

Romano Mwirichia

EDUCATION

- 2006 -2009 - PhD (Biotechnology), Jomo Kenyatta University of Agriculture and Technology.
- 2003-2005 - M.Sc. (Microbiology), Jomo Kenyatta University of Agriculture and Technology.
- 1994-1998 - BSc. (Upper 2nd) Hons Botany and Zoology, University of Nairobi, Kenya.
- 1991-1992 - Thitha High school, Kenya certificate of secondary education.
- 1987-1988 - St Pius X seminary, (Form 1 and 2).
- 1979-1986 - Karama Primary school, Kenya certificate of primary education.

RESEARCH

- Postdoc - Analysis of Single cell Genomes from the Red Sea.
- Postdoc - Metagenomics: phylogenetics and functional diversity of microbial communities in Lakes Bogoria, Magadi, Elmenteita and the crater lake Sonachi.
- Postdoc -Cloning and functional screening of the Genome of Isolate 327 from Lake Elmenteita for novel Haloalkaliphilic enzymes
- PhD Thesis: - Microbial Diversity of Lake Elmenteita, Kenya.
- MSc Thesis: - Enumeration, isolation and characterization of *Enterobacteriaceae* From shallow wells in Juja, Kenya.
- Other Qualifications: Competence in different MS office applications, bioinformatics and data Analysis tools.

WORKING EXPERIENCE

- Jan. 2015 to Date Senior Lecturer, Embu University College (A constituent college of The University of Nairobi)
- July 2012 - Dec. 2014 Postdoctoral Fellow (Microbiology), King Abdullah University of Science and Technology, Kingdom of Saudi Arabia
- Feb. 2011 - June 2012 Postdoc Fellow (metagenomics), Institut für Mikrobiologie und Genetik, Georg-August Universität Göttingen, Germany
- January - May, 2010 Postdoc Fellow (Metagenomics), Department of Cell, Molecular and Developmental Biology, Yale University
- 2010- August 2012 Research Fellow, Institute for Biotechnology Research, Jomo Kenyatta University of Agriculture and Technology.
- 2007 -2010 Assistant Research Fellow, Institute for Biotechnology Research, Jomo Kenyatta University of Agriculture and Technology.

COMPLETED RESEARCH PROJECTS (PhD and MSc Students)

Start	Student's Name, Research Title and Year of Graduation	Course
2010	Huxcley Mae Makonde (BR411-1549/2009) - Isolation and screening of termite microbiome for novel biocatalysts using culture-based and functional metagenomic techniques (Graduated, 2013).	PhD
2007	Lily W Simasi (BR311-0009/2007) - Isolation, Characterization and Identification of Alkalithermophiles from the Hot Springs of Lake Bogoria of the Kenyan Rift Valley (Graduated, 2009).	MSc
2008	Japhael Murungi Mbaabu (BR311-0004/2008) - Investigation of antiplasmodial, safety properties and parasite resistance of <i>Clausenaaanisata</i> and <i>Clutiarobusta</i> in a mouse model (Graduated, 2011).	MSc
2008	Francis Machabe Mwatuni (BR311-0020/2005) - Identification and Molecular Characterization of Viruses of Cassava Viral Diseases in Kenya (Graduated, 2013)	MSc
2009	Hellen Kemuma Atuncha (BR311-0012/2008) - Molecular characterization of whiteflies, biological control and mode of transmission of cassava brown streak virus disease (Graduated, 2013).	MSc
2010	Samuel Mathu Ndungu (BR311-0951/2009) - Assessment of the potential to improve yields and nitrogen fixation of four legume species in Kenya by using commercial inoculums or native Rhizobial strains (Graduated, 2012).	MSc
2010	Daniel Anyika Khwilimwa (BR311-0023/2008) - Growth, sporulation, crystal formulation and toxicity control during culture of <i>Bacillus Thuringiensis</i> in Kenya (Graduated, 2012).	MSc
2010	Anne Kelly Kambura (BR311) - Isolation, characterization and screening of bacterial isolates from Lake Magadi for bioactive metabolites (Graduated, 2011).	MSc
2010	Evans Manyara Nyakheri (BR311-0134/2009) - Isolation and characterization of archaea from Lake Magadi, Kenya (Graduated, 2013).	MSc
2010	Odilia Solano Atamba (BR311-0132/2009) - Isolation and characterization of fungi from lake Magadi of the Kenyan rift valley (Graduated, 2011)	MSc
2010	Regina Ronoh Chemutai (SC321-0847/2009) - Assessment of the Actinobacteria and polyketide synthase genes diversity in lake Magadi (Graduated, 2013)	MSc
2010	Eliud Nalinya Wafula (SC351-0846/2009) - Molecular and culture-based analyses of soil bacteria in small scale tea growing areas of Kenya (Graduated, 2012)	MSc

