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EDUCATION

2010-2015	PhD in Biochemistry and Molecular Biology Collaboration: Project title: Field of research:	Egerton University Tea Research Institute, TRI; Kenya Medical Research Institute KEMRI-CTMDR; International Livestock Research Institute, ILRI Effect of Tea (<i>Camellia sinensis</i>) on tumour properties and gene expression profiles in <i>4T1</i> metastatic breast cancer model. Phytochemistry and Molecular Medicine. Area of research: Phytochemicals and cancer.
2005-2007	MSc -Biochemistry and Molecular Biology Project title: Collaboration: Field of research:	Egerton University Tea Flavonoids and their Effect on Chronic Inflammation Induced in <i>Trypanosoma brucei</i> Infected Mice. Trypanosomiasis Research Institute, TRI; Tea Research Institute, TRI Phytochemistry and Molecular Medicine Area of research: Phytochemicals and inflammation.

1998-2003	BSc- Biochemistry and Molecular Biology	Egerton University
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FIELD OF SPECIALIZATION

Biochemistry, Phytochemistry

WORK EXPERIENCE

June 2013 to date	Lecturer- Department of Biochemistry and Molecular Biology
Oct 2009 - June 2013	Assistant Lecturer- Department of Biochemistry and Molecular Biology
2008-2009	Pesticide Analyst- Pest Control Products Board (PCPB)

KEY RESEARCH PROJECTS

2012 - 2014	Evaluation of the Anti-microbial, Anti-mutagenic, and Anti-cancer Properties of Black Tea Products from Kenya-EU DIV R&E KES 400,000
2013-2016	Development of High Value Tea Products and Validation of their Potential Health Benefits-National Council for Science and Technology KES 5,000,000
2018	Role of Polyphenol Oxidase and Peroxidase Activities in Tea Quality- National Research Fund (NRF) Considered for Funding (KES 5,000,000)
2018	Product diversification, value addition and branding of Kenyan tea for Geographical Indications- National Research Fund (NRF) (KES 19, 663,015)
2018	Development and Validation of High Value Diversified Tea Products for a Profitable and Sustainable Tea Industry in Kenya (KES 19,998,000)

UNIVERSITY RESPONSIBILITIES

University Management	Acting COD, Department of Biochemistry and Molecular Biology-August 2015
University Committee Membership	<ul style="list-style-type: none"> Chair of the Faculty of Science ICT committee- 29th September 2015 to 29th

	<p>September 2018</p> <ul style="list-style-type: none"> • Member of the Faculty of Science Sports and Health Committee- 1st September 2014 to date • Coordinator of the Postgraduate activities in the department of Biochemistry and Molecular Biology-July 2015 date
Students activities	<ul style="list-style-type: none"> • Patron of Biochemistry Association (BASEU)- 3rd November 2014 to date • Patron of the International Youth Fellowship (IFY)-17th December 2015 to date
Non-University Responsibility	<ul style="list-style-type: none"> • Member of the Technical Committee in second Africa Tea Science Symposium and Exhibition (ATSS)-2018 • Member of the KEBS Committee for Safeguarding Impartiality-October 2018 • Chair of the KEBS- Tea Technical Committee-6th February 2015 to date • Member of the KEBS- Technical Committee on Tea-1st February 2014 to date. • Chair of the Board of Management, Wendani Secondary School-3rd September 2015 to date. • Vice-chair of National Steering Committee (NSC) to the Swedish Standard Institute-SIS-KEBS-21st December 2015 to 21st December 2018.

