Katie Paulson

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Education

University of Washington, Doctor of Philosophy in Biostatistics   Sep 2021 – Present
- Committee: Dr. Jonathan Wakefield (chair); Dr. Tyler McCormick (member), Dr. Megan Othus (member), Dr. Audrey Dorélien (graduate school representative)
- Thesis: *Survival models for estimating child mortality rates using national-level data*

University of Washington, Master of Public Health   Sep 2016 – Aug 2019
- Concentrations: Global Health, Health Metrics and Evaluation
- Committe: Dr. Haidong Wang (chair); Dr. Laura Dwyer-Lindgren
- Thesis: *Estimating age and sex-specific mortality under five years*

Bates College, Bachelor of Science in Mathematics   Sep 2011 – May 2015
- Concentrations: Public Health, Chemistry
- Honors Thesis: *Using community structure networks to model heterogeneous mixing in epidemics, and a potential application to HIV in Washington, D.C.*

Academic Honors, Awards, & Fellowships

University of Washington
- NIH T32 Fellowship: Data Science and Demography, University of Washington Center for Studies in Demography and Ecology   2024-Present

Bates College
- Graduated *Summa Cum Laude* with Honors in Mathematics   2015
- Academic Honors Societies: Phi Beta Kappa, Sigma Xi   2015
- Maine IDeA Network for Biological Research Excellence (INBRE) Fellowship   2014
- Dana Scholar Award: For academic excellence, leadership, and service to the college and the community   2012

Professional Experience

Graduate Research & Teaching Assistant   Sep 2021 – Present
Department of Biostatistics, University of Washington, Seattle, WA
Supervisors: Dr. Jonathan Wakefield (Sep 2021 – Present); Dr. Thomas Fleming (Sep 2022 - Dec 2023)

Consultant   Mar 2023 – Present
World Health Organization

Researcher   Sep 2019 – Sep 2021
Institute for Health Metrics and Evaluation, University of Washington, Seattle, WA
Supervisor: Dr. Haidong Wang

Post-Bachelor Fellow   Sep 2016 – Sep 2019
Institute for Health Metrics and Evaluation, University of Washington, Seattle, WA
Supervisors: Dr. Haidong Wang, Dr. Theo Vos

AmeriCorps VISTA; Data Analyst   Jul 2015 – Jul 2016
Rhode Island Free Clinic, Providence, RI

Research Fellow   Jun 2014 – Aug 2014
Mount Desert Island Biological Laboratory, Salisbury Cove, ME
Supervisor: Dr. Larissa Williams

Teaching

Department of Biostatistics, University of Washington, Seattle, WA
Teaching Assistant
- BIOST 555 (Statistical Methods For Spatial Epidemiology); Supervisor: Dr. Jon Wakefield   Winter 2026, 2024
- STAT 554 (Statistical Methods For Spatial Data); Supervisor: Dr. Jon Wakefield   Winter 2023
- SISMID Spatial Statistics in Epidemiology and Public Health; Supervisor: Dr. Jon Wakefield   Summer 2022
- BIOST 515/518 (Applied Biostatistics II); Supervisor: Dr. Amy Willis   Winter 2022
- BIOST 511 (Medical Biometry I); Supervisor: Dr. Jim Hughes   Fall 2021

Bates College, Lewiston, ME
Peer Assisted Learning in the Sciences (PALS) Leader
- CHEM 108 (Chemical Reactivity)   2015

Teaching Assistant and Tutor
- MATH 301 (Real Analysis)   2014
- CHEM 217/218 (Organic Chemistry)   2013-2015
- BIO 117 (Plants and Human Affairs)   2013
- MATH 218 (Multivariable Calculus)   2012-2013

Community Service

University of Washington, Department of Biostatistics

- Coordinator, Space-Time Analysis Bayes research group   Jun 2023 – Aug 2024
- Co-organizer of Student Seminar   Sep 2022 – Mar 2024
- Student Member, Educational Policy and Teaching Evaluation Committee (EPTEC)   Sep 2022 – Sep 2023
- Student Representative to the Faculty Meetings   Sep 2021 – Sep 2022

University of Washington, Other

- Member of editorial team, Population Dynamics Lab   Nov 2024 – Present

Publications

Peer-Reviewed Journal Articles (Under Review & In Preparation)

4) **K.R. Paulson**, J. Wakefield (in preparation), "A joint estimation approach for national and subnational under-five mortality rate."

