Scriven, MS, Martin M. Mulinge, PhD\*, Norah Saleri, BS, Elizabeth A. Luvai, MS, Atunga Nyachieo, PhD, **Esther N. Maina, PhD**, Matilu Mwau, MD, PhD Prevalence and factors associated with HIV-1 drug resistance mutations in treatment-experienced patients in Nairobi, Kenya: A cross-sectional study. **Medicine** (2021) 100:40

**2021.** Naomi Chikwana, **Esther N. Maina**, Yahaya Gavamukulya, Wallace Bulimo, Fred Wamunyokoli. Antiproliferative Activity, c-Myc and FGFR1 Genes Expression Profiles and Safety of *Annona muricata* Fruit Extract on Rhabdomyosarcoma and BALB/c Mice. *Journal of Complementary and Alternative Medical Research*, 14 (4): 30-46

**2020. Book Chapter :** Parasitoids' Ecology and Evolution, DOI: [10.3389/978-2-88963-480-4](https://doi.org/10.3389/978-2-88963-480-4)  
Publisher: Frontiers in Ecology and Evolution ISBN: 978-2-88963-480-4

2020. Phytochemical Analysis and Antileishmanial Activity of *Clerodendrum myricoides* and *Salvadora persica* Plant Extracts against *Leishmania major*. **Esther N. M. Maina**, Virginia N. Njau and Yahaya Gavamukulya. *Journal of Complementary and Alternative Medical Research*. 9(1): 29-44,

### 2019. Filed patent

Inventors: Gavamukulya, Y., **Maina, E.N.**, Madivoli, E.S., El-Shemy, H.A., Magoma, G., Wamunyokoli, F. Filing Date: 24-04-2019. Title of the Invention: Synthesis of Silver Nanoparticles from Extracts of *Annona muricata* and Use Thereof. Filing Authority: African Regional Intellectual Property

2022

Organization (ARIPO). ARIPO Patent Application number: AP/P/2019/011514. Applicants: Pan African University Institute for Basic Sciences, Technology and Innovation; Busitema University; and Gavamukulya Yahaya. Designation States: UG, KE, TZ, ZW, and BW. AP; ARIPO Journal; Vol. XXXVI, No. 4, Page 23

## Papers

**2019.** Gilbert K. Cheruiyot<sup>a</sup> Wycliffe C. Wanyonyi<sup>a</sup> Joyce J. Kiplimo<sup>a</sup> **Esther N. Maina**<sup>b</sup> Adsorption of toxic crystal violet dye using coffee husks: Equilibrium, kinetics and thermodynamics study. *Scientific African* 5 (2019) July 2019

**2019.** Gavamukulya, Y., **Maina, E.N.**, Meroka, A. M., Madivoli, E.S., El-Shemy, H.A., Magoma, G., and Wamunyokoli, F. (2019). Liquid Chromatography Single Quadrupole Mass Spectrometry (LC/SQ MS) Analysis Reveals Presence of Novel Antineoplastic Metabolites in Ethanolic Extracts of Fruits and Leaves of *Annona muricata*. *Pharmacognosy Journal*. 11(4): 660–668

**2019.** Gavamukulya, Y., El-Shemy, H.A., Meroka, A. M., Madivoli, E.S., **Maina, E.N.**, Wamunyokoli, F., and Magoma, G. (2019). Advances in green nanobiotechnology: Data for synthesis and characterization of silver nanoparticles from ethanolic extracts of fruits and leaves of *Annona muricata*. *Data in Brief*

**2019.** Gavamukulya, Y., **Maina, E.N.**, Meroka, A., Madivoli, E.S., El-Shemy, H.A., Wamunyokoli, F., and Magoma, G. (2019). Green Synthesis and Characterization of Highly Stable Silver Nanoparticles from Ethanolic Extracts of Fruits of *Annona muricata*. *Journal of Inorganic and Organometallic Polymers and Materials*. <https://doi.org/10.1007/s10904-019-01262-5>. Url: <https://rdcu.be/bK3sP>

**2019.** Gavamukulya, Y., **Maina, E.N.**, Meroka, A., El-Shemy, H.A., Magoma, G., and Wamunyokoli, F. (2019). In search for new anticancer drugs: Data for cytotoxic activities of green synthesized silver nanoparticles from ethanolic extracts of fruits and leaves of *Annona muricata* and 5-Fluorouracil against HeLa, PC3 and PNT1A Cell lines. *Data in Brief*; 26:104442.

