

## **CURRICULUM VITAE**

**Name** Joseph Mumo **MWANGANGI**

**Address** Kenya Medical Research Institute,  
Centre for Geographic Medicine Research Coast,  
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**Date of Birth** 31<sup>ST</sup> March 1973

**Marital Status** Married

### **Research Interests**

Research interests include the ecology and behaviour of mosquitoes and other arthropods, disease transmission dynamics and control of vector-borne diseases, and vector-host-parasite interactions, and Development of new vector control tools.

### **ACADEMIC QUALIFICATION**

#### **Degrees**

##### **PhD (Medical Entomology)**

January 2004 – December 2006  
Zoological Sciences Department,  
Kenyatta University.  
Graduated April 2007

##### **PhD Thesis Title:**

*Anopheles larval productivity and diversity in Mwea irrigation scheme, Kirinyaga district, Kenya*

##### **MSc (Applied Parasitology)**

September 2000 – September 2002  
Kenyatta University, Graduated October 2003

##### **BSc Course**

1993- 1997: Bachelor of Science (B.Sc.)  
Kenyatta University; Botany, Zoology  
and Geography, Graduated October 1997

## **EMPLOYMENT HISTORY:**

<b>Employer</b>	Kenya Medical Research Institute (KEMRI), Nairobi P.O. Box 54840, Nairobi – 00200 City Square.
<b>Centre/Station</b>	Centre for Geographic Medicine Research Coast- (CGMRC) Kilifi
<b>July 2013 up to date</b>	Principal Research Officer, KEMRI
<b>May 2014</b>	Acting Centre Director, CGMR-C
<b>January 2009 up to date:</b>	Field Entomologists and Assistant Program Manager, Integrated Vector Management (IVM) Program in Malindi (KEMRI- <i>icipe</i> -Biovision Foundation)
<b>Dec 2014 up to Dec 2018</b>	<b>Adjunct Senior Lecturer, Department of Biological Sciences, Pwani University</b>
<b>July 2009 up to June 2013</b>	Senior Research Officer, KEMRI
<b>April 2012</b>	Acting Centre Director, CGMR-C
<b>May &amp; October 2012:</b>	Senior Entomologist, Short Term Technical Assistance (STTA) in Entomology African Indoor Residual Spraying (AIRS) Angola. USAID/PMI/Abt Associates
<b>January 2011 up to date:</b>	Part-time Lecturer in Pwani University College. <ol style="list-style-type: none"><li>i. Coordinating and facilitating Environmental Epidemiology (ENS 441) Course.</li><li>ii. Coordinating and facilitating Applied Ecology (SZL 412) Course</li><li>iii. Coordinating and facilitating Agricultural Entomology (AST 301) Course</li></ol>

- May 2011:** Senior Entomologists Consultant, Short term Technical Assistance (STTA) in Entomology Indoor Residual Spraying (IRS) Angola. USAID/PMI/RTI
- October 2010:** Senior Entomologists Consultant, Short Term Technical Assistance (STTA) in Entomology Indoor Residual Spraying 2 (IRS2) Angola. USAID/PMI/RTI
- October to November 2009:** Senior Entomologists Consultant, IRS Program in Huambo Province, Angola, Performing Baseline Entomological Survey for the IRS Program. USAID/PMI/RTI
- July 2003 to June 2009** Research Officer, Kenya Medical Research Institute (KEMRI)
- May to August 2007** Part-time Lecturer (Entomology) in Egerton University, Kilifi Campus, Kenya. Coordinating General Entomology Course
- January 2004 to December 2006** Graduate Student Research Internship, International Centre of Insect Physiology (ICIPE), Dissertation Research Internship Programme (DRIP) Nairobi Kenya.
- January 1998 to June 2003** Assistant Research Officer, Kenya Medical Research Institute (KEMRI)

**MEMBERSHIP:**

- 2012-present** Member of Fund Raising Committee, Pan African mosquito Control Association (PAMCA) and Treasurer of PAMCA

**STUDENT SUPERVISION:**

- i. **2015 upto date:** Samuel Kahindi, PhD Student Pwani University, Biological Sciences Department
- ii. **2015 upto Date:** Caroline Kiuru, MSc Student University of Nairobi, Biological Sciences Department

- iii. **January 2015 to July 2015:** Harun Njoroge: Spatial temporal characterization of *Anopheles* mosquitoes in Malindi. Postgraduate Diploma studentship, KEMRI/Wellcome Trust Internship Program
- iv. **January 2014 to July 2014:** Caroline Kiuru: Evaluation of malaria vector sampling techniques. Intern KEMRI/Wellcome Trust Internship Program
- v. **January 2013 to July 2013:** Immatrugh Kiminza: A situational Analysis of Susceptibility of Malaria Vectors to Insecticides Study Sites. Intern KEMRI/Wellcome Trust Internship Program
- vi. **April 2012 to May 2013:** Daniel Munywoki: Insecticide Resistance Monitoring In Malaria Vectors Along The Coastal Kenya. MSc Student Kenyatta University, Zoological Sciences Department
- vii. **April 2010 up to date:** Omwenga, Kepha Gisemba: Effects of System of Rice Intensification (SRI) On Mosquito Larvae Survival and Consequent Crop Yields at Mwea Irrigation Scheme. MSc Student Jomo Kenyatta University of Agriculture and Technology, Department of Biomechanical and Environmental Engineering, Nairobi. Thesis submitted for examination.
- viii. **July 2010 up to July 2012:** Msami, James Edward: Monitoring Insecticide Resistance of Malaria Vectors along Coastal Region of Kenya. MSc Student University of Nairobi, Biological Sciences Department.
- ix. **July 2009 – July 2011:** Ondeto, Benyl Entomological profiles of Malaria Vector species in Kenya. MSc Student University of Nairobi, Biological Sciences Department

## AWARDS

1. TWAS Young Affiliate Fellow for Academy of Sciences for the Developing World (TWAS) and the TWAS Regional Office for Sub-Saharan Africa (TWAS-ROSSA): 2011 - 2015.

