

Kelly B Kamm, PhD

Contact information

230B Student Development Complex
Kinesiology and Integrative Physiology
Michigan Technological University
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Education

- 2008-2014 **Doctor of Philosophy, Epidemiology**
Department of Epidemiology and Environmental Health*
State University of New York at Buffalo, Buffalo, NY
Dissertation: "Handwashing with soap to improve child health: observational and experimental studies to estimate behavior and health effects of handwashing with soap in low-resource settings"
- 1996 – 1997 **Master of Health Science, Molecular Microbiology & Immunology**
Department of Molecular Microbiology and Immunology
Johns Hopkins School of Hygiene and Public Health, Baltimore, MD
- 1992 – 1996 **Bachelor of Science, Microbiology**
Washington State University, Pullman, WA

Post-doctoral Training

- 2015 – 2016 Post-doctoral Fellow
Department of Epidemiology and Environmental Health
State University of New York at Buffalo, Buffalo, NY

Research Experience and Grant Support

- 2019-20 **Debweyendan Indigenous Gardens**
Role: Co-investigator
Summary: An initiative to promote access to healthy, culturally appropriate foods through a series of gardening and landscape harvesting workshops that promote intergenerational learning.
Responsibilities: Develop, implement, and analyze quantitative instruments to monitor and evaluate program components.
Funding: Keweenaw Indian Bay Community Natural Resources Department

*Formerly Department of Social and Preventive Medicine (name change April 2014)

- 2019 **Western Upper Peninsula Food Systems Initiative (\$14,232)**
Role: Co-investigator
Summary: Development of a food systems analysis for the Western U.P.
Responsibilities: Develop and field test a quantitative survey to assess food access and health.
Funding: Western U.P. Planning & Development Region
- 2018 **State of Michigan Independent Risk Analysis for the Straits Pipelines**
Role: Section Lead, Public Health
Summary: The public health section is responsible for conducting a health and public safety risk assessment in the event of a worst-case scenario spill in the Straits oil pipeline.
Responsibilities: Facilitate information exchange between sections and coordinate timely completion of section objectives.
Funding: State of Michigan, awarded to GLRC
- 2017 – 2018 **Infant feeding practices in Michigan's Upper Peninsula**
Role: Primary investigator
Summary: A cross sectional study of mothers of children <5 years old and health professionals serving women in the perinatal period to understand breastfeeding practices, perceptions, and beliefs and the support systems that influence these practices.
Responsibilities: Develop and submit institutional review board protocol, including data collection instruments and recruitment materials. Recruit participants, supervise data entry, conduct analysis and prepare reports/publications.
Funding: Michigan Technological University/Portage Health Foundation REF grant
- 2014 – 2016 **Experimental study to improve maternal handwashing behaviors in rural Kenya**
Role: Research Scientist/Post-doctoral Fellow
Summary: This project is an evaluation of a handwashing promotion program delivered by health care workers and community health volunteers to women during pregnancy and shortly after birth in rural Meru County, Kenya. The purpose of the study is to assess the impact of the program on maternal handwashing behavior using a modified stepped-wedge design. A process evaluation to determine compliance with delivery of the intervention will also be conducted using quantitative and qualitative data collection methods.
Responsibilities: Developed and submitted an institutional review board protocol, including data collection instruments. Developed training manual for field staff.
Funding: Save the Children Federation
- 2015 – 2016 **The Neonatal Microbiome Study: A pilot study**
Role: Research Scientist/Post-doctoral Fellow
Summary: This project is a pilot study to determine a) a valid and feasible method for collecting breast milk and stool samples in a rural low-income setting, b) to describe the evolution of the gut microbiome during the neonatal period, and c) to compare the neonatal gut microbiome and the mother's gut and breast milk microbiomes.
Responsibilities: Developed and submitted an institutional review board protocol for the proposed field collection methods. Assisted in drafting funding applications for the pilot study and a larger scale future study.
Funding: University at Buffalo IMPACT grant
- 2014 – 2015 **The Microbiomes of Postmenopausal Women**

Role: Research Scientist

Summary: This project is collecting a range of biologic samples from women enrolled in an extension of the Women's Health Initiative (2015-2020) in western New York for future microbiome analysis.