**2019.** Gavamukulya, Y., **Maina, E.N.**, Wamunyokoli, F., Meroka, A.M., Madivoli, E.S., El-Shemy, H.A., and Magoma, G. (2019). Synthesis and characterization of silver nanoparticles from ethanolic extracts of leaves of *Annona muricata*: A green nanobiotechnology approach. *Biotechnology Journal International*.

## Published database

**2019.** Gavamukulya, Y., **Maina, E. N.**, Meroka, A. M., Madivoli, E. S., El-Shemy, H. A., Wamunyokoli, F., Magoma, G. (2019). Data for green synthesis and characterization of silver nanoparticles from ethanolic extracts of fruits of *Annona muricata*. *Mendeley Data*, v1, <http://dx.doi.org/10.17632/jkj2x782wh.1>

**2019.** Gavamukulya, Y., El-Shemy, H.A., Meroka, A. M., Madivoli, E. S., Magoma, G., Wamunyokoli, F., **Maina, E. N.** (2019). Data for green synthesis and characterization of silver nanoparticles from ethanolic extracts of leaves of *Annona muricata*. *Mendeley Data*, v1, <http://dx.doi.org/10.17632/f4mb6b488n.1>

**2018.** Salivary  $\alpha$ -Amylase of Stem Borer Hosts Determines Host Recognition and Acceptance for Oviposition by *Cotesia* spp. (Hymenoptera, Braconidae) Gladys B. Bi chang'a, Jean-Luc Da Lage, Kevin Sambai, Simon Mule, Bruno Le Rue, Laure Kaiser, Gerald Juma, **Esther N. Maina** and Paul-André Calatayud, *Front. Ecol. Evol.*, 19 December 2018

**2018.** Clove (*Syzygium aromaticum*) and honey extracts significantly reduce inflammatory cytokines and liver function enzymes in experimental rats fed on carbon tetrachloride (CCl<sub>4</sub>) Mohamad T. Abdelrahman **Esther N. Maina**, Hany A. Elshemy October 2018, **Journal of Radiation Research and Applied Sciences**, Volume 11, 2018 - Issue 4

**2018.** Adsorptive Removal of Crystal Violet Dye from Aqueous Solution Using Water Hyacinth Roots." Oral Paper presentation at **THE INTERNATIONAL ESAECC-TCCA CONFERENCE, 3RD -7TH SEPTEMBER 2018, REEF HOTEL, MOMBASA, KENYA** Wanyonyi, **Maina et al**

