

# JONATHAN D. SUGIMOTO

*Primary*  
6424 57<sup>th</sup> Ave. S.  
Seattle, WA 98118  
(206) 295-0291 (Cell)

*Work*  
1100 Fairview Avenue North  
Room M2-C200  
Seattle, WA 98109-1024  
(206) 667-5069 (Office)  
(206) 667-4378 (Fax)

Email: [jsugim96@gmail.com](mailto:jsugim96@gmail.com)

## EDUCATION

**Doctor of Philosophy**, anticipated December 2010  
Department of Epidemiology, School of Public Health and Community Medicine, University of Washington, Seattle, WA

Dissertation title: Determinates of transmissibility in community outbreaks of symptomatic novel human influenza A  
Adviser: Ira M. Longini, Jr.  
Committee members: M. Elizabeth Halloran, Lisa A. Jackson, John (Chris) Victor, Jared Baetan

**Masters of Health Sciences**, International Health, Disease Prevention and Control, May 2002  
Department of International Health, Bloomberg School of Public Health  
Johns Hopkins University, Baltimore, MD

**Thesis:** Assessing the Safety, Efficacy, and Cost-Effectiveness of Public Health Programs  
Co-Administering High-Dose Vitamin A Supplements and Measles Vaccination: An Indonesian Example

**B.S., Biology; Minor: Biochemistry**, May 2000  
Calvin College, Grand Rapids, MI

## PROFESSIONAL TRAINING

2<sup>nd</sup> Summer Institute in Statistics and Modeling in Infectious Diseases (2010), Seattle, WA  
- MCMC I Methods for Infectious Diseases (June 16 – 18)  
- Quantitative Methods for Evaluating Drug Resistance (June 28 – 30)

1<sup>st</sup> Summer Institute in Statistics and Modeling in Infectious Diseases (2009), Seattle, WA  
- Design and Analysis of Vaccine Clinical Trials (June 17 – 19)  
- Inference for Graphs and Network Theory in Infectious Diseases (June 24 – 26)

## RESEARCH INTERESTS

My research interests include the following:

- Application of statistical models of infectious disease transmission to estimate:

Updated: November 8, 2010

- Epidemiologic measures of pathogen transmissibility, for example reproductive numbers, secondary attack rates, and transmission probabilities
- Intervention and risk factor effects, for example, vaccine efficacy, drug effectiveness, or age effects
- Design, implementation, and analysis of epidemiologic intervention and natural history studies of infectious diseases, both observational and randomized clinical trials
- Implementation of study designs appropriate for maximizing the amount of information gained from observational studies of infectious disease outbreaks, especially for emerging pathogens
- Mathematical simulation of infectious disease transmission to investigate the potential impact of interventions
- Design, implementation, and analysis of cluster randomized intervention trials
- Development of novel quantitative methods for infectious disease epidemiology
- Integration of data from a diverse range of study designs and a sources to provide better information for the estimation of infectious disease transmission parameters and intervention effects

## RESEARCH EXPERIENCE

**Research Associate**, Center for Statistics and Quantitative Infectious Diseases, Fred Hutchinson Cancer Research Center, Seattle WA (September 2006 – present)

- Estimated transmission parameters from early outbreaks of pandemic influenza A (H1N1) 2009 in the United States, as well as the relative effects of potential determinants of transmissibility
- Helped to develop a statistical approach to adjust for unobserved factors affecting susceptibility to symptomatic infection during outbreaks of an acute infectious disease. Pre-existing immunity and unobserved asymptomatic infection during an outbreak are examples of these types of factors.
- Performed statistical modeling of the transmission of highly-pathogenic H5N1 avian influenza, 2009 pandemic influenza A (H1N1), and seasonal influenza in community settings, such as households, schools, and camps.
- Worked on the development team for a software application (TranStat) designed to estimate transmission parameters from outbreaks of acute infectious diseases
- Conducted mathematical modeling of the projected effectiveness of novel diagnostic, drug, and vaccine technologies against tuberculosis for the first half of the 21<sup>st</sup> century
- Investigated the impact of potential interventions to prevent the spread of pandemic influenza in a simulated population of Los Angeles County, California
- Collaborating with a cluster-randomized community trial of the trivalent, inactivated seasonal influenza vaccine being conducted in Senegal, West Africa,
  - Randomized communities to receive either the trial or control vaccine using stratified, constrained randomization methods
  - Conducting the primary analysis of the vaccine effectiveness against laboratory-confirmed symptomatic seasonal influenza
  - Collecting data to estimate the efficacy of influenza vaccination in rural Africa, accounting for variation in exposure to infection

**Research Associate**, Department of International Health, Bloomberg School of Public Health, Johns Hopkins University, Baltimore, MD (July 2002 – July 2006)

- Designed, constructed, and managed a large geographical information system (**GIS**) for an international, community-based, nutrition research project, located in rural **Bangladesh**
  - Assembled the 500 km<sup>2</sup> GIS from digitized paper maps, conducted a geographic survey of 225,000 landmarks using global positioning system (GPS) technology, conducted GIS-based analyses, and produced maps for publication.
  - Assessed the effect of access to health care services, or lack thereof, on pregnancy-related outcomes
  - Investigated the relationship between household dietary diversity and proximity to a market center or bazaar
  - Compared geographic patterns of contraceptive use to rates of unplanned pregnancies
- Team lead on a retrospective cohort study (N = 30,000) of the epidemiology of a **tornado disaster**
  - Drafted the study protocol, developed the data collection instruments, managed data collection, managed entry of the study data into a database, conducted the analysis, and first-authored related publications.