Professional affiliations and Professional linkages	<ul style="list-style-type: none"> • Member of the ISO TC 34/SC 8 • Member and current chair of Technical Committee on Tea-KEBS. • Patron of Biochemical Society of Egerton University (BASEU). • Tea Research Foundation, Kericho (TRFK), Kenya. • Member of the Biochemical Society of Kenya (BSK). • Member of St. Johns Ambulance Kenya-international lifesaver
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Post-Graduate Student supervision

Completed	<ol style="list-style-type: none"> 1. Augustine Muthiani Mutuku. MSc Student. Title of Project; Determination of Bioactive Molecules in Kenyan Tea Cultivars for Suitability in the Development of High Value and Diversified Products Collaboration; Tea Research Institute and Egerton University 2. Urbanus Muthai Kinuthia. MSc student. Characterisation of Baobab (<i>adansonia digitata</i> L.) for Nutritional Variation across six agro-climatic zones in Africa. Collaboration; ICRAF and Egerton University
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<p>In progress</p>	<ol style="list-style-type: none"> 1. Judith Kavulani Chore. PhD Student. Biochemical Changes and Microbial Profiles affecting Quality and Vase Life of Cut Cladioli (<i>Gladiolus grandiflorus</i> L. <i>Fado</i>) following Pulsing and Cold Wet Storage. Egerton University- 2. Thomas Momanyi MSc Student Characterization OF ANTILEISHMANIAL SECONDARY METABOLITES FROM <i>Tithonia diversifolia</i>, <i>Sonchus oleraceus</i> and <i>Bidens pilosa</i>. Egerton University and Kenya Medical Research Institute
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RECENT SELECTED PUBLICATIONS

1. Urbanus Kinuthia, Alice Muchugi, Catherine Dembele, Ramni Jamnadass, Simon Mng'omba, Stephen Indieka, **Karori Mbuthia** (2019). Quantitative Variation of Fatty Acid Composition in Seed Oil from Baobab (*Adansonia digitata* L.) Wild Populations in sub-Saharan Africa. *South African Journal of Botany*. SAJB_2018_1233
2. Gerald Otwabe Areba, Rashid Khalid, Nyaga Samuel Nderitu, Thuo Jesse Kevin, Moseti Kevin Okongo, **Karori Stephen Mbuthia**, Wachira Francis Nyamu, Ngure Raphael Muchangi (2018). Antioxidant activity and effects of Kenyan Tea (*Camellia sinensis*) on the liver function and serum biochemistry in male Wistar rats. *Int J Basic Clin Pharmacol*. 2018 Aug;7(8):1471-1479.
3. Douglas Kahura Njuguna, **Karori Mbuthia**, Chrispus Mutuku, Mercy Jepkorir, Jecinta Wanjiru Ndung'u, Reginah Mwangangi, Jean Chepngetich and Peter Mwitari (2018). Phytochemical Composition and *In vitro* AntiProliferative Activity of *Oxygonum sinuatum* (Meisn.) Dammer on Selected Cancerous Cells *Journal of Complementary and Alternative Medical Research*, 6(2): 1-9.
4. **Karori S. Mbuthia**, Paul O. Mireji, Raphael M. Ngure, Francesca Stomeo, Martina Kyallo, Chalo Muoki and Francis N. Wachira. (2017) Tea (*Camellia sinensis*) infusions ameliorate cancer in 4TI metastatic breast cancer model. *BMC Complementary and Alternative Medicine* 17:202. DOI 10.1186/s12906-017-1683-6
5. Kinuthia U. Muthai, **Mbuthia S. Karori**, Alice Muchugi, Abwao S. Indieka, Catherine Dembele, Simon Mng'omba, Ramni Jamnadass (2017). Nutritional variation in baobab (*Adansonia digitata* L.) fruit pulp and seeds based on Africa geographical regions. *Food Sci Nutr*. 00:1–14. <https://doi.org/10.1002/fsn3.502>
6. **Karori SM**, Wachira FN, Francesca S., Kyallo M, Muoki C Ngure RM and Mireji PO. (2016). Amelioration of 4TI Cancer Cells by Tea. *Tea*, 37: 139-147
7. Wachira FN, Kamunya S., Kyallo M, Muoki C, Kerio C, Wanyoko J, Koech R, **Karori SM**, Rashid R. (2016). Emerging Opportunities for Tea Product Diversification from Kenyan Tea Cultivars. *Tea*, 37: 139-147
8. Mutuku A. Muthiani, John K. Wanyoko, Francis N. Wachira, Samson M. Kamunya, Richard M. Chalo, Samuel Kimutai, Rashid Khalid and **Stephen Karori**. (2016) Biochemical Diversity of Kenyan Tea Cultivars and Potential use in Processing of Diversified products. *Tea*, 37: 49-57
9. Kerio L., Wachira FN, Obanda M., **Karori SM.**, Koech R. (2016). Antimicrobial Properties