Responsibilities: Developed procedures for in-home stool collection technique for use in a large epidemiologic study of the gut microbiome among adult women in western New York.

Funding: Dr. Amy E. Millen, self-supporting research funds

2014 – 2015

A transdisciplinary approach to promote safety climate and reduce healthcare associated infections in the NICU

Role: Research Scientist

Summary: This project was to submit an NIH application to a) understand organizational and individual factors that affect the safety climate of a neonatal intensive care unit and b) develop and evaluate the impact of an intervention that utilizes peer influences to improve hand hygiene among health care workers in the NICU.

Responsibilities: Assisted in the creation of the portion of the grant application to evaluate the proposed intervention to improve hand hygiene in a neonatal intensive care unit in Buffalo, NY.

Funding: Dr. Pavani K. Ram, self-supporting research funds

2011 – 2013

Evaluation of the SOPO Handwashing Campaign, Nyanza and Rift Valley Provinces, Kenya

Role: Student Primary Investigator

Summary: This project was an evaluation of a school-based handwashing program implemented in a selection of schools and communities in western Kenya.

Responsibilities: Study design selection, creation of the protocol and data collection instruments (approved by an institutional review board), developed training documents for field team, provided support to in-country student researcher during field team training and initial study activities. Conducted primary and secondary data analyses using SAS statistical software.

Funding: UNICEF

2010 – 2012

The Bangladesh Perinatal Handwashing Study

Role: Student researcher

Summary: This project was a randomized trial to assess the impact of an intensive handwashing promotion program, delivered during the antenatal period and shortly after birth, on maternal handwashing behavior during the neonatal period. The study enrolled 250 primiparous women in rural Matlab, Bangladesh.

Responsibilities: Assisted in the development and conduct of the RCT in rural Bangladesh. Duties included development of data collection instruments, field testing data collection instruments, developing training documents for field team, conducting retraining of field team, initiating studies activities in the field. Conducted primary and secondary data analyses using SAS statistical software.

Funding: USAID, US CDC, and icddr,b (International Centre for Diarrhoeal Disease Research, Bangladesh)

1997 – 1998 **Emerging Infectious Diseases Training Fellow** **CDC/ASTPHLD**
Colorado Department of Public Health and Environment, Denver, CO
Role: Training Fellow
Summary: This project was developed to test whether molecular subtyping using pulsed field gel electrophoresis of *Shigella sonnei* would be useful to differentiate outbreak strains among Colorado clinical isolates.
Responsibilities: Designed the study, conducted laboratory testing, and analyzed results.

Submitted Funding Applications

Feb 2019 **Convergent Research to Address Tribal-Lake Systems, Contamination, and American Indian Health and Wellbeing**
Role: Co-investigator
Summary: A transdisciplinary study to understand the components and relationships between components of a tribal-lake system impacted by anthropogenic contamination.
Responsibilities: Statistical analysis of existing data to determine the quantitative relationships between sources of information, perceptions of and contamination in fish, fishing practices, and fish consumption in a fish-reliant tribal community.
Agency/Announcement: NSF 19-528: Dynamics of Integrated Socio-Environmental Systems

Teaching Experience

Instructor

Fall 2017- present **KIP2600: Introduction to Public Health** (2 credits)
Department of Kinesiology and Integrated Physiology
Michigan Technological University, Houghton, MI

Spring 2017-present **KIP4740: Epidemiology** (3 credits)
Department of Kinesiology and Integrated Physiology
Michigan Technological University, Houghton, MI

Fall 2014-15 **EEH 513: Epidemiology of Infectious Disease** (3 credits)
Department of Epidemiology and Environmental Health
State University of New York at Buffalo, Buffalo, NY

Spring 2015 **PH 574: Infectious Disease Epidemiology** (3 credits)
Division of Health and Human Services, Public Health
Daemen College, Amherst, NY

Teaching Assistant

Spring 2013 **PTR 502: Analysis of Health Related Data**
Roswell Park Cancer Institute, Buffalo, NY
Instructor: Susan McCann, PhD

Spring 2011 **SPM 506: Application of statistics to epidemiology**
Department of Epidemiology and Environmental Health
State University of New York at Buffalo, Buffalo, NY
Instructor: Carole Rudra, PhD

