

1.1.1 PERSONAL INFORMATION

NAME : Prof. Richard Okoth Oduor
NATIONALITY : Kenyan
DESIGNATION : Associate Professor and Director- Research Support and
Dissemination
PF No. : 7641
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Cell: 0702 931951

1.1.2 QUALIFICATIONS

1.1.2.1 Academic Qualifications

2012: Executive Master of Science in Management and Organizational Development, USIU,
Kenya
2011: Postdoctoral Research Associate in Drug discovery, Pfizer Global Research &
Development, United Kingdom
2009: PhD in Molecular & Cell Biology, University of Cape Town, South Africa
2005: Master of Science in Biotechnology, Kenyatta University, Nairobi, Kenya
2002: Bachelor of Science in Biochemistry, Kenyatta University, Nairobi, Kenya
2010: Graduate Diploma in Forensic Sciences, Blackford Institute, United Kingdom
2008: Certificate in Science Communication, University of Cape Town, South Africa

1.1.2.2 Professional Courses

2018: Honorary Visiting Fellow, University of Leicester, UK
2016: Bridging the gap between Agriculture and Human Health, Cape Town, South
Africa
2015: Use of social media in science communication, Nairobi, Kenya
2014: Forensic and Profiling training, Nairobi, Kenya
2013: Toxicology training, Novartis, Boston, USA
2012: Ethics and Governance course, Sunrise, Mombasa
July 2011: Integrated Environmental Impact Assessment and Auditor, Regional
Centre for capacity development, Kenyatta University

July 2011: Basic Skills in teaching Methodology and course examination, Regional Centre for capacity development, Kenyatta University

1.1.3 EMPLOYMENT HISTORY

Aug 2020 – date : Director, Research Support and Dissemination

March 2020 – date: Associate Professor of Molecular and Cell Biology, Department of Biochemistry and Biotechnology, Kenyatta University

May 2011 – Feb 2020: Senior Lecturer, Department of Biochemistry and Biotechnology, Kenyatta University

Jan 2011-May 2011: Lecturer, Department of Biochemistry and Biotechnology, Kenyatta University

2010- Jan 2011: Research Officer/Lecturer, Institute of Biotechnology Research, Jomo Kenyatta University of Agriculture & Technology

2008: Academic Writing Consultant, University of Cape Town, Cape Town, South Africa

2007-2010: Assistant Research Officer/Assistant Lecturer, Institute of Biotechnology Research, Jomo Kenyatta University of Agriculture & Technology

2004: Head of Linkages and Program Coordinator, Regional Institute of Business Management, Nairobi, Kenya

1.2 RESEARCH AND PUBLICATIONS

1.2.1 Articles in Refereed Journals

- Joel Masanga, Beatrice Njoki Mwangi, Willy Kibet, Philip Sagero, Mark Wamalwa, **Richard Oduor**, Mathew Ngugi, Amos Alakonya, Patroba Ojola, Emily S Bellis, Steven Runo (2021), Physiological and ecological warnings that dodders pose an exigent threat to farmlands in Eastern Africa, Plant Physiology, kiab034, <https://doi.org/10.1093/plphys/kiab034>
- Mukami A, Ng’etich A, Syombua E, **Oduor R**, Mbinda W (2020). Varietal differences in physiological and biochemical responses to salinity stress in six finger millet plants. *Physiol Mol Biol Plants* <https://doi.org/10.1007/s12298-020-00853-8>

- Asande LK, Ombori RO, Nyaboga EN, **Oduor RO**. (2020). Efficient Shoot Organogenesis Using Leaf Disc and Nodal Explants of Passion Fruit (*Passiflora edulis* Sims) and Genetic Fidelity Assessment Using Sequence-Related Amplified Polymorphism (SRAP) Markers. *International Journal of Agronomy*. <https://doi.org/10.1155/2020/320571>
- Mbinda W, Dixelius C and **Oduor R** (2019). Induced Expression of *Xerophyta viscosa* XvSap1 Gene Enhances Drought Tolerance in Transgenic Sweet Potato. *Front. Plant Sci. 10:1119*. doi: 10.3389/fpls.2019.01119
- Asunta Mukami, Alex Ngetich, Cecilia Mweu, **Richard O. Oduor**, Mutemi Muthangya, Wilton Mwema Mbinda (2019). Differential characterization of physiological and biochemical responses during drought stress in finger millet varieties. *Physiol Mol Biol Plants*. <https://doi.org/10.1007/s12298-019-00679-z>
- Asunta Mukami, Alex Ngetich, Cecilia Mweu, Mutemi Muthangya, **Richard O. Oduor**, Mathew Ngugi, and Wilton Mbinda (2019). Rapid and efficient plant regeneration from shoot apical meristems of finger millet [*Eleusine coracana* (L.) Gaertn.] via direct organogenesis. 17(29), pp. 898-905, : 10.5897/AJB2018.16562
- DM Mukwabi, PO Okemo, SO Otieno, **RO Oduor** and CM Macharia (2019). Temperature and PH influence on bacterial pathogens infecting farmed Nile tilapia in aquaculture systems in Bungoma County, Kenya. *International Journal of Fisheries and Aquatic Studies* 7(1): 190-197
- Easter D. SYOMBUA, Christine N. WANYONYI, Wilton M. Mbinda, Mathew P. NGUGII, Amos E. ALAKONYA and **Richard O. ODUOR** (2019). Explant type and hormone regime influences somatic embryogenesis and regeneration of cassava. *African Journal of Biotechnology* 18(25), pp. 532-539. DOI: 10.5897/AJB2019.16853

- D M Mukwabi, S O Otieno, P O Okemo, **R O Oduor** and B Agwanda (2019). Parasites infesting Nile tilapia grown in aquaculture systems in Kenya. *Livestock Research for Rural Development* 31 (20)
- Mukwabi D. M., Okemo P.O, Otieno S. A, **Oduor R.O**, and Okwany Z.W (2019) Antibiotic Resistant Pathogenic Bacteria Isolated from Aquaculture Systems in Bungoma County, Kenya. *Journal of Applied & Environmental Microbiology*.7(1): 25-37
- **Richard O. Oduor** (2019). Exposure to Background Ionizing radiation from quarries and premises in Kisumu County, Kenya. *International Journal of Scientific Research*.
- **Richard O. Oduor** (2018). Indoor background ionizing radiations in selected premises in Mombasa County, Kenya. *International Advanced Research Journal in Science, Engineering and Technology*. 5(11):36-38. DOI 10.17148/IARJSET.2018.5118
- Sylvia Nawiri, **Richard Oduor** and Wilton Mbinda (2018). Isopentenyletransferase Gene Enhances Drought Tolerance in Genetically Engineered Sweetpotato (*Ipomoea batatas* (L.) Lam). *J Plant Biochem Physiol*, 6:3 DOI: 10.4172/2329-9029.1000221
- Wilton Mbinda, Omwoyo Ombori, and Christina Dixelius, **Richard Oduor** (2018). *Xerophyta viscosa* Aldose Reductase, XvAld1, Enhances Drought Tolerance in Transgenic Sweetpotato. *Molecular Biotechnology* <https://doi.org/10.1007/s12033018-0063-x>
- Nzaro G Makenzi1, Wilton M Mbinda, **Richard Oduor Okoth** and Mathews Piero Ngugi (2017). *In vitro* Plant Regeneration of Sweetpotato Through Direct Shoot Organogenesis *J Plant Biochem Physiol*. DOI: 10.4172/2329-9029.1000207
- Ouko R.O, Koech S.C, Arika W.M, **Oduor R.O**, Ngugi M.T. (2017) Bioefficacy of organic extracts of *Ocimum basilicum* against *Sitophilus zeamais*. *Entomology, Ornithology & Herpetology* Vol. 6:190 doi 10.4172/2162-0983.1000190

