

Kevin M. Mwenda

Curriculum Vitae

January 2018

Human-Environment Dynamics Lab
Department of Geography
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University of California
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EDUCATION

- Ph.D., Geography, University of California, Santa Barbara** Expected June 2018
Major: Geographic Information Science & Cartography
Dissertation Committee: David López-Carr (co-chair), Phaedon Kyriakidis (co-chair), Keith Clarke
Dissertation title: Spatial-Temporal Modelling and Assessment of Relationships between Malaria Endemicity and Child Undernutrition in Kenya
- M.A., Geography, University of California, Santa Barbara** 2014
Thesis Committee: David López-Carr (co-chair), Phaedon Kyriakidis (co-chair), Keith Clarke
Thesis title: Decision-Making under Spatial Uncertainty in Downscaled Population Estimates: An Assessment of HIV Prevalence in Tanzania
- B.A., Dartmouth College** 2010
Major: Environmental Studies, with college honors
Minor: Engineering Sciences

Research Interests

Geographic Information Science; (Geo)Spatial Data Science; Spatial Epidemiology; Spatial Demography, Public Health

EMPLOYMENT HISTORY

- Lab Manager**, Broom Center for Demography, University of California, Santa Barbara 2014 – Present
Lead Teaching Assistant, Department of Geography, University of California, Santa Barbara 2016 – Present
Instructor of Record (Lecturer) Department of Geography, University of California, Santa Barbara 2014 – Present
Teaching Assistant, Department of Geography, University of California, Santa Barbara 2013 – 2016
Teaching Assistant, Department of Geography, Dartmouth College 2011 – 2012
GIS/Spatial Analysis Specialist, Department of Geography, Dartmouth College 2010 – 2012
Research Assistant, Computational Genetics Lab, Dartmouth-Hitchcock Medical Center 2007 – 2010

AWARDS, HONORS, FELLOWSHIPS & SCHOLARSHIPS

- UCSB Graduate Division Dissertation Fellowship (1-quarter tuition and stipend) 2018
UCSB Academic Senate Outstanding Teaching Assistant Award (*Nominated*) 2018 – 2017
UCSB Graduate Division Professional Development Award 2017
UCSB Dean's Grant for Summer ICPSR Training 2017
UCSB Department of Geography Excellence in Teaching Award 2017
UCSB Broom Center for Demography Population Association of America (PAA) Travel Award 2017
UCSB Broom Center for Demography Graduate Students Research and Travel Award 2016 – Present
UCSB Department of Geography Leal Ann Kerry Mertes Scholarship 2016

UCSB Summer Teaching Institute for Associates (STIA) Certificate	2016
UCSB Graduate Students Association Conference Travel Award	2014 – Present
UCSB Department of Geography Jack & Laura Dangermond Travel Award	2013 – Present
Dartmouth College Institute for Quantitative Biomedical Sciences (iQBS) Travel Award	2012
National Institute of Health (NIH) Superfund Research Grant	2009

