

Stanford



Jade Benjamin-Chung

Assistant Professor of Epidemiology and Population Health

Bio

BIO

Jade Benjamin-Chung, PhD MPH, is an Assistant Professor at Stanford University in the Department of Epidemiology and Population Health. Her research applies causal inference and machine learning techniques to study interventions to control, eliminate, or eradicate environmentally-transmitted infectious diseases, including interventions to prevent malaria, diarrhea, soil-transmitted helminths, and influenza. She is a Chan Zuckerberg Biohub Investigator and a recipient of a K01 Career Development Award from the National Institute of Allergy and Infectious Diseases to estimate spillover effects of malaria eradication interventions in southern Africa (K01AI141616). She completed her graduate training in epidemiology and biostatistics at UC Berkeley and joined Stanford in May 2021.

ACADEMIC APPOINTMENTS

- Assistant Professor, Epidemiology and Population Health
- Member, Maternal & Child Health Research Institute (MCHRI)

HONORS AND AWARDS

- Rosenkranz Prize, Stanford University (2023)
- Stanford Program on Research Rigor and Reproducibility Award, Stanford University (2023)
- Investigator, Chan Zuckerberg Biohub (2022-2027)

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Faculty Fellow, Stanford Center for Innovation in Global Health (2021 - present)

PROFESSIONAL EDUCATION

- PhD, UC Berkeley , Epidemiology (2014)
- MA, UC Berkeley , Biostatistics (2013)
- MPH, UC Berkeley , Epidemiology & Biostatistics (2008)

LINKS

- My Lab Site: <https://jadebc.net>

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

Our research aims to improve population health by creating high quality evidence about what health interventions work in whom and where, when, and how to implement them. Most of our research is focused on environmentally-mediated infectious diseases, including malaria, diarrhea, soil-transmitted helminths, and

influenza. Our focus is on improving the health of vulnerable populations from low-resource settings, both domestically and internationally. We use a variety of epidemiologic, computational, and statistical methods, including causal inference and machine learning methods.

CLINICAL TRIALS

- Effects of Household Concrete Floors on Child Health, Not Recruiting

Teaching

COURSES

2022-23

- Intermediate Epidemiologic and Clinical Research Methods: EPI 226 (Win)