of Cosmetic Products Developed from Kenya Tea Extracts. *Tea*, 37: 43-48

10. Mutuku A. Muthiani, John K.Wanyoko, Francis N. Wachira, Samson M. Kamunya, Richard M. Chalo, Samuel Kimutai, Rashid Khalid and **Stephen Karori**. (2016) Potential Use of Kenyan Tea Cultivars in Development of High Value Diversified Products. *International Journal of Tea Science*, Vol. 12 (1&2). pp30-48
11. Mutuku, A., Wanyoko, J., Wachira, F., Kamunya, S., Chalo, R., Kimutai, S., Moseti, K. and **Karori, S.** (2016) Influence of Geographical Regions on Catechin and Caffeine Levels in Tea (*Camellia sinensis*). *American Journal of Plant Sciences*, **7**, 562-571.
12. Kimutai, S., Wanyoko, J., Kinyanjui, T., **Karori, S.**, Muthiani, A. and Wachira, F. (2016) Determination of Residual Catechins, Polyphenolic Contents and Antioxidant Activities of Developed Theaflavin-3, 3'-Digallate Rich Black Teas. *Food and Nutrition Sciences*, **7**, 180-191.
13. Mavura, H.K.M., Ngure, R.M., Mwangi, W.W., **Karori, S.M.** and Murilla, G., 2015. haematological changes in sheep (*Ovis aries*) infected with human infective *Trypanosoma brucei rhodesiense*. *International Journal of Medical and Pharma Research (IJMPR)*, 4(2), pp.41-48.
14. Kimutai, S., Kinyanjui, T., Wanyoko, J., Wachira, F., **Karori, S.** and Muthiani, A. (2015) Optimization of Aeration Time in the Development Theaflavin-3, 3'-Digallate Rich Black Teas. *American Journal of Plant Sciences*, **6**, 3001-3012.
15. **Karori S. M.**, Wachira F. N., and Koech K.R. (2014). In-vitro antimicrobial and synergistic properties of water soluble green and black tea extracts. *African Journal of Microbiology Research*, **8**:1527-1534.
16. Koech K. R., Wachira F. N., Ngure R. M., Wanyoko J. K., Bii C. and **Karori S. M**, Kerio L.C. (2014). Antioxidant, Antimicrobial and Synergistic activities of Tea polyphenols. *African Crop Science Journal*, **22**: 837-846. (ISSN 1021-9730)
17. Koech K. R., Wachira F. N., Ngure R. M., Orina I. A., Wanyoko J. K., Bii C. and **Karori S. M** (2013). Antimicrobial, synergistic and antioxidant activity of tea products. In: Microbial pathogens and strategies for combating them: Science, Technology and Education. Formatex Research Center. Pp 971-981 (ISBN 2: 978-84-942134-0-3)

18. Koech K. R., Wachira F. N., Ngure R. M., Wanyoko J. K., Bii C. and **Karori S. M.** (2013). Antibacterial and synergistic activity of different tea crude extracts against antibiotic resistant *S. Aureus*, *E. Coli* and clinical isolates of *S. Typhi*. *Science Journal of Microbiology* ISSN:2276-626X DOI: 10.7237/sjmb/115
19. Koech K. R., Wachira F. N., Ngure R. M., Orina I. A., Wanyoko J. K., Bii C. and **Karori S. M.** (2013). Antifungal activity of crude tea extracts. *African Journal of Agricultural Research*, 8: 2086-2089.