Spring 2010 **SPM 502: Advanced Epidemiologic Methodologies**
Department of Epidemiology and Environmental Health
State University of New York at Buffalo, Buffalo, NY
Instructor: Amy Millen, PhD

Invited Presentations, Michigan Technological University

Oct 2018 **Educate or Motivate? Health behavior change theories applied to population based research**
Cognitive & Learning Sciences Departmental Seminar

Jan 2017 **Beyond John Snow: Using Epidemiology to save lives**
Kinesiology & Integrative Physiology Departmental Seminar

Fall 2017 **Epidemiology in a world of engineers: cross disciplinary research**
Civil and Environmental Engineering Departmental Seminar

Invited Presentations, Other Institutions

Oct 2017 **What is Enough? Water recommendations in humanitarian emergencies.** Water around the World, University of Michigan-Flint, Department of Public Health and Health Sciences, Flint, MI.

Academic Honors and Awards

2016 Saxon Graham Award for Academic Excellence in Epidemiology
Department of Epidemiology and Environmental Health
State University of New York at Buffalo, Buffalo, NY

2015 Saxon Graham Award for Academic Excellence in Epidemiology
Department of Epidemiology and Environmental Health
State University of New York at Buffalo, Buffalo, NY

2013 Domestic Fieldwork scholarship
Office of Global Health Initiatives
State University of New York at Buffalo, Buffalo, NY

2012 Robert O'Shea Travel Award
Department of Social and Preventive Medicine
State University of New York at Buffalo, Buffalo, NY

2011 23rd Annual J. Warren Perry Poster presentations, First prize
State University of New York at Buffalo, Buffalo, NY

2011 Graduate Student Association Conference Funding Award
State University of New York at Buffalo, Buffalo, NY

- 2011 Robert O'Shea Travel Award
Department of Social and Preventive Medicine
State University of New York at Buffalo, Buffalo, NY
- 2008 - 2012 University of Buffalo Presidential Fellowship
State University of New York at Buffalo, Buffalo, NY
- 1996 Summa cum laude
Washington State University, Pullman, WA

Professional Memberships

2009 –present American Society of Tropical Medicine and Hygiene

Employment History

- 2019 - **Assistant Professor**
College of Sciences & Arts, Michigan Technological University, Houghton, MI
Responsibilities: Development and instruction of introductory undergraduate courses in epidemiology and public health. Development of a research program to support my career goals and interests.
- 2017 - 2019 **Research Assistant Professor**
College of Sciences & Arts, Michigan Technological University, Houghton, MI
Responsibilities: Development and instruction of introductory undergraduate courses in epidemiology and public health. Development of a research program to support my career goals and interests.
- 2015 – 2016 **Post-doctoral Fellow**
Department of Epidemiology and Environmental Health, University at Buffalo, Buffalo, NY
Responsibilities: Assisted in the design of epidemiologic studies, including development of sample collection, survey instruments, study protocols, and submission to scientific and ethical review boards.
- 2014 – 2015 **Research Scientist**
Department of Epidemiology and Environmental Health, University at Buffalo, Buffalo, NY
Responsibilities: Assisted in the design of epidemiologic studies, including development of sample collection, survey instruments, study protocols, and submission to scientific and ethical review boards.
- 2008 – 2013 **Graduate/Teaching Assistant**
Department of Social and Preventive Medicine, University at Buffalo, Buffalo, NY
Responsibilities: Assisted in the design, conduct, and analysis of epidemiologic studies. Graded student homework, provided support to students with class material, taught computer lab sessions for SAS (a statistical software program).