**Intern**, Helen Keller International (HKI), Jakarta, Indonesia (August - December 2001)

- Modeled the cost-effectiveness of an Indonesian pilot project co-delivering vitamin A and measles vaccination and reviewed the relevant literature

## TEACHING EXPERIENCE

**Teaching Assistant**, Department of Epidemiology, University of Washington, Seattle, WA (January – March 2008)

- Introductory biostatistics
- Responsible for grading, leading review sessions, delivered a laboratory lecture

**Laboratory Assistant**, Department of Biology, Calvin College, Grand Rapids, MI (1999)

- Freshman biology
- Prepared laboratory for class and acted as teaching assistant during the laboratories

## CONSULTING EXPERIENCE

**Information Systems Consultant**, PSATT Research Trial, Karachi, Pakistan (February - June 2006)

- Reviewed and revised protocols related to entry and management of research trial data and analyzed data for review by the trial's data safety and monitoring board

**Data Analyst**, Bloomberg School of Public Health, Johns Hopkins, Baltimore, MD (June – July 2001)

- Spatial modeling of the influence of environmental factors on the human feeding habits of the malaria mosquito vector

## FIELDWORK EXPERIENCE

**Niakhar, Senegal**, Institute of Research for Development, Demographic and Health Surveillance System (July – August 2009)

- Worked with local investigators to introduce a new surveillance form into the community-based influenza vaccine trial
- Dissertation related field work

**Karachi, Pakistan**, Aga Khan University (February 2006)

- Conducted an onsite review of data-entry activities for an urban, community-based, maternal nutrition research trial

**Rangpur, Bangladesh**, JiVitA Bangladesh (2002 – 2005)

- Produced public health informatics solutions for a large international nutrition research trial
- Managed the development of a large geographic information system (GIS)
- Educated local scientists in the use of GIS and spatial statistics for public health research

**Democratic Republic of Congo and Kenya** (1986-1996)

- Lived in the Ituri forest region of the Congo
- Volunteered at a hospital in rural Congo
- Volunteered at a local elementary school in Kenya

## PEER-REVIEWED PUBLICATIONS

### In Print

Yang Y, **Sugimoto JD**, Halloran ME, Basta NE, Chao DL, Matrajt L, Potter G, Kenah E, Longini IM. The Transmissibility and Control of Pandemic Influenza A (H1N1) Virus. *Science* 2009 October 30; 326(5953): 729-33.

Abu-Raddad LJ, Sabatelli L, Achterberg JT, **Sugimoto JD**, Longini IM, Dye C, Halloran ME. Epidemiological benefits of more-effective tuberculosis vaccines, drugs, and diagnostics. *Proc Natl Acad Sci U S A*. 2009 August 18; 106(33): 13980–13985.

**Sugimoto JD**, Labrique AB, Ahmad S, Rashid M, Klemm RDW, Christian P, West KP Jr. Development and management of a geographic information system for health research in a developing-country setting: a case study from Bangladesh. *Journal of Population, Health and Nutrition* 2007 Dec;25(4):436-47.

**Sugimoto JD**, Ahmad S, Rashid M, Shamim AA, Labrique AB. A low-cost method to identify tubewells for longitudinal research on arsenic in groundwater. *Journal of Population, Health and Nutrition* 2007 Sept;25(3):377-81.

Yang Y, Halloran ME, **Sugimoto JD**, Longini IM Jr. Detecting Human-to-Human Transmission of Avian Influenza A (H5N1). *Emerging Infectious Diseases*. 2007 Sept;13(9):1348-53.

### In Press

**Sugimoto JD**, Labrique AB, Ahmad S, Rashid M, Shamim AA, Ullah B, Klemm RDW, Christian P, West KP. Epidemiology of tornado destruction in rural northern Bangladesh: Risk factors for death and injury. *Disasters*. Accepted June 2009.

**Sugimoto JD**, Borse NN, Ta ML, Stockman LJ, Fischer GE, Yang Y, Halloran ME, Longini IM, Duchin JS. The effect of age on transmission of 2009 pandemic influenza A (H1N1) in a camp and associated households. *Epidemiology*. Accepted September 2010.

### PRESENTATIONS

**Sugimoto JD**. Pandemic H1N1: Age and Household Transmission. *Poster presented at: Models of Infectious Disease Agent Study (MIDAS) Meeting*. Washington, DC. May 5, 2010.

