

# BREANNE K. LANGLOIS, M.P.H.

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Public Health & Nutrition Data Scientist with over 7 years of research and analytic experience in both domestic and global health studies. Expertise in statistical, qualitative, and spatial analysis, and study design, database creation, open data kit, and mobile data collection. Aptitude for handling large, complex datasets. Key strengths include advanced statistical programming using multiple packages (SAS, Stata, R) and modeling of longitudinal, cluster correlated data. Skilled, self-directed learner and dedicated problem solver with an interest in the intersection between climate change, global food systems, food security, and nutrition outcomes.

## EDUCATION

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PhD	Tufts University Friedman School of Nutrition Science & Policy Nutrition Epidemiology & Data Science	Current student
MPH	Boston University School of Public Health Global Health with emphasis in Research Methods & Data Analysis Thesis: <i>"The Ethiopian Health Extension Program: Areas for Improvement through Use of mHealth Tools"</i>	May 2012
BA	University of New Hampshire - Durham Anthropology, Cum Laude	May 2007

## PROFICIENCIES

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SAS, Stata	KoboToolbox	Data management, mobile data collection
R, R Studio	REDCap	Power, sample size, effect size, intraclass correlation
NVivo	CSPRO	Bland-Altman analysis
PASS	Microsoft Office	Principal components analysis
ArcGIS		Receiving operating characteristic curves
Open Data Kit, xlsform		Multiple imputation
		Spatial analysis
		Qualitative analysis and exploration
		Regression modeling: linear, logistic, multinomial, negative binomial, mixed-effects

## RESEARCH, PROGRAMMING, DATA ANALYSIS EXPERIENCE

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### **Tufts University Friedman School of Nutrition Science & Policy Data Analyst, Nutrition Innovation Lab**

2019

- Conducted threshold analysis of data from two birth cohort studies in Uganda and Nepal evaluating effect of maternal aflatoxin B1 exposure on birth outcomes
- Goal was to identify whether an empirical threshold level of aflatoxin exposure existed in relation to adverse birth outcomes using Receiver Operating Characteristic (ROC) curves

### **Tufts University Friedman School of Nutrition Science & Policy Data Analyst, Food Aid Quality Review Project**

2015 to 2019

- Performed statistical and qualitative analysis for field trials in Malawi, Burkina Faso and Sierra Leone – a USAID-funded project assessing cost-effectiveness of four supplementary food-aid products used for prevention and treatment of moderate-acute-malnutrition
- Wrote DO files and SAS programs to clean, manipulate, merge, and manage all datasets from the Sierra Leone treatment study
- Calculated statistical power and detectable effect sizes for cluster-randomized field trial using PASS software to improve study design by determining optimal number of clusters and sample sizes per cluster
- Created and managed all data collection instruments using ‘Open Data Kit’ (xlsform) and KoboToolbox for use on Android tablets
- Troubleshoot problems that arose with KoboCollect App or Webforms during data collection on Android tablets
- Cleaned, manipulated and analyzed large, complex raw datasets using advanced macro-level SAS and Stata coding, created and maintained detailed variable lists
- Analyzed data for cluster-randomized designs using mixed-effects modelling methods
- Created maps and conducted spatial analysis using ArcGIS
- Created high-quality graphics for publication using R statistical package
- Wrote and edited scientific manuscripts and reports for publication
- Prepared abstracts and posters for presentation
- Lead the manuscript submission and peer review response process
- Assisted in other necessary research related tasks as needed (e.g. editing protocols, data collection instruments, data management & analysis plans, etc.)

### **Boston Medical Center Research Assistant II, Emergency Medicine**

2012 to 2014

- Supported residents and faculty in all aspects of research: development of study protocols, grant preparation, study design, data analysis plans, IRB submission, and continuing reports
- Created and managed all databases using Microsoft Access and REDCap
- Analyzed data for all ED studies using SAS and NVivo
- Critically reviewed, edited, and prepared: posters, presentations, abstracts, and manuscripts for publication

### **JSI Research & Training Institute, Ethiopia Research Intern, Saving Newborn Lives Project**

2011

- Oversaw data collection, field training, and analysis of a qualitative study on barriers to care-seeking and referral compliance for severe neonatal illness as part of the ‘Saving Newborn Lives’ project in Ethiopia

- Managed and coordinated training to field team on objectives, selected research methods, and interview techniques in focus communities in Ethiopia
- Developed data collection instruments, critically reviewed and edited all study related documents
- Assured quality of interviews, expansion of raw notes, and determined further need for data collection on issues related to perception of newborn illness, willingness, barriers and constraints to care-seeking, referral compliance, and level of understanding where services are provided
- Conducted an analysis workshop with field team to organize, categorize and provide initial interpretation of field notes and other related data
- Analyzed qualitative data on attitudes towards understanding of newborn illness, care-seeking for newborns, awareness of available services, confidence in service provision, and referral compliance using NVivo software