ONGOING RESEARCH PROJECT SUPERVISION (PhD and MSc)

2007	Francis Ileri Ndwigwa (HD413-0010/2008) - Characterization and identification of fungi from soda lakes in Kenya (Ongoing)	PhD
2009	Jacqueline Akanga Ongachi (BR411-0004/2008) - Metagenomic studies of the Archaeal diversity of Lake Elmenteita (ongoing).	PhD
2013	Anne Kelly Kambura (BR411-2949/2013) - Metagenomic and Metatranscriptomic analysis of the Microbial communities in Lake Magadi, Kenya (ongoing).	PhD
2010	Jacob Kamau Ngugi (BR311-0364/2009) - Isolation, cloning, characterization and expression of the Crt Y gene from <i>Paracoccus</i> sp. bog27 and its application in the production of Astaxanthin (Awaiting defence).	MSc
2010	Wesonga Christopher Opuko (BR311-0322/2009) - Natural products from extremophiles: isolation, cloning and characterization of phytoene desaturase gene (crt1) from <i>Paracoccus</i> sp. Bog (Awaiting defence).	MSc

PUBLICATIONS

1. Scheuner C, B J. Tindall, Megan Lu, Matt Nolan, AllaLapidus, Jan-Feng Cheng, Lynne Goodwin, Sam Pitluck, Marcel Huntemann, Konstantinos Liolios, IoannaPagani, Konstantinos Mavromatis, Natalia Ivanova, Amrita Pati, Amy Chen, Krishna Palaniappan, Cynthia D. Jeffries, Loren Hauser, Miriam Land, **Romano Mwirichia**, Manfred Rohde, BirteAbt, John C. Detter, TanjaWoyke, Jonathan A. Eisen, Victor Markowitz, Philip Hugenholtz, Markus Göker, Nikos C. Kyrpidis and Hans-Peter Klenk (2014). Complete genome sequence of *Planctomycesbrasiliensis* type strain (DSM 5305T), phylogenomic analysis and reclassification of *Planctomyces* including the descriptions of *Gimesia* gen. nov., *Planctopirus* gen. nov.and*Rubinisphaera* gen. nov.andemended descriptions of the order *Planctomycetales* and the family *Planctomycetaceae*. *Stand. Genomic Sci.* (Accepted)

Link to the Full paper:<http://www.standardsingenomics.com/content/pdf/1944-3277-9-10.pdf>

2. E N Wafula, J Kinyau, D Kariuki, AMuigai, **R Mwirichia**(2014). Molecular and culture-based analyses of soil bacteria in Ngere tea catchment area of Murang'acounty, Kenya. *Proceedings of 2012 JKUAT scientific technological and industrialization conference.*

Link to the full

paper:<http://www.researchpublish.com/download.php?file=ISOLATION%20AND%20CHARACTERIZATION%20-483.pdf&act=book>

3. Huxley M. Makonde, Hamadi I. Boga, **Romano Mwirichia**, Lucy M. Mackenzie, Markus Göker, Hans-Peter Klenk (2013). 16S-rRNA-based analysis of bacterial diversity in the gut of fungus-cultivating termites (*Microtermes* and *Odontotermes* species)", 10.1007/s10482-013-0001-7

Link to the full

paper:http://download.springer.com/static/pdf/988/art%253A10.1007%252Fs10482-013-0001-7.pdf?auth66=1423115879_7bdf7d2caffb8a661a7feec6d206f7e3&ext=.pdf