- EN Marigi, JO Masanga, TL Munga, LS Karanja, MP Ngugi, WM Thagana, D Kirubi, M Mwangi, CM Githunguri, WM Muiru, DW Miano, AE Alakonya and **RO Oduor (2016)**. Optimisation of a Somatic Embryogenesis and Transformation Protocol for Farmer-Preferred Cassava Cultivars in Kenya. *African Crop Science Journal*, 24 (s1): 35–44. ISSN 1021-9730/2016. doi: <http://dx.doi.org/10.4314/acsj.v24i1.4S>
- Stephen O. Onyango, Hugh Roderick, Jaina N. Tripathi, Richard Collins, Howard J. Atkinson, **Richard O. Oduor**, Leena Tripathi (2016). The ZmRCP-1 promoter of maize provides root tip specific expression of transgenes in plantain. *Journal of Biological Research*. 23:4 1-9. DOI 10.1186/s40709-016-0041-z
- Miccah Songelael Seth, Leta Tulu Bedada, Mathew Piero Ngugi, Steven Maina Runo, Revel Iyer, Jennifer Ann Thomson, Emmarold E. Mneney, Dan Makumbi, **Richard Okoth Oduor (2016)**. Drought tolerance in transgenic tropical maize (*Zea mays* L) by heterologous expression of *peroxiredoxin2* gene-*XvPrx2*. *African Journal of Biotechnology*. 15(25). 1350-1362.
- Ogola PE, Arika WM, Nyamai DW, Osano KO, achuonyo HO, Wambani JR, Lagat RC, Njagi SM, Mumenya SW, Koteng A, Ngugi MP, **Oduor RO (2016)**. Determination of background ionizing radiations in selected buildings in Nairobi County, Kenya. *Journal of Nuclear Medicine and Radiation Therapy* 7:29. doi:10.4172/2155-9619.1000289
- Leta Tulu Bedada, Miccah Songelael Seth, Steven Maina Runo, Wondyifraw Teffera, Charless Mugoya, Clet Wandui Masiga, **Richard Okoth Oduor**, Eduardo Blumewald and Francis Wachira (2016). Drought tolerant tropical maize (*Zea mays* L.) developed through genetic transformation with isopentenyltransferase gene. *African Journal of Biotechnology*. 15(43), pp. 2447-2464, 26. DOI: 10.5897/AJB2016.15228

- Mbinda W, Anami S, Ombori O, Dixelius C, **Oduor R (2016)**. Efficient Plant Regeneration of Selected Kenyan Sweetpotato (*Ipomoea batatas* (L.) Lam.) Cultivars through Somatic Embryogenesis. *J Tissue Sci Eng* 7: 176. doi:10.4172/21577552.1000176
- Tripathi JN, **Oduor RO** and Tripathi L (2015) A High-Throughput Regeneration and Transformation Platform for Production of Genetically Modified Banana. *Front. Plant Sci.* 6:1025. doi: 10.3389/fpls.2015.01025
- Piero NM, Murugi NJ, **Okoth OR**, Ombori OR, Jalemba MA, Chelule CR (2015) RNAi-Mediated Downregulation of Cyano-Glycoside Biosynthesis in Kenyan Cassava (*Manihot esculenta* Crantz) Genotypes. *J Plant Biochem Physiol* 3: 148. doi:10.4172/2329-9029.1000148
- Piero NM, Joan MN, **Richard OO**, Jalemba MA, Omwoyo OR, and Cheruiyot R Chelule. (2015) Determination of Cyanogenic Compounds Content in Transgenic Acyanogenic Kenyan Cassava (*Manihot esculenta* Crantz) Genotypes: Linking Molecular Analysis to Biochemical Analysis. *J Anal Bioanal Tech* 6: 264 doi:10.4172/2155-9872.1000264
- Ngugi MP, **Oduor RO**, Omwoyo RO, Njagi JM, Mgutu AJ, Cheruiyot (2015) Regeneration of Kenyan Cassava (*Manihot Esculenta* Crantz) Genotypes. *J Plant Biochem Physiol* 3: 147. doi:10.4172/2329-9029.1000147
- K. Mburua, **R. Oduor**, A. Mgutu and L. Tripathi (2015). Silicon application enhances resistance to xanthomonas wilt disease in banana. *Plant Pathology*. Doi:10.1111/ppa.12468
- Wilton Mbinda, Sylvia Nawiri, Makenzi Nzaro, Benson Kinyagia, Allan Mgutu, and **Richard Oduor (2015)**. Evaluation of the Phosphomannose Isomerase-Based Selection System for Genetic Transformation of Sweetpotato. *International Journal of LifeScience* 9(3): 46-53

- Marigi E, Ngugi MP, Thagana W, Muiru W, Munga TL, Alakonya A and **Oduor RO (2014)**. Establishing a platform for routine genetic transformation of cassava for enhanced tolerance to cassava mosaic disease and cassava brown streak diseases. *CRCoE Review* (3) 23-26
- Ngugi M Piero, Njagi J Murugi, **Oduor R Okoth**, Mgtutu A Jalemba, Ngeranwa NJ Joseph and Njagi EN Mwaniki, (2012). Prevention of Type I Diabetes Mellitus: The Role of Immune Interventions. *Clinical and Cellular Immunology*. doi:10.4172/21559899.S2-005
- Seth M S, Bedada, L T, Mneney, E. E, **Oduor R O** and Machuka J S (2012). *In vitro* regeneration of selected commercial Tanzanian open pollinated maize genotypes. *African Journal of Biotechnology* 11(22): 6043-6049
- Seth M S, Bedada, L T, Mneney, E. E, **Oduor R O** and Machuka J S (2012). *In vitro* regeneration of selected commercial Tanzanian open pollinated maize genotypes. *African Journal of Biotechnology* 11(22): 6043-6049
- **Oduor, R. O.**; K. Ojo, K. K.; Williams G. P.; Bertelli, F.; Mills, J.; Maes , L.; Pryde, D. C.; Parkinson , T.; Van Voorhis, W. C. and Holler, T. P. (2011). Trypanosoma brucei Glycogen Synthase Kinase-3 Target for Anti-trypanosomal Drug Development: A Public-Private Partnership to Identify Novel Leads. *PLoS Negl Trop Dis* 5(4): e1017. doi:10.1371/journal.pntd.0001017
- **Oduor, R. O**, Njagi, E. N. M, Ndung'u, S and Machuka, J. S. (2006). *In vitro* Regeneration of Dryland Kenyan Maize Genotypes Through Somatic Embryogenesis *International Journal of Botany* 2 (2): pp 46-151.
- Ngugi M Piero, Njagi J Murugi, Oduor R Okoth, Musembi Susan, Njagi EN Mwaniki, (2020). Towards biochemical and molecular understanding of obesity. *Journal of Obesity and Lifestyle Management*. In press

- Emma N. Marigi, Joel O. Masanga, Theresia L. Munga, Laura S. Karanja, Mathew P. Ngugi, Wilson M. Thagana Duncan Kirubi, Maina Mwangi, Cyrus M. Githunguri William M. Muiru, Douglas W. Miano, Amos E. Alakonya and Richard O. Oduor (2020). Effect of explant type, plant growth regulators and photoperiod regimes on regeneration of selected Kenyan cassava (*Manihot esculenta* Crantz) cultivars. In Press
- Ogola PE, Mumenya SW, Koteng' A, Ngugi MP, **Oduor RO** (2020). Determination of ionizing radiations in selected quarries in Nairobi County, Kenya. *OMICs*. In press

Books Chapters in Book (s)

- **Richard Oduor**, Mathew Ngugi, Vivian Twei, 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.
- Clet Wandui Masiga, Charles Mugoya, Rasha Ali, Abdalla Mohamed, Sarah Osama, Abigail Ngugi, DanKiambi, Santie de Villiers, Kahiu Ngugi, Theogene Niyibigira, Abraha Tesfamichel, Jesse Machuka, **Richard Oduor**, Steven Runo, Rasha Adam, et al (2014). Enhanced Utilization of Biotechnology Research and Development Innovations in Eastern and Central Africa for Agro-ecological Intensification. Editors: Bernard Vanlauwe, Piet van Asten, Guy Blomme. In Challenges and Opportunities

for Agricultural Intensification of the Humid Highland Systems of Sub-Saharan Africa. *Springer International Publishing Switzerland*. SBN 978-3-319-07661-4 ISBN 978-3-319-07662-1 (eBook) DOI 10.1007/978-3-319-07662-1 pp 97-104 http://link.springer.com/chapter/10.1007/978-3-319-07662-1_8#page-1

