

Curriculum Vitae

Biographic information

Raphael Omusebe Ondondo

(B.Sc., Grad. Cert. STD/HIV/AIDS Research, MSPH–Pathobiology, PhD (c) Mol. Medicine)

Kenya Medical Research Institute (KEMRI) – University of California San Francisco (UCSF) –

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Summary statement:

I am a lecturer at Masinde Muliro university of Science and Technology, and a Research scientist PhD fellow working with Research, Care and Training Program (RCTP) in the KEMRI – UCSF – UW collaborative research. I hold a Master of Science degree in Public Health (MSPH) – Pathobiology from University of Washington, School of Public Health and Community Medicine; Seattle Washington. My thesis research was based on identification of novel organisms associated with Sexually Transmitted Disease (STD) syndromes in Seattle WA. I developed molecular tools that enabled me to demonstrate the differential association of *Ureaplasma* species with nongonococcal urethritis (NGU). In Nairobi, Kenya, I have participated in several studies assessing the immunobiology of *C. trachomatis* and *N. gonorrhoeae*, and the role of *M. genitalium* in the etiology of urethritis, pelvic inflammatory disease (PID), cervicitis, endometritis, salpingitis and bacterial vaginosis. My current research focuses on the prevention of HIV transmission by identifying novel etiologies of STDs, improved detection, and management of STIs and clinical trials evaluating the safety and efficacy of potential therapeutic HIV prevention agents and diagnostics. With the main focus on the molecular immunobiology of HIV, viral STIs and the molecular exploration of etiologies of idiopathic STD syndromes. As well as participating on research in TB and Malaria in the context of HIV/AIDS, and development & evaluation of Point of Care diagnostics.

Education background:

2010 – Date: PhD in Molecular Medicine – Medical Molecular Virology and Clinical Immunology: Evaluation of the dynamics and immune-virology of HPV infections among Fishermen in Kisumu Kenya; at ITROMID, JKUAT, Kenya, in collaboration with KEMRI Graduate School and UCSF.

Feb – August 2013: Visiting research scholar in Molecular Virology& Immunology: Development of multiplex molecular diagnostic tool for detection of 34 genital HPV types in human samples and applying to prospective samples collected from my prospective cohort study of the immune-virology of HPV infections among fishermen. As well as perform T-cell response to persistent HPV infections among these men. At the Institute of Global Health, School of Medicine, UCSF, CA. USA

2004 – 2006: Master of Science in Public Health (MSPH) -Pathobiology, UW, Seattle, WA. I studied the biology of human pathogens: pathogenesis, immunobiology, host-pathogen interaction, their management and the search for new therapeutic/prevention agents; Epidemiology of infectious diseases, biostatistics, biochemistry, virology, microbiology, cell and molecular biology of human pathogens. MSc thesis: Differential association of *Ureaplasma* species (*U. urealyticum* and *U. parvum*) with urethritis.

2005 – 2006: Multidisciplinary Graduate certificate program in HIV/AIDS & STDs and Principles of STDs & HIV Research, Department of Epidemiology – UW Seattle, WA.

2003 – 2004: Short term visiting Scholar at the University of Washington, Seattle, WA. Took some classes (Medical Microbiology Laboratory and Fundamentals of General Microbiology) and laboratory research training mentored by Prof. Patricia Totten and supervised by Dr. Sabina Astete

Jan-Sep 2001: Nine-month Post-BSC internship training in medical microbiology, molecular microbiology, Bacteriology, Parasitology and medical research methodologies; at the Department of Medical Microbiology, College of Health Sciences, University of Nairobi – Kenya.

1997 – 2000: BSC double major in Chemistry and Physics; and minor in Mathematics and computer science: JKUAT – Kenya. 4th year honors project: Electromagnetic field interaction with organic molecules in colloids – Time domain reflectometry.