STANFORD ADVISEES

Doctoral Dissertation Reader (AC)

Jason Hernandez

Doctoral Dissertation Advisor (AC)

Anna Nguyen

Publications

PUBLICATIONS

- **Measuring the Success of the US COVID-19 Vaccine Campaign-It's Time to Invest in and Strengthen Immunization Information Systems.** *American journal of public health*
Benjamin-Chung, J., Reingold, A.
2021; e1-e3
- **Household finished flooring and soil-transmitted helminth and Giardia infections among children in rural Bangladesh and Kenya: a prospective cohort study.** *The Lancet. Global health*
Benjamin-Chung, J. n., Crider, Y. S., Mertens, A. n., Ercumen, A. n., Pickering, A. J., Lin, A. n., Steinbaum, L. n., Swarthout, J. n., Rahman, M. n., Parvez, S. M., Haque, R. n., Njenga, S. M., Kihara, et al
2021; 9 (3): e301–e308
- **Evaluation of a city-wide school-located influenza vaccination program in Oakland, California, with respect to vaccination coverage, school absences, and laboratory-confirmed influenza: A matched cohort study** *PLOS MEDICINE*
Benjamin-Chung, J., Arnold, B. F., Kennedy, C. J., Mishra, K., Pokpongkiat, N., Nguyen, A., Jilek, W., Holbrook, K., Pan, E., Kirley, P. D., Libby, T., Hubbard, A. E., Reingold, et al
2020; 17 (8): e1003238
- **Substantial underestimation of SARS-CoV-2 infection in the United States.** *Nature communications*
Wu, S. L., Mertens, A. N., Crider, Y. S., Nguyen, A. n., Pokpongkiat, N. N., Djajadi, S. n., Seth, A. n., Hsiang, M. S., Colford, J. M., Reingold, A. n., Arnold, B. F., Hubbard, A. n., Benjamin-Chung, et al
2020; 11 (1): 4507
- **A Randomized Controlled Trial to Measure Spillover Effects of a Combined Water, Sanitation, and Handwashing Intervention in Rural Bangladesh** *AMERICAN JOURNAL OF EPIDEMIOLOGY*
Benjamin-Chung, J., Amin, N., Ercumen, A., Arnold, B. F., Hubbard, A. E., Unicomb, L., Rahman, M., Luby, S. P., Colford, J. M.
2018; 187 (8): 1733–44
- **Spillover effects in epidemiology: parameters, study designs and methodological considerations** *INTERNATIONAL JOURNAL OF EPIDEMIOLOGY*
Benjamin-Chung, J., Arnold, B. F., Berger, D., Luby, S. P., Miguel, E., Colford, J. M., Hubbard, A. E.
2018; 47 (1): 332–47
- **Scaling Up a Water, Sanitation, and Hygiene Program in Rural Bangladesh: The Role of Program Implementation.** *American journal of public health*
Benjamin-Chung, J., Sultana, S., Halder, A. K., Ahsan, M. A., Arnold, B. F., Hubbard, A. E., Unicomb, L., Luby, S. P., Colford, J. M.