1.2.2 Other Publications

Articles in Conference Proceedings

- **Oduor RO**, Mbinda W, Runo SM, Murilla G, Mugendi J, Muriira G⁴, Ogoyi D, Ochieng J and, Mathabe PMK, Ngugi MP (2018). ‘Genetically Modified Organisms: the Kenya’s Story’ Presented at Africa Animal Welfare Conference between September 3-5 2018, United Nations Complex, Kenya
- Ogola PE, Njagi JM, Ngugi MP, Mumenya SW, Koteng’A, Wala E, Geoffrey Muriira Mugendi J, Bosire, SW and **Oduor RO** (2018). ‘Determination of exposure to indoor ionizing radiation in human habitat: a preventive approach to cancer management’ presented at the 50th KMA ANNUAL SCIENTIFIC CONFERENCE, between 17th - 21st April 2018 at Nyali Sun Africa Beach Hotel & Spa, Mombasa Kenya.
- Joel W Ochieng, Jane J. Binott, Richard S. Mulwa, Mathews M. Dida, Pixley K. Kipsumbai, Trizah K. Milugo and **Richard O. Oduor** (2017) “Can Genetic Engineering promote food security and reduce the health burden? Focus on food safety and nutrition” presented at 45th KMA Annual Scientific Conference, held between 19th to 23rd April 2017
- **Oduor RO**, Ngugi MP, Alakonya AE and Maina SR (2016). ‘Politics of GM crops: The Kenyan Story and its Role in Sustainable Agriculture’, a paper presented at the 2nd SAED Biennial International Conference held on November 29th to December 2nd 2016 pg37

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- Oduor RO, Ngugi MP, Tuei VC, Milugo TK, and Ochieng JW (2016) “How prepared is Sub Saharan Africa to adopt Biotech crops? Lessons from Kenya” presented at the Bridging the Gap between Agriculture and Human Health workshop, held between 19th to 22nd September 2016
- Easter D. SYOMBUA, Mathew P. NGUGI, Theresia L. MUNGA, Laura S. KARANJA, Wilson M. THAGANA Duncan KIRUBI, Maina MWANGI, Cyrus M. GITHUNGURI William M. MUIRU, Douglas W. MIANO, Amos E. ALAKONYA and Richard O. ODUOR (2016) ‘Somatic embryogenesis and transformation of selected Kenyan cassava cultivators’ presented at the 20th International Consortium on Applied Bioeconomy Research (ICABR) on 26th to 29th June 2016.
- Oduor RO, Mgtu AJ, Ngugi MP, Alakonya AE and Maina SR (2015) ‘Africa is ready for genetically modified crops: Lessons from Kenya’ presented at the 2nd Africa International Biotechnology and Biomedical Conference held on 17th to 18th September 2015.
- Emma N. MARigi, Mathew P. NGUGI, Theresia L. MUNGA, Laura S. KARANJA, Wilson M. THAGANA Duncan KIRUBI, Maina MWANGI, Cyrus M. GITHUNGURI William M. MUIRU, Douglas W. MIANO, Amos E. ALAKONYA and Richard O. ODUOR (2015) ‘Evaluating regenerability and transformability of a farmer-preferred Kenyan Cassava Cultivars’ presented at the 4th Annual Biosafety Conference held on 11th to 14th August 2015.
- Marigi E, Ngugi MP, Thagana W, MuiRU W, Munga TL, Alakonya A and Oduor RO (2014) ‘Establishing a platform for routine genetic transformation of cassava for enhanced tolerance to cassava mosaic disease and cassava brown streak disease’ presented at the 3rd CRCoE Review and Cassava Scientific Conference held on 28th to 30th July 2014 pg 23-26
- Oduor RO, Ochieng’ JW, Ngugi MP and Miano DW (2014). ‘Kenya is Ready for the Adoption of Genetically Modified Foods Despite the Existing Ban on their

Importation’’ presented at the UCT –USHEPiA Alumni seminar, held on 18th to 19th September 2014.

- Wilson M. Thagana, Richard O. Oduor, and William M Muiru (2012) ‘Enhancing cassava productivity through host plant resistance breeding against cassava mosaic disease and cassava brown streak disease using genetic engineering and marker assisted selection – A Kenyan project’ presented at the 12th International Symposium on Plant Virus Epidemiology held on 28th January to 1st February 2012. Pg 157.
- Oduor, R. O., K. Ojo, K. K., Williams G. P., Bertelli, F., Mills, J., Maes, L., Pryde, D. C., Parkinson, T., Van Voorhis, W. C. and Holler, T. P. (2011). ‘High-throughput screening to identify novel anti-trypanosomal leads targeting glycogen synthase kinase 3 of *Trypanosoma brucei*’ presented at the 4th ANDI Stakeholders meeting and Donors Conference on 24th to 27th October 2011 pg 109.

CONFERENCES/SEMINARS/WORKSHOPS

Participation in Workshop/Conferences 2019

- Attended and presented a paper entitled The Fear of the Unknown: A Growing Hindrance to Reaping the Gains of New and Emerging Biotechnologies in Kenya on 14th August 2019
- Attended and participated in the 2nd Biotechnology Consultative meeting in the Office of the president to broker the ban on GMOs on 15th March 2019
- Attended and presented the Kenyatta University Biennial Research and Innovation Conference and presented a paper entitled ‘Advancing crop productivity through mobile biotechnology on the 24th Oct 2019.
- Attended and participated in Breakfast meeting with the Ministry of Environment,

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Natural Resources and Regional Development Authorities on 4th June 2019

- Attended a seminar on the MLN gene editing project on 7th February 2019, ICRAF campus, Nairobi, Kenya

2018

- Attended a Breakfast meeting on the Status of Agricultural Biotechnology in Kenya, and presented a paper on the Overview of Biotechnology Research in Kenya on 10th December, 2018 AT SANKARA HOTEL, Nairobi
- Attended the Christian and Scientific Association of Kenya (CSAK) Regional Conference and **Chaired a session** in August between 29th – 30th, 2018 at The Sweet Lake Resort, Naivasha.
- Invited to a Health and Leadership Congress to be held in May 2nd to 4th, 2018 at the Crowne Plaza Hotel Nairobi, Kenya
- Attended a Study Tour on Biotech Cassava CFT site in Mtwapa and Presented a paper on the Introduction to Modern Biotechnology on the 5th September 2018, in KALRO Mtwapa.
- Attended as a resource person on ‘The Role of Bioinformatics in Risk Assessment of GMOs’ Action Plan during the Pre-Conference Courses of the 7th Annual Biosafety Conference in August 14th-17th, 2018 at KSMS, Nairobi
- Attended and facilitated a workshop on the Introduction to Biotechnology & Biosafety Regulatory Frameworks during a science café on 31st May 2018 at Nairobi Safari
- Attended and facilitated on the Introduction to Biotech and biosafety during a Youth Biotech Sensitization workshop on 10th April 2018 at the SHUHAN Hotel, Thika.

2017

- Attended a Validation workshop on the review of a manual for post release monitoring of GM crops in Kenya, Lukenya Gateway Inn, Machakos, 26th -27th April 2017

Attended a Workshop on Synthetic Biology, Laico Regency Hotel, Nairobi, 15th - 17th March, 2017.

- Attended a Crop, Disease, Diagnostics & Detection workshop, Imperial Collage, London, 16th -17th March 2017
- Attended a Consultative meeting on Biotechnology and Biosafety Regulatory Framework in Kenya, Sarova Panafric Hotel, 21st February 2017
- Attended an Agricultural Biotechnology Forum on “*Demystifying Agricultural Biotechnology through active Engagement in Academia*”, and gave an oral presentation entitled: *Introduction to GM Technology*, University of Embu on 16th March 2017
- Attended a Research Partnership Building Workshop, and gave an oral presentation entitled: *Capacity development and research needs in NARS*. ILRI Campus Nairobi, 8th to 9th February 2017

2016

- Attended the 5th Annual Biosafety Conference, and gave an oral presentation of a paper entitled: *Bioinformatics in Risk assessment of GMOs*’. Kenya School of Monetary Studies, 15th to 18th August 2016
- Attended the African Food Manufacturing and Safety Summit Conference 2016, and gave an oral presentation of a paper entitled: *How Africa and its corporate sector can reap the benefits of modern biotechnology*’ Kenya School of Monetary Studies, 8th to 10th June 2016

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- Attended a Kenya Universities Biotechnology Consortium (KUBICO) special meeting for Student Unions in Public Universities, and gave an oral presentation of a paper entitled: *Biotechnology applications*, Nairobi Serena Hotel on 14th December 2016
- Attended an International Food Policy Research Institute (IFPRI) managed Program for Biosafety Systems (PBS) stakeholder meeting, Royal Orchid Hotel, 25th November 2016
- Attended a BecA-Japan/JSPS symposium on “Developing partnerships for collaborative agricultural research development programs in support of smallholder farmers”, and gave an oral presentation of a paper entitled: *Research Advancements at Plant Transformation Laboratory at Kenyatta University, Nairobi, Kenya*. ILRI Campus, 16th June 2016
- Attended a Communication event on Harnessing Modern Biotech for Africa’s Economic Development, and was a discussant on a topic entitled: *Effective communication for modern Agricultural biotechnology*, Addis Ababa, Ethiopia, 21st to 22nd April 2016
- Attended a National Biosafety Authority training on Environmental Risk and Food/feed safety, and gave an oral presentation of a paper entitled: *Introduction to modern biotechnology and safety, and global trends for commercialized biotech crops*. Sagana Getaway Lodge, 21st to 23rd March 2016
- Attended a National Biosafety Authority training workshop on National Performance Trials (NPTs) and the National Variety release process in Kenya, Maanzoni Lodge, Machakos, 27th to 28th June 2016
- Attended a Biotechnology Symposium, and gave an oral presentation of a paper entitled: *Bioengineered foods in Kenya*. KEMRI, Nairobi, 10th February 2016