3) **K.R. Paulson**, T. Okonek, J. Wakefield (under review), "A survival framework for estimating child mortality rates using multiple data types."

2) **K.R. Paulson**, G. Fuglstad, Z.R. Li, J. Wakefield (in press), "Temporal models for estimation and short-term forecasting of neonatal mortality rates in sub-Saharan Africa." *Annals of Applied Statistics*

1) **K.R. Paulson**, C. Wang, J. Liu, T.M. Therneau, T.R. Fleming (under review), "Evaluation of statistical methods for estimating rate ratios for recurrent events in clinical trials."

Peer-Reviewed Journal Articles (Published & Accepted)

6) H. Wang, **K.R. Paulson**, S.A. Pease, S. Watson, H. Comfort, P. Zheng, A.Y. Aravkin ... C.J.L. Murray, "Estimating excess mortality due to the COVID-19 pandemic: a systematic analysis of COVID-19-related mortality, 2020–21," *The Lancet*, Mar 2022.

5) **K.R. Paulson**, A. Kamath ... H. Wang, N. Kassebaum, "Global, regional, and national progress towards Sustainable Development Goal 3.2 for neonatal and child health: all-cause and cause-specific mortality findings from the Global Burden of Disease Study 2019," *The Lancet*, vol. 398, no. 10303, pp. 870-905, Aug 2021.

4) J.B. Soriano, P.J. Kendrick, **K.R. Paulson**, V. Gupta ... T. Vos, "Prevalence and attributable health burden of chronic respiratory diseases, 1990–2017: a systematic analysis for the Global Burden of Disease Study 2017," *The Lancet Respiratory Medicine*, vol. 8, no. 6, pp. 585-596, Jan 2020.

3) S. Salvi, ... **K.R. Paulson** ... D.J. Christopher, "India State-Level Disease Burden Initiative CRD Collaborators. The burden of chronic respiratory diseases and their heterogeneity across the states of India: the Global Burden of Disease Study 1990–2016," *The Lancet Global Health*, vol. 6, no. 12, pp. e1363–e1374, Dec 2018.

2) J.B. Soriano, ... **K.R. Paulson** ... C.J.L. Murray, T. Vos, "Global, regional, and national deaths, prevalence, disability-adjusted life years, and years lived with disability for chronic obstructive pulmonary disease and asthma, 1990–2015: a systematic analysis for the Global Burden of Disease Study 2015," *The Lancet Global Health*, vol. 5, no. 9, pp. 691–706, Sep 2017.

1) L.M. Williams, ... **K.R. Paulson** ..., "The transcription factor, Nuclear factor, erythroid 2 (Nfe2), is a regulator of the oxidative stress response during Danio rerio development," *Aquatic Toxicology*, vol. 180, pp. 141–154, Nov 2016.

Global Burden of Disease Core Papers

Included as an author on the following publications as part of the Global Burden of Disease Study. Performed literature reviews and statistical analyses to produce results for sub-topics of each of these papers.

10) GBD 2019 Demographics Collaborators, "Global age-sex-specific fertility, mortality, healthy life expectancy (HALE), and population estimates in 204 countries and territories, 1950–2019: a comprehensive demographic analysis for the Global Burden of Disease Study 2019," *The Lancet*, vol. 396, no. 10258, pp.1160-1203, Oct 2020.