## PUBLICATIONS

1. **Mwangangi, JM.** (2006). *Anopheles larval productivity and diversity in Mwea irrigation scheme, Kirinyaga district, Kenya.* PhD Thesis in Medical Entomology, Kenyatta University, Nairobi; Kenya.
2. **Mwangangi, JM.** (2002). *The influence of nutritional status of a larval habitat on the body size of Anopheles mosquito.* MSc Thesis, Kenyatta University, Nairobi; Kenya.
3. Kangoye DT, Noor A, Midega J, Mwongeli J, Mkabili D, Mogeni P, Kerubo C, Akoo P, **Mwangangi J**, Drakeley C, Marsh K, Bejon P, Njuguna P.

- Malaria hotspots defined by clinical malaria, asymptomatic carriage, PCR and vector numbers in a low transmission area on the Kenyan Coast. *Malar J*. 2016 Apr 14;15(1):213.
4. Kasili, S and **Mwangangi J.**, Insecticide treated nets for malaria control: a review of lessons learnt, challenges and recommendations. *Journal of Disease and Global Health*, 2016 7(1) 14-30
  5. Mutero CM, Mbogo C, **Mwangangi J**, Imbahale S, Kibe L, Orindi B, Girma M, Njui A, Lwande W, Affognon H, Gichuki C, Mukabana WR. An Assessment of Participatory Integrated Vector Management for Malaria Control in Kenya. *Environ Health Perspect*. 2015 Apr 10.
  6. Kipyab, PC., Khaemba, BM., **Mwangangi, JM.**, Mbogo, CM.. The physicochemical and environmental factors affecting the distribution of *Anopheles merus* along the Kenyan coast. *Parasites and Vectors*, (2015) 8:221 DOI 10.1186/s13071-015-0819-0
  7. Walker M, Winskill P, Basáñez MG, **Mwangangi JM**, Mbogo C, Beier JC, Midega JT. Temporal and micro-spatial heterogeneity in the distribution of *Anopheles* vectors of malaria along the Kenyan coast. *Parasites and Vectors*. 2013 Oct 28;6(1):311. doi: 10.1186/1756-3305-6-311.
  8. Muturi, E.J., **Mwangangi, J.M.**, Beier, J.C., Blackshear, M., Wauna, J., Sang, R., Mukabana, W.R. Ecology and behavior of *Anopheles arabiensis* in relation to agricultural practices in central Kenya. *Journal American Mosquito Control Association* 2013 Sep; 29 (3):222-30.
  9. Kipyab, P.C., Khaemba, B.M., **Mwangangi, J.M.**, Mbogo, C.M. The Bionomics of *Anopheles merus* (Diptera: culicidae) Along the Kenyan Coast. *Parasites and Vectors*: 2013 Feb 14;6:37. doi: 10.1186/1756-3305-6-37.
  10. Muiruri, S.K., **Mwangangi, J.M.**, Carlson, J., Kabiru, E.W., Kokwaro, E., Mbogo, C.M., Beier, J.C. Effect of predation on *Anopheles* larvae by five sympatric insect families in coastal Kenya. *Journal of Vector Borne Diseases*: 50, March 2013, pp. 45–50
  11. **Mwangangi, JM.**, Muturi, EJ., Nzovu, J., Midega, JT., Mbogo, CM. The role of *Anopheles arabiensis* and *Anopheles coustani* in indoor and outdoor malaria transmission in Taveta District, Kenya. *Parasites and Vectors* 2013, 6:114 doi:10.1186/1756-3305-6-114
  12. **Mwangangi, J.M.**, Mbogo, C.M., Orindi, B.O., Muturi, E.J., Midega, J.T., Nzovu, J., Gatakaa, H., Githure, J., Borgemeister, C., Keating, J., Beier, J.C. Shifts in malaria vector species composition and transmission dynamics along the Kenyan coast over the past 20 years. *Malaria Journal* 2013, **12**:13
  13. Midega, J.T., Smith, D.L., Olotu, A., **Mwangangi, JM.**, Nzovu, J.G., Wambua, J., Nyangweso, G., Mbogo, C.M., Christophides, G.K., Marsh, K., Bejon, P. (2012) Wind direction and proximity to larval sites determines malaria risk in Kilifi District in Kenya. *Nature Communications* 3 : 674doi:10.1038/ncomms1672 (2012)
  14. **Mwangangi JM**, Midega J, Kahindi S, Njoroge L, Nzovu J, Githure J, Mbogo CM, Beier JC (2012). Mosquito species abundance and diversity in Malindi, Kenya and their potential implication in pathogen transmission. *Parasitol Res*. **110**:61–71
  15. Mutuku FM, King CH, Mungai P, Mbogo CM, **Mwangangi JM**, Muchiri EM, Walker ED, Kitron U (2011). Impact of insecticide treated bednets on malaria transmission indices on the south coast of Kenya. *Malar J*, **10**:356