- Attended a NACOSTI SCIENCE WEEK, and was a panellist on a topic entitled: Genetically modified crops: *Their role in Food security and sustainable crop production Nairobi*, 16th to 20th May 2016

Attended a 10th Annual decolonizing the spirit international conference “*Demystifying Agricultural Biotechnology through active Engagement in Academia*”, and was a

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panellist on a topic entitled: *Impact of former colonialist anti-technology policies on Africa's agriculture; can GM crops thrive in Africa?* University of Embu on 19th-21st July 2016

2015

- Attended an International Centre for Genetic Engineering and Biotechnology Workshop and visit of the centre, and gave an oral presentation of a paper entitled: *Biotechnology research in Kenya*, Cape Town South Africa, 19th - 23rd October 2015
- Attended an Open Forum on Agricultural Biotechnology in Africa (OFAB) county edition workshop, and gave an oral presentation of a paper entitled: *Kenya's capacity for Biotechnology R&D*. Kericho County, 2nd September 2015
- Attended a 43rd Annual Scientific Conference of the Kenya Medical Association, gave an oral presentation of a paper entitled: *Safety of GM products in Medical, Fibre and food application*, Noble Hotel Eldoret 22nd - 25th April 2015
- Attended a National Biosafety Authority meeting to review NPT/DUS Guidelines for GM Crops in Kenya, Lukenya Getaway, 30th June 2015
- Attended a 2nd Annual Biotech Literacy Project Boot camp and gave an oral presentation of a paper entitled: *GMO Debate in Kenya*. University of California Davis, 31st May to 2nd June 2015
- Attended a Kenya –Australia Investor Forum 2015, on Agriculture and renewable energy. Brisbane Australia 13th -14th Aug 2015
- Attended a National Commission for Science Technology and Innovation (NACOSTI) stakeholder validation workshop to discuss the draft policy on exploitation of Nanotechnology, Nairobi Safari Club, 28th April 2015

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Attended a National Commission for Science Technology and Innovation (NACOSTI) sensitization workshop on International Centre for Genetic Engineering and Biotechnology bilateral program in Kenya, Intercontinental Hotel Nairobi, 1st April 2015.

- Attended an ASARECA Focused group discussion, KALRO Headquarters, 28th January 2015
- Attended a Study tour of Brazil Crop Farms, Londrina, Brazil 14th to 20th March 2015

2014

- Attended the 18th ICABR conference – Bioeconomy and Development, and presented an oral paper entitled: *Improved drought tolerance in transgenic sweet potato expressing Xeropyhta viscosa XvAld1 and Xvsap1 genes*'. Safari Park Hotel Nairobi, 18th to 20th June 2014
- Attended a KARI/ University of Missouri GM Cassava stakeholders' workshop, and gave an oral presentation entitled: *Research advances by Kenyatta University*. Nairobi, 10th July 2014
- Attended a Program for Biosafety Systems (PBS) Biosafety stakeholders meeting, Jacaranda Hotel Nairobi, 21st October 2014
- Attended a KU Next Generation of Academicians and Researchers Network NGARN cocktail seminar on Genetically Modified Organisms, and presented an oral paper entitled: *Global commercialization, ongoing GM research and Kenya's Capacity to develop and regulate GM technology and its product*. KUCC, KU, 11th December 2014

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- Attended an Egerton University biotech and GMOs symposium, and presented an oral paper entitled: *The GMO ban in Kenya: Potential economic impact*. Egerton University Utafiti Building, 9th to 10th June 2014

Attended a BioZeq Kenya Ltd, QIAGEN Technology Forensic and profiling training workshop, Nairobi Kenya, 24th to 26th June 2014

- Attended the 3rd Seed trade Association of Kenya (STAK) congress and EXPO, and presented an oral paper entitled: *Is Kenya on the right path on for the adoption of GM technology? What is the role of universities?* KUCC, KU, 5th to 7th November 2014
- Attended a KALRO, OFAB, ISAAA study tour on GM Field Trials, KALRO Kiboko, Kenya, 9th October 2014

2013

- Attended the Cassava Regional Centre of Excellence Project Review and Planning Workshop, Entebbe, Uganda, 22nd to 25th July 2013
- Attended the 2nd National Biosafety Authority Conference, Nairobi, Kenya, 5th to 9th August 2013
- Attended a National Biosafety Authority workshop for developing guidelines on risk assessment of facilities handling genetically modified organisms, Kenya School of Monetary Studies, 10th - 11th June 2013
- Attended a Kenya Accreditation Services (KENAS) policy makers breakfast meeting, Hilton Hotel, 10th June 2013

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2012

- Attended an Executive workshop on Agricultural Biotechnology in Kenya, and presented an oral paper entitled: *Status of Agricultural biotechnology in Kenyatta University*. AICAD JKUAT, 13th to 14th August 2012
- Attended the University of Dar es Salaam workshop on GMO Options for Climate Change Adaptation in Agriculture, and presented an oral paper entitled: *Drought as a challenge for crop production*. Dar es Salam, Tanzania, 6th to 7th December 2012

Attended an Inaugural conference on Nanotechnology and Material sciences in Kenya, Nairobi 18th to 20th July 2012

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7.2 Presentation of papers at Academic and Professional Conferences

- “Can Genetic Engineering promote food security and reduce the health burden? Focus on food safety and nutrition” presented at 45th KMA Annual Scientific Conference, held between 19th to 23rd April 2017 at Sportsman’s Arms Hotel Nanyuki.
- ‘Politics of GM crops: The Kenyan Story and its Role in Sustainable Agriculture’, a paper presented at the 2nd SAED Biennial International Conference held on November 29th to December 2nd 2016 at KU-Business Students and Services Centre (BSSC).
- “How prepared is Sub Saharan Africa to adopt Biotech crops? Lessons from Kenya” presented at the Bridging the Gap between Agriculture and Human Health workshop, held in Cape Town, South Africa, between 19th to 22nd September 2016
- ‘Somatic embryogenesis and transformation of selected Kenyan cassava cultivators’ presented at the 20th International Consortium on Applied Bioeconomy Research (ICABR) on 26th to 29th June 2016 in Ravello (Amalfi coast) Italy.
- ‘Africa is ready for genetically modified crops: Lessons from Kenya’ presented at the 2^{ns} Africa International Biotechnology and Biomedical Conference held on 17th to 18th September 2015 at the African population & Health Research Center (APHRC) Nairobi Kenya
- ‘Evaluating regenerability and transformability of a farmer preferred Kenyan Cassava cultivars’ presented at the 4th Annual Biosafety Conference held on 11th to 14th August 2015 at KICC
- ‘Establishing a platform for routine genetic transformation of cassava for enhanced tolerance to cassava mosaic disease and cassava brown streak disease’ presented at the 3rd CRCoE Review and Cassava Scientific Conference held on 28th to 30th July 2014 in Kampala Uganda.

- ‘‘Kenya is Ready for the Adoption of Genetically Modified Foods Despite the Existing Ban on their Importation’’ presented at the UCT –USHEPiA Alumni seminar, held on 18th to 19th September 2014 at University of Cape Town, Cape Town, South Africa,
- Evaluating regenerability and transformability of a farmer-preferred Kenyan Cassava Cultivars presented at the Cassava Regional Centre of Excellence Project Review and Planning Workshop, Entebbe, Uganda, 22nd to 25th July 2013
- ‘Enhancing cassava productivity through host plant resistance breeding against cassava mosaic disease and cassava brown streak disease using genetic engineering and marker assisted selection – A Kenyan project’ presented at the 12th International Symposium on Plant Virus Epidemiology held on 28th January to 1st February 2012 in Arusha Tanzania
- ‘High-throughput screening to identify novel anti-trypanosomal leads targeting glycogen synthase kinase 3 of Trypanosoma brucei’ presented at the 4th ANDI Stakeholders meeting and Donors Conference on 24th to 27th October 2011 at UN Conference Center, Addis Ababa, Ethiopia.