4. Huxley M. Makonde, Hamadi I. Boga, Zipporah Osiemo, **Romano Mwirichia**, J. Benjamin Stielow, Markus Göker, Hans-Peter Klenk (2013). Diversity of *Termitomyces* Associated with Fungus-Farming Termites Assessed by Cultural and Culture-Independent Methods. *PLOS ONE* 10.1371/journal.pone.0056464

Link to full

paper:<http://www.plosone.org/article/metrics/info%3Adoi%2F10.1371%2Fjournal.pone.0056464>

5. Daniel Anyika, HamadiBoga and **Romano Mwirichia**(2013). Development of cost-effective media for the culture of *Chilopartelluslarvicide* in Kenya. *International Journal for*

Link to Full

paper:http://www.academicjournals.org/article/article1379503795_Anyika%20et%20al.pdf

6. Kambura AK, **Mwirichia RK**, Ngaira J, Boga HI. 2013. Isolation and characterization of bacterial isolates from Lake Magadi. *J. Trop. Microbiol. Biotechnol.* 8:17-25 17

Link to Abstract:<http://www.ajol.info/index.php/jtmb/article/view/90998>

7. Regina C. Ronoh, Nancy L. M. Budambula, **Romano K. Mwirichia** and Hamadi I. Boga (2013). Isolation and characterization of Actinobacteria from Lake Magadi, Kenya. *African Journal of Microbiology Research Vol. 7(32), pp. 4200-4206.*

Link to the

Abstract:http://www.researchgate.net/publication/256198694_Isolation_and_characterization_of_actinobacteria_from_Lake_Magadi_Kenya

8. Mathu Samuel, Herrmann Laetitia, Pypers Pieter, Matiru Vivienne, **Mwirichia Romano**, Lesueur Didier (2012). Potential of indigenous *Bradyrhizobia* versus commercial inoculants to improve cowpea (*Vigna unguiculata* L. walp.) and green gram (*Vigna radiata* L. wilczek.) yields in Kenya. *Soil Science and Plant Nutrition.* 58(6). p.750

Link to full Article: <http://www.tandfonline.com/doi/pdf/10.1080/00380768.2012.741041>

9. Beatrice N. Irungu, Murungi J. Mbabu, Daniel M. Kiboi, Enock Moindi, Johnson Kinyua, and **Mwirichia Romano** (2012). In vivo antimalarial and acute toxicity properties of hexane and chloroform extracts from *Clausenianisata* (Willd.) Benth. *Afr. J. Pharmacol. Ther.* 1(1): 24-29.

Open Access to full text available at <http://www.uonbi.ac.ke/journals/kesobap/>

10. Amrita Pati, Xiaojing Zhang, Alla Lapidus, Matt Nolan, Susan Lucas, Tijana Glavina Del Rio, Hope Tice, Jan-Fang Cheng, Roxane Tapia, Cliff Han, Lynne Goodwin, Sam Pitluck, Konstantinos Liolios, Ioanna Pagani, Natalia Ivanova, Konstantinos Mavromatis, Amy Chen, Krishna Palaniappan, Loren Hauser, Cynthia D. Jeffries, Evelyne-Marie Brambilla, Alina Röhl, **Romano Mwirichia**, Manfred Rohde, Brian J. Tindall, Johannes Sikorski, Reinhard Wirth, Markus Göker, Tanja Woyke, John C. Detter, James Bristow, Jonathan A. Eisen, Victor Markowitz, Philip Hugenholtz, Nikos C. Kyrpides, Hans-Peter Klenk, Miriam Land. Complete genome sequence of *Oceanithermus profundus* type strain (506^T) *Stand. Genomic Sci.* 4 (2) 210-220

Link to the Full paper:

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3111992/pdf/sigs.1734292.pdf>