Abstracts and Proceedings in conferences

1. **Karori SM**, Wachira FN, Francesca S., Kyallo M, Muoki C Ngure RM and Mireji PO. (2016). Amelioration of 4TI Cancer Cells by Tea. 1st African Tea Science Symposium and Exhibition and Spa. Enashipai, Naivasha. 23rd -25th May 2016. Pp 17
2. **Karori SM**, Wachira FN, Francesca S., Kyallo M, Muoki C Ngure RM and Mireji PO. (2016). Amelioration of 4TI Cancer Cells by Tea. Proceedings of the 1st African Tea Science Symposium and Exhibition and Spa. Enashipai, Naivasha. 23rd -25th May 2016. Pp 59-60.
3. Wachira FN, Kamunya S., Kyallo M, Muoki C, Kerio C, Wanyoko J, Koech R, **Karori SM**, Rashid R. (2016). Emerging Opportunities for Tea Product Diversification from Kenyan Tea Cultivars. 1st African Tea Science Symposium and Exhibition and Spa. Enashipai, Naivasha. 23rd -25th May 2016. Pp 9
4. Douglas Kahura, **Karori Mbuthia**, Ngule Chrispus Mutuku, Mercy Jepkorir, Jecinta Wanjiru, Reginah Mwangangi, Jean Chepngetich, Peter Mwitari (2016). Phytochemical Composition and *in vitro* Antiproliferative Activity of *oxygonium sinuatum* on Vero (normal) and Selected Cancerous Cells. Proceedings of the 7th KASH Conference. 8th -10th February 2017. KEMRI, Panari Hotel Nairobi. Abstract 051 pp 118-119
5. Douglas Kahura, **Karori Mbuthia**, Ngule Chrispus Mutuku, Mercy Jepkorir, Jecinta Wanjiru, Reginah Mwangangi, Jean Chepngetich, Peter Mwitari (2016). Phytochemical Composition and *in vitro* Antiproliferative Activity of *oxygonium sinuatum* on Vero (normal) and Selected Cancerous Cells. Proceedings of the 11th Research Week Held on 30th March-1st April at Egerton University. Pp 126
6. Wachira FN, Kamunya S., Kyallo M, Muoki C, Kerio C, Wanyoko J, Koech R, **Karori SM**, Rashid R. (2016). Emerging Opportunities for Tea Product Diversification from Kenyan Tea

Cultivars. Proceedings of the 1st African Tea Science Symposium and Exhibition and Spa. Enashipai, Naivasha. 23rd -25th May 2016. Pp 24