Convening and Coordinating Conferences

- Convened and coordinated Next Generation of Academicians and Researchers Network (NGARN) sensitization seminar on International Foundation for Sciences (IFS) funding opportunity for young scholars in Kenyatta University held on 15th September 2015 at BSSC.
- Convened and coordinated Next Generation of Academicians and Researchers Network (NGARN) cocktail seminar on Genetically Modified Organisms held on 11th December 2014 at KUCC.
- Scientific Committee member of the 18th International Consortium on Applied Bioeconomy Research (ICABR) Conference – Bioeconomy and Development on 18th to 20th June 2014 at Safari Park Hotel.

- Coordinated KEMRI-Wellcome Trust students seminar at Kenyatta University held on 9th April 2013

Participation in book Launches

- 2014: Book launch Biotechnology in Africa: Emergence, Initiatives and Future. Sarova Stanley Hotel, and presented an oral paper entitled: *Capacity Building within Biotechnology* 4th December 2014

Patent (s)

- Oduor, R. O, Iyer, R, Mackuka, J. and Thomson, J. A. (2009). Plant promoters of the *XVSAP1* gene. World Intellectual Property Organization Patent no. Patent No. WO/2009/060402.

1.3 QUALITY TEACHING AND LEARNING

Student Lecturer evaluation

Sept 2018:	SBC 235: Grade A
Sept 2018:	SBC 344: Grade A
Nov 2014:	SBC 535: Grade A
Nov 2014:	SBC 423: Grade A
Nov 2014:	SBC 344: Grade A
July 2014:	SBC 231: Grade A
July 2014:	SBC 343: Grade A
July 2014:	SBC 234: Grade A
Aug 2011:	SBC 412: Grade A
Aug 2011:	SBC 213: Grade A

POSTGRADUATE SUPERVISION

COMPLETED PhD Supervision

- 1. 2018: Nzaro Makenzi Gona I84/21326/2010. Title:** In vitro Regeneration and Evaluation of Salt stress tolerance of selected Kenyan Sweet Potato (*Ipomoea batatas*)

genotypes. Department of Biochemistry and Biotechnology, Kenyatta University, Nairobi, Kenya.

2. **2018: Jaindra Nath Tripathi. I84F/23552/2013.** *Title:* Genetic engineering of banana using *NHI* gene for resistance to bacterial and fungal diseases. Department of Biochemistry and Biotechnology, Kenyatta University, Nairobi, Kenya.
3. **2018: Limbua Purity Gacheri. I84/28502/2014.** *Title:* Regeneration and *Agrobacterium*-mediated introgression of isopentenyl transferase (*ipt*) gene in selected Kenyan groundnut (*Arachis hypogaea* L.) genotypes for drought tolerance. Department of Biochemistry and Biotechnology, Kenyatta University, Nairobi, Kenya.
4. **2016: Kahariri Esther Wanja. I84/24495/2011.***Title:* Optimization of *in vitro* regeneration and genetic transformation protocol for selected banana and plantain (*Musa spp*) Cultivars and generation of transgenic banana resistant to bacterial Xanthomonas wilt. Department of Biochemistry and Biotechnology, Kenyatta University, Nairobi, Kenya.
5. **2015: Njiru Joshua Mugendi. I84/24429/2011.***Title:* Genetic Engineering Approach in the control of cassava Brown Streak and Bacterial Blight disease. Department of Biochemistry and Biotechnology, Kenyatta University, Nairobi, Kenya.
6. **2015: Mburu Kenneth Njuguna. I84/21431/2010.** *Title:* An integrated approach for the control and management of the banana Xanthomonas wilt disease. Department of Biochemistry and Biotechnology, Kenyatta University, Nairobi, Kenya.
7. **2014: Mbinda Wilton Mwema. I84/21962/2010.** *Title:* Enhancement of drought tolerance in sweetpotato by expressing XvAld1 and XvSap1 genes isolated from *Xerophyta viscosa*. Department of Biochemistry and Biotechnology, Kenyatta University, Nairobi, Kenya.
8. **2014: Miccah Songelael Seth. I84EA/12345/2009.***Title:* Genetic transformation of farmer preferred tropical maize varieties and inbred lines using drought tolerance

conferring genes isolated from *Xerophyta viscosa*. Department of Biochemistry and Biotechnology, Kenyatta University, Nairobi, Kenya.

ONGOING

1. Mukwabi Davies Makilla. I84/23446/2010. *Title:* Characterization of bacteria and protozoa infecting farmed *Oreochromis niloticus* and *Clarias gariepinus* in Bungoma County. Department of Zoological Sciences, Kenyatta University, Nairobi, Kenya. **Submitted**
2. Eliakim Mbaka (I84/29467/2014). *Title:* Hepatoprotective, Nephroprotective and Antioxidant Activities of Selected Medicinal Plant Extracts in Mice. Department of Biochemistry, Microbiology and Biotechnology, Kenyatta University, Nairobi. **To submit in 3 months**
3. Duncan Muchira (I84/32936/2015). *Title:* Advancing transgenic BWX banana to contained trials. Department of Biochemistry and Biotechnology, Kenyatta University, Nairobi. **Thesis draft ready**
4. Asande Lydia Kwamboka (I84/31985/2016). *Title:* Genetic improvement of Kenyan passion fruits (*Passiflora edulis* Sims) for resistance to woodiness virus disease through *Agrobacterium* mediated transformation. Department of Biochemistry, Microbiology and Biotechnology, Kenyatta University, Nairobi. **Data collection stage**
5. Joel Okoyo Masanga (I84/38221/2016). Stability and biosafety evaluation of locally developed transgenic aflatoxin, *Striga* maize lethal necrosis disease and drought resistant maize. Department of Biochemistry, Microbiology and Biotechnology, Kenyatta University, Nairobi. **Data collection stage**
6. Ogola Phillip Einstein (I84/39447/2016). Determination of background ionizing radiation in human habitat, water and food: a potential cause of cancer incidences in Kenya. Department of Biochemistry, Microbiology and Biotechnology, Kenyatta University, Nairobi. **Data collection stage**

7. Odero Mark Ochieng' (I84/37178/2017). Genetic engineering of banana against bacterial and fungal diseases. Department of Biochemistry, Microbiology and Biotechnology, Kenyatta University, Nairobi. **Data collection stage**

8. Muinde Jane Mbithe I84/39079/2016. Development of allele frequencies for the Kenyan population using globalfilertm and y-filertm markers for advanced forensics. Department of Biochemistry, Microbiology and Biotechnology, Kenyatta University, Nairobi. **Data collection stage**

9. Wekesa Francis Chaka. (I84/33580/2015). Development of Rapid Diagnostic Tool to Facilitate Characterization of Rift Valley Fever Virus in Kenya. Department of Biochemistry, Microbiology and Biotechnology, Kenyatta University, Nairobi. **Data collection stage**

10. Ida Arff Tarjem. Advancing Feminist Sociotechnical Analysis of Technological Innovation in Agriculture: The Case of Genetically Modified and Edited Maize for Africa. Department of International Environment and Development Studies Norwegian University of Life Sciences. **Data collection stage**

11. Julia Njagi. Investigating residual levels of endocrine disrupting agro-pollutants in water, soil and fresh horticultural produce within Mwea irrigation scheme, Kenya. Department of Biochemistry, Microbiology and Biotechnology, Kenyatta University, Nairobi. **Proposal stage**

12. Joan J.C Kemutai (10804022). Breeding for multiple resistance to Striga (*Striga hermonthica* (del) benth) in maize through marker assisted backcross. West African Center for Crop Improvement. University of Ghana. **Coursework stage**

COMPLETED Master Supervision

1. **2019:** Erick Mikwa. I56/24662/2012. Transcriptome analysis of finger millet at critical stages of *Striga* infestation. Department of Biochemistry and Biotechnology, Kenyatta University, Nairobi, Kenya.
2. **2019:** Njeru Asunta Mukami. I675/KIT/20621/2015. Genetic Engineering of Finger millet (*Eleusine coracana*) with Aldose reductase gene isolated from *Xerophyta viscosa* to enhance drought and salinity tolerance. South Eastern Kenya University.
3. **2019:** Ogolla Andrew Egesa. I56/33212/2015. Morphology, biochemical and transcriptome of maize pollen under heat stress. Department of Biochemistry and Biotechnology, Kenyatta University, Nairobi, Kenya.
4. **2018:** Jacqueline Waeni. I56/CTY/PT/28369/2014. Validation of *TXNDC5* as a biomarker of humoral immunity to respiratory syncytial virus infections in infants in Kilifi. Department of Biochemistry and Biotechnology, Kenyatta University, Nairobi, Kenya.
5. **2018:** Odoyo Erick Omondi. I56/CTY/PT/27009/2014. Prevalence and virulence factors of Enterococcal *Escherichia coli* in a case-control study of children under five years old. Department of Biochemistry and Biotechnology, Kenyatta University, Nairobi, Kenya.
6. **2017:** Robert Ouko Odhiambo. I56/28877/2014. Bioefficacy of organic blend extracts of *Allium sativum* L. and *Ocimum basilicum* L. Against maize weevil (*Sitophilus zeamais*). Department of Biochemistry and Biotechnology, Kenyatta University, Nairobi, Kenya.
7. **2017:** Ngure Godfrey Mutero. I56/23455/2012. Bioengineering tomato (*Solanum lycopersicum* Mill) with peptide aptamer for *Meloidogyne incognita* Chorismate mutase as a strategy for nematode resistance. Department of Biochemistry and Biotechnology, Kenyatta University, Nairobi, Kenya.