PEER-REVIEWED JOURNAL PUBLICATIONS

* Conference papers

- 2016 López-Carr, D., & **Mwenda, K.M.**¹, Pricope, N.G., Kyriakidis, P.C., Jankowska, M.M., Weeks, J., Funk, C., Husak, G., Michaelsen, J. Climate-Related Child Undernutrition in the Lake Victoria Basin: An Integrated Spatial Analysis of Health Surveys, NDVI, and Precipitation Data, *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing*. 9 (6): 2830 – 2835. DOI: 10.1109/JSTARS.2016.2569411
¹Corresponding and co-first author
- 2015 **Mwenda, K.M.**, Kyriakidis, P.C., López-Carr, D. Quantifying Spatial Uncertainty of Population Estimates: Evidence from three Tanzanian districts, *Plurimondi. An International Forum for Research and Debate on Human Settlements*. 8(17): 215-221.
- 2015* López-Carr, D. & **Mwenda, K.M.**¹, Pricope, N.G., Kyriakidis, P.C., Jankowska, M.M., Weeks, J., Funk, C., Husak, G., Michaelsen, J. A Spatial Statistical Analysis of Climate-related Child Malnutrition in the Lake Victoria Basin. Proceedings of the *2015 International Geoscience and Remote Sensing Symposium (IGARSS)*. July 26-31. Milan, Italy.
¹Corresponding and co-first author
- 2013 Shi, X., Miller, S.D., **Mwenda, K.M.**, Onda, A., Rees, J.R., Onega, T.L., Gui, J., Karagas, M.R., Demidenko, E., Moeschler, J.B. Mapping Disease at an Approximated Individual Level Using Aggregate Data: A Case Study of Mapping New Hampshire Birth Defects, *International Journal of Environmental Research and Public Health*, 10: 4161-4174. DOI: 10.3390/ijerph10094161
- 2013 Yang, Q., **Mwenda, K.M.**, Miao, G. Incorporating Geographical Factors with Artificial Neural Networks to predict Reference Values of Erythrocyte Sedimentation Rate, *International Journal of Health Geographics*. 12:11. DOI: 10.1186/1476-072X-12-11
- 2012 Sloan, C.D., Andrew, A.S., Gruber, J.F., **Mwenda, K.M.**, Moore, J.H., Onega, T., Karagas, M.R., Shi, X., Duell, E.J. Indoor and Outdoor Air Pollution and Lung Cancer in New Hampshire and Vermont, *Toxicological & Environmental Chemistry*. 94(3): 605-615. DOI:10.1080/02772248.2012.659930
- 2012* **Mwenda, K.M.**, Shi, X. Spatial Interpolation of Fine Particulate Matter in New Hampshire using Landuse-based Kriging. *GIScience conference (2012)*, Columbus, OH, USA.

SELECTED CONFERENCE PRESENTATIONS AND SEMINARS

** Oral presentations

* Invited seminars

- 2017 López-Carr, D., Cifuentes, S., Schumacher, B., Williams, E., Ervin, D., Krell, N., **Mwenda, K.M.**, Castillo, F., Smith, W., Suski, N., Ying, S. Planetary Health: A Framework for Sustainable and Equitable Food and Nutrition Systems in socio-ecological hotspots. *Planetary Health Annual Meeting*, Cambridge MA, 29 – 30 April, 2017.

- 2017 Cassels, S., & **Mwenda, K.M.** Short-Term Mobility and Sexual Behaviour – Testing the Selection, Enabling, and Influence Hypotheses. *Population Association of America Annual Meeting*, Chicago IL, 28 April, 2017.
- 2017 Jin, A., & **Mwenda, K.M.** Fine-Scale Spatial Modelling of Child Undernutrition in Kenya. *Population Association of America Annual Meeting*, Chicago IL, 27 April, 2017.
- 2017** **Mwenda, K.M.** Fine-Scale Spatial Modelling of Child Undernutrition in Kenya. *American Association of Geographers Annual Meeting*, Boston MA, 9 April, 2017.
- 2017** Ruiz, J.V., Mendoza, M.A., **Mwenda, K.M.** Forest Dynamics and landscape ecology metrics in Old Providence Island, Colombia 2005 – 2015. *American Association of Geographers Annual Meeting*, Boston MA, 9 April, 2017.
- 2017** **Mwenda, K.M.** Fine-Scale Spatial Modelling of Child Undernutrition in Kenya. *African Health Agenda International Conference*, Nairobi, Kenya, 8 March, 2017.
- 2016** **Mwenda, K.M.** A Spatial Analysis of undernutrition and malaria incidence among Kenyan children under 5 years. *American Association of Geographers Annual Meeting*, San Francisco CA, 1 April, 2016.
- 2016** Ruiz, J.V., & **Mwenda, K.M.** Modelling woody vegetation cover change in Boyaca, Colombia, using OLS, GWR and Random Forests. *American Association of Geographers Annual Meeting*, San Francisco CA, 1 April, 2016.
- 2016* **Mwenda, K.M.** Visualizing Spatial Data using R. *UCSB Broom Center for Demography*, Santa Barbara CA, 12 February, 2016.
- 2016* **Mwenda, K.M.** Geographically Weighted Regression (GWR). *UCSB Broom Center for Demography*, Santa Barbara CA, 27 January, 2016.
- 2015* **Mwenda, K.M.** Visualizing Spatial Data using R. *UCSB Broom Center for Demography*, Santa Barbara CA, 28 May, 2015.
- 2015 **Mwenda, K.M.** Implications of Spatial Uncertainty of HIV Prevalence Estimates in Tanzania. *University of California Global Health Day Conference*, Los Angeles CA, 18 April, 2015.
- 2014* **Mwenda, K.M.** Working with U.S. Census Data. *UCSB Broom Center for Demography*, Santa Barbara CA, 19 November, 2014.
- 2014** **Mwenda, K.M.** Quantifying Uncertainty of Spatial Interpolation of Fine Particulate Matter in Small Regions using Empirical Bayesian Kriging. *4th International Chemical and Environmental Conference*, Kuala Lumpur, Malaysia, 15 February, 2014.
- 2013* **Mwenda, K.M.** Geographically Weighted Regression (GWR). *UCSB Broom Center for Demography*, Santa Barbara CA, 20 May, 2013.
- 2012 **Mwenda, K.M.** Spatial Interpolation of Fine Particulate Matter in New Hampshire using Landuse-based Kriging. *Geographic Information Science conference*, Columbus OH, 18 – 21 September, 2012.
- 2012** **Mwenda, K.M.**, Shi, X., Onega, T.L., Karagas, M.R., Moore, J.H., Andrew A.S. Detecting Association between Bladder Cancer Recurrence and Travel Time to Treatment Facility in New Hampshire. *American Association of Geographers Annual Meeting*, Manhattan NY, 25 February, 2012.
- 2012 **Mwenda, K.M.**, Shi, X., Onega, T.L., Karagas, M.R., Moore, J.H., Andrew A.S. Modeling Spatial Variation of Bladder Cancer Prognosis and Travel Time to Treatment Facility using Geographically Weighted Regression (GWR). *Pacific Symposium on Biocomputing conference*, Kona HI, 3 – 7 January, 2012.