- 2007 – 2008 **Manager of Lab Operations**
Cerep, Inc., Redmond, WA
Responsibilities: Managed laboratory supply chain, chemical, biologic, and radioactive inventories, laboratory instrument maintenance, and capital purchases for high throughput robotic systems. Conducted cost analysis for new assays and supervised laboratory assistant.
- 2005 – 2007 **Metabolism Lead/Lab Supervisor**
Cerep, Inc., Redmond, WA
Responsibilities: Supervised 2-3 research associates, conducted quality assurance, and developed standard operating protocols. Trained research associates on protocols, use and programming of high-throughput robotic systems. Worked with site Director to develop a research and development plan.
- 2001-2005 **Lab Supervisor/Research Associate**
Cerep, Inc., Redmond, WA
Responsibilities: Developed chemical and consumable inventories and instrument maintenance systems. Conducted high throughput screening assays (metabolic profiling), developed high-throughput assays, and wrote standard operating protocols. Supervised lab assistant.
- 1999 – 2001 **Research Associate**
Cerep, Inc., Redmond, WA
Responsibilities: Conducted high throughput screening assays (metabolic profiling), developed high-throughput assays, and wrote standard operating protocols.
- 1998 – 1999 **Physical Scientist I**
Laboratory and Radiation Services Division
Colorado Department of Public Health and Environment, Denver, CO
Responsibilities: Conducted biochemical, serologic, and molecular assays for the identification of bacteria isolates (primarily enteric pathogens) for clinical samples, routine surveillance, and outbreak investigations.
- 1997 – 1998 **Emerging Infectious Diseases Training Fellow, CDC/ASTPHLD**
Colorado Department of Public Health and Environment, Denver, CO
Responsibilities: Trained to use biochemical, serologic, and molecular assays to identify pathogenic microorganisms of public health concern in clinical and environmental samples. Participated in sample collection and processing during an outbreak investigation of suspected *Legionella*.

Peer Reviewed Journal Articles

Parveen S, Nasreen S, Allen JV, **Kamm KB**, Khan S, Akter S, Lopa TM, Zaman K, El Arifeen S, Luby SP, Ram PK. Barriers to and motivators of handwashing behavior among mothers of neonates in rural Bangladesh. *BMC Public Health* 2018; 18(1): 483.

Ram PK, Nasreen S, **Kamm K**, Allen J, Kumar S, Rahman MA, Zaman K, El Arifeen S, Luby SP. Impact of an intensive perinatal handwashing promotion intervention on maternal handwashing behavior in the neonatal period: findings from a randomized controlled trial in rural Bangladesh. *BioMed Res Intl* 2017;2017:6081470.

Kamm KB, Vujcic J, Nasreen S, Luby SP, Zaman K, El Arifeen S, Ram PK. Is pregnancy a teachable moment to promote handwashing with soap among primiparous women in rural Bangladesh? Follow-up of a randomized controlled trial. *Trop Med Int Health* 2016 Dec; 21(12):1562-1571.

Kamm KB, Feikin DR, Bigogo GM, Aol G, Audi A, Cohen AL, Shah M, Yu J, Breiman RF, Ram PK. Associations with handwashing in the home and respiratory and diarrheal illness in children under five years old in rural western Kenya. *Trop Med Int Health* 2014 Apr; 19(4):398-406.

Mao B, Gozalbes R, Barbosa F, Migeon J, Merrick S, **Kamm K**, Wong E, Costales C, Shi W, Wu C, Froloff N. QSAR modeling of in vitro inhibition of cytochrome P450 3A4. *J Chem Inf Model* 2006 Sep-Oct; 46(5):2125-2134.

Other Publications

Sharp R, **Kamm K**, Reeve K, Frankovich T. Upper Peninsula Community Health Needs Assessment: Reporting on the health status of Michigan's Upper Peninsula Residents, 2nd Edition. Hancock, MI: Western Upper Peninsula Health Department; 2018. [Available from: <http://www.wupdhd.org/community-health/community-health-assessment-2/>].

Olawoyin R, Paterson G, Ide CF, **Kamm K**. Task D: Analyzing the short and long-term public health and safety impacts. In: Meadows G, Grimm A, Green S, eds. *Independent Risk Analysis for the Straits Pipelines – Final Report*; 2018. p. 118-164. [Available from: https://mipetroleumpipelines.com/sites/mipetroleumpipelines.com/files/document/pdf/Straits_Independent_Risk_Analysis_Final.pdf].

Kamm KB, Crabtree-Ide C, Thomas A, Ram PK. Evaluation of the SOPO School Handwashing Promotion Programme: Nyanza and Rift Valley Provinces, Kenya. Nairobi, Eastern and Southern Africa Sanitation and Hygiene Learning Series. Nairobi, Kenya: UNICEF-Eastern and Southern Africa Regional Office; Feb 2015.