- 8. 2016:** Phillip Ogolla I56/20183/2012. *Title:* Determination of background ionizing radiations in human premises and selected quarries around Nairobi County.
Department of Biochemistry and Biotechnology, Kenyatta University, Nairobi, Kenya
- 9. 2016:** Wanyonyi Christine Nakhumicha. I56/20412/2012. *In vitro* regenerability and transformability of selected Kenyan Cassava (*Manihot esculenta Cranz*) genotypes.
Department of Biochemistry and Biotechnology, Kenyatta University, Nairobi, Kenya.
- 10. 2016:** Syombua Easter Syombua. I56/21974/2012. *Title:* Optimization of regeneration and Agrobacterium – mediated transformation protocols for selected Kenyan Cassava (*Manihot esculenta Crantz*) genotypes. Department of Biochemistry and Biotechnology, Kenyatta University, Nairobi, Kenya.
- 11. 2015:** Francis Chaka Wekesa. I56/2449/2011. *Title:* Expression of Rift valley fever virus Gn and Gc glycoproteins in *Escherichia coli*. Department of Biochemistry and Biotechnology, Kenyatta University, Nairobi, Kenya.
- 12. 2015:** Anyango Beatrice. I56/CE/22224/2010. *Title:* Levels of β -carotene and microbial load in solar dried dark green leafy vegetable of different moisture content with storage.
Department of Chemistry, Kenyatta University, Nairobi, Kenya.
- 13. 2015:** Cheptoo Tracey. I56/12923/2009. *Title:* Evaluation of quantity and quality characteristics of biodiesel produced from *Jatropha curcas* in different parts of Kenya.
Department of Biochemistry and Biotechnology, Kenyatta University, Nairobi, Kenya
- 14. 2015:** Otieno O Eric. I56/21226/2010. *Title:* Associations between SDF-1 alpha polymorphisms and malarial outcomes in children at Siaya county referral hospital, Western Kenya. Department of Biochemistry and Biotechnology, Kenyatta University, Nairobi, Kenya.

- 15. 2015:** Luasi Wycliffe Wanjala. I56/20402/2010. *Title:* Genetic transformation of maize inbred lines using Aldose reductase (ALD1) gene for enhanced drought tolerance. Department of Biochemistry and Biotechnology, Kenyatta University, Nairobi, Kenya.
- 16. 2015:** Emma Nyananyi Magiri. I56/21971/2012. *Title:* Reiteration and transformability of selected Kenyan farmer preferred cassava (*Manihot esculenta Cranz*) ecotypes. Department of Biochemistry and Biotechnology, Kenyatta University, Nairobi, Kenya
- 17. 2014:** Pauline Asami Okemo. “*Agrobacterium*-mediated transformation of pigeonpea (*Cajanus cajan* L. millsp.) ICPL 87105 and ICPL 87091 using pPTF 102 construct. Institute for Biotechnology Research, Jomo Kenyatta University of Agriculture and Technology, Nairobi, Kenya.
- 18. 2014:** Sylvia Obinda Nawiri. I56/12258/2009. *Title:* Genetic engineering of sweetpotatoes (*Ipomoea batata* (L.) LAM) using isopentenyl transferase gene for enhanced drought tolerance. Department of Biochemistry and Biotechnology, Kenyatta University, Nairobi, Kenya.
- 19. 2013:** Stephen Odhiambo Onyango. I56/12260/2009. Analyses of expression pattern of RCP1 and CaMV35S in plantains in association with nematode infection. Department of Biochemistry and Biotechnology, Kenyatta University, Nairobi, Kenya.

ONGOING

1. Christine Jobita. I56/CTY/PT/23334/2012. Determination of the resistance of Kenyan Local Banana Cultivars to Fusarium wilt. Department of Biochemistry and Biotechnology, Kenyatta University, Nairobi, Kenya. **Write up stage**
2. Collins O. Omogo. I56/28089/2013. Genetic diversity of *Anopheles gambiae* immune (*TEPI*) and *Plasmodium* surface protein (*Ps47*) gene loci as determinants of malaria sectorial competence in Busia and Malindi, Kenya. Department of Biochemistry and Biotechnology, Kenyatta University, Nairobi, Kenya. **Data collection stage**

3. Onyingo Joseph Opondo. I56/27463/2013. Effect of indomethacin on selected protein digesting enzymes in rats. Department of Zoological Sciences, Kenyatta University, Nairobi, Kenya. **Already scheduled for a Defense**
4. Paul Thiong'o. I56/CTY/PT/25516/2013. Interaction of *maize streak virus* with viruses causing *maize lethal necrosis disease* on disease development. Department of Biochemistry and Biotechnology, Kenyatta University, Nairobi, Kenya. **Data collection stage**
5. Maryam Abdallah. I56/CTY/PT/27008/2013. Reduction of losses of maize yields due to maize lethal necrosis disease. Department of Biochemistry and Biotechnology, Kenyatta University, Nairobi, Kenya. **Data collection stage. Left the country for the USA, but promised to continue**
6. Getrude Okiko. I56/CTY/PT/28428/2014. Determination of the resistance of Kenyan Local bean varieties to drought. Department of Biochemistry and Biotechnology, Kenyatta University, Nairobi, Kenya. **Data collection stage**
7. Atuya Janet Kemunto. I56/CTY/PT/28297/2014. Effect of axenic and monoxenic methods on *Phasmarhabditis hermaprodita* production. Department of Biochemistry and Biotechnology, Kenyatta University, Nairobi, Kenya. **Write up stage**
8. Oduma Stephen Otieno I56/CTY/PT/28672/14. Molecular diagnosis of *Mycobacterium tuberculosis* among HIV positive patients and children below fifteen years at Migori County hospital. Department of Biochemistry and Biotechnology, Kenyatta University, Nairobi, Kenya. **Data collection stage**
9. Calvin Okoth Odero. I56/30983/2015. Striga resistance response in maize hybrids grown in Western Kenya. Department of Biochemistry and Biotechnology, Kenyatta University, Nairobi, Kenya. **Write up stage**

10. Rose Mweru Muruo I56/CTY/PT/32757/2015. Persistence in performance and nutritional composition of transgenic maize under drought stress in Kenya. Department of Biochemistry, Microbiology and Biotechnology, Kenyatta University, Nairobi, Kenya. **Data collection stage**

11. Dennis Mwangangi Mbiti I56/CTY/PT/39118/2016. Determination of background ionizing radiation in quarries, House premises and soil in Meru County. Department of Biochemistry, Microbiology and Biotechnology, Kenyatta University, Nairobi, Kenya. **Data collection stage**

12. Lillian Nyaboke Ondieki - I56/39593/2016. Determination of gene persistence and segregation patterns for transgenic Cassava. Department of Biochemistry, Microbiology and Biotechnology, Kenyatta University, Nairobi, Kenya. **Data collection stage**

13. Nyaga Julian Wanja. I56/38673/2017. Biodiversity and symbiotic efficiency of native Arbuscular mycorrhizal fungi and rhizobia to improve cowpea production in Eastern Kenya. Department of Biochemistry, Microbiology and Biotechnology, Kenyatta University, Nairobi, Kenya. **Data collection stage**

1.4 PROFESSIONAL/CONSULTING

Local, regional & international appointments

International Consultancies

May 2018: **SI Ltd for Rwanda National Police College** Facilitated

TWO modules:

Fundamentals of Forensic Toxicology and Drug Analysis

Advanced DNA and Molecular Genetics

External examiner in other universities

2013 – 2017: School of Biological Sciences, External Examiner, University of Nairobi