2017; 107 (5): 694-701

- **Spillover effects on health outcomes in low- and middle-income countries: a systematic review.** *International journal of epidemiology*
Benjamin-Chung, J., Abedin, J., Berger, D., Clark, A., Jimenez, V., Konagaya, E., Tran, D., Arnold, B. F., Hubbard, A. E., Luby, S. P., Miguel, E., Colford, J. M.
2017
- **Rigour and reproducibility in perinatal and paediatric epidemiologic research using big data.** *Paediatric and perinatal epidemiology*
Nguyen, A., Benjamin-Chung, J.
2023
- **Assessing sustained uptake of latrine and child feces management interventions: Extended follow-up of a cluster-randomized controlled trial in rural Bangladesh 1-3.5 years after intervention initiation.** *International journal of hygiene and environmental health*
Islam, M., Rahman, M., Kafi, M. A., Unicomb, L., Rahman, M., Mertens, A., Benjamin-Chung, J., Arnold, B. F., Colford, J. M., Luby, S. P., Ercumen, A.
2023; 250: 114149
- **Effects of water, sanitation, and hygiene interventions on detection of enteropathogens and host-specific faecal markers in the environment: a systematic review and individual participant data meta-analysis.** *The Lancet. Planetary health*
Mertens, A., Arnold, B. F., Benjamin-Chung, J., Boehm, A. B., Brown, J., Capone, D., Clasen, T., Fuhrmeister, E., Grembi, J. A., Holcomb, D., Knee, J., Kwong, L. H., Lin, et al
2023; 7 (3): e197-e208
- **The effect of a large-scale water, sanitation and hygiene intervention in Bangladesh on knowledge, behaviour and health: Findings from an endline programme evaluation** *TROPICAL MEDICINE & INTERNATIONAL HEALTH*
Aluri, K., Halder, A. K., Islam, M., Benjamin-Chung, J., Alam, M., Shoab, A., Rahman, M., Unicomb, L., Luby, S. P.
2022
- **Influence of community-level sanitation coverage and population density on environmental fecal contamination and child health in a longitudinal cohort in rural Bangladesh.** *International journal of hygiene and environmental health*
Contreras, J. D., Islam, M., Mertens, A., Pickering, A. J., Kwong, L. H., Arnold, B. F., Benjamin-Chung, J., Hubbard, A. E., Alam, M., Sen, D., Islam, S., Rahman, M., Unicomb, et al
2022; 245: 114031
- **Evaluation of an on-site sanitation intervention against childhood diarrhea and acute respiratory infection 1 to 3.5 years after implementation: Extended follow-up of a cluster-randomized controlled trial in rural Bangladesh.** *PLoS medicine*
Contreras, J. D., Islam, M., Mertens, A., Pickering, A. J., Arnold, B. F., Benjamin-Chung, J., Hubbard, A. E., Rahman, M., Unicomb, L., Luby, S. P., Colford, J. M., Ercumen, A.
2022; 19 (8): e1004041
- **A Review of the Ring Trial Design for Evaluating Ring Interventions for Infectious Diseases.** *Epidemiologic reviews*
Butzin-Dozier, Z., Athni, T. S., Benjamin-Chung, J.
2022
- **Impact of community masking on COVID-19: A cluster-randomized trial in Bangladesh** *SCIENCE*
Abaluck, J., Kwong, L. H., Styczynski, A., Haque, A., Kabir, M., Bates-Jefferys, E., Crawford, E., Benjamin-Chung, J., Raihan, S., Rahman, S., Benhachmi, S., Bintee, N., Winch, et al
2022; 375 (6577): 160+
- **Evaluating the robustness of targeted maximum likelihood estimators via realistic simulations in nutrition intervention trials.** *Statistics in medicine*
Li, H., Rosete, S., Coyle, J., Phillips, R. V., Hejazi, N. S., Malenica, I., Arnold, B. F., Benjamin-Chung, J., Mertens, A., Colford, J. M., van der Laan, M. J., Hubbard, A. E.
2022
- **Evaluation of a city-wide school-located influenza vaccination program in Oakland, California with respect to race and ethnicity: A matched cohort study.** *Vaccine*
Nguyen, A. T., Arnold, B. F., Kennedy, C. J., Mishra, K., Pokpongkiat, N. N., Seth, A., Djajadi, S., Holbrook, K., Pan, E., Kirley, P. D., Libby, T., Hubbard, A. E., Reingold, et al
2021
- **Impact of community masking on COVID-19: A cluster-randomized trial in Bangladesh.** *Science (New York, N.Y.)*
Abaluck, J., Kwong, L. H., Styczynski, A., Haque, A., Kabir, M. A., Bates-Jefferys, E., Crawford, E., Benjamin-Chung, J., Raihan, S., Rahman, S., Benhachmi, S., Bintee, N. Z., Winch, et al
2021: eabi9069