11. Cliff Han, **Romano Mwirichia**, Olga Chertkov, Brittany Held, AllaLapidus, Matt Nolan, Susan Lucas, Nancy Hammon, Shweta Deshpande, Jan-Fang Cheng, Roxanne Tapia, Lynne Goodwin, Sam Pitluck, Marcel Huntemann, Konstantinos Liolios, Natalia Ivanova, IoannaPagani, Konstantinos Mavromatis, Galina Ovchinnikova, Amrita Pati, Amy Chen, Krishna Palaniappan, Miriam Land, Loren Hauser, EvelyneBrambilla, Manfred Rohde, Stefan Spring, Johannes Sikorski, Markus Göker, TanjaWoyke, James Bristow, Jonathan A. Eisen, Victor Markowitz, Philip Hugenholtz, Nikos C. Kyrpides, Hans-Peter Klenk, John C. Detter. **2011**. Complete genome sequence of *Syntrophobotulusglycolicus* type strain (FIGlyR^T) *Stand.Genomic Sci.* **4** (3):371-380 Doi:10.4056/sigs.2004648
Link to Full Article:
<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3156405/pdf/sigs.2004684.pdf>
12. TanjaWoyke, Olga Chertkov, AllaLapidus, Matt Nolan, Susan Lucas, TijanaGlavina Del Rio, Hope Tice, Jan-Fang Cheng, Roxanne Tapia, Cliff Han, Lynne Goodwin, Sam Pitluck, Konstantinos Liolios, IoannaPagani, Natalia Ivanova, Marcel Huntemann, Konstantinos Mavromatis, Natalia Mikhailova, Amrita Pati, Amy Chen, Krishna Palaniappan, Miriam Land, Loren Hauser, Evelyne-Marie Brambilla, Manfred Rohde, **Romano Mwirichia**, Johannes Sikorski, Brian J. Tindall, Markus Göker, James Bristow, Jonathan A. Eisen, Victor Markowitz, Philip Hugenholtz, Hans-Peter Klenk, Nikos C. Kyrpides. Complete genome sequence of the gliding freshwater bacterium *Fluviicolataffensis* type strain (RW262^T) *Stand. Genomic Sci.* 2011 5:1
Link To full article:
<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3236050/pdf/sigs.2124912.pdf>
13. Markus Göker, HajnalkaDaligault, **Romano Mwirichia**, AllaLapidus, Susan Lucas, Shweta Deshpande, IoannaPagani, Roxanne Tapia, Jan-Fang Cheng, Lynne Goodwin, Sam Pitluck, Konstantinos Liolios, Natalia Ivanova, Konstantinos Mavromatis, Natalia Mikhailova, Amrita Pati, Amy Chen, Krishna Palaniappan, Cliff Han, Miriam Land, Loren Hauser, Chongle Pan, Evelyne-Marie Brambilla, Manfred Rohde, Stefan Spring, Johannes Sikorski, Reinhard Wirth, John C. Detter, TanjaWoyke, James Bristow, Jonathan A. Eisen, Victor Markowitz, Philip Hugenholtz, Nikos C. Kyrpides, Hans-Peter Klenk. Complete genome sequence of the thermophilic sulfur-reducer *Desulfurobacteriumthermolithotrophum* type strain (BSA^T) from a deep-sea hydrothermal vent. *Stand. Genomic Sci.* 2011 5:3
Link to Full Article:
<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3368423/pdf/sigs.2465574.pdf>
14. H Atuncha, K Monjero, L Ateya, I Mbogo, **R Mwirichia**, R Amata, E M Ateka (2011). Mitochondrial DNA variation of *Bemisiatabaci* (Gennadius) (*Hemiptera: aleyrodidae*) infesting cassava in Kenya. *Proceedings of 2011 JKUAT scientific technological and industrialization conference.*

Link To Full Text Article

<http://elearning.jkuat.ac.ke/journals/ojs/index.php/jscp/article/download/888/787>

15. D Anyika, H Boga, **R Mwirichia**(2011). Characterisation of various *Bacillus thuringiensis* strains having larvicidal activity on *Chilopartellus* first-instar larvae, after culture on cost-effective medium, in Kenya. Proceedings of 2011 JKUAT scientific technological and industrialization conference.

Link to the Full Text:

<http://elearning.jkuat.ac.ke/journals/ojs/index.php/jscp/article/view/879/781>

16. **Mwirichia, R.**, Muigai, A.W., Cousin, S., Boga H.I. and Stackebrandt, E. (2011): Bacterial Diversity in the Haloalkaline Lake Elmenteita in Kenya *Current Microbiology* (2010) 62:209–221 DOI:10.1007/s00284-010-9692-4).