2015 – 2019: Institute of Biotechnology Research, External Examiner, Jomo Kenyatta University of Agriculture and Technology (JKUAT)

2015 – 2018: Department of Biochemistry, External Examiner, University of Eldoret

- 2014 – 2017: School of Science & Technology (Department of Biological Sciences),
External Examiner, University of Kabianga
- 2019 February: MSc Thesis: Oloo Richard dooso. Assessment of toxigenic potential and genetic relatedness of *Aspergillus flavus* populations from different maize growing regions in Kenya. University of Nairobi
- 2018 August: PhD Thesis: Abigael Atieno Ouko. Screening maize inbred lines and crosses for resistance to Aflatoxin and Fumonisin accumulation in Kenya. University of Nairobi
- 2019 Feb: MSc Thesis. Ayienda Carol Kerubo. Antibacterial activities Dichloromethane: methanolic leaf and stem extracts of *Psidium guajava* (Linn). Department of Biochemistry and Biotechnology
- 2019 Feb: MSc Thesis. Audrey Chepkemoi's thesis entitled antiinflammatory, antinociceptive and antipyretic activities of acetone stem bark extracts of *Pappea capensis* litch in animal models. Department of Biochemistry and Biotechnology
- 2018 September: MSc Thesis: Koech Julius Kirwa's thesis entitled hypoglycaemic, hypolipidemic and hepatoprotective effects of *Polyscias fulva* ethanolic bark extract in diabetic rats. University of Eldoret
- 2018 September: MSc Thesis: Sylvia M. Mbula 'Uncoupling *Striga hermonthica* resistance mechanisms in an open pollinated maize variety and validation of crossspecies RNA interference as an emerging weed management tool. Jomo Kenyatta University of Agriculture and Technology
- March 2017: MSc thesis (Nderitu Kathryn Wanjiku): Antiobesity effects of Methanolic Extracts of *Amaranthus dubius*, *Vigna unguiculata*, *Curcubita pepo* in Progesterone-induced obese mice. Department of Chemistry and Biochemistry, University of Eldoret.
- August 2016: MSc thesis: *Evaluation of the antinociceptive, antipyretic and antiinflammatory properties of methanolic bark extracts of Terminalia brownii in wistar rats*, Department of Biotechnology, South Eastern Kenya University
- April 2015: MSc thesis (Ogola Zachary Udhili), School of Graduate Studies, Maseno

University

July 2015: MSc thesis (Mark Kilongosi Webale), School of Graduate Studies, Maseno University

March 2015: PhD thesis: *Isolation and characterization of novel bacteria and macrophages haloalkaline lake elmentaita*. Institute of Biotechnology Research, Jomo Kenyatta University of Agriculture and Technology (JKUAT)

September 2012: PhD thesis: *Collection, characterization, in vitro regeneration and genetic transformability of Kenya Jatropha (Jatropha curcas L.)*, Institute of Biotechnology Research, Jomo Kenyatta University of Agriculture and Technology (JKUAT)

Internal examiner in Kenyatta University

2018 Sept: MSc Thesis: Wachira Benson Mureithi's thesis entitled behavioral and chemosensory gene expression responses of savannah tsetse flies to d octalactone analogues and selected blends. Department of Biochemistry and Biotechnology.

2018 July: MSc thesis: Justine Tirimba Nyasinga. Evaluation of iplex massarray as an alternative method for genetic typing and characterization of Staphylococcus aureus isolates in Kenya. Department of Biochemistry and Biotechnology

2018 July: MSc thesis: Wilhelmy Marion Jebet. Bioefficacy of organic extract of fish poison bush (*Gnidia glauca*, Fresen) against cowpea weevil (*Callosobruchus maculatus*, Fabricius). Department of Biochemistry and Biotechnology

November 2017: PhD thesis: Irene W. Njagi.184/11907/2007. *Evaluating promoters for expression of transgenesis in cassava storage roots*, Department of Biochemistry and Biotechnology,

December 2017: MSc thesis: Onyango Tonny Omondi. 156/CTY/PT/24940/13. *Effects of Maalox plus antacids and pure Cal calcium supplements on liver and kidney following heavy alcohol intake in rats*), Department of Biochemistry and Biotechnology.

November 2016: MSc thesis: Hildah Kithinji. 156/290000/14. *Strigolactone profile of selected wild and cultivated sorghum accessions*, Department of Biochemistry and Biotechnology,

- October 2016: MSc thesis: Kariuki Duncan Maina. 156/CTY/PT/27310/14. *In vivo safety of dichloromethane – methanolic extract of allium sativum in normal mice*, Department of Biochemistry and Biotechnology.
- May 2016: MSc thesis: Felix Matheri.156/26862/13. *Phenotypic characterization and molecular studies of Kenyan passiflora edulis (SIMS) flavicarpa (DEG) genotypes based on SSR markers*, Department of Biochemistry and Biotechnology.
- February 2016: MSc thesis: Festus K. Wambua. 156/27393/13. *Effects of dichloromethane – methanolic leaf extracts of Carissa edulis (Forssk.) VAHL on haematological and serum lipid profiles in normal rat models*, Department of Biochemistry and Biotechnology.
- September 2015: MSc thesis: Joseph K. Mworira. 156/CE/24613/12. *Antinociceptive activities of acetone leaves extracts of Carissa spanarum and Caesalpinia volkensii in mice*, Department of Biochemistry and Biotechnology.
- September 2015: MSc thesis: Obel Jorun Humphrey.156/CTY/PT/24942/13. *Phenotypic characterization and genetic diversity studies on selected rice populations based on aroma and cooked kernel elongation*, Department of Biochemistry and Biotechnology.
- October 2015: MSc thesis: Aliyu Umar. 156F/23555/13. *Evaluation of anti-aphids properties of aqueous crude fruit sap extract of Solanum incanum*), Department of Biochemistry and Biotechnology, Kenyatta University
- April 2015: MSc thesis: Gitahi Stephen Maina. 156/CE/24660/12. *Antipyretic and antinociceptive properties Dichloromethane: Methanolic leaf and root bark extracts of Carissa edulis (Forssk.) VAHL in rats*, Department of Biochemistry and Biotechnology.
- November 2014: MSc thesis: Omingo Daniela Omari.156/21025/12. *Genetic variation in coffee accessions in Kenya and evidence of gene introgression from Robusta to arabica using simple sequence repeats and random amplified polymorphic DNA markers*, Department of Biochemistry and Biotechnology.

- August 2014: MSc thesis: Kataka J. Atanda 156/CE/14403/09. *Genetic diversity and virulence study of Striga Hermonthica ecotypes from Kenya and Uganda on selected sorghum varieties*, Department of Biochemistry and Biotechnology.
- July 2014: MSc thesis: Okinyi Juma Adams 156/10103/08. *Molecular determination and characterization of phytoplasma 16S rRNA gene in selected wild grasses from Western Kenya*, Department of Biochemistry and Biotechnology.
- January 2012: MSc thesis: Jancinta Mutheni Kavuluko. 156/10270/089. *Molecular characterization and genetic variation of root-knot nematode in selected legume production areas of Mbeere District*, Department of Biochemistry and Biotechnology.
- February 2012: MSc thesis: Eric Kimani Kuria. 156/10663/07. *Bioengineering maize with C-repeat binding factor 1 as a strategy towards drought tolerance*, Department of Biochemistry and Biotechnology.
- October 2011: MSc thesis: David Waweru Nderu. 156/12778/09. *Clinical evaluation of florescent in-situ hybridization (Fish) assay malaria diagnosis*, Department of Biochemistry and Biotechnology.
- September 2011: MSc thesis: Grace Njoki Gichemi. 156/10924/08. *A comparative study of eb-1 gene sequences among plasmodium falciparum isolates from two malaria endemic sites in Kenya*, Department of Biochemistry and Biotechnology.
- August 2011: MSc thesis: Newton Otieno Otecko. 157/10106/08. *Effect of HIV and malaria chemo-prophylaxis during pregnancy on multiplicity of plasmodium falciparum infections in pregnant women in Western Kenya*, Department of Biochemistry and Biotechnology.
- August 2011: MSc thesis: Margaret C. Mburu. 157/OL/0256/04. *Evaluation of genotypic MTBDR Plus assay as a screening tool for multi-drug resistant tuberculosis surveillance among patients at high risk in Nairobi*, Department of Public Health, School of Health Sciences

Review of professional periodicals

- 2017: Reviewer, Journal of Global Agriculture and Ecology
- 2017: Reviewer, Food and Energy Security