- 2018.** Gladys Bichang'a, Jean-Luc Da Lage, Claire Capdevielle-Dulac, Michel Zivy, Thierry Balliau, Kevin Samba, Bruno Le Ru, Laure Kaiser, Gerald Juma, **Esther Njoki Mwangi Maina**, Paul-André Calatayud,  $\alpha$ -Amylase Mediates Host Acceptance in the Braconid Parasitoid *Cotesia flavipes* August 2018 **Journal of Chemical Ecology** **44(1–2)**
- 2018.** Caroline M.W, **Maina E.N.M.** and Karanja S. Factors associated with pneumonia in children under five (2-59 months) in Nairobi, Kenya, **African Journal of Health Sciences**, Volume 31, Number 1, January-March 2018
- 2017.** Katabale MK, **Esther NM** and Kariuki D Phytochemical screening, Cytotoxic, genotoxic and mutagenic effects of the aqueous extract of *Azadirachta indica* leaves. **International Journal of Herbal Medicine** 2017; 5(3): 39-44
- 2016.** Virginia N Njau, **Esther NM Maina**, Christopher O Anjili, Johnstone M Ingonga, Joan C Koech, Hellen W Kariuki, Peter K Ngure. *In vitro* antileishmanial activity and phytochemical analysis of *Carissa edulis* against *Leishmania major* **African Journal of Pharmacology and Therapeutics**. Vol 5, No 4 (2016)
- 2016.** Efficacy of combination therapy using extracts of *Aloe Secundiflora* Eng l. And *Callistemon citrinus* William c. In *Leishmania major* Infected balb/c mice. C. M. Ndeti, C. kituyi, M. Ndirangu, J. Ingonga, M. I. chimbevo, J. O. Ochieng, M. Barasa, G. Kinuthia, **E. N. Maina**, V. C. S. Nyambati, C. O. Anjili. **East African Medical Journal** Vol. 93 No. 2 February 2016
- 2014.** **Esther Njoki Maina**<sup>a\*</sup>, Helen Wambui Kinyi<sup>b</sup>, Dominic Omosa Ochwang'i<sup>c</sup>, Wycliffe Wanyonyi Chisutia<sup>d</sup> Liver toxicity of crude ethanolic extract of *Ficus natalensis* traditionally used in South Western Uganda, **African Journal of Pharmacology and Therapeutics**. 3(4):116-121
- 2014.** **Maina E.N.**, Skowronska A., Chaganti S., Taylor M.A, Murray P.G., Stankovic T., **2014.** EBV infection and the DNA damage response in lymphomas of B-cell origin. 16-17 October. 3rd **Medical and Veterinary Virus Research in Kenya (MVVRK-3) symposium**, Hilton Hotel; Nairobi
- 2014.** **Esther Njoki Maina**<sup>a\*</sup>, Helen Wambui Kinyi<sup>b</sup>, Dominic Omosa Ochwang'i<sup>c</sup>, Wycliffe Wanyonyi Chisutia<sup>d</sup> Liver toxicity of crude ethanolic extract of *Ficus natalensis* traditionally used in South Western Uganda, 3<sup>rd</sup>-5<sup>th</sup> September, 2014. 9<sup>th</sup> Biennial Scientific conference, **College of Agriculture and Veterinary Science, University of Nairobi**
- 2013.** **Maina E.N.M.** Lifestyle diseases pose a definite threat to the developing world. (Invited mini-review by Editor) -Your Doctor Magazine- online publication url: [www.yourdoctormagazine.co.ke](http://www.yourdoctormagazine.co.ke)
- 2012.** **Esther N. Maina**, Tessa Webb, John R Arrand, Joyce Whittington, Sarita Soni, Harm Boer, David Clarke, Anthony J. Holland. Investigation of Prader-Willi-like Phenotype using a Whole Genome Array. **African Journal of Pharmacology and Therapeutics**. 1(3):84-91
- 2012.** **Maina E.N.M.** Looking to the study of genes for cancer diagnoses and Treatment. (Invited mini-review by Editor) -Your Doctor Magazine 2012 Jul; 4 (5-6)
- 2009.** Bose S, Yap LF, Fung M, Starzynski J, Saleh A, Morgan S, Dawson C, Chukwuma MB, **Maina E**, Buettner M, Wei W, Arrand J, Lim PV, Young LS, Teo SH, Stankovic T, Woodman CB, Murray PG. The ATM tumour suppressor gene is down-regulated in EBV-associated nasopharyngeal carcinoma. **J Pathol.** **2009; 217(3):345-52.**
- 2009.** Marston E, Weston V, Jesson J, **Maina E**, McConville C, Agathangelou A, Skowronska A, Mapp K, Sameith K, Powell JE, Lawson S, Kearns P, Falciani F, Taylor M, Stankovic T. Stratification of pediatric ALL by in vitro cellular responses to DNA double-strand breaks provides insight into the molecular mechanisms underlying clinical response. **Blood.** **2009 1;113 (1):117-26.**

