

CAITLIN WARD

2221 University Ave SE, Suite 200
Minneapolis, MN 55414

Email: ward-c@umn.edu
Website: ceward18.github.io
ORCID: [0000-0002-0806-0222](https://orcid.org/0000-0002-0806-0222)

EDUCATION

2018-2021	University of Iowa PhD, Biostatistics Advisors: Dr. Jacob Oleson and Dr. Grant Brown Topic: Bayesian Methods for Spatio-Temporal Epidemic Models
2016-2018	University of Iowa MS, Biostatistics
2012-2016	Iowa State University BS, Statistics, <i>Summa Cum Laude</i> , Minors in Mathematics and Russian Studies

RESEARCH INTERESTS

Spatio-temporal modeling	Spatial omics analysis	Bayesian statistics
Infectious diseases	Cancer	Dementia care

EMPLOYMENT

2022-Present	University of Minnesota <i>Assistant Professor</i> , Division of Biostatistics & Health Data Science	Minneapolis, MN
2021-Present	University of Iowa <i>Adjunct Assistant Professor</i> , College of Nursing	Iowa City, IA
2021-2022	University of Calgary <i>CANSSI Distinguished Postdoctoral Fellow</i> Supervisors: Dr. Rob Deardon and Dr. Alexandra Schmidt	Calgary, AB
2016-2021	University of Iowa <i>Graduate Research Assistant</i> , Department of Biostatistics Biostatistics Consulting Center Center for Public Health Statistics Public Policy Center	Iowa City, IA

HONORS AND AWARDS

2026	Recipient of Thank a Mentor note of appreciation, University of Minnesota BHDS Division
2021	Milford E. Barnes Award, University of Iowa College of Public Health
2021	Ada Louise Ballard and Seashore Dissertation Fellowship, University of Iowa
2021	University of Iowa Dare to Discover Banner Campaign, Featured Researcher
2021	Recipient of Thank a Teacher note of appreciation through the Center for Teaching
2020	William R. Clarke Graduate Teaching Assistant Award, University of Iowa
2020	University of Iowa Council on Teaching Outstanding Teaching Assistant Award
2020	Recipient of Thank a Teacher note of appreciation through the Center for Teaching
2018	Leon F. Burmeister Memorial Scholarship Award, University of Iowa
2018	William R. Clarke Graduate Research Assistant Award, University of Iowa
2015	George W. Snedecor Undergraduate Award, Iowa State University