16. Jacob, B.G., **Mwangangi, JM.**, Mbogo, C.M., and Novak R.J. A Taxonomy of Unmixing Algorithms Using Li-Strahler Geometric-Optical Model and other Spectral Endmember Extraction Techniques for Decomposing a QuickBird Visible and Near Infra-Red Pixel of an *Anopheles arabiensis* Habitat. *The Open Remote Sensing Journal*, 2011, 4, 1-25
17. Jacob BG, Griffith DA, **Mwangangi J**, Gathings DA, Mbogo CC, Novak RJ: A Cartographic Analysis Using Spatial Filter Logistic Model Specifications for Implementing Mosquito Control in Kenya. *Urban Geography* 2011, **32**:263-300.
18. **Mwangangi JM**, Kahindi SC, Kibe LW, Nzovu JG, Luethy P, Githure JI, Mbogo CM. (2011) Wide-scale application of Bti/Bs biolarvicide in different aquatic habitat types in urban and peri-urban Malindi, Kenya. *Parasitol Res. Jun*;108(6):1355-63. Epub 2010 Aug 21
19. **Mwangangi, JM.**, Shililu, J., Muturi, E.J., Muriu, S.M., Jacob, B., Kabiru, E.W., Mbogo, C.M., Githure JI., Novak, R.J. (2010) Spatial and temporal distribution of *Anopheles* Larvae in 3 ecologically different villages in Mwea Irrigation Scheme, Kenya. *Malaria Journal* 9: 228.
20. **Mwangangi, JM.**, Muturi, E.J., Mbogo, C.M. (2009) Seasonal mosquito larval abundance and composition in Kibwezi, lower eastern Kenya. *Journal of Vector Borne Diseases* 46, pp. 65–71
21. Muturi, E.J., **Mwangangi, JM.**, Jacob B.G., Shililu, JI., Mbogo, C.M., Githure, JI., Novak, R.J. (2009). Spatiotemporal dynamics of immature culicines (subfamily Culicinae) and their larval habitats in Mwea Rice Scheme, Kenya. *Parasitology Research* 104: 851 - 859.
22. Kahindi, S.C., Midega, J.T., **Mwangangi, JM.**, Kibe, L.W., Nzovu, J., Luethy, P., Githure, J., Mbogo, C.M. (2008). Efficacy of Vectobac DT and Culinexcombi against mosquito larvae in unused swimming pools in Malindi, Kenya. *Journal of the American Mosquito Control Association* 24 (4):538 - 542
23. **Mwangangi, JM.**, Muturi, E.J., Mbogo, C.M., Jacob, B., Kabiru, E.W., Shililu, J.I., Githure, J.I. and Novak R. (2008). Distribution of mosquito larvae within the paddy and its implication in larvicidal application in Mwea rice irrigation scheme, central Kenya. *Journal of the American Mosquito Control Association* 24 (1): 36 - 41
24. **Mwangangi, J.M.**, Muturi, E.J., Mbogo, C.M., Jacob, B., Kabiru, E.W., Shililu, J.I., Githure J.I. and Novak, R. (2008). Contribution of Different Aquatic Habitats to Adult *Anopheles arabiensis* and *Culex quinquefasciatus* (Diptera: Culicidae) Production in a Rice Agro-ecosystem, Mwea, Kenya. *Journal of Vector Ecology* 33: (1): 129 - 138.
25. Muturi, E.J., Muriu, S., Shililu, J., **Mwangangi, J.M.**, Jacob, B.G., Mbogo, C., Githure, J., Novak, R.J. (2008). Blood-feeding patterns of *Culex quinquefasciatus* and other culicines and implications for disease transmission in Mwea rice scheme, Kenya. *Parasitology Research* Feb 23
26. Muturi, E.J., Shililu, J.I, Jacob, B.G., **Mwangangi, J.M.**, Mbogo, C.M., Githure, J.I., Novak, R.J. (2008). Diversity of riceland mosquitoes and factors affecting their occurrence and distribution in Mwea, Kenya. *Journal of the American Mosquito Control Association* 24(3):349-58.
27. Muriu, S.M., Muturi E.J., Shililu, J.I., Mbogo, C.M., **Mwangangi, J.M.**, Jacob, B.G., Irungu, L.W., Mukabana, R.W., Githure, J.I., and Novak, R.J.

