

# Ayesha S. Mahmud

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## Academic appointments

**Assistant Professor** July 2019 - Present  
Department of Demography, University of California, Berkeley

**Visiting Scientist** July 2019 - Present  
Harvard T.H. Chan School of Public Health

**Rockefeller Foundation Planetary Health Postdoctoral Fellow** September 2017 - June 2019  
Harvard T.H. Chan School of Public Health  
Harvard University Center for the Environment

## Education

**Ph.D. Demography and Social Policy, Princeton University** September 2017  
*Advisors:* C. Jessica Metcalf and Bryan T. Grenfell

**B.A. Economics and Physics, Carleton College** June 2009  
*Magna Cum Laude, Distinction in major and thesis (Economics and Physics)*

## Peer-reviewed publications

Lewnard, J.A., Liu, V.X., Jackson, M.L., Schmidt, M.A., Jewell, B.L., Flores, J.P., Jentz, C., Northrup, G.R., **Mahmud, A.**, Reingold, A.L., Petersen, M., Jewell, N. P., Young, S., Bellows, J. (2020) "Incidence, clinical outcomes, and transmission dynamics of severe coronavirus disease 2019 in California and Washington: prospective cohort study". *BMJ* 369:1923. **Link.**

Chin, T., Buckee, C. O., **Mahmud, A.\*** (2020) "Quantifying the success of measles vaccination campaigns in the Rohingya refugee camps". *Epidemics*. 30:100385. **(\* senior author) Link.**

Martinez, P.\*, **Mahmud, A.\***, Yunus, M., Faruque, A. S. G., Ahmed, T., Pascual, M., Buckee, C. (2020) "Tubewell use protects against rotavirus infection during the monsoons in an urban setting". *Journal of Infectious Diseases*. 221: 22. **(\* co-first author). Link.**

Baker, R, **Mahmud, A.**, Wagner, C., Yang, W., Pitzer, V., Viboud, C., Vecchi, G., Metcalf, C., Grenfell, B. (2019) "Epidemic dynamics of respiratory syncytial virus in current and future climates". *Nature Communications*. 10:5512. [Link](#).

Kahn, R.\*, **Mahmud, A.\***, Schroeder, A., Aguilar Ramirez, L.H., Crowley, J., Chan, J., Buckee, C.O. (2019) "Rapid forecasting of cholera risk in Mozambique: translational challenges and opportunities." *Prehosp Disaster Med*. 34(5):557-562. (\* co-first author). [Link](#).

Rahman, M. R., Ahmed, S., **Mahmud, A. et al.** (2019) "Health consequences of climate change in Bangladesh: An overview of the evidence, knowledge gaps and challenges". *Wiley Interdisciplinary Reviews: Climate Change*. e601. [Link](#).

**Mahmud, A.**, Lipsitch, M., and Goldstein, E. (2019) "On the role of different age groups during pertussis epidemics in California, 2010 and 2014". *Epidemiology and Infection*. 147 (e184). [Link](#).

Chang, H.H., Wesolowski, A., Sinha, I., Jacob, C.G., **Mahmud, A.**, et al. (2019) "Mapping imported malaria in Bangladesh using parasite genetic and human mobility data." *eLife*. 8:e43481. [Link](#).

Bhatia, A., **Mahmud, A.**, Fuller, A., et al. (2018) "The Rohingya in Cox's Bazar: When the Stateless Seek Refuge." *Journal of Health and Human Rights*. 20 (2) pp 105 -122. [Link](#).

Kishore, N., Marques, D., **Mahmud, A. et al.** (2018) "Mortality in Puerto Rico after Hurricane Maria". *New England Journal of Medicine*, 379 (2) pp 162-170. [Link](#).

Baker, R.\*, **Mahmud, A.\***, and Metcalf, C. J. E. (2018) "Dynamic response of airborne infections to climate change: predictions for varicella". *Climatic Change*, 148 (4) pp 547-560. (\* co-first author). [Link](#).

Buckee, C. et al. (2018) "Productive disruption: opportunities and challenges for innovation in infectious disease surveillance." *BMJ Global Health*, 3 (1). [Link](#).

**Mahmud, A.**, Alam, N., and Metcalf, C. J. E. (2017) "Drivers of measles mortality: the historic fatality burden of famine in Bangladesh". *Epidemiology and Infection*, 145 (16), pp 3361-3369. [Link](#).

**Mahmud, A.**, Metcalf, C. J. E., and Grenfell, B.T. (2017) "Comparative dynamics, seasonality in transmission, and predictability of childhood infections in Mexico". *Epidemiology and Infection*, 145 (3), pp 607-625. [Link](#).

Carton, S.\*, Helsby, J.\*, Joseph, K.\*, **Mahmud, A.\***, Park, Y.\*, Walsh, J., Cody, C., Patterson, E., Haynes, L., and Ghani, R. (2016) "Identifying Police Officers at Risk of Adverse Events." *Proceedings of the 22nd ACM SIGKDD Conference on Knowledge Discovery and Data Mining, KDD '16*. (\* co-first author). [Link](#).