Professional Positions and Training

March 2012 – to Date: Lecturer, Medical Laboratory Sciences, School of Public Health and Biomedical Sciences, Masinde Muliro University of Science and Technology, Kakamega, Kenya.

- Oct 2006 – Date: RCTP, KEMRI – UCSF – UW, Kisumu: Research scientist PhD fellow on Phase III Randomized Placebo-Controlled clinical Trial, a three-arm Parallel Comparison of Truvada/tenofovir Pre-Exposure Prophylaxis to Prevent HIV-1 Acquisition within HIV-1 Discordant Couples; Phase III Randomized Placebo-Controlled Trial of HSV-2 Suppression to Prevent HIV Transmission among HIV-Discordant Couples; Male and female Phase I clinical trials; the microbiology and molecular immunobiology of organisms associated with STD syndromes; and the PEPFAR-funded comprehensive HIV care and treatment program in Kisumu Kenya.
- Feb – August 2013: Visiting research scholar in Molecular Virology& Immunology and a Junior Specialist in Molecular Epidemiology at the Institute of Global Health, School of Medicine, UCSF, CA. USA
- April 2010: Grant Writing and Mentorship workshop; held at the Fair View Hotel, Nairobi Kenya. Organized and funded by the School of Global Health, University of Washington (UW).
- Jan 2009: First Annual Course on Principles of HIV and STD International Research, held at the Safari Park Hotel, Nairobi Kenya. Organized and funded by the School of Global Health, UW.
- July 2008: First Annual Course on Point-of-Care Diagnostics for Global Health; held at the UW Seattle WA, USA and funded by Center for Point-of-Care Diagnostics for Global Health, UW and PATH.
- July – Sep 2006: Dr. Patricia Totten's laboratory, UW, Seattle. Postgraduate Academic on isolation of *Ureaplasmas* species, standardizing antibiotic sensitivity assays for *U. urealyticum* and development of Real Time PCR assay for its rapid detection in human specimens.
- 2004 – 2006: Dr. Patricia Totten's laboratory, UW, Seattle. Pre-Doctoral Research Associate: Developed differential molecular diagnostic assays for *U. urealyticum* and *U. parvum*, that I used to evaluate the differential association of UU and UP with NGU. I was also involved in the pathogenesis studies of *M. genitalium*, *H. ducreyi*, HSV-2. Moreover, I participated in a pilot study (PEACH pilot study): Evaluation of the prevalence of *U. urealyticum* in cervical/ endometrial specimens and its association with STD syndromes women.
- 2003 – 2004: Visiting research scholar, UW – participated in development of PCR assay for *M. genitalium*, and assessing the effect of different specimen preparation procedures on the PCR assay and using this assay to evaluate the association of *M. genitalium* with NGU
- 2001 – 2004: Laboratory research assistant: University of Washington – University of Nairobi collaborative research, Pelvic Inflammatory Disease (PID) project, on the immunobiology of *C. trachomatis*, *N. gonorrhoeae*, *M. genitalium* infections, and etiology of salpingitis, bacterial vaginosis and PID.

Current Research activities involved on:

1. Evaluation of the immunobiology of persistent HPV infections among Fishermen in Kisumu Kenya: The incidence, persistence and the kinetics of immune response to HPV infections. Sponsored by Consortium of National Health Research – Kenya (CNHR)
2. Evaluation of the effectiveness of routine infant vaccination against Hepatitis B virus (HBV) infection among children aged 6-12 years in Kisumu, Kenya. Funded by National Council of Science, Technology and Innovation (NACOSTI)
3. Evaluation of the immunologic response after Hepatitis B vaccination among HIV infected people in Kisumu, Kenya. Funded by Bill and Melinda Gates Foundation
4. Laboratory evaluation of the Performance characteristics of SD Bio line rapid HIV-Syphilis Duo test kit for simultaneous detection of HIV and Syphilis infections in Kisumu, Kenya. Funded by Standard Diagnostics Inc. South Korea.
5. Open label demonstration study of Truvada as Pre-Exposure Prophylaxis to prevent HIV infections among HIV discordant couples in Kisumu Kenya.