- (2008). Host choice and multiple blood feeding behaviour of malaria vectors and other anophelines in Mwea rice scheme, Kenya. *Malaria Journal*, 7(1):43
28. Muturi, E.J., Muriu, S., Shililu, J., **Mwangangi, J.**, Jacob, B.G., Mbogo, C., Githure, J., and Novak, R.J. (2008). Effect of Rice Cultivation on Malaria Transmission in Central Kenya. *American Journal of Tropical Medicine and Hygiene* 78(2): 270 – 275
  29. Muturi, E.J., **Mwangangi, J.**, Shililu, J., Jacob, B.G., Mbogo, C., Githure, J., Novak, R.J. (2008). Environmental factors associated with the distribution of *Anopheles arabiensis* and *Culex quinquefasciatus* in a rice agro-ecosystem in Mwea, Kenya. *Journal of Vector Ecology* 33: (1): 59 - 63.
  30. Midega JT, Mbogo CM, Mwambi H, Wilson MD, Ojwang G, **Mwangangi JM**, Nzovu JG, Githure JI, Yan G, Beier JC, (2007). Estimating population density, dispersal and survival for *Anopheles gambiae* and *Anopheles funestus* along the Kenyan Coast using mark-release-recapture methods. *Journal of Medical Entomology*, 44 (6): 923 – 929
  31. **Mwangangi, JM.**, Muturi, E.J., Mbogo, C.M., Jacob, B., Kabiru, E.W., Shililu, J.I., Githure, J.I. and Novak R. (2007) Environmental covariates associated with abundance of *Anopheles arabiensis* in Mwea irrigation scheme, central Kenya. *Journal of the American Mosquito Control Association* 23: (4) 371 - 377
  32. Jacob, B.J. Muturi, E.J., Halbig, P., **Mwangangi, JM.**, Wanjogu, R.K., Mpanga, E., Funes, J.E., Shililu, J., Githure, J., Regens, J.L., and Novak R. (2007) Environmental abundance of *Anopheles* (Diptera: Culicidae) larval habitats on land cover change sites in Karima Village, Mwea Rice Scheme, Kenya. *American Journal of Tropical Medicine and Hygiene* 76: 73 – 80
  33. Muturi, E.J., **Mwangangi, JM.**, Shililu J., Muriu S., Jacob B., Kabiru E., Gu, W., Mbogo, C., Githure, J., and Novak R. (2007) Mosquito Species Succession And Physicochemical Factors Affecting Their Abundance In Rice Fields In Mwea, Kenya. *Journal of Medical Entomology* 44(2): 336 – 344
  34. **Mwangangi, JM.**, Mbogo, C.M., Nzovu, J.G., Muturi, E.J., Githure, J.I., Minakawa, N., Yan, G., Novak, R.J., and Beier, J.C. (2007) Spatial distribution and habitat characterisation of *Anopheles* larvae along the Kenyan coast. *Journal of Vector Borne Diseases* 44: 44 – 51
  35. Muturi E.J., **Mwangangi, J.**, Shililu, J., Muriu, S., Jacob, B., Mbogo C.M., Githure, J., and Novak, R. (2007) Evaluation of Four Sampling Techniques for Surveillance of *Culex quinquefasciatus* (Diptera: Culicidae) and Other Mosquitoes in African Rice Agro-ecosystems. *Journal of Medical Entomology* 44(3): 503 - 508
  36. **Mwangangi, JM.**, Mbogo, C.M., Muturi, E.J., Kabiru, E.W., Githure, J.I., Novak, R.J., and Beier, J.C. (2007) The influence of biological and physicochemical characteristics of larval habitat on the body size of *Anopheles gambiae* (Diptera: Culicidae) mosquitoes. *Journal of Vector Borne Diseases* 44: (June) 121 – 126
  37. Jacob, B.G., Muturi, E.J., **Mwangangi, JM.**, Funes, J.E., Caamano, E.X., Muriu, S.M., Shililu, J.I., Githure, J.I., and Novak, R.J. (2007) Remote and field level quantification of vegetation covariates for malaria mapping in three rice agro-village complexes in Central Kenya. *International Journal of Health Geographics* 6:21
  38. Jacob, B.G., Shililu, J.I., Muturi, E.J., **Mwangangi, JM.**, Muriu, S.M., Funes, J.E., Githure, J.I., Regens, J.L., and Novak, R.J. (2006). Spatially targeting *Culex*

- quiquefasciatus* aquatic habitats on modified land cover an integrated vector management (IVM) program in three villages within the Mwea Rice Scheme, Kenya. *International Journal of Health Geographics* 5:18.
39. Muturi JE., Mbogo, CM., **Mwangangi, JM.**, Ng'ang'a, ZW., Kabiru, EW., Mwandawiro, C., and Beier, JC. (2006) Concomitant infections of *Plasmodium falciparum* and *Wuchereria bancrofti* on the Kenyan coast. *Filaria Journal* 5:8
  40. **Mwangangi, J.**, Shililu, J., Muturi, E., Gu, W., Mbogo, C., Kabiru, E., Jacob, B., Githure, J., and Novak, R. (2006). Dynamics of immature stages of *Anopheles arabiensis* and other mosquito species (Diptera: Culicidae) in relation to rice cropping in a rice agro-ecosystem in Kenya. *Journal of Vector Ecology*. 31(2): 245 – 251
  41. **Mwangangi, JM.**, Muturi, JE., Shililu, J., Muriu, S.M., Jacob, B., Kabiru, EW., Mbogo, CM., Githure, J., and Novak, R. (2006). Survival of immature *Anopheles arabiensis* (Diptera: Culicidae) in aquatic habitats in Mwea rice irrigation scheme, central Kenya. *Malaria Journal* 5: 114
  42. Keating, J., Mbogo, CM., **Mwangangi, J.**, Nzovu, JG., Gu, W., Regens, JL., Yan, G., Githure, JI., and Beier, JC. (2005). *Anopheles gambiae* s.l. and *Anopheles funestus* Mosquito Distributions at 30 Villages along the Kenyan Coast. *Journal of Medical Entomology*. 42 (3): 241-246.
  43. **Mwangangi, JM.**, Mbogo, CM., Kabiru, EW., Githure, JI., and Beier, JC. (2004). Relationships between body size of *Anopheles* mosquitoes and *Plasmodium falciparum* sporozoite rates along the Kenya Coast. *Journal of the American Mosquito Control Association*. 20(4): 390-394
  44. Mbogo, C., **Mwangangi JM.**, Nzovu J, Gu W., Yan G., Gunter J., Swalm C., Keating J., Regens J.L., Shililu J.I., Githure J.I., and Beier J.C. (2003). Spatial and temporal heterogeneity of *Anopheles* mosquitoes and *Plasmodium falciparum* transmission along the Kenyan coast. *American Journal of Tropical Medicine and Hygiene* 68 (6): 734- 742.
  45. **Mwangangi, JM.**, Mbogo, C.M., Nzovu, J.G., Githure, J.I., Yan, G., and Beier J.C. (2003). Blood meal analysis for anopheline mosquitoes sampled along the Kenyan coast. *Journal of the American Mosquito Control Association*. 19(4): 371-375.