**University of New Hampshire**

2006 to 2007

**Teaching/Research Assistant, Anthropology Department**

- Instrumental in development of two seminar courses in the Spring 2007 semester, which led to student involvement in faculty research
- Recruited research participants through local newspapers
- Conducted semi-structured, in-depth interviews and focus group discussions with research participants
- Analyzed narratives, identified major themes, reported results
- Coordinated and facilitated student involvement through acting as liaison between students, refugees, and a local social service agency

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**OTHER WORK EXPERIENCE**

**United States Peace Corps - Ethiopia**

2007 to 2009

**Community HIV/AIDS Advisor**

- Served as a Peace Corps Volunteer in the first Peace Corps Health Sector Program in Ethiopia
- Learned the local language (Afan-Oromo), developed relationships within the community
- Empowered a community group of people living with HIV/AIDS to improve their economic situation by assisting in the creation of a sustainable milling machine business
- Mobilized resources via grant writing, budget management, informal networking, fundraising, and marketing with minimal direct supervision
- Recipient of Peace Corps VAST grant
- Facilitated leadership training for 20 members of the high school anti- AIDS club focusing on mediation, conflict resolution, and coalition building
- Formed a local mutual care and support group with youth and community members to support bed ridden AIDS patients
- Developed a Life Skills curriculum for 50 local orphans and vulnerable children, emphasizing teambuilding and critical thinking while utilizing enthusiasm, patience and resourcefulness

**Boston University School of Public Health**

2011 to 2013

**Teaching Assistant & Grader**

- Teaching assistant for two MPH courses in the Global Health Department: Social & Behavioral Health and Applied Research Methods in International Health

- Taught students to identify barriers to positive health behavior by leading a class and developing a case study, which was integrated into course syllabus
- Trained students on qualitative data analysis using NVivo software: creating nodes, coding data, performing text search queries, assessing inter-rater agreement between coders, creating maps of themes, and using coding stripes to view data
- Graded students' papers and assignments

**Committee on Rights and Justice, University of New Hampshire  
Student Volunteer**

2004 to 2006

- Instrumental in starting the committee and recruiting other students and community members to join, which resulted in an active community-based organization that supported local immigrants and refugees
- Reunited a family from Democratic Republic of Congo. Parents seeking political asylum in the U.S., kids were left behind facing difficulties imposed by political persecution of their family and natural disaster. Reunited 7 children with parents through advocacy, consulting with lawyers, mobilizing community involvement and increasing awareness
- Organized fundraising efforts through benefit concerts
- Facilitated weekly meetings to discuss, monitor and evaluate committee goals

**SELECTED PUBLICATIONS**

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- Wilner L, Suri DJ, **Langlois BK**, Walton SM, Rogers BL. Effective delivery of social and behavior change communication through a Care Group model in a supplementary feeding program. *J Health Popul Nutr.* 2017;36(1):34. Published 2017 Sep 12. doi:10.1186/s41043-017-0111-3
- **Breanne K. Langlois**, Devika J. Suri, Lauren Wilner, Shelley Marcus Walton, Kwan Ho Kenneth Chui, Kristine R. Caiafa & Beatrice Lorge Rogers (2018) Self-report vs. direct measures for assessing corn soy blend porridge preparation and feeding behavior in a moderate acute malnutrition treatment program in southern Malawi, *Journal of Hunger & Environmental Nutrition*, 13:4, 470-481
- Rogers, B.L., Wilner, L.B., Maganga, G., Walton, S.M., Suri, D.J., **Langlois, B.K.**, Chui, K.K.H., Boiteau, J.M., Vosti, S.A. and Webb, P., 2017. Program changes are effective and cost-effective in increasing the amount of oil used in preparing corn soy blend porridge for treatment of moderate acute malnutrition in Malawi. *Maternal & child nutrition*.
- Koroma, A., Manary, M., Marron, B., Green, J., Rogers, B., Walton, S., Chui, K.H.K., Suri, D., **Langlois, B.**, Jayson, L. and Boiteau, J., 2015. Comparison of four supplementary foods in treating moderate acute malnutrition in Sierra Leone: an Ebola-constrained cluster-randomized, controlled clinic-based effectiveness trial, Report to USAID. *Boston, MA*.
- James, T.L., Bibi, S., **Langlois, B.K.**, Dugan, E. and Mitchell, P.M., 2014. Boston Violence Intervention Advocacy Program: a qualitative study of client experiences and perceived effect. *Academic emergency medicine*, 21(7), pp.742-751.
- Weiner, S.G., Griggs, C.A., Mitchell, P.M., **Langlois, B.K.**, Friedman, F.D., Moore, R.L., Lin, S.C., Nelson, K.P. and Feldman, J.A., 2013. Clinician impression versus prescription drug monitoring program criteria in the assessment of drug-seeking behavior in the emergency department. *Annals of emergency medicine*, 62(4), pp.281-289.