Publications:

1. **Ondondo R**, Ng'ang'a, Z, Mpoke, S. , Kiptoo M. and Bukusi, E. (2014). Prevalence and Incidence of HIV Infection among Fishermen along Lake Victoria Beaches in Kisumu County, Kenya. *World Journal of AIDS*, **4**, 219-231. doi: 10.4236/wja.2014.42027.
2. **Ondondo R**, Ng'ang'a, Z, Mpoke S, Kiptoo M and Bukusi E, (2014). Prevalence, Incidence and Risk Factors for Acquisition of Herpes Simplex Virus Type 2 among Fishermen on the Shores of Lake Victoria in Kisumu County, Kenya. *Advances in Infectious Diseases*, **4**, 101-110. doi: 10.4236/aid.2014.42016.

3. Bristow CC, Adu-Sarkodie Y, **Ondondo RO**, Bukusi EA *et al.* (2014). Multisite Laboratory Evaluation of a Dual Human Immunodeficiency Virus (HIV)/Syphilis Point-of-Care Rapid Test for Simultaneous Detection of HIV and Syphilis Infection. *Open Forum Infect Dis* (Spring 2014) 1 (1): DOI: 10.1093/ofid/ofu015
4. Kahle E, Campbell M, Lingappa J, **Ondondo R**, Celum C *et al.* (2014). HIV-1 subtype C is not associated with higher risk of heterosexual HIV-1 transmission: a multinational study among HIV-1 serodiscordant couples. *AIDS 2014 January 14*, 28 (2): 235-43
5. Baeten JM, Donnell D, Mugo NR, **Ondondo R**, Bukusi EA, Cohen CR, C Celum *et al.* Antiretroviral prophylaxis for HIV prevention in heterosexual men and women. *N Engl J Med.* 2012 Aug 2;367(5):399-410. doi: 10.1056/NEJMoa1108524. Epub 2012 Jul 11.
6. **Ondondo RO**, Whittington W. H, Astete S, Totten PA. Differential association of *Ureaplasma* species with acute nongonococcal urethritis in heterosexual men in Seattle, Washington. *Sex Transm Infect.* 2010 Aug;86(4):271-5. Epub 2010 May 10. doi: 10.1136/sti.2009.040394
7. Haggerty CL, Totten PA, Ferris M, Martin D, Hoferka S, Astete S, **Ondondo R**, Norori J, Ness RB. Clinical characteristics of bacterial vaginosis among women testing positive for fastidious bacteria. *Sexually Transmitted Infections*, 2009 Aug;85(4):242–8
8. Craig R Cohel, NelLy R Mugo, Sabina G Astete, **Raphael Odondo**, Lisa E Manhart, *et al.* (2005). Detection of *Mycoplasma genitalium* in women with laparoscopically diagnosed acute salpingitis: Sexually Transmitted Infections 2005; 81: 463– 466.

Abstracts:

