

## MOSES CHAPA KITI

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### CAREER OBJECTIVE

I am interested in working with a multi-disciplinary research team focusing on using novel data streams to understand the transmission dynamics of infectious diseases. I bring onboard 10 years of progressive experience in human health research, specifically unravelling complex human social interactions that can lead to the transmission of respiratory infections. My other research interests are in public health policy, science communication and teaching.

#### Research disciplines

Epidemiology/ Demography and Social statistics

### EDUCATION

- *Doctor of Philosophy candidate – Life and Biomolecular Science.* 2015 - 2019  
The Open University (UK) and the KEMRI-Wellcome Trust Research Centre (Kenya).

Thesis: Using proximity sensors to characterize social contact patterns relevant to transmission of respiratory viruses in schools and households.

- *Master of Science - Demography and Health.* 2012 - 2013  
London School of Hygiene and Tropical Medicine (UK).

Dissertation: Household structural changes: analysis of Kilifi Health and Demographic Surveillance Site data in 2005, 2008 and 2011.

- *Bachelor of Science – Geomatic Engineering and GIS.* 2003 - 2008  
Jomo Kenyatta University of Agriculture and Technology (Kenya).

- *Additional training*  
Introduction to GIS for health researchers, University of Washington. 2017  
Contact network epidemiology, University of Washington. 2016  
Mathematical modelling of infectious diseases, University of Washington. 2016  
Statistics and modelling with novel data streams, University of Washington. 2016  
Protection of Human Research Participants, National Institute of Health. 2016  
Leadership and Management in Health, University of Washington. 2015

### PROFESSIONAL EXPERIENCE

- *Doctoral Research* KEMRI-WTRP 2015-2019  
Principal investigator for a study to understand characteristics of proximity events, collected using wireless proximity sensors, that are relevant to transmission of respiratory infections in schools and households in Kilifi, Kenya.

Key responsibilities: proposal development (study design), ethics application (Kenya and UK), research team leader (6 research assistants), community engagement for research, data collection and analysis, bi-annual progress reports, manuscript preparation and dissemination of results at scientific and community meetings.

- *Research Officer* KEMRI-WTRP 2013-2015  
Co-principal investigator for a study to quantify social contact patterns in rural and urban settings in coastal Kenya.

Key responsibilities: supervise research activities (proposal development, data collection and analysis), assist in preparation of scientific reports for publication.

- *Assistant Research Officer* *KEMRI-WTRP* *2009-2012*  
Principal investigator for: i) study to quantify social contact patterns relevant to transmission of respiratory infections in rural and urban settings of Kilifi using paper diaries, and ii) piloting the use of wireless proximity sensors in a rural household community to understand feasibility and acceptability of use of this method for data collection.

Key responsibilities: proposal development, ethics application (Kenya and UK), research team leader (8 research assistants), data collection and analysis, manuscript preparation and dissemination of results at scientific and community meetings.

- Guest lecturer* *Pwani University, Kenya*  
Infectious diseases: an epidemiological perspective 2018  
Population dynamics 2016

## GRANTS AND AWARDS

- Travel grant: RSV 2018 symposium, Asheville, USA 2018
- Scholarship: SISMID, University of Washington, Seattle, USA 2016
- Travel grant: RSV 2014 symposium, Stellenbosch, South Africa 2014
- Wellcome Trust Masters Fellowship 2012

## SKILLS

Research: Grant writing. Developing research protocols and standard operating procedures for field studies. Ability to communicate effectively to community members and other stakeholders for scientific research. Designing and conducting focus group discussions. Critical review of research literature.

Management: Ability to observe deadlines and achieve results. Enhance collaborative work with colleagues to achieve research goals. Recruiting, training and supervising research teams. Planning and supervising research activities. Providing oversight to teams in compliance with organization's rules and regulations and research objectives.