**Mahmud, A.** (2016) "Behavioral or Biological: Taking a Closer Look at the Relationship between HIV and Fertility." *Applied Demography and Public Health in the 21st Century*. Springer International Publishing, pp. 361-380. [Link](#).

Caudron, Q., **Mahmud, A.**, Metcalf, C. J. E., Gottfredsson, M., Viboud, C., Cliff, A. D., and Grenfell, B. T. (2015). "Predictability in a Highly Stochastic System: Final Size of Measles Epidemics in Small Populations." *Journal of The Royal Society Interface*, 12(102), 20141125. [Link](#).

## Fellowships and awards

Rockefeller Foundation Planetary Health Fellowship, Harvard University, 2017-2019.

Fellowship of Woodrow Wilson Scholars, Princeton University, 2016-2017.

Health Grand Challenge Graduate Research Funding, Center for Health and Wellbeing, Princeton University, 2016.

Data Science for Social Good Fellowship, University of Chicago, 2015.

Scholarship, 6th Summer Institute in Statistics and Modeling in Infectious Diseases, University of Washington, 2014.

Summer grant for developing the syllabus for undergraduate courses on social entrepreneurship and global health challenges, Kellar Center, Princeton University, 2013 and 2014

Employee Recognition Award, NORC at the University of Chicago, 2009.

Starr International Scholar, Carleton College, 2005 - 2009.

Dean's list, Carleton College, 2006 (awarded to top 10 percent of the class).

Nominated for Sigma Xi (honor society for scientists), 2009

## Talks and conference presentations

"When a megacity goes on holiday: The impact of population mobility on the spread of local epidemics." Ecology and Evolution of Infectious Disease meeting, Princeton, NJ, June 2019.

"The impact of population mobility on the spread of local epidemics". Massachusetts General Hospital HIV Conference Series, Boston, MA, May 2019. *Invited talk*.

"Drivers of dengue dynamics in Brazil: quantifying the role of human demography and climate". Planetary Health Annual Meeting, Edinburgh, UK, May 2018.

"Drivers of infectious disease dynamics: Quantifying the impact of demography and climate". Department of Demography Seminar Series, University of California, Berkeley, CA, January 2018. *Invited talk*.

"Climate drivers of infectious diseases" Epidemics, Sitges, Spain, November 2017.

"Drivers of seasonal disease dynamics" UTokyo-Princeton Infectious Disease Modeling Symposium, Tokyo, Japan, July 2017. *Invited talk*.

"Dynamic response of airborne infections to climate change: predictions for varicella." Planetary Health / GeoHealth Annual Meeting, Boston, MA, April 2017.

"Comparative Dynamics, Seasonality in Transmission, and Predictability of Childhood Infections in Mexico." Population Association of America conference, Chicago, IL, April 2017.

"Drivers of infectious disease dynamics: Childhood infections in Mexico." 5th Annual Institute for Disease Modeling Symposium, Bellevue, WA, April 2017. *Invited talk.*

"Drivers of seasonal transmission of childhood infections." Center for Communicable Disease Dynamics Seminar, Harvard University, Cambridge, MA, December, 2016. *Invited talk.*

"Comparative dynamics, seasonality in transmission, and predictability of childhood infections in Mexico." Ecology and Evolution of Infectious Disease meeting, Cornell, NY, June 2016.

"Identifying Police Officers at Risk of Adverse Events." Population Association of America conference, Washington, DC, April 2016.

"HIV and Fertility in sub-Saharan Africa." Population Association of America conference, San Diego, CA, May 2015.

"Stratospheric Photochemistry on Neptune: Constraints from Spitzer Observations." American Astronomical Society Division of Planetary Sciences conference, Cornell, NY, October 2008.

## Work experience

<b>World Bank</b> , Washington, D.C.	June 2016 - June 2017
<b>Data Science for Social Good Summer Fellowship</b> , Chicago, IL	June - August 2015
<b>National Bureau of Economic Research</b> , Cambridge, MA	July 2011 - August 2012
<b>NORC at the University of Chicago</b> , Bethesda, MD	July 2009 - June 2011

## Teaching

<b>Instructor, Introduction to Population Analysis</b> University of California, Berkeley	Fall 2019
<b>Co-Instructor, Introduction to Infectious Disease Modeling</b> Harvard T. H. Chan School of Public Health	Spring 2019
<b>Instructor, Introduction to Demographic Methods</b> Office of Population Research, Princeton University Summer "boot-camp" for incoming Ph.D. students	Summer 2014

**Teaching assistant, Epidemiology**

Spring 2014

Woodrow Wilson School, Princeton University

Instructor: Joseph Amon, Princeton University

**Teaching assistant, Ventures to Address Global Health Challenges**

Fall 2013

Woodrow Wilson School and Dept. of Engineering, Princeton University

Instructor: John Danner, University of California - Berkeley

**Reviewer**

*Emerging Infectious Diseases, PLOS Computational Biology, Epidemiology and Infection, Nature Scientific Reports*

Last updated: May 27, 2020