## PAPERS PRESENTED IN CONFERENCES

1. 5<sup>th</sup> KEMRI Annual Scientific and Health Conference (KASH), 4<sup>th</sup> – 6<sup>th</sup> February 2015, Nairobi, Kenya. Joseph M. Mwangangi, Lydia Kibe, Charles M. Mbogo. Adaptive Integrated Vector Management (IVM) for Malaria Control in Kenya: Experiences and lessons learnt from Malindi Sub-county
2. 2<sup>nd</sup> Kenya National Malaria Forum, Nairobi, Kenya, October 10<sup>th</sup>-11<sup>th</sup>, 2014, **Joseph Mwangangi**, Joseph Nzovu, and Charles Mbogo Entomological Monitoring for Integrated Vector Management (IVM) for malaria control in Malindi Sub-county along the Kenya coast
3. 4<sup>th</sup> KEMRI Annual Scientific and Health Conference (KASH), 5<sup>th</sup> – 7<sup>th</sup> February 2014, Nairobi, Kenya. Joseph M. Mwangangi, Lydia Kibe, Charles M. Mbogo. Integrating larval source management in the National Malaria Control programme in Kenya
4. 3<sup>rd</sup> KEMRI Annual Scientific and Health Conference (KASH), 6<sup>th</sup> – 8<sup>th</sup> February 2013, Nairobi, Kenya. **Joseph M. Mwangangi**, Ephantus J. Muturi,



- Simon M. Muriu, Lydia Kibe, Joseph Nzovu, Janet T. Midega, Charles Mbogo. The role of *Anopheles arabiensis* and *Anopheles coustani* in indoor and outdoor malaria transmission in Taveta District, Kenya
5. 2<sup>nd</sup> KEMRI Annual Scientific and Health Conference (KASH), 7<sup>th</sup> – 10<sup>th</sup> February 2012, Nairobi, Kenya. **Joseph Mwangangi**, Joseph Nzovu, Lydia Kibe, Richard Mukabana, John Githure, and Charles Mbogo. Malaria vector dynamics and transmission indices in Malindi District along the coastal Kenya
  6. 1<sup>st</sup> Kenya National Malaria Forum, Nairobi, Kenya, October 10<sup>th</sup>-11<sup>th</sup>, 2011, **Joseph M. Mwangangi**, Lydia Kibe, Christian Borgemeister, John Githure, Charles M. Mbogo; Integrating larval source management in the National Malaria Control programme in Kenya
  7. 6<sup>th</sup> Fresh Air Conference to be held in Kisumu Jumuia Conference Hall between 18<sup>th</sup> and 21<sup>th</sup> July 2011, **Joseph Mwangangi**, Joseph Nzovu, Lydia Kibe, Charles Mbogo; Entomological monitoring for an Adaptive Integrated Vector Management (IVM) Program, in Malindi district along the Kenya Coast
  8. Malaria vector control Technical Meeting in the ECOWAS region, Cotonou, the Benin Republic capital from 28<sup>th</sup> to 30<sup>th</sup> November 2011. **Joseph M. Mwangangi**, Lydia Kibe, Christian Borgemeister, John Githure, Charles M. Mbogo; Larval Source Management (LSM) as component in integrated Vector Management (IVM): Kenyan Experience
  9. 1<sup>st</sup> KEMRI Annual Scientific and Health Conference (KASH), 9<sup>th</sup> – 11<sup>th</sup> February 2011, Nairobi, Kenya. **Joseph Mwangangi**, Benyl Ondeto, Simon Muriu, Lydia Kibe, Joseph Nzovu, John Githure, Charles Mbogo; Malaria vectors species diversity and malaria transmission in Malindi district along the Kenya coast.
  10. 5<sup>th</sup> MIM conference, 1<sup>st</sup> – 6<sup>th</sup> November 2009, Nairobi, Kenya. **Joseph M Mwangangi**, Samuel C Kahindi , Janet T Midega, Lydia W Kibe, Joseph Nzovu, Peter Luethy, John Githure, Charles M Mbogo. Integrated Mosquito Control Using Community Based Adaptive Techniques in Urban Malindi, Kenya
  11. 2<sup>nd</sup> East African Community Health and Scientific Conference, 26<sup>th</sup> – 28<sup>th</sup> March 2008, Arusha, Tanzania. **Joseph M. Mwangangi**, Ephantus J. Muturi, Josephat Shililu, Simon M. Muriu, Benjamin Jacob, Ephantus W. Kabiru, Charles M. Mbogo, John Githure and Robert Novak. Contribution of Different Aquatic Habitats to Adult *Anopheles arabiensis* and *Culex quinquefasciatus* (Diptera: Culicidae) Production in a Rice Agro-ecosystem, Mwea, Kenya
  12. Postgraduate Seminar, Kenyatta University, Nairobi Kenya 30<sup>th</sup> March 2007. **Joseph M. Mwangangi**, Ephantus W. Kabiru, Josephat I. Shililu and John I. Githure. *Anopheles* larval productivity and diversity in Mwea irrigation scheme, Kirinyaga district, Kenya.
  13. 2<sup>nd</sup> National Biological Sciences Conference, Kenyatta University, Nairobi Kenya, 8<sup>th</sup> – 11<sup>th</sup> August 2006. **Joseph M. Mwangangi**, Ephantus W. Kabiru, Josephat I. Shililu and John I. Githure. Environmental and agricultural factors regulating the productivity and diversity of malaria vectors in Mwea Irrigation Scheme, Kirinyaga District, Kenya.
  14. 36<sup>th</sup> Society for Vector Ecology (SOVE) annual meeting, Reno Nevada 26<sup>th</sup> - 29<sup>th</sup> September 2005, **Joseph M. Mwangangi**, Ephantus Muturi, Charles M. Mbogo, Ephantus W. Kabiru, John I. Githure and John C. Beier. Spatial and