TEACHING EXPERIENCE

Lead Teaching Assistant, Department of Geography, UCSB

Assisting in the orientation of new Teaching Assistants (TAs)

2016 – Present

Instructor of Record (Lecturer), Department of Geography, UCSB

Maps and Spatial Reasoning

Summer 2014, 2015, 2016, 2017

People, Place, and Environment

Summer 2015, 2017

Teaching Assistant, Department of Geography, UCSB

Analytical and Computer Cartography

Winter 2013

Economic Geography

Winter 2016

Land, Water & Life

Fall 2015

Maps and Spatial Reasoning

Fall 2013; Spring 2013 & 2014

People, Place, and Environment

Fall 2014; Spring 2015

Technical Issues in GIS/Science

Winter 2015

Transportation Planning & Modeling

Winter 2014

Teaching Assistant, Department of Geography, Dartmouth College

Environmental Applications of GIS

Winter 2011

Introduction to GIS

Spring 2012

Mapping Health and Disease

Spring 2011

Urban Applications of GIS

Fall 2011

Undergraduate research mentorship, UCSB

2017

Annika Tan: Applications of Spatial Statistics towards Public Health research (Department of Statistics & Applied Probability, 4 credits)

Research mentorships, Summer Sessions Research Mentorship Program, UCSB

2017

Cathy Zhang: Hot Spot Analysis of Child Undernutrition in Kenya using Spatial Statistics (Mountain View High School, Mountain View, CA)

2017

Emmanuel Flores: Hot Spot Analysis of Malaria in Kenya using Spatial Statistics. (Bakersfield High School, Bakersfield, CA)

2016

Andy Jin: Fine-Scale Modelling of Undernutrition in Kenya Using spatial statistics (Westlake High School, Thousand Oaks, CA)

ACADEMIC SERVICE

Chair:

Session: *Uncertainty in Spatial Patterns* at the AAG Meeting, Boston MA

2017

Panel: *Healthy Geographies: Travel, Transportation and Health* at the AAG Meeting, Manhattan, NY

2012

Session Co-organizer:

Uncertainty in Spatial Patterns at the AAG Meeting, Boston MA

2017

Space and place in population, health, and environment research at the AAG Meeting, San Francisco, CA

