



WILSON OKUMU, PhD

Department of Medical Biochemistry
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EDUCATION BACKGROUND

- PhD (Medical Biochemistry), Western Michigan University, May **2010** Dissertation Title: The Lipid Acyl-Chain Dynamics in Giant Liposomes and Characterization of Domain 4 of The Wilson Disease Protein Advisor: Prof. David Huffman
- MSc (Chemistry), Western Michigan University, December **2007**, Thesis Title: Fundamental Investigation of Vesicle Bilayer Membrane Dynamics, Thesis Director- Prof. Subra Muralidharan, Advisor- Prof. Ekkehard Sinn
- BSc (Chemistry / Biochemistry), Egerton University, Njoro, Kenya, **1999**

RESEARCH EXPERIENCE

- Western Michigan University, Chemistry Department, Kalamazoo, Michigan, USA; Line tension force measurements on lipid vesicles from pore-closing dynamics using Fluorescence and **Laser Tweezer Optical Trapping** (published).
- Western Michigan University, Chemistry Department, Kalamazoo, Michigan, USA; Characterization of the N-terminal domain 4, human Wilson Disease protein.

Achievement: Participated in the design and assembly of home made **Laser Tweezer Optical Trapping** Instrument

CONSULTANCY SERVICES

Consultant on PACE Projects, University of Nairobi

- Partnership for Advanced Clinical Education (PACE), 2013-2014: University of Nairobi: Scope of Work: HIV training of undergraduate and health Science students, Training of university academic staff on Innovative Teaching Methodologies and Clinical Mentorship and Monitoring and Evaluation of PACE projects.

CO-PRINCIPAL INVESTIGATOR (CO-PI)

Consultant, IntraHealth, USAID

- Occupational Health and Safety (OSH) Risk Assessment Kenya, 2012: Ministry of Medical Services, Ministry of Public Health Kenya, THRO' Capacity Kenya (USAID Sponsored Project): Scope of Work:
 - Training,
 - Field Supervision,
 - Risk assessment of medical equipment,
 - Data Analysis,
 - Development of Minimum Safety Package in Public Hospitals in Kenya.

Achievement: Risk Assessment Report to Kenya Ministry of Medical Services and Ministry of Public Health (MOH, Risk Assessment Report, RAR, 2013 published)

PROFESSIONAL WORK EXPERIENCE

- **Chairman**, (2017-to-date), Department of Medical Biochemistry, School of Medicine, Maseno
- **Chairman**, (2014-to-date), Community Health Committee, School of Medicine, Maseno University
- **Lecturer**, (2011-to-date), School of Medicine, Maseno University, Kenya
- **Assistant Professor**, (2010-2011), Grand Valley State University, USA
- **Adjunct Professor**, (Jan-May 2010), Grand Valley State University, MI, USA
- **Graduate Teaching Assistant**, (2004- 2010), Western Michigan University, MI, USA
- **Chemist**, Industrial Coatings line supervisor, (2000-2003), Crown Berger (K) Ltd
- Quality Control supervisor, (2000), Regal Pharmaceutical

COURSES TAUGHT

- Medical Biochemistry - Maseno University, 2012-todate
- Community Health, Maseno University, 2014-todate
- HIV & AIDS Determinants, Prevention and Management (PHT 112), eLearning Maseno University, 2014-2015
- Clinical Biochemistry/Chemical Pathology (PMT 426), Maseno University, 2012
- First Aid (PNT 133, PDML 0112), Maseno University, 2011, 2012
- Principles of Chemistry I (CHM 115), GVSU, 2011

- Organic Chemistry for Life Sciences I (CHM241), GVSU, 2010, 2011
- Introductory Organic Chemistry (CHM 231), GVSU, 2010
- Organic Chemistry for Life Sciences II (CHM242), GVSU, 2010, 2011
- Biochemistry (CHM 356), WMU
- Organic Chemistry (CHM 3780), 2004-2005, 2008-2009, WMU
- General Chemistry, 2004-2005, WMU

STUDENT SUPERVISION (Assistant Supervisor)

- OKEYO WINNIE AKOTH - MSc.
Research Thesis: Association between IL-13 promoter polymorphisms (-7402G/T and 4729A/G) and susceptibility to pediatric severe malaria anemia, high-density parasitemia and functional changes in IL-13 production.