- temporal distribution of *Anopheles* Larvae in 3 ecologically different villages in Mwea Irrigation Scheme, Kenya.
15. 1<sup>st</sup> National Biological Sciences Conference, Kenyatta University, Nairobi Kenya, 2<sup>nd</sup> – 5<sup>th</sup> August 2005. **Joseph M. Mwangangi**, Ephantus W. Kabiru, Josephat I. Shililu and John I. Githure. Spatial and temporal variation of *Anopheles* larvae in 3 ecologically different villages in Mwea Irrigation Scheme
  16. 36<sup>th</sup> Society for Vector Ecology (SOVE) annual meeting, Boston Massachusetts 26<sup>th</sup> -29<sup>th</sup> September 2004, **Joseph M. Mwangangi**, Charles M. Mbogo, Ephantus W. Kabiru, John I. Githure and John C. Beier. The impacts of larval habitat on the fitness of *Anopheles gambiae s.l.* (Diptera: Culicidae) mosquitoes.
  17. 24<sup>th</sup> African Health Sciences Congress: Addis Ababa, Ethiopia Sept 28 – Oct 2 2003, Impacts of larval habitats on the fitness of *Anopheles gambiae* mosquitoes. **Joseph M. Mwangangi**, Charles M. Mbogo, Ephantus W. Kabiru, John I. Githure, and John C. Beier
  18. 8<sup>th</sup> Annual Postgraduate Scientific Conference, Department of Zoology, Kenyatta University, Nairobi, Kenya August 5 – 9, 2002, The influence of nutritional status of a larval habitat on the body size of *Anopheles* mosquitoes. **Joseph M. Mwangangi**, Charles M. Mbogo, Ephantus W. Kabiru, John I. Githure, and John C. Beier
  19. NIAID International Centers for Tropical Disease Research Network Eleventh Annual Meeting, Lister Hill Auditorium, National Institute of Health, Bethesda, MD, USA, 15 – 17 April, 2002. Impacts of larval habitats on the fitness of *Anopheles gambiae* mosquitoes **Joseph M. Mwangangi**, Charles M. Mbogo, Ephantus W. Kabiru, John I. Githure, and John C. Beier
  20. 21<sup>ST</sup> African Health Sciences Congress: Nairobi, Kenya 24-28 April 2000, The larval abundance of anopheline and culicine mosquitoes at the onset of the wet season in nine sites along the Kenyan coast. **Mwangangi JM**, Nzovu JG, Minakawa N, Mbogo CNM, Githure JI, Beier JC.
  21. 20<sup>TH</sup> African Health Sciences Congress: Accra, Ghana 19-23 April 1999, Blood meal analysis of anopheline mosquitoes (Diptera : Culicidae) by Enzyme-linked Immunosorbent Assay (ELISA) along the Kenyan Coast, **Mwangangi JM**, CNM Mbogo, JG Nzovu
  22. The KEMRI/WTRL Scientific Meeting in Kilifi 17<sup>th</sup>-20<sup>th</sup> October 1999, Study Proposal: The larval Ecology of African Malaria vectors. **Mwangangi JM**, Mbogo CNM, Githure JI, and Beier JC
  23. 10<sup>TH</sup> Annual conference on the medical laboratory sciences of the Association of the Kenya Medical Laboratory Scientific Officers (AKMLSO) 10<sup>th</sup> 12th November 1999 Kisumu, Kenya. The feeding behaviour of the Anophelines of the Kenyan Coast, **Mwangangi JM**, and Mbogo CNM

## Research Support

### **Ongoing Research Support**

SSC# 2675: Biovision Foundation Dr C Mbogo (PI) Mwangangi J (Co-PI). 2013 -2015. Integrated Vector Management (IVM) For Sustainable Malaria Control in Eastern Africa

SSC# 2591: WHO Dr C Mbogo (PI) Mwangangi J (Co-PI) Longitudinal Study of Vector Behavior in Areas of Expanding Vector Control Interventions in Western, Central and Coastal Kenya.

SSC# 1725: Biovision Foundation Mwangangi J (Co-PI) 2009-2012

The applicability of available technologies for adaptive integrated malaria vector management at Malindi, Kenya.