2016

Discussant: Panel on *Spatial Information for Human Health* at the SPATIAL un-conference in Santa Barbara, CA 2015

Manuscript Reviewer:

International Social Science Council

2016

International Journal of Health Geographics (IJHG)

2014 – Present

Spatial Demography

2014 – Present

Committees:

- Graduate Student Representative, Faculty Search committee, UCSB Department of Geography* 2017 – Present
- Graduate Student Representative, Web sub-committee, UCSB Department of Geography* 2017 – Present

PROFESSIONAL EXPERIENCE

- Lab Manager, Broom Center for Demography, University of California, Santa Barbara** 2014 - Present
- Lead Consultant for Social Sciences in spatial statistics software and methods for population distribution analyses and public health studies, geostatistical methods of analyzing environmental variables and general conceptual issues relating to designing spatial demographic surveys, analyzing and mapping spatial-temporal data
 - Manage the Social-Demography computer lab, organize multiple mini-courses and maintain the lab's web-pages
 - Conduct multiple method-driven workshops e.g. Geographically Weighted Regression (GWR), Working with U.S. Census Data and Visualizing Spatial Data using R
- GIS/Spatial Analysis Specialist, Dartmouth College** 2010 – 2012
- Performed geospatial and epidemiological study of associations between birth defects and arsenic exposure in New England, as a research assistant on federally funded research grant (Project 3 in the P20 grant “Children's Environmental Health & Disease Prevention Research Center at Dartmouth College)
 - Provided interdepartmental technical support for ArcGIS including, but not limited to, the departments of Geography, Government, Economics, Earth Sciences and Environmental Studies
 - Supervised 2 undergraduate research assistants working on multiple grant-based GIS projects
 - Managed the GIS computer lab and Geography department website
- Research Assistant I, Computational Genetics Lab, Dartmouth-Hitchcock Medical Center** 2007 – 2010
- Incorporated biostatistics with GIS to perform spatial statistical analysis of the effect of various environmental variables on lung and bladder cancer incidences in New Hampshire
 - Performed data mining of Systemic Sclerosis cases using Multifactor Dimensionality Reduction (MDR) software

PROFESSIONAL SKILLS

Technical/Software Experience:

- GIS: ESRI ArcGIS Desktop 10x, 9x (Extensions include: Network Analyst, Spatial Analyst, Geostatistical Analyst, 3D Analyst); MicroCAM, MapWindow GIS*
- Programming/Scripting Software: Java, MATLAB, R, Python, SAS, SPSS*
- Geodatabase Management: ESRI ArcInfo Personal and File Geodatabase, MySQL*
- Geospatial Image Analysis and Processing: ENVI 4.x, Erdas Imagine 8x, Inkscape, MICRODEM, LandSerf*
- Website Design and Management: Adobe Dreamweaver*

PROFESSIONAL TRAINING

ICPSR Summer Program in Quantitative Methods of Social Research: University of Michigan, Ann Arbor, MI
Machine Learning: Applications and Opportunities in the Social Sciences (August 7 – 11, 2017)

ESRI Virtual Campus:

- Mobile GIS: Creating Data Collection Applications Using the ArcGIS API for iOS
- Mobile GIS: Getting Started with the ArcGIS API for iOS
- Python Scripting for Geoprocessing Workflows (for ArcGIS 10.x)
- Python Scripting for Map Automation in ArcGIS 10.x
- Basics of Python (for ArcGIS 10.x)
- Learning ArcGIS Desktop (9.x & 10.x)

PROFESSIONAL MEMBERSHIPS

- Association of American Geographers (AAG) 2012 – Present
- Population Association of America (PAA) 2017 – Present

COMMUNITY SERVICE AND OUTREACH

“Space for Dinner” volunteer, *Transition House*, Santa Barbara, CA 2016 – Present

Resident Assistant, *Residential & Community Living*, UCSB 2013 – 2016

Graduate Representative: *SDSU/UCSB Joint Doctoral Program Committee*, San Diego, CA, (October 22, 2016)

Panelist: *California Forum for Diversity in Graduate Education*, UCSB (November 7, 2015)

Panelist: *W.E.B Du Bois: Academic Communities for Excellence (ACE)*, UCSB (March 4, 2015)