1. **Ondondo R**, Z. Ng'ang'a, S.Mpoke, M.K. Kiptoo, Bukusi E. (2014). Factors associated with persistence of Human Papillomavirus among Fishermen in Kisumu Kenya. HPV 2014 international conference, Seattle WA USA 26th – 28th August 2014.
2. **Ondondo R**, Z. Ng'ang'a, S. Mpoke, M.K. Kiptoo, Bukusi E. (2014). Incidence and prevalence of HSV-2 infections among Fishermen around Lake Victoria in Kisumu, Kenya. 16th ICID, Cape Town, South Africa from April 2 to 5, 2014
3. C. Bristow, Y. Adu-Sarkodie, **R. Ondondo**, E. Bukusi, C. Cavagnaro, *et al.* (2014). Standard Diagnostics Bioline HIV/syphilis Duo Test: Multi-site laboratory evaluation using serum. 21st CROI 2014, Boston USA.
4. **Ondondo R**, Z. Ng'ang'a, S.Mpoke, M.K. Kiptoo, Bukusi E. (2013). Incidence and prevalence of HIV infections among Fishermen around Lake Victoria in Kisumu, Kenya. 20th ISSTD and 14th AUSTI World Congress: 14th -17th July, 2013; Vienna, Austria.
5. **Ondondo R**, Odoyo J, Bukusi E. (2013). Performance characteristics of SD Bio line rapid HIV-Syphilis Duo test kit for simultaneous detection of HIV and Syphilis infections. 20th ISSTD and 14th AUSTI World Congress: 14th -17th July, 2013; Vienna, Austria.
6. R. Mackelprang, C. Scoville, C. Cohen, **R. Ondondo**, C Celum *et al.* (2013). Differential association of Toll-like receptor gene variants with bacterial vaginosis among HIV-1 infected and uninfected African women. 12th ISIR - ASRI; Boston, MA USA; May 28- June 1, 2013.
7. **Ondondo R**, Cohen C, Z. Ng'ang'a, S. Mpoke, Bukusi E. (2012). Baseline characteristics of fishermen participating in the study of Human Papillomavirus infections in Kisumu Kenya. 7th JKUAT Scientific, technological and Industrialization conference, Nairobi, Kenya. 15th -16th November 2012.
8. E. Kahle, M. Campbell, J. Lingappa, **R. Ondondo**, C. Celum, A. Mujugira, *et al.* (2012). HIV-1 subtype C is not associated with higher risk of heterosexual HIV-1 transmission: a multinational study among African HIV-1 serodiscordant couples. XIX International AIDS Conference July 22-27, 2012, Washington DC, USA. *Journal of the International AIDS Society* 2012, 15 (Suppl 3)
9. **Ondondo R**, Cohen C, Bukusi E. (2011). A cross-sectional survey of natural immunity against Hepatitis B virus infections among HIV discordant heterosexual couples in Kisumu, Kenya. ISSTD 2011, Quebec, Canada 10th – 13th July 2011.
10. **Ondondo R**, Cohen C, Bukusi E. (2010). Hepatitis B virus infections among HIV discordant heterosexual couples in Kisumu Kenya: A setting with very poor hepatitis B vaccination coverage. 2010 International Meeting on the Molecular Biology of Hepatitis B Viruses, in Taipei, Taiwan, October 9th – 13th 2010
11. **Ondondo R**, Whittington W. H, Astete S, Totten P. (2007). Differential association of *Ureaplasma urealyticum* and *U. parvum* with nongonococcal urethritis in heterosexual men in Seattle Washington. 17th ISSTD Congress, Seattle WA, USA, July 29 – August 1, 2007.

12. Haggerty CL, Totten PA, **Ondondo R**, Ness RB *et al.* (2007). Novel Bacteria associated with Bacterial Vaginosis among Women with Pelvic Inflammatory Disease. 17th ISSTD Congress, Seattle WA, USA, July 29 – August 1, 2007.
13. **Ondondo R**, Whittington W. H, Astete S, Totten P. (2006). *Ureaplasma urealyticum* is associated with acute idiopathic nongonococcal urethritis in Seattle. 16th IOM Congress, Cambridge, UK, July 9 – 14, 2006
14. Cohen CR, Astete S, **Odondo R**, Totten PA. *et al.* (2003). Detection of *M. genitalium* in laparoscopically diagnosed acute salpingitis in Nairobi, Kenya. ISSTD, Ottawa, Canada, July 27-31, 2003.