THESIS EXAMINED:

1. Philip Kirianka Ruciaka - PHD. **Thesis Title:** Isolation and Molecular Characterization of *Escheichia coli* From Selected Drinking Water Sources In Njoro Sub-County, Kenya.. Egerton University (2016).
2. Sheila, Malesi Jaika – MSC. **Thesis Title:** ‘Prevalence of Metabolic Syndrome Components by Age and Gender Among Maseno University Students, Kenya’ (2017)

EXTERNAL EXAMINER

External Examiner Uzima University College School of Medicine: 2012-2013

PUBLICATION

1. Abel M. Okoth-Okelloh, Rosebella Onyango, Willy K. Tonui, **Wilson Okumu** and Collins Ouma, *Occupational Health and Safety Administration (OSHA) in the Morgue: Management and Practice of the universal Precautions in Morgues in Kenya, Biosafety, 2015, Vol. 4(1).*
2. Francis Indoshi, Samuel B. Anyona, **Okumu W.** *Sub-Editors-In-Chief, Maseno University Journal, 2015: (Vol. 1)*
3. Okeyo W.A, Munde, E.O., Okumu, W., Raballah, E., Anyona, S.B., Vuvule, J.M., Ongecha J.M., Perkins, D.J., Ouma, C. Interleukin (IL)-13 promoter polymorphisms (-7402 T/G and -4729G/A) condition susceptibility to

pediatric severe malarial anemia but not circulating IL-13 levels. 2013

4. Munde E.O., Okeyo W.A., Anyona S.B., Raballah E, Konah S, Okumu W, Ogonda L, Vuvule J, Ouma C. Polymorphisms in Fc gamma receptor (FcγRIIIA-176 F/V) and Toll-like receptor (TLR9[-123 T/C]) are associated with protection against severe malarial anemia and changes in circulating IFN-γ. *Infect Immun.* 2012
5. Onyango, E.O, Ayodo, G., Watsierah, C.A., Were, T., Okumu, W., Anyona, S.B., Raballah, E., Okoth, J.M., Gumo S., Orinda G.O., Ouma C. Factors associated with non-adherence to Artemisinin-based Combination Therapy (ACT) to malaria in a rural population from holoendemic region of western Kenya . *BMC Infectious Dis.* 2012, 12 (1):143
6. Narayanan, Srividya, Muralidharan, Subra, Okumu, Wilson, Brian Tripp. Determination of Line Tension of giant vesicles from pore-closing dynamics. *Journal of Physical Chemistry B.* 2009, 113 (19): 7040
7. Okumu, Wilson; Srividya, Narayanan; Whitlock, Joshua; Tripp, Muralidharan, Subra (Submitted). Fundamental Characterization of the Temperature Dependent Behavior of Dimyristolyphosphatidylcholine Vesicle Bilayer Region, 2009.

PROFESSIONAL PRESENTATION

1. Wilson Okumu, *1st International Biotechnology and Biomedical Conference AIBBC*, Safari Park, Hotel in Nairobi Kenya, September 10, 2014
2. Winnie A. Okeyo, Elly Munde, Carren A. Watsierah, Wilson Okumu, George Orinda, Collins Ouma. *ASTMH, 61st Annual General Meeting*, Atlanta, GA, USA, November 11-15, 2012
3. Srividya, N., Okumu, W., McPherson, K., Balandram, G., Muralidharan, S. *ACS National Meeting*, Boston, MA, USA, August, 2007
4. Okumu, W., Srividya, N., Tripp, B. C., Muralidharan, S. *ACS National Meeting*, Chicago, IL, USA, March, 2007
5. Srividya, N., Okumu, W., Tripp, B. C., Muralidharan, S. *ACS National Meeting*, Chicago, IL, USA, March, 2007
6. Okumu, W., Srividya, N., Tripp, B.C., Muralidharan, S. *NOBCChE Regional conference*, University of Michigan, Ann Arbor, USA, October 2006
7. Okumu, W., Srividya, N., Tripp, B., and Muralidharan, S. (2006) *ACS Conference in Atlanta*, USA, March 2006

