

# Kevin M. Mwenda

## Curriculum Vitae

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Human-Environment Dynamics Lab  
Department of Geography  
1832 Ellison Hall  
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### EDUCATION

- Ph.D., Geography, University of California, Santa Barbara** Expected 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

- AAG Dissertation Research Grant 2018  
UCSB Graduate Division Dissertation Fellowship (1-quarter tuition and stipend) 2018  
UCSB Academic Senate Outstanding Teaching Assistant Award (*Nominated*) 2018 – 2017  
UCSB Academic Senate Doctoral Student Travel Grant 2018  
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 – Present

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

- [5] López-Carr, D., & **Mwenda, K.M.**<sup>1</sup>, Pricope, N.G., Kyriakidis, P.C., Jankowska, M.M., Weeks, J., Funk, C., Husak, G., Michaelsen, J. (2016). 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  
<sup>1</sup>Corresponding and co-first author
- [4] **Mwenda, K.M.**, Kyriakidis, P.C., López-Carr, D. (2015). 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.
- [3] 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. (2013). 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
- [2] Yang, Q., **Mwenda, K.M.**, Miao, G. (2013). 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
- [1] 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. (2012). 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

#### PEER-REVIEWED CONFERENCE PROCEEDINGS

- [2] López-Carr, D. & **Mwenda, K.M.**<sup>1</sup>, Pricope, N.G., Kyriakidis, P.C., Jankowska, M.M., Weeks, J, Funk, C, Husak, G., Michaelsen, J. (2015). 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.  
<sup>1</sup>Corresponding and co-first author
- [1] **Mwenda, K.M.**, Shi, X. (2012). Spatial Interpolation of Fine Particulate Matter in New Hampshire using Landuse-based Kriging. *GIScience conference*, Columbus, OH, USA.

#### INVITED SEMINARS & PRESENTATIONS

- [5] **Mwenda, K.M.** Visualizing Spatial Data using R. *UCSB Broom Center for Demography*, Santa Barbara CA, 12 February, 2016.
- [4] **Mwenda, K.M.** Geographically Weighted Regression (GWR). *UCSB Broom Center for Demography*, Santa Barbara CA, 27 January, 2016.

- [3] **Mwenda, K.M.** Visualizing Spatial Data using R. *UCSB Broom Center for Demography*, Santa Barbara CA, 28 May, 2015.
- [2] **Mwenda, K.M.** Working with U.S. Census Data. *UCSB Broom Center for Demography*, Santa Barbara CA, 19 November, 2014.
- [1] **Mwenda, K.M.** Geographically Weighted Regression (GWR). *UCSB Broom Center for Demography*, Santa Barbara CA, 20 May, 2013.

#### CONFERENCE PRESENTATIONS

*\* Poster presentations*

- [10]\* **Mwenda, K.M.**, & López-Carr, D. Chronic Child Undernutrition in Kenya: A Multilevel and High-Resolution Spatial Modeling Approach. *Population Association of America Annual Meeting*, Denver, CO, 26 April, 2018.
- [9] **Mwenda, K.M.** Multilevel Spatial Modelling of Chronic Child Undernutrition in Kenya. *American Association of Geographers Annual Meeting*, New Orleans LA, 13 April, 2018.
- [8]\* 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.
- [7]\* 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.
- [6]\* 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.
- [5]\* **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.
- [4] **Mwenda, K.M.** Quantifying Uncertainty of Spatial Interpolation of Fine Particulate Matter in Small Regions using Empirical Bayesian Kriging. *4<sup>th</sup> International Chemical and Environmental Conference*, Kuala Lumpur, Malaysia, 15 February, 2014.
- [3] **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.
- [2] **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.
- [1] **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

2017-18 **Annika Tan:** Applications of Spatial Statistics towards Public Health research (Department of Statistics & Applied Probability)

### 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:

*Deep Learning of Geospatial Patterns & Applications* at the AAG Meeting, New Orleans LA

2018

*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 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)