7. Mutuku A. Muthiani, John K.Wanyoko, Francis N. Wachira, Samson M. Kamunya, Richard M. Chalo, Samuel Kimutai, Rashid Khalid and **Stephen Karori**. (2016) Biochemical Diversity of Kenyan Tea Cultivars and Potential use in Processing of Diversified products. 1st African Tea Science Symposium and Exhibition and Spa. Enashipai, Naivasha. 23rd -25th May 2016. Pp 8
8. Mutuku A. Muthiani, John K.Wanyoko, Francis N. Wachira, Samson M. Kamunya, Richard M. Chalo, Samuel Kimutai, Rashid Khalid and **Stephen Karori**. (2016) Biochemical Diversity of Kenyan Tea Cultivars and Potential use in Processing of Diversified products. Proceedings of the 1st African Tea Science Symposium and Exhibition and Spa. Enashipai, Naivasha. 23rd -25th May 2016. Pp 20
9. Kerio L., Wachira FN, Obanda M., **Karori SM.**, Koech R. (2016). Antimicrobial Properties of Cosmetic Products Developed from Kenya Tea Extracts. 1st African Tea Science Symposium and Exhibition and Spa. Enashipai, Naivasha. 23rd -25th May 2016. Pp 7
10. Kerio L., Wachira FN, Obanda M., **Karori SM.**, Koech R. (2016). Antimicrobial Properties of Cosmetic Products Developed from Kenya Tea Extracts. Proceedings of the 1st African Tea Science Symposium and Exhibition and Spa. Enashipai, Naivasha. 23rd -25th May 2016. Pp 19
11. **Karori SM**, Wachira FN, Ngure RM and Mireji PO. (2016). Tea and Cancer. Research and Networking. Laying the Foundation for the sustainable Development goals. Humbolt Kolleg. Naivasha, Kenya. April 6th -8th 2016.
12. Mutuku M.A, Wanyoko JK and Wachira FN, Kamunya SM, Chalo RM, Kimutai S, **Karori SM** (2016). Potential use of High Value Kenyan Teas in Development of Diversified Products. Proceedings of the 10th Research Week Held on 30th March-1st April at Egerton University. Pp 29
13. Kimutai S, Kinyanjui T, Wanyoko JK and **Karori SM** (2016). Determination of Residual Catechins, Polyphenolic content and Antioxidant Activity of Developed Theaflavin-3, 3'-digallate rich black teas. Proceedings of the 10th Research Week Held on 30th March-1st April at Egerton University. Pp 107
14. Mutuku M.A, **Karori SM**, Wanyoko JK and Wachira FN (2015). Determination of levels of bioactive molecules in Kenyan tea cultivars for suitability in development of high value tea products. Proceedings of the 9th Research Week Held on 25th to 27th March at Egerton University. Pp 98

15. Kimutai S, Kinyanjui T, Wanyoko JK and **Karori SM** (2015). Tea Products value addition; Development of Theaflavin-3, 3'-digallate rich black teas. Proceedings of the 9th Research Week Held on 25th to 27th March at Egerton University. pp 11

Consultancy

Tea Board of Kenya (2011-2012)

Drafting of Curriculum for the Tea Industry in Kenya-Completed and awaiting Implementation by the GoK- **Secretary of the Steering Committee.**

KES 1,400,000

TRAINING/ SEMINAR/MEETINGS

- 2nd Africa Tea and Science symposium and Exhibition, Green hills Hotel, 22nd to 23rd November 2018
- EAC TC 002 - Tea harmonization meeting in Kigali Rwanda, 21-25 May 2018
- ISO TC 34/SC8 on Tea. 12th December 2017 to 15th December 2017 at the BSI Centre, Chiswick Town, London.
- Regional planning workshop for the EAC-SIS programme, 7th - 9th march 2016, Arusha, Tanzania.
- ISO TC 34/SC8 on Tea. 2nd June 2015 to 4th June 2015 at the Shizuoka Convention and Art Centre, Shizuoka City, Japan.
- Training of SIS-NSC committee training on project management. EKA hotel-Nairobi, 21st -23rd December 2015
- Academic Record Management Systems. (ARMS). Tabor Hill Spirituality Centre. 9th - 11th March 2015
- 2nd Karatina University on Tea Science and Development. 24th to 27th September 2014. Karatina.

RESEARCH INTERESTS

Phytochemicals, Plant Biochemistry, Clinical Biochemistry

REFERENCES

References available upon request from:

1. Prof. Francis N. Wachira, South Eastern Kenya University (SEKU).
P.O Box 536, Njoro. Tel: 0722644279. E-mail: fwachira@yahoo.com

Position: Deputy Vice Chancellor, SEKU.
2. Prof. Raphael M. Ngure, Department of Veterinary Medicine, Egerton University.
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Position: Associate Professor.
3. Margaret Aleke, Manager, Food safety, Nutrition and Standards. Kenya Bureau of Standards (KEBS)
P.O Box 54974-0200, Nairobi. Tel: 0728748172. E-mail: alekem@kebs.org