Scholarships and awards:

- Full scholarship from University of Washington to attend the 22nd Annual Principle of STD and HIV Research; University of Washington, Seattle WA USA. 21st July – 1st August 2014
- Full scholarship from UCSF to attend the 3rd Sub-Saharan Centre for AIDS Research, UCSF, Kampala Uganda; 10th – 12th July 2014
- Full scholarship to attend the 3rd National Research to Policy dialogue form Consortium for National Health Research, Ministry of Health and NACOSTI that was held at Windsor Golf hotel; 19th – 21st June, 2014
- CFAR Scholarship to attend SSA Biannual conference and 17th ICASA 2014 conference that was held in Cape Town South Africa; 6-12 Dec 2013.
- ISSTD Scholarship Program; travel scholarship award to present at the 20th ISSTD World Congress International Conference in Vienna Austria (July 2013)
- Full scholarship from Consortium for National Health Research (CNHR) to attend a 3-week course on the Immunology in the Tropics: TB, Malaria and HIV; Medical Research council, Uganda Virology Research Institute, Makerere University, Entebbe Uganda. 9th -21st September, 2012.
- Full scholarship from Pan Africa Chemistry Network (PACN) to attend a 1 week instrumentation and applications workshop on Gas chromatography and Mass Spectroscopy (GC-MS). September 3rd-7th September 2012.
- Centre For AIDS Research (CFAR), University of California San Francisco (UCSF), Gladstone Institute for Virology and Immunology, International Mentored Scientist Award, 2012
- ISSTD Scholarship Program; Full travel scholarship award to present at the 19th ISSTD International Congress in Quebec Canada (July 2011)
- Full scholarship from CNHR, to attend the 1st National Research to Policy Dialogue – Using Research Results for Dialogue, Action and Change workshop (21-23 June, 2011)
- Full scholarship from International Centre for AIDS Research (CFAR), to attend the 1st African CFAR International Conference held in Sub-Sahara Africa, Kampala, Uganda; 25th – 27th May, 2011.
- Full scholarship from CNHR, short training scholarship to attend a 1 week course on Scientific communications and publishing (Dec 2010), University of Nairobi
- Scholarship from University of Washington to attend the Grant Writing and Mentorship workshop in Nairobi Kenya, 20-21 April, 2010
- PhD fellowship from CNHR (2010).
- Scholarship from University of Washington to attend the Principle of HIV and STD research workshop in Nairobi Kenya, 18th-22nd Jan, 2010
- Full scholarship from Center for Point-of-Care Diagnostics for Global Health, UW and PATH to attend the First Annual Course on Point-of-Care Diagnostics for Global Health, held at the UW Seattle WA, USA. (July 2008)
- International AIDS Research and Training Program (IARTP); Travel Scholarship award to present at the 17th ISSTD International Congress in Seattle WA. (July 29th – 1st August, 2007)
- IARTP Scholarship for Graduate studies – Master of Science in Public Health – Pathobiology at the UW (2004-2006)
- International Organization for Mycoplasmaology (IOM) travel grant award (2006), to present at the 16th IOM Congress, Cambridge, UK, July 9 – 14, 2006
- IARTP Scholarship for Short-term visiting scholar training at the UW (2003/2004).
- Higher Education University Bursary scholarship awards for undergraduate studies (1997-2000)
- High school Education Bursary scholarship (1992-1995)
- Best student's award (in academics) in High School (1993-1994)

- Most disciplined student's award in High School (1993-1994)

Referees:

Dr. Elizabeth Bukusi: Deputy Director Research & Training and Chief Research Officer, KEMRI; Email: ebukusi@kemri.org, ebukusi@rctp.or.ke

Dr. Patricia Totten: Research Professor of Medicine, Division of Infectious Diseases, Adjunct Professor of Global Health, UW; Email: patotten@u.washington.edu

Dr. Craig R. Cohen: Professor In-Residence, Department of Obstetrics, Gynecology & Reproductive Sciences, UCSF; Email: ccohen@globalhealth.ucsf.edu

Dr. Anna-Barbara Moscicki: Professor of Pediatrics and Adolescent Medicine, Department of Pediatrics, School of Medicine, UCSF; Email: moscickia@peds.ucsf.edu

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