- **LONGITUDINAL EFFECTS OF A SANITATION INTERVENTION ON ENVIRONMENTAL FECAL CONTAMINATION IN A CLUSTER-RANDOMIZED CONTROLLED TRIAL IN RURAL BANGLADESH**
Contreras, J. D., Islam, M., Mertens, A., Pickering, A. J., Kwong, L. H., Arnold, B. F., Benjamin-Chung, J., Hubbard, A. E., Alam, M., Sen, D., Islam, S., Rahman, M., Unicomb, et al
AMER SOC TROP MED & HYGIENE.2021: 287-288
- **City-wide school-located influenza vaccination: A retrospective cohort study.** *Vaccine*
Benjamin-Chung, J., Arnold, B. F., Mishra, K., Kennedy, C. J., Nguyen, A., Pokpongkiat, N. N., Djajadi, S., Seth, A., Klein, N. P., Hubbard, A. E., Reingold, A., Colford, J. M.
2021
- **Telomere length is associated with growth in children in rural Bangladesh.** *eLife*
Lin, A., Mertens, A. N., Arnold, B. F., Tan, S., Lin, J., Stewart, C. P., Hubbard, A. E., Ali, S., Benjamin-Chung, J., Shoab, A. K., Rahman, M. Z., Famida, S. L., Hossen, et al
2021; 10
- **Telomere length is associated with growth in children in rural Bangladesh** *ELIFE*
Lin, A., Mertens, A. N., Arnold, B. F., Tan, S., Lin, J., Stewart, C. P., Hubbard, A. E., Ali, S., Benjamin-Chung, J., Shoab, A. K., Rahman, M., Famida, S. L., Hossen, et al
2021; 10
- **Longitudinal Effects of a Sanitation Intervention on Environmental Fecal Contamination in a Cluster-Randomized Controlled Trial in Rural Bangladesh.** *Environmental science & technology*
Contreras, J. D., Islam, M., Mertens, A., Pickering, A. J., Kwong, L. H., Arnold, B. F., Benjamin-Chung, J., Hubbard, A. E., Alam, M., Sen, D., Islam, S., Rahman, M., Unicomb, et al
2021
- **Effect of sanitation improvements on soil-transmitted helminth eggs in courtyard soil from rural Bangladesh: Evidence from a cluster-randomized controlled trial.** *PLoS neglected tropical diseases*
Kwong, L. H., Sen, D., Islam, S., Shahriar, S., Benjamin-Chung, J., Arnold, B. F., Hubbard, A., Parvez, S. M., Islam, M., Unicomb, L., Rahman, M., Nelson, K., Colford, et al
2021; 15 (7): e0008815
- **Effect of water, sanitation, handwashing and nutrition interventions on enteropathogens in children 14 months old: a cluster-randomized controlled trial in rural Bangladesh.** *The Journal of infectious diseases*
Grembi, J. A., Lin, A., Karim, M. A., Islam, M. O., Miah, R., Arnold, B. F., McQuade, E. T., Ali, S., Rahman, M. Z., Hussain, Z., Shoab, A. K., Famida, S. L., Hossen, et al
2020
- **Internal replication of computational workflows in scientific research.** *Gates open research*
Benjamin-Chung, J., Colford, J. M., Mertens, A., Hubbard, A. E., Arnold, B. F.
2020; 4: 17
- **Effects of Water, Sanitation, Handwashing, and Nutritional Interventions on Environmental Enteric Dysfunction in Young Children: A Cluster-randomized, Controlled Trial in Rural Bangladesh** *CLINICAL INFECTIOUS DISEASES*
Lin, A., Ali, S., Arnold, B. F., Rahman, M., Alauddin, M., Grembi, J., Mertens, A. N., Famida, S. L., Akther, S., Hossen, M., Mutsuddi, P., Shoab, A. K., Hussain, et al
2020; 70 (5): 738–47
- **Effect of Improved Water Quality, Sanitation, Hygiene and Nutrition Interventions on Respiratory Illness in Young Children in Rural Bangladesh: A Multi-Arm Cluster-Randomized Controlled Trial.** *The American journal of tropical medicine and hygiene*
Ashraf, S., Unicomb, L., Rahman, M., Winch, P. J., Arnold, B. F., Benjamin Chung, J., Ram, P. K., Colford, J. M., Luby, S. P.
2020
- **Comparison of multi-parallel qPCR and double-slide Kato-Katz for detection of soil-transmitted helminth infection among children in rural Bangladesh.** *PLoS neglected tropical diseases*
Benjamin-Chung, J. n., Pilotte, N. n., Ercumen, A. n., Grant, J. R., Maasch, J. R., Gonzalez, A. M., Ester, A. C., Arnold, B. F., Rahman, M. n., Haque, R. n., Hubbard, A. E., Luby, S. P., Williams, et al
2020; 14 (4): e0008087
- **The WASH Benefits and SHINE trials: interpretation of WASH intervention effects on linear growth and diarrhoea.** *The Lancet. Global health*