The major goal of this project is to implement Integrated Vector Management Strategies in control of mosquitoes in Malindi.

**Role:** Co-Principal Investigator (Field Entomologists and Assistant Program Manager)

SSC# 1882: TWAS: The Academy of Sciences for the Developing World; Mwangangi J (PI) 2010-2011. Comparative studies between *Anopheles gambiae* and *Anopheles funestus* along the Kenya Coast.

The major objective of this study is to compare epidemiologically important life history traits of *An. gambiae* and *An. funestus*, including larval survivorship and development duration, adult body size, fecundity, and survivorship under natural and semi-natural conditions.

**Role:** Principal Investigator

SSC#1980: KEMRI – Internal Research Grant (IRG – 029);

Mwangangi J (PI) 2011: Malaria vector composition and malaria transmission indices in Taveta District, Kenya.

In this study we seek to carry out a detailed entomological survey to establish malaria vector composition and malaria transmission indices in Taveta District.

**Role:** Principal Investigator

### **Completed Research Support**

1 UO1 AI054889-01 Novak R.J. (PI) 05/01/03-04/30/07

NIH/ NIAID

“Microbial control of immature *Anopheles* mosquitoes”

The major goal of this project is to demonstrate that larval management using environmentally safe and efficacious microbial insecticides in rice can provide an integral part of a malaria control program.

**Role:** PhD Student

U19 AI45511-06 Beier JC (PI) 09/01/99-06/31/06

NIH/NIAID (ICIDR Program)

“African Malaria Vectors”

The major goal of this project is to better understand the larval ecology, behavior, and vector competence of African malaria vector mosquitoes.

**Role: Investigator**

D43 TW01142-06 Beier JC (PI 06/01/99-05/31/06

NIH Fogarty International Center (ABC Program)

“African Malaria Vectors (Training Grant)”

The major goal of this ABC project is to provide research training to African students in the areas of tropical medicine and insect ecology.

**Role: MSc Student**

DEB-0083602 Beier JC (PI) 09/15/00-08/31/02

NSF Biocomplexity Program

“Biocomplexity – Incubation Activity: Anopheline mosquito adaptation to urban environments”

The goal of this project is to study the biology of mosquito adaptation to urban environments.

**Role on Project:** Investigator

**CONFERENCES ATTENDED**

1. 4<sup>th</sup> KEMRI Annual Scientific and Health Conference (KASH), 8<sup>th</sup> – 10<sup>th</sup> February 2014, KEMRI Headquarters Nairobi, Kenya
- 2.
3. 3<sup>rd</sup> KEMRI Annual Scientific and Health Conference (KASH), 6<sup>th</sup> – 8<sup>th</sup> February 2013, KEMRI Headquarters Nairobi, Kenya
4. 2<sup>nd</sup> KEMRI Annual Scientific and Health Conference (KASH), 7<sup>th</sup> – 10<sup>th</sup> February 2012, KEMRI Headquarters Nairobi, Kenya
5. 1<sup>st</sup> KEMRI Annual Scientific and Health Conference (KASH), 9<sup>th</sup> – 11<sup>th</sup> February 2011, KEMRI Headquarters Nairobi, Kenya.
6. 6<sup>th</sup> Fresh Air Conference to be held in Kisumu Jumuia Conference Hall between 18<sup>th</sup> and 21<sup>th</sup> July 2011
7. 1<sup>st</sup> Kenya National Malaria Forum, Nairobi, Kenya, October 10<sup>th</sup>-11<sup>th</sup>, 2011,
8. Malaria vector control Technical Meeting in the ECOWAS region, Cotonou, the Benin Republic capital from 28<sup>th</sup> to 30<sup>th</sup> November 2011. **Joseph M. Mwangangi**, Lydia Kibe, Christian Borgemeister, John Githure, Charles M. Mbogo; Larval Source Management (LSM) as component in integrated Vector Management (IVM): Kenyan Experience
9. 5<sup>th</sup> MIM conference, 1<sup>st</sup> – 6<sup>th</sup> November 2009, Nairobi, Kenya.
10. TDR/PDVI expert meeting on targeted interventions for dengue vectors, which will take place from 9<sup>th</sup> to 11<sup>th</sup> August 2007 at the Instituto Pedro Kouri (IPK) in La Havana, Cuba. This symposium was organized by TDR/WHO.