Link to the Full Article:

<http://link.springer.com/content/pdf/10.1007%2Fs00284-009-9500-1.pdf>

17. **Mwirichia, R.**, Muigai, A.W., Cousin, S., Boga H.I. and Stackebrandt, E. (2010): Archaeal diversity in the haloalkaline Lake Elmenteita in Kenya (*Current Microbiology*60: 47-52)

Link to Full Article

<http://link.springer.com/content/pdf/10.1007%2Fs00284-010-9692-4.pdf>

18. **Mwirichia, R.**, Muigai, A.W., Tindall, B., Boga H.I. and Stackebrandt, E. (2010): Isolation and characterization of bacteria from the haloalkaline Lake Elmenteita, Kenya. *Extremophiles*14, Number 4, 339-348 DOI 10.1007/s00792-010-0311-x,).

Link to Full Article

<http://link.springer.com/content/pdf/10.1007%2Fs00792-010-0311-x.pdf>

19. Ntabo, R., Boga HI., Muigai AW and **Mwirichia, R.**(2010): Isolation and Characterization of Bacteria Isolates from soil feeding termites and soil from Jujaand Kakamegaforest in Kenya: In: *Proceeding of the 2010 JKUAT scientific conference 177-191.*

Link to Full Article:

<http://elearning.jkuat.ac.ke/journals/ojs/index.php/jscp/article/viewFile/675/623>

20. **Mwirichia, R.**, Nancy, M.B and Hamadi, I. B. (2009): Isolation, Characterization and Identification of *Enterobacteriaceae* from well water in Juja Town in Kenya. *Journal of Tropical Microbiology and Biotechnology* 5:31-36

Link to Abstract: <http://www.ajol.info/index.php/jtmb/article/view/49264>

21. Microbial Diversity of Lake Elmenteita, Kenya, PhD Thesis

Link to the Thesis:

http://elearning.jkuat.ac.ke/journals/ojs/index.php/pgthesis_abs/article/download/325/245

SEMINARS AND CONFERENCES

1. 17th to 20th July, 2012: Microbial Ecology of the Kenyan Soda lakes: Humboldt Kolleg, Voi-Kenya
2. 20th to 21st January 2012: Genetic Resources and Traditional Knowledge: Research Cooperation and Facilitated Access, Göttingen, Germany.
3. 31st May - 1st June, 2011: GBRCN meeting: Partnerships for Sustainable Solutions Workshop Exploratory and Preparatory Measures- Bonn/Germany
4. 21th - 25th Feb, 2011: Isolation and characterisation of local biodiversity GBRCN Seminar in Kenya, Nairobi
5. 20th Nov -4th Dec, 2010: Meeting and Training towards the Establishment of a BRC in Kenya, DSMZ Germany.
6. 29th -30th November 2010: The Kenyan Biological Resource Centre- A long Journey: Capacity building in Africa – a Kenyan experience Joint human & microbial domain GBRCN pilot phase meeting. Federal Ministry of Science and Research Freyung 3, 2nd Floor,A-1010 Vienna
7. 3rd to 8th October, 2010: Third Bio-prospecting strategy developing workshop, Sai Rock hotel, Mombasa Kenya
8. 21st to 25th April, 2010: Second Bioprospecting Policy and Strategy meeting, Voi safari Lodge, Voi Kenya
9. 8th -11th, September 2009: Microbial Diversity in Kenya -Current status and the potential Mukonyi, K. W, &Lusweti, A. M., 2009. *Proceedings of Bioprospecting Experts Brainstorming Workshop* at Lake Bogoria Spa Resort, Baringo, Kenya.
10. 24thApril, 2009: Trainer, PhD Proposal Writing workshop. ICIPE Conference Center, Nairobi
11. 13th - 15th January, 2009. Facilitator for the HINARI/AGORA/OARE (HINAGOA) Training-Of-Trainer National Workshop (AICAD), Nairobi, Kenya

PROFESSIONAL AFFILIATION

- Member, American Society of Microbiology
- Member, Global Lake Ecological Observatory Network (GLEON)
- Member, Kenya Society for Microbiology