9) GBD 2017 Disease and Injury Incidence and Prevalence Collaborators, "Global, regional, and national incidence, prevalence, and years lived with disability for 354 diseases and injuries for 195 countries and territories, 1990–2017: a systematic analysis for the Global Burden of Disease Study 2017," *The Lancet*, vol. 392, no. 10159, pp. 1789–1858, Nov 2018.

8) GBD 2017 Risk Factor Collaborators, "Global, regional, and national comparative risk assessment of 84 behavioural, environmental and occupational, and metabolic risks or clusters of risks for 195 countries and territories, 1990–2017: a systematic analysis for the Global Burden of Disease Study 2017," *The Lancet*, vol. 392, no. 10159, pp. 1923–1994, Nov 2018.

7) GBD 2017 Causes of Death Collaborators, "Global, regional, and national age-sex-specific mortality for 282 causes of death in 195 countries and territories, 1980–2017: a systematic analysis for the Global Burden of Disease Study 2017," *The Lancet*, vol. 392, no. 10159, pp. 1736–1788 Nov 2018.

6) GBD 2017 SDG Collaborators, "Measuring progress from 1990 to 2017 and projecting attainment to 2030 of the health-related Sustainable Development Goals for 195 countries and territories: a systematic analysis for the Global Burden of Disease Study 2017," *The Lancet*, vol. 392, no. 10159, pp. 2091–2138 Nov 2018.

5) GBD 2017 DALYs and HALE Collaborators, "Global, regional, and national disability-adjusted life-years (DALYs) for 359 diseases and injuries and healthy life expectancy (HALE) for 195 countries and territories, 1990–2017: a systematic analysis for the Global Burden of Disease Study 2017," *The Lancet*, vol. 392, no. 10159, pp. 1859-1922 Nov 2018.

4) GBD 2016 Disease and Injury Incidence and Prevalence Collaborators, "Global, regional, and national incidence, prevalence, and years lived with disability for 328 diseases and injuries for 195 countries, 1990–2016: a systematic analysis for the Global Burden of Disease Study 2016, " *The Lancet*, vol. 390, no. 10100, pp. 1211–1259 Sep 2017.

3) GBD 2016 Causes of Death Collaborators, "Global, regional, and national age-sex specific mortality for 264 causes of death, 1980–2016: a systematic analysis for the Global Burden of Disease Study 2016," *The Lancet*, vol. 390, no. 10100, pp. 1151–1210 Sep 2017.

2) GBD 2016 SDG Collaborators, "Measuring progress and projecting attainment on the basis of past trends of the health-related Sustainable Development Goals in 188 countries: an analysis from the Global Burden of Disease Study 2016," *The Lancet*, vol. 390, no. 10100, pp. 1423–1459 Sep 2017.

1) GBD 2016 DALYs and HALE Collaborators, "Global, regional, and national disability-adjusted life-years (DALYs) for 333 diseases and injuries and healthy life expectancy (HALE) for 195 countries and territories, 1990–2016: a systematic analysis for the Global Burden of Disease Study 2016, " *The Lancet*, vol. 390, no. 10100, pp. 1260-1344 Sep 2017.

Conference Presentations

2) **K.R. Paulson**, J. Wakefield, "A Bayesian survival framework for estimating child mortality rates using multiple data types," at the 2025 Population Association of America Annual Meeting, Washington, D.C.. Oral. Apr 2025.

1) **K.R. Paulson**, T.R. Fleming, "Evaluation of Statistical Methods for Recurrent Events," at the 2023 ASA Biopharmaceutical Section Regulatory-Industry Statistics Workshop, Rockville, Maryland. Oral. Sep 2023.

Skills

- **Statistical languages:** R, Stata, familiar with Python
- **Markdown:** LaTeX, Rmarkdown, familiar with HTML
- **Other:** collaborative software development, Git, cluster computing, R package development, Microsoft Excel, familiar with bash and SQL