11. Post-graduate Seminar, Kenyatta University, Nairobi Kenya, 28<sup>th</sup> March – 5 April 2007.
12. 2<sup>nd</sup> National Biological Sciences Conference, Kenyatta University, Nairobi Kenya, 5<sup>th</sup> – 8<sup>th</sup> August 2006.
13. Society of Vector Ecology annual Meeting: 2-7 October 2005, Reno Nevada USA.
14. 1<sup>st</sup> National Biological Sciences Conference, Kenyatta University, Nairobi Kenya, 2<sup>nd</sup> – 5<sup>th</sup> August 2005.
15. 36<sup>th</sup> Society for Vector Ecology (SOVE) annual meeting, Boston Massachusetts 26<sup>th</sup> -29<sup>th</sup> September 2004.
16. NIAID International Centers for Tropical Disease Research Network Eleventh Annual Meeting, Lister Hill Auditorium, National Institute of Health, Bethesda, MD, USA, 15 – 17 April, 2002.
17. 8<sup>th</sup> Annual Postgraduate Scientific Conference, Department of Zoology, Kenyatta University, Nairobi, Kenya August 5 – 9, 2002,
18. 21<sup>ST</sup> African Health Sciences Congress: Nairobi, Kenya 24-28 April 2000.
19. 20<sup>th</sup> African Health Sciences Congress Accra, Ghana April 19-23 1999
20. Oxford net work meeting, Kilifi, Kenya; April 27-30, 1998
21. 10<sup>TH</sup> Annual conference on the Medical Laboratory Sciences of the Association of the Kenya Medical Laboratory Scientific Officers (AKMLSO) 10<sup>th</sup> -12<sup>th</sup> November 1999 Kisumu, Kenya
22. Malaria Workshop: Kenya-Mali Malaria vectors collaborative workshop, ICIPE: Mbita Point 31<sup>st</sup> January- 4<sup>th</sup> February 2000.
23. NIH-ICIDR Review Meeting: ICIPE, Nairobi; 14-16<sup>th</sup> February, 2001.
24. 2001 Unit Meeting: KEMRI/Wellcome trust Kilifi; 4<sup>th</sup> – 6<sup>th</sup> December 2001
25. Kilifi-Nairobi-Malawi Scientific Conference: KEMRI/Wellcome Trust Collaborative projects, Kilifi 9<sup>th</sup> – 12<sup>th</sup> December 2002. Kilifi, Kenya.

## **WORKSHOPS AND SHORT COURSES ATTENDED**

- 1) Good Clinical Practices Workshop, National Institute of Health Bethesda, MD, USA, April 17 – 18, 2002.

- 2) Bioinformatics for Entomologists Workshop, Tulane University Health Sciences Center Campus, Department of Biostatistics and Tropical Medicine, Tulane School of Public Health and Tropical Medicine, Funded by Fogarty International Center, NIH, April 21 – 10<sup>th</sup> May, 2002.
- 3) Programme for Fogarty Short-course on Emerging and Re-emerging infectious diseases with special emphasis on malaria and HIV/AIDS, KCCT, Mbagathi, Nairobi, Kenya, 22<sup>nd</sup> September – 4<sup>th</sup> October, 2001.
- 4) East African Regional Workshop, Research in Protozoan Pathogens, Tanga, Tanzania; 26<sup>th</sup> to 31<sup>st</sup> May, 2003.

## **RESEARCH PROJECTS INVOLVED IN**

- 1) August 2009 – 2012: Population Dynamics and Ecological Adaptations of *Anopheles gambiae* s.s (Diptera: Culicidae) Immature Stages along the Kenyan Coast. Grant from Wellcome Trust Programme
- 2) January 2011 – December 2011. Malaria vector composition and Malaria Transmission indices for Taveta District, Kenya KEMRI – Internal Research Grants
- 3) May 2010 – April 2011: Comparative studies between *Anopheles gambiae* and *Anopheles funestus* along the Kenya Coast. TWAS: The Academy of Sciences for the Developing World
- 4) January 2007 up to date: Adaptive Integrated Malaria Vector Management (IVM) in Urban and Peri-urban Malindi, Kenya. Biovision Foundation Funded
- 5) January 2007 up to 2008: Targeted *Aedes aegypti* vector control interventions in Malindi district, Kenya: A community based approach. WHO/TDR Programme.
- 6) January 2006 – December 2007: To investigate the practicality and consistency of the pupal demographic survey methodology to identify key container habitats of *Aedes aegypti* (L) in Malindi District, Kenya (2006-2007) WHO/TDR Programme.
- 7) 1998-June 1999: Population, Ecology and Genetics of malaria vectors along the Kenyan coast. A collaborative project between KEMRI and ICIPE.
- 8) June 1999 to 2003: Larval Ecology of African Malaria vectors: A NIH-ICIDR funded project through ICIPE. A KEMRI-ICIPE-TULANE UNIVERSITY Collaborative Project.
- 9) January 2004 up to March 2007: Microbial control of immature stages of malaria vectors in Mwea. A NIH-ICIDR funded project through ICIPE. A KEMRI-ICIPE-ILLINOIS UNIVERSITY Collaborative studies.

10) June 2004 to April 2006: An Ecosystem approach to human Health: Integrating malaria control interventions with development strategies in Kenya: SIMA/IWMI Project

## **PROFESSIONAL EXPERIENCE**

- 1) Processing of mosquito samples for sporozoite ELISA (*Plasmodium falciparum*) and blood meal analysis.
- 2) Morphological identification of anopheline mosquitoes (both the adults and the larvae)
- 3) Maintenance and rearing of mosquitoes under insectary conditions
- 4) Field and laboratory experience (collection, data entry and management on field and laboratory forms, parasitological examination of malaria parasite; blood collection and staining).
- 5) Quality control: Designing of field and laboratory forms, Ensuring accuracy in filling data collection tools
- 6) Efficacy trials of microbial control of *Anopheles* mosquitoes using Bti and Bs
- 7) Computer literate: Data entry (FoxPro and MS Excel, Access), Data analysis and management (SPSS for windows, Stata and Epiinfo 2000), Word processor (MS word), Spread sheet (MS Excel), Presentation preparation (Power point for windows and Lotus- Freelance graphics)
- 8) Logistics and Human Resource management: Coordination of field operations for sampling of mosquito larvae and adult mosquitoes in the study sites. Coordination of laboratory processing of samples. Coordination of all Data entry activities for the entomology laboratory
- 9) Data management, analysis and report writing

## **REFEREES**

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