- 2017: Plant Cell Biotechnology and Molecular Biology
 2016: Plant Cell Reports

NETWORKING AND COLLABORATION WITH EXTERNAL ORGANIZATIONS

- 2017: Initiated a collaborative research between Kenyatta University and the Sainsbury Laboratory, Norwich Research Park, Norfolk, UK
- 2017 Initiated a collaborative research between Kenyatta University and the Leibniz-Institut für Pflanzenbiochemie, Department of Cell and Metabolic Biology
- 2016: Initiated a collaborative research between Kenyatta University and the Agricultural Research Council, South Africa through a joint funded research project between NACOSTI and South Africa.
- 2013 Developed a dossier which was submitted by Kenyatta University to International Center for Genetic Engineering and Biotechnology (ICGEB) to allow the Plant Transformation Laboratory, at Kenyatta University be an affiliate Center of ICGEB. The request was approved.
- 2014: Initiated a collaborative research between Kenyatta University and the University of Cape Town, South Africa.
- Oct 2011: Initiated a collaborative research between Kenyatta University and Dahlem Center of Plant Sciences, FU Berlin, Germany 10th October 2011

1.5 ADMINISTRATIVE RESPONSIBILITY

At Kenyatta University

- 2016: Acting Chairman, Department of Biochemistry and Biotechnology
- 2015: Academic Advisor, Third year Forensic Science
- 2014: Chair, Next Generation of Academics and Researchers Network, KU
- 2013: Member, University Research and Advisory Board, Kenyatta University
- 2013: Member, City Campus Management Board, Kenyatta University
- 2013: Member, Departmental Forensic Science Committee
- 2013: Member, Departmental Appointment and Appraisal Committee
- 2012: Chair, Departmental Board of Postgraduate studies
- 2012: Acting Chairman, Department of Biochemistry and Biotechnology

At Other Institutions

- 2018: Board Member, Kenya National Bureau of Statistics (KNBS)
- 2016: Member, Board of Management, Christian and Scientific Association of Kenya
- 2014: Chair, Kenya University Biotechnology Consortium (KUBICO)
- 2011: Member of Technical Committee, Kenya Accreditation Services (KENAS)

COMMUNITY ENGAGEMENT AND OTHER CONTRIBUTIONS

EXTERNAL AND INTERNAL GRANTS

- 2018: **Principle Investigator** - International Research Development Fund project : Supporting sexual violence investigation in Kenya through forensic reference databases (Total Amount: 1 300 000)
- 2017: Advancing locally developed biotech drought tolerant maize towards commercialization for enhanced food security. Vice Chancellor's Research grant (Total Amount: KShs. 1 000 000)
- 2017: Co-Principal Investigator-NRF multidisciplinary project: Food Safety and Forensics: Development and use of Proteomics and DNA-based technologies for the detection of adulterated and counterfeited meat and meat products in Kenya (Total Amount: KES 16 100 000).
- 2017: **Principal Investigator**-NRF multidisciplinary project: An Integrated Approach to Advanced Research on Locally Developed and Safe Genetically Modified Foods (Total Amount: KES 11 600 000).
- 2017: Co-Principal Investigator-NRF multidisciplinary project: Determination of levels of ionizing radiation in Human Habitat, Water, and Food: a potential cause of the rising cancer incidences in Kenya (Total Amount: KES 19 930 000).
- 2017: Co-Principal Investigator-NRF multidisciplinary project: Inter-disciplinary Striga Management Approaches (Total Amount: KES 14 000 000)

2016: Co-Principal Investigator-NACOSTI South Africa joint research project: Proteomics and contained laboratory assessment of locally developed drought tolerant maize (Total Amount: KES 3000 000).

2013: **Principal Investigator**-NCST Grant: Applying the benefits of genomics and systems biology to enhance adaptation of sweet potato to drought stress emanating from perturbations in climate in Kenya (Total Amount: KES 8000 000).

2013: **Principal Investigator**-Bill and Melinda Gates Foundation Grant: Sweet Potato Action for security and health in Africa (Total Amount: KES 14 675 000).

2012: **Principal Investigator**-NCST Grant: Assessment of ionizing radiation in human habitat: a potential cause of cancer incidences in Kenya (Total Amount: KES 6 100 000).

2012: **Principal Investigator**-World Bank Grant through EAAPP & KARI: Enhancing cassava productivity through host plant resistance breeding against cassava mosaic disease and cassava brown streak disease (Total Amount: KES 17 233 785).

Being invited to a conference as a Guest Speaker

2016: Guest Speaker at the African Food Manufacturing & Safety Conference & Expo June 8-10 2016, and presented a paper entitled: *Status of Research in GMOs in Kenya : Nutritional Focus*

Appointment to Boards

2018: Board Member, Kenya National Bureau of Statistics (KNBS)

2016: Member, Board of Management, Christian and Scientific Association of Kenya

2013: Member, University Research and Advisory Board, Kenyatta University

2013: Member, City Campus Management Board, Kenyatta University

2012: Chair, Departmental Board of Postgraduate studies

2011: Member of Technical Committee Board, Kenya Accreditation Services

AWARDS /RECOGNITION

2012: Awarded the **Top student** of Executive Master of Science in Organizational Development, by United States International University,

Oct 2011: Awarded **Best Oral presentation** in Product discovery and development, by African Network for Drugs and Diagnostic Innovation (ANDi) 2011, in Addis Ababa, Ethiopia

1.6 COMMUNITY OUTREACH

2016: Contributed to the Ark Children's Home, in commemorating the 2016 Culture week Festivals

2013-date: Patron Siaya County Students Association – KU Chapter

ACADEMIC LEADERSHIP

Development of teaching/academic programmes in department/school/University

2016: Appointed to a committee to develop coursework for PhD in Biotechnology

2016: Appointed to a committee to develop coursework for PhD in Biotechnology and revision of Master of Science in Biotechnology

2014: Appointed as a module vetter for the institute of Peace and security studies

2012: Appointed to a departmental committee to review programs in the department

Developing Programmes External to Kenyatta University

2016: Invited by the University of Eldoret and participated in the development of a curriculum for postgraduate studies in Food Security and Biotechnology

Initiating/Leading Research Project

2017: Initiated a collaborative research between Kenyatta University and the Sainsbury Laboratory, Norwich Research Park, Norfolk, UK

2017 Initiated a collaborative research between Kenyatta University and the Leibniz-Institut für Pflanzenbiochemie, Department of Cell and Metabolic Biology

2016: Initiated a collaborative research between Kenyatta University and the Agricultural Research Council, South Africa through a joint funded research project between NACOSTI and South Africa.

2013 Developed a dossier which was submitted by Kenyatta University to International Center for Genetic Engineering and Biotechnology (ICGEB) to allow the Plant Transformation Laboratory, at Kenyatta University be an affiliate Center of ICGEB. The request was approved.

2014: Initiated a collaborative research between Kenyatta University and the University of Cape Town, South Africa.

Oct 2011: Initiated a collaborative research between Kenyatta University and Dahlem Center of Plant Sciences, FU Berlin, Germany 10th October 2011

OTHERS

Appointment

- 2018: Board Member, Kenya National Bureau of Statistics (KNBS)
- 2016: Member, Board of Management, Christian and Scientific Association of Kenya
- 2011: Member of Technical Committee Board, Kenya Accreditation Services

Contribution to university advancement

Has contributed to University advancements by being a key opinion leader on Biotech matters in Kenya and beyond. Selected media captions in local daily newspapers are provided below:

- 2015: GMOs Safe – Scientist, The Star Newspaper 27th February
- 2014: State Under pressure to lift ban on GMOs, The standard Newspaper, 10th Nov
- 2014: Dons urge State to lift ban on GMOs, The Star Newspaper 13th June
- 2014: University Researchers support GM foods, Business Daily, 6th Oct
- 2014: Kenya Losing billions in Biotech delay, say experts, People Daily, 8th Nov
- 2013: Lift ban on GMOs, scientists tell state, The Star Newspaper, 3rd Dec

Membership to Professional Bodies

- 2014: Member Kenya Universities Biotechnology Consortium (KUBICO)
- 2016: Lead Member Environment Institute of Kenya (EIK)
- 2016: Member Christian and Scientific Association of Kenya (CSAK)
- Aug 2011: Lead expert National Environment Management Authority (NEMA)
- 2011: Member of Technical Committee, Kenya Accreditation Services (KENAS)
- 2010: Member Kenya National Academy of Science
- 2010: Member of Technical Committee, African Cancer Foundation
- 2010: Member, Association of Africa Biotechnology Network for Africa (ABNETA)

1.7 REFEREES

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