- 2008.** Tessa Webb, **Esther N. Maina**, Sarita Soni, Joyce Whittington, Harm Boer, David Clarke, Anthony Holland. In search of the psychosis gene in people with Prader-Willi syndrome. **Am J Med Genet A.** **2008 Apr 1; 146 (7):843-53.**
- 2008.** S. Soni, J. Whittington, A. J. Holland, T. Webb, **E. N. Maina**, H. Boer and D. Clarke. The phenomenology and diagnosis of psychiatric illness in people with Prader-Willi syndrome. **Psychol. Med.** **2008 Jan 4:1-10.**
- 2007.** Soni S, Whittington J, Holland AJ, Webb T, **Maina E**, Boer H, Clarke D. The course and outcome of psychiatric illness in people with Prader-Willi syndrome: implications for management and treatment. **J Intellect Disabil Res.** **2007 Jan; 51(Pt 1):32-42.**
- 2006. Maina EN**, Webb T, Soni S, Whittington J, Boer H, Clarke D, Holland A. Analysis of candidate imprinted genes in PWS subjects with atypical genetics: a possible inactivating mutation in the SNURF/SNRPN minimal promoter. **J. Hum. Genet.** **2007; 52(4):297-307.**
- 2006. Maina EN**, Abdulrahman M, Morris MR, Zatyka M, Raval RR, Banks RE, Wiesener MS, Richards FM, Johnson CM, Latif F, Maher ER. Identification of novel VHL targets that are associated with the development of renal cell carcinoma. **Oncogene.** **2007 Mar 8; 26(11):1661-72. Epub 2006 Sep 25.**
- 2006.** Smith UM, Consugar M, Tee LJ, McKee BM, **Maina EN**, Whelan S, Morgan NV, Goranson E, Gissen P, Lilliquist S, Aligianis IA, Ward CJ, Pasha S, Punyashthiti R, Malik Sharif S, Batman PA, Bennett CP, Woods CG, McKeown C, Bucourt M, Miller CA, Cox P, Algazali L, Trembath RC, Torres VE, Attie-Bitach T, Kelly DA, Maher ER, Gattone VH 2nd, Harris PC, Johnson CA. The transmembrane protein meckelin (MKS3) is mutated in Meckel-Gruber syndrome and the wpk rat. **Nat Genet.** **2006 Feb; 38(2):191-6. Epub 2006 Jan 15.**
- 2005.** Morris MR, Gentle D, Abdulrahman M, **Maina EN**, Gupta K, Banks RE, Wiesener MS, Kishida T, Yao M, Teh B, Latif F, Maher ER Tumor suppressor activity and epigenetic inactivation of hepatocyte growth factor activator inhibitor type 2/SPINT2 in papillary and clear cell renal cell carcinoma. **Cancer Res.** **2005 Jun 1; 65(11):4598-606.**
- 2005. Maina EN**, Morris MR, Zatyka M, Raval RR, Banks RE, Richards FM, Johnson CM, Maher ER. Identification of novel VHL target genes and relationship to hypoxic response pathways. **Oncogene.** **2005 Jun 30; 24(28):4549-58.**
- 2005.** Aligianis IA, Johnson CA, Gissen P, Chen D, Hampshire D, Hoffmann K, **Maina EN**, Morgan NV, Tee L, Morton J, Ainsworth JR, Horn D, Rosser E, Cole TR, Stolte-Dijkstra I, Fieggen K, Clayton-Smith J, Megarbane A, Shield JP, Newbury-Ecob R, Dobyns WB, Graham JM Jr, Kjaer KW, Warburg M, Bond J, Trembath RC, Harris LW, Takai Y, Mundlos S, Tannahill D, Woods CG, Maher ER. Mutations of the catalytic subunit of RAB3GAP cause Warburg Micro syndrome. **Nat Genet.** **2005 Mar; 37(3):221-3.**
- 2004. Maina E**, Morris MR, Morgan NV, Gentle D, Astuti D, Moch H, Kishida T, Yao M, Schraml P, Richards FM, Latif F, Maher ER. Molecular genetic analysis of FH1-1, FH, and SDHB candidate tumour suppressor genes in renal cell carcinoma. **J Clin Pathol.** **2004 Jul; 57(7):706-11.**

## 19. REFEREES:

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