- Dwyer, K.H., Walley, A.Y., **Langlois, B.K.**, Mitchell, P.M., Nelson, K.P., Cromwell, J. and Bernstein, E., 2015. Opioid education and nasal naloxone rescue kits in the emergency department. *Western Journal of Emergency Medicine*, 16(3).
- Weiner, S.G., Griggs, C.A., **Langlois, B.K.**, Mitchell, P.M., Nelson, K.P., Friedman, F.D. and Feldman, J.A., 2015. Characteristics of emergency department “doctor shoppers”. *The Journal of emergency medicine*, 48(4), pp.424-431.

### *Currently under review*

- Cliffer, I.R., Nikiema, L., **Langlois, B.K.**, Zeba, A.N., Shen, Y., Lanou, H.B., Suri, D.J., Garanet, F., Chui, K., Vosti, S.A., Walton, S.M., Rosenberg, I., Webb, P., and Rogers, B.L., “Cost-effectiveness of four specialized nutritious foods in the prevention of stunting and wasting in children 6-23 months in Burkina Faso: a geographically randomized trial,” Submitted to: Current Developments in Nutrition.
- Shen, Y., Cliffer, I.R., Suri, D.J., **Langlois, B.K.**, Vosti, S.A., Webb, P., and Rogers, B.L., “Impact of stakeholder perspectives on cost-effectiveness estimates of four specialized nutritious foods for preventing stunting and wasting in children 6-23 months in Burkina Faso,” Submitted to: Current Developments in Nutrition.
- **Langlois, B.K.**, Cliffer, I.R., Nikiema, L., Suri, D.J., Garanet, F., Shen, Y., Zeba, A.N., Walton, S.M., Lanou, H., Webb, P., and Rogers, B.L., “Factors that may influence effectiveness of four specialized nutritious foods in the prevention of stunting and wasting in children 6-23 months in Burkina Faso,” Submitted to: Current Developments in Nutrition.

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### **PROFESSIONAL ABSTRACTS, PRESENTATIONS, AND CONFERENCES**

**Organizer of Concurrent Session at the Food Assistance for Nutrition Evidence Summit,** “Raising the Bar on Food Aid Research: Challenges and Methodological Considerations to Guide Policy and Programming,” Washington DC, June 2018

**Poster Presentation,** “Behaviors Surrounding Ration Use in a Blanket Supplementary Feeding Program in Burkina Faso,” Nutrition, Boston MA, June 2018.

**Poster Presentation,** “A Mobile Data Collection Tool Using Android Tablets for In-Home Observations in Sierra Leone Improves Data Quality,” Nutrition, Boston MA, June 2018.

**Oral Presentation,** “What to Consider when Programming Food Aid Products: Operational Research findings from the Food Aid Quality Review (FAQR) Project,” USAID TOPS (Technical and Operational Performance Support) Knowledge Sharing Meeting, July 19, 2017.

**Poster Presentation,** “Experiences and Perceptions of Beneficiary Caregivers in a Supplementary Feeding Program in Southern Malawi,” Experimental Biology, Chicago IL, April 2017.

**Poster Presentation,** “A Tale of Two Measures: Self-report and Lab Measurements in Amount of Oil Added to CSB Porridge Prepared by Caregivers of Children with Moderate Acute Malnutrition in Southern Malawi,” Experimental Biology, San Diego CA, March 2016.

**Poster Presentation**, “Comparison of four supplementary foods in treating moderate acute malnutrition in Sierra Leone: an Ebola-truncated effectiveness study,” Experimental Biology, Boston MA, March 2015.

#### **AWARDS & HONORS**

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**B.U. Merit Scholarship** (Fall 2010) Awarded to exceptional students entering the MPH program at the Boston University School of Public Health

**Santander University Scholarship** (Spring 2011) Awarded to promising and dedicated Boston University School of Public Health students for an international practicum

**Practicum Poster Winner** (Fall 2011) Selected for special recognition for best poster format out of over 75 students who participated in the practicum finale at Boston University School of Public Health