Halloran ME, Abu-Raddad LJ, Sabatelli L, Achterberg JT, **Sugimoto JD**, Dye C, Longini IM. Impact of vaccination strategies on TB incidence and mortality. *Presentation at: 40th Union World Conference on Lung Health*, Cancun, Mexico. December 6, 2009

**Sugimoto JD**, Laith J. Abu-Raddad, Jerusha T. Achterberg, Lorenzo Sabatelli, Ira M. Longini, Jr., Christopher Dye, M. Elizabeth Halloran. The effects of mass treatment of latent infection and enhanced case management on tuberculosis incidence and mortality. *Poster presented at: Epidemics 1, First International Conference on Infectious Disease Dynamics*. Asilomar, CA. December 2, 2008.

Achterberg JT, Abu-Raddad LJ, Sabatelli L, **Sugimoto JD**, Longini IM, Dye C, Halloran ME. Global health 2015-2050: The epidemiological consequences of novel vaccines against tuberculosis. *Presentation at: Epidemics 1, First International Conference on Infectious Disease Dynamics*, Asilomar, CA. December 2, 2008.

Sabatelli L, Abu-Raddad LJ, Achterberg JT, **Sugimoto JD**, Longini IM, Dye C, Halloran ME. Estimating the potential impact of novel diagnostics on the global tuberculosis epidemic. *Presentation at: Epidemics 1, First International Conference on Infectious Disease Dynamics*, Asilomar, CA. December 2, 2008.

S Ahmad, **Sugimoto JD**, AA Shamim, AB Labrique, M Rashid, JH Rah, P Christian, R Klemm, KP West Jr. Does proximity to market influence dietary diversity of pregnant women in rural Bangladesh? *Presentation at: Commonwealth Association of Pediatric Gastroenterology and Nutrition (CAPGAN) Conference*. Dhaka, Bangladesh; February 5-8, 2006.

Siddique AB, **Sugimoto JD**, Ali H, Ullah B, Sikder SS, Christian P, Klemm RDW, Labrique AB. Using GPS data timestamps and other mobile ICT methods to improve community-based worker accountability: a rural Bangladesh experience. *Poster at: mHealth Summit*, Washington DC. November 8-10, 2010.

## OTHER PUBLICATIONS

Halloran ME, Achterberg JT, Sabatelli L, **Sugimoto JD**, Dye C, Longini IM. Reply to Vani et al.: Tuberculosis models and complexity. *Proceedings of the National Academy of Sciences USA* 2009 November 17; 106(46): E130.

Longini IM Jr, Yang Y, **Sugimoto JD**, Halloran ME. Detecting human-to-human transmission of avian influenza A (H5N1) [response]. *Emerging Infectious Diseases* 2007 November; 13(12): 1969-1971.

West KP Jr, Rice A, **Sugimoto JD**. Tables on the Global Burden of Vitamin A Deficiency and Xerophthalmia Among Preschool Aged Children and Low Vitamin A Status, Vitamin A Deficiency, and Night Blindness Among Pregnant Women By WHO Region. <http://www.ihsph.edu/CHN/images/GlobalVADtables.pdf> (updated August 2002).

## WORKS IN PROGRESS

Chao DL, Matrajt L, Basta NE, **Sugimoto JD**, Dean B, Bagwell DA, Ojulfstad B, Halloran ME, Longini IM. Planning control of pandemic influenza H1N1 in Los Angeles County and the US. *Submitted for Publication*.

**Sugimoto JD**, Yang Y, Dean B, Bagwell DA, Ojulfstad B, Halloran ME, Longini IM. Pre-existing immunity and age effects on household transmission of 2009 pandemic influenza A (H1N1) associated acute febrile respiratory illness in Los Angeles County, United States. *In Preparation*.

## FUNDING

Thomas Francis, Jr., Global Health Fellowship, June - August 2009  
- Travel grant funding to support dissertation fieldwork in Senegal, West Africa

Diane Hess Memorial Fund Award, February 2001  
- Funding to support master's thesis work

## AFFILIATIONS

American Association for the Advancement of Science, 2008-2009

## PROFESSIONAL SKILLS

### Geographic Information Systems and Database Software Experience

- ArcGIS Desktop Software Suite
- AutoCAD Map
- MapInfo Professional
- Microsoft Access
- SQL Server Professional

### Programming Language Experience

- JAVA
- Python

#### Statistical Software Experience

- R
- SatScan
- STATA
- TranStat (<https://www.epimodels.org/midas/transtat.do>)

#### LANGUAGES

- Fluent in French
- Knowledgeable in Swahili, Bahasa Indonesia, and Bengali.

#### VOLUNTEER EXPERIENCE

Disaster relief for tornado victims in rural Bangladesh, March 2005

- Provided first aid to victims and disseminated disaster statistics and information about relief efforts to other collaborating organizations