- Pickering, A. J., Null, C., Winch, P. J., Mangwadu, G., Arnold, B. F., Prendergast, A. J., Njenga, S. M., Rahman, M., Ntozini, R., Benjamin-Chung, J., Stewart, C. P., Huda, T. M., Moulton, et al
2019; 7 (8): e1139–e1146
- **Effects of water, sanitation, handwashing and nutritional interventions on soil-transmitted helminth infections in young children: A cluster-randomized controlled trial in rural Bangladesh.** *PLoS neglected tropical diseases*
Ercumen, A., Benjamin-Chung, J., Arnold, B. F., Lin, A., Hubbard, A. E., Stewart, C., Rahman, Z., Parvez, S. M., Unicomb, L., Rahman, M., Haque, R., Colford, J. M., Luby, et al
2019; 13 (5): e0007323
 - **Effects of Water, Sanitation, Handwashing, and Nutritional Interventions on Child Enteric Protozoan Infections in Rural Bangladesh: A Cluster-Randomized Controlled Trial** *CLINICAL INFECTIOUS DISEASES*
Lin, A., Ercumen, A., Benjamin-Chung, J., Arnold, B. F., Das, S., Haque, R., Ashraf, S., Parvez, S. M., Unicomb, L., Rahman, M., Hubbard, A. E., Stewart, C. P., Colford, et al
2018; 67 (10): 1515–22
 - **Do Sanitation Improvements Reduce Fecal Contamination of Water, Hands, Food, Soil, and Flies? Evidence from a Cluster-Randomized Controlled Trial in Rural Bangladesh** *ENVIRONMENTAL SCIENCE & TECHNOLOGY*
Ercumen, A., Pickering, A. J., Kwong, L. H., Mertens, A., Arnold, B. F., Benjamin-Chung, J., Hubbard, A. E., Alam, M., Sen, D., Islam, S., Rahman, M., Kullmann, C., Chase, et al
2018; 52 (21): 12089–97
 - **Effects of Single and Combined Water, Sanitation and Handwashing Interventions on Fecal Contamination in the Domestic Environment: A Cluster-Randomized Controlled Trial in Rural Bangladesh** *ENVIRONMENTAL SCIENCE & TECHNOLOGY*
Ercumen, A., Mertens, A., Arnold, B. F., Benjamin-Chung, J., Hubbard, A. E., Ahmed, M., Kabir, M., Khalil, M., Kumar, A., Rahman, M., Parvez, S., Unicomb, L., Rahman, et al
2018; 52 (21): 12078–88
 - **Effects of water quality, sanitation, handwashing, and nutritional interventions on diarrhoea and child growth in rural Bangladesh: a cluster randomised controlled trial** *LANCET GLOBAL HEALTH*
Luby, S. P., Rahman, M., Arnold, B. F., Unicomb, L., Ashraf, S., Winch, P. J., Stewart, C. P., Begum, F., Hussain, F., Benjamin-Chung, J., Leontsini, E., Naser, A. M., Parvez, et al
2018; 6 (3): E302–E315
 - **Effects of water quality, sanitation, handwashing, and nutritional interventions on diarrhoea and child growth in rural Kenya: a cluster-randomised controlled trial** *LANCET GLOBAL HEALTH*
Null, C., Stewart, C. P., Pickering, A. J., Dentz, H. N., Arnold, B. F., Arnold, C. D., Benjamin-Chung, J., Clasen, T., Dewey, K. G., Fernald, L. H., Hubbard, A. E., Kariger, P., Lin, et al
2018; 6 (3): E316–E329
 - **Effects of water, sanitation, handwashing and nutritional interventions on telomere length among children in a cluster-randomized controlled trial in rural Bangladesh** *ELIFE*
Lin, A., Arnold, B. F., Mertens, A. N., Lin, J., Benjamin-Chung, J., Ali, S., Hubbard, A. E., Stewart, C. P., Shoab, A. K., Rahman, M., Hossen, M., Mutsuddi, P., Famida, et al
2017; 6
 - **The Interaction of Deworming, Improved Sanitation, and Household Flooring with Soil-Transmitted Helminth Infection in Rural Bangladesh** *PLOS NEGLECTED TROPICAL DISEASES*
Benjamin-Chung, J., Nazneen, A., Halder, A. K., Haque, R., Siddique, A., Uddin, M. S., Koporc, K., Arnold, B. F., Hubbard, A. E., Unicomb, L., Luby, S. P., Addiss, D. G., Colford, et al
2015; 9 (12)