Presentation: Disseminating research output at local and international forums through oral and poster presentations. Preparation of scientific manuscripts as first author and in collaboration with other scientists. Proficient in MS Word, PowerPoint and Keynote.

Data analysis: Good working knowledge of STATA, R and Python for data wrangling and analysis; QGIS for mapping; GEPHI for network analysis and visualization.

## PRESENTATIONS AT CONFERENCES

- 11<sup>th</sup> International Respiratory Syncytial Virus Symposium, Asheville, USA. (Poster) 2018
- Initiative to Develop African Research Leaders, Nairobi, Kenya. (Oral and poster) 2018
- 28<sup>th</sup> International Population Conference, Cape Town South Africa. (Oral) 2017
- 9<sup>th</sup> International Respiratory Syncytial Virus Symposium, Stellenbosch, SA. (Oral) 2014

## PUBLICATIONS

- **Kiti MC**, Tizzoni M, Kinyanjui TM, Koech DC, Munywoki PK, Meriac M, et al. Quantifying social contacts in a household setting of rural Kenya using wearable proximity sensors. *EPJ Data Sci.* Kiti et al.; 2016;5: 21. doi:10.1140/epjds/s13688-016-0084-2
- **Kiti MC**, Kinyanjui TM, Koech DC, Munywoki PK, Medley GF, Nokes DJ. Quantifying age-related rates of social contact using diaries in a rural coastal population of Kenya. *PLoS One.* 2014;9. doi:10.1371/journal.pone.0104786
- Pan-Ngum W, Kinyanjui T, **Kiti M**, Taylor S, Toussaint JF, Saralamba S, et al. Predicting the relative impacts of maternal and neonatal respiratory syncytial virus (RSV) vaccine target

product profiles: A consensus modelling approach. *Vaccine*. The Authors; 2017;35: 403–409. doi:10.1016/j.vaccine.2016.10.073

- Kinyanjui TM, House TA, **Kiti MC**, Cane PA, Nokes DJ, Medley GF. Vaccine induced herd immunity for control of respiratory syncytial virus disease in a low-income country setting. *PLoS One*. 2015;10: e0138018. doi:10.1371/journal.pone.0138018
- Ojal J, Flasche S, Hammit LL, Akech D, **Kiti MC**, Kamau T, et al. Sustained reduction in vaccine-type invasive pneumococcal disease despite waning effects of a catch-up campaign in Kilifi, Kenya: A mathematical model based on pre-vaccination data. *Vaccine*. The Author(s); 2017;35: 4561–4568. doi:10.1016/j.vaccine.2017.07.019
- Flasche S, Ojal J, Le Polain de Waroux O, Otiende M, O'Brien KL, **Kiti M**, et al. Assessing the efficiency of catch-up campaigns for the introduction of pneumococcal conjugate vaccine: a modelling study based on data from PCV10 introduction in Kilifi, Kenya. *BMC Med. BMC Medicine*; 2017;15: 113. doi:10.1186/s12916-017-0882-9

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## MEMBERSHIP

- The Complex Systems Society
- The John Snow Society
- The Royal Society for Tropical Medicine and Hygiene
- International Union for the Scientific Study of Population
- Union for African Population Studies
- The Rotary Club of Kilifi (social development and charity work)

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## REFEREES

- *Prof D. James Nokes*

Professor of Infectious Diseases

KEMRI-Wellcome Trust Research Programme , Kilifi, Kenya and School of Life Science and Zeeman Institute (SBIDER), University of Warwick, UK

Email address: [jnokes@kemri-wellcome.org](mailto:jnokes@kemri-wellcome.org)

- *Prof Alessia Melegaro*

Associate Professor in Demography and Social Statistics

Department of Social and Political Sciences

Dondeona Centre for Research on Social Dynamics and Public Policies

Bocconi University, Milan, Italy

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- *Dr Benjamin Tsofa*

Director

KEMRI-Wellcome Trust Research Programme, Kilifi, Kenya

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