Kamm KB, Crabtree-Ide C, Kiritu H, Ram PK. Report on evaluation of SOPO Program, Nyanza and Rift Valley Provinces, Kenya. Nairobi, Kenya: UNICEF-Kenya Country Office; 2012.

Presented Abstracts

Kamm KB. Motivators and barriers to breastfeeding in Michigan's Upper Peninsula. 2019 American Public Health Association Annual meeting. Submitted (under review).

Destrampe AE*, **Kamm KB**. Impact of community and institutional factors on breastfeeding practices in the Upper Peninsula. Undergraduate Research Symposium, Michigan Technological University, March 2019.

Fife A*, **Kamm KB**. Prenatal and demographic influences on breastfeeding in the U.P. Undergraduate Research Symposium, Michigan Technological University, March 2019.

Nutini B*, **Kamm KB**. Determinants of breastfeeding among younger mothers in Michigan's U.P., a secondary analysis. Undergraduate Research Symposium, Michigan Technological University, March 2019.

Millen AE, Hall K, **Kamm KB**, Liu Z, Krajewski BJ, Wactawski-Wende J, Lema G, Buck M, Hageman Blair R, Sun Y, McSkimming D, Mares JA. Mail-based stool collection in women with and without

age-related macular degeneration (AMD). Association for Research in Vision and Ophthalmology Annual Meeting. Vancouver, British Columbia. April 28-May 2, 2018.

Vaughn A*, **Kamm KB**. Understanding asthma determinants among adults in the U.P. Undergraduate Research Symposium, Michigan Technological University, March 2018.

Kamm KB, Crabtree-Ide C, Thomas A, Job-Johnson B, Zai T, Eshuchi R, Obisa J, Imbo F, Kiritu H, Ram PK. Evaluation of the school-based SOPO handwashing campaign in western Kenya. 2014 UNC Water and Health conference. Accepted for poster presentation.

Kamm KB, Vujcic J, Nasreen S, Luby SP, Zaman K, el Arifeen S, Ram PK. Is pregnancy a teachable moment for handwashing habit adoption in primiparous women in rural Bangladesh? 2014 Pediatric Academic Societies and Asian Society for Pediatric Research Annual Meeting, Vancouver, BC, Canada. Accepted for poster presentation.

Kamm KB, Nasreen S, Vujcic J, el Arifeen S, Zaman K, Luby SP, Ram PK. Impact of a brief in-home neonatal health promotion on self-reported birth and neonatal care practices among primiparous women in the third trimester in rural Bangladesh. 2012 American Society for Tropical Medicine and Hygiene, 61th Annual Meeting, Atlanta, GA. Accepted for oral presentation.

Kamm KB, Feikin D, Bigogo G, Aol G, Audi A, Cohen A, Shah M, Yu J, Breiman RF, Ram PK. Associations with handwashing in the home and respiratory and diarrheal illness in children under five years old in rural western Kenya. 2011 American Society for Tropical Medicine and Hygiene, 60th Annual Meeting, Philadelphia, PA. Accepted for oral presentation.

Kamm KB, Erwin DO, Widman CA, Wactawski-Wende J. A low-cost community based incentive program to increase mammography utilization. 2011 International Cancer Education Conference, Buffalo, NY. Accepted for poster presentation.

Kamm KB, Rudra CB. Time trends and correlates of infant bedsharing in the United States, 2000-2008. 2011 Society for Epidemiologic Research, 3rd North American Congress of Epidemiology, Montreal, Quebec. Accepted for poster presentation. Also accepted for poster presentation at 2011 23rd Annual J. Warren Perry lecture, University at Buffalo, Buffalo, NY.

*Undergraduate student presenter

Student Mentorship

Lianne Novak (undergraduate). Factors associated with a working mother's decision to breastfeed her baby in Michigan's Upper Peninsula. Summer Undergraduate Research Fellowship, Michigan Technological University. Faculty Advisors: **Kelly Kamm** and Kui Zhang. Awarded for summer 2019.

Ayla Vaughn (undergraduate). Understanding asthma determinants among adults in the U.P. Undergraduate Research Internship Program, Michigan Technological University. Awarded for 2017-2018 academic year.