8. Srividya, Narayanan; Okumu, W.; Gose, Michael; Whitlock, Joshua; Tripp, B.C., Lee, D., Muralidharan, S. ACS National Meeting, Atlanta, USA, March 26-30, 2006
9. Okumu, W., Srividya, N., Tripp, B., and Muralidharan, S. ACS Conference in San Diego, California, USA, March 2005

PROFESSIONAL COURSES ATTENDED

- Training of Trainers in Innovative Teaching Methodologies and Mentorship, Partnership in Advanced Clinical Education (PACE), Kisumu Hotel, Maseno University, Kenya, May 22, 2014
- eContent Conversion Training, FunzoKenya/AMREF/USAID, PCEA Milele Hotel, Nairobi, 19-30th August, 16-20th September 2013
- Research Grants Writing Workshop, Maseno University and Masinde Muliro University of Science and Technology, Maseno University, June 26-28, 2013
- Critical thinking in Research, Division of Global Health & Human Rights, Department of Emergency Medicine and Pediatrics Massachusetts General Hospital, Maseno University, Kenya, June 20-21, 2013
- HIV symposium on the Role of Training and Research in Health Service Delivery and the Lessons learnt from the HIV epidemic (Keynote Speakers: Dr. Robert Gallo, Dr. John Barlett), School of Medicine, College of Health Sciences, University of Nairobi, PACE sponsored Project, June 13-15, 2012
- Training of Trainers in Innovative Teaching Methodologies and Mentorship, Partnership in Advanced Clinical Education (PACE), ARC Hotel, Egerton University, Kenya, April 23-28, 2012
- Emergency Response Unit, Basic Disaster Medical Operations, Maseno University, February 2012
- Conference on Occupational Biological Exposures: A Colloquium for Occupational Medicine, Infectious Disease and Emergency Medicine Professionals, August 9-12, 2011, Cathay Hotel, Nakuru, Kenya
- Teaching Conference, Grand Valley State University Pew FTLC, August 25-27, 2010
- Principles of Fluorescence Techniques, April 8-10, 2009, Sponsored by ISS, IBD NanoBiology Facility, The University of Chicago, Gordon Center for Integrative Science, Chicago, IL, USA

DEPARTMENTAL ACTIVITIES

- Chairman, Department of Medical Biochemistry, School of Medicine, Maseno University
- eLearning Postgraduate Representative, School of Graduate Studies (SGS), Maseno University, 2015
- Chairman, Community Health Attachment Committee, School of Medicine, Maseno University, 2015
- **Coordinator**, Second Year Community Health Attachment, School of Medicine, Maseno University, 2014-2015
- Acting Examination Coordinator - School of Medicine, Maseno University, November 1, 2013-January 31, 2014
- Acting Chairman- Department of Medical Biochemistry, School of Medicine, Maseno University; November 2012-September 30, 2013
- Member- Curriculum Development Committee, School of Medicine, Maseno University
- Member- Postgraduate Committee, School of Medicine, Maseno University

SYNERGISTIC ACTIVITIES

- **Chairman**, Board of Management, Nyamasaria Secondary School, Kisumu, Kenya -September 2012-todate
- **President** - June 2006-June 2007, Western Michigan University Chemistry Graduate Student Association, (CGSA)
- **Member**, American Chemical Society (ACS), 2004 – 2010
- Secretary General, Biochemistry Student Association Egerton University 1996-1998

HONORS AND AWARDS

- Western Michigan University, WMU Haenickle Institute, J-visiting Scholar, June 2012
- Western Michigan University Graduate College Research Award in Chemistry, November 2007
- Western Michigan University, WMU Keck Scholar, WMU Chemistry Department, 2005

REFEREES

Prof Wilson Odero, Dean, School of Medicine, Maseno University
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Prof David Huffman, Department of Chemistry, Western Michigan University, 1903 W. Michigan Ave. Kalamazoo, MI, 49008-54123
Office Phone: 1-269-3872865 Email: david.huffman@wmich.edu