PUBLICATIONS

Peer-Reviewed Journal Publications

36. Ricke, I., Nguyen, R., Spaulding, A., Sherwood, N., **Ward, C.** (In press). Childhood vaccination rates and COVID-19 vaccination coverage by county voting patterns. *American Journal of Public Health*
35. Ricke, I., **Ward, C.**, Spaulding, A., Sherwood, N., Nguyen, R. (2026). Caregiver COVID-19 vaccine status and its influence on pediatric vaccination decisions in a US cohort. *Vaccine*. doi: [10.1016/j.vaccine.2026.128847](https://doi.org/10.1016/j.vaccine.2026.128847).
34. Yasir, A., Santiago Ramos, L. J., Rivera Gutierrez, R., Schafer, I. J., Coriano-Diaz, N., Mueller, M., Maldonado, J., Jara Aviles, V., Cuevas Oquendo, M., Carle Rivera, V., De Leon Marrero, J., Nally, J. E., Galloway, R., Kircher, A., Hamond, C., LeCount, K., Anderson, T., **Ward, C.**, Munoz-Zanzi, C. (2026). Presence and diversity of leptospira species and serogroups in domestic animals, rodents, and mongooses in Puerto Rico communities. *Preventive Veterinary Medicine: Regional Studies and Reports*. doi: [10.1016/j.pvmrsr.2026.100016](https://doi.org/10.1016/j.pvmrsr.2026.100016).
33. Shaw, C., Gordon, J., **Ward, C.**, Jackson, L., Shaw, N., Williams, K. (2025). The Iowa Coding Scheme for Elderspeak (ICodE): Development and Validation. *The Gerontologist*. doi: [10.1093/geront/gnaf093](https://doi.org/10.1093/geront/gnaf093).
Featured in the New York Times: [Honey, Sweetie, Dearie: The Perils of Elderspeak](#)
32. Segbefia, C., Telke, S., Olayemi, E., **Ward, C.**, Asamoah-Akuoko, L., Appiah, B., Yawson, A. E., Tancred, T., Adu-Afarwuah, S., Benneh-Akwasi Kuma, A., Acquah, M. E., Ofori-Acquah, S. F., Adongo, P. B., Ametorwo, R., Bates, I., Reilly, C., Dei-Adomakoh, Y. (2025). Deferrals for Low Haemoglobin and Anaemia Among First-Time Prospective Blood Donors in Southern Ghana: Results From the BLOODSAFE Ghana—Iron and Nutritional Counselling Strategy Pilot (BLIS) Study. *Advances in Hematology*. doi: [10.1155/ah/9971532](https://doi.org/10.1155/ah/9971532).
31. Novotny, B., Moore, R., Langit, L., Maus, R. L., Jiang, J., **Ward, C.**, Guo, R., Winham, S. J., Goode, E. L., Markovic, S. N., Wang, C. (2025). SpaFlow: A Nextflow pipeline for QC and clustering of MxIF datasets. *Bioinformatics Advances*. [10.1093/bioadv/vbaf032](https://doi.org/10.1093/bioadv/vbaf032)
30. **Ward, C.**, Finical, W., Rounds, J. M., Smith, K., Klumb, C. A., Tarr, G. (2025). Ruminant-dense environments increase risk of Shiga toxin-producing Escherichia coli independently of direct ruminant contact. *Applied and Environmental Microbiology*. doi: [10.1128/aem.01864-24](https://doi.org/10.1128/aem.01864-24)
29. Dei-Adomakoh, Y., Olayemi, E., Telke, S., Asamoah-Akuoko, L., Appiah, B., Segbefia, C., **Ward, C.**, Tancred, T., Yawson, A. E., Adu-Afarwuah, S., Akwasi-Kuma, A. B., Ofori-Acquah, S. F., Adongo, P. B., Acquah, M. E., Ametorwo, R., Bates, I., Agyei, F., Delaney, M., Reilly, C. (2024). Impact of iron supplementation among anemic voluntary first-time blood donors: Results from the BLOODSAFE pilot trial in Ghana *Transfusions*. doi: [10.1111/trf.18082](https://doi.org/10.1111/trf.18082)
28. Suman, S., Nevala, W. K., Leontovich, A. A., **Ward, C.**, Jakub, J. W., Kim, Y., Geng, L., Stueven, N. A., Atherton, C. L., Moore, R. M., Schimke, J. M., Lucien-Matteoni, F., McLaughlin, S., Markovic, S. N. (2024) Melanoma-derived extracellular vesicles induce CD36-mediated pre-metastatic niche. *Biomolecules*. doi: [10.3390/biom14070837](https://doi.org/10.3390/biom14070837)
27. Biesheuvel, M. M., **Ward, C.**, Penterman, P., van Engelen, E., van Schaik, G., Deardon, R., Barkema, H. W. (2023). Within-herd transmission of Mycoplasma bovis infections after initial detection in dairy cows. *Journal of Dairy Science*. doi: [10.3168/jds.2023-23407](https://doi.org/10.3168/jds.2023-23407)

26. **Ward, C.**, Deardon, R., Schmidt, A. (2023). Bayesian modeling of dynamic behavioral change during an epidemic. *Infectious Disease Modelling*. doi: [10.1016/j.idm.2023.08.002](https://doi.org/10.1016/j.idm.2023.08.002)
25. Bathla, G., Soni, N., **Ward, C.**, Pillenahalli Maheshwarappa, R., Agarwal, A., Priya S. (2023). Clinical and Magnetic Resonance Imaging Radiomics–Based Survival Prediction in Glioblastoma Using Multiparametric Magnetic Resonance Imaging. *Journal of Computer Assisted Tomography*. doi: [10.1097/RCT.0000000000001493](https://doi.org/10.1097/RCT.0000000000001493)
24. Shaw, C., **Ward, C.**, Lee, K., Williams, A., Herr, K. (2023). The relationship between rejection of care behaviors and pain and delirium severity in hospital dementia care. *Innovation in Aging*. doi: [10.1093/geroni/igad076](https://doi.org/10.1093/geroni/igad076)
23. **Ward, C.**, Brown, G., Oleson, J. (2022). Incorporating infectious duration-dependent transmission into Bayesian epidemic models. *Biometrical Journal*. doi: [10.1002/bimj.202100401](https://doi.org/10.1002/bimj.202100401)
22. Heeren, T., **Ward, C.**, Ashida, S., Sewell, D. (2022). Applying network analysis to assess the development and sustainability of multi-sector coalitions. *PLoS ONE*. doi: [10.1371/journal.pone.0276114](https://doi.org/10.1371/journal.pone.0276114)
21. Shaw, C., **Ward, C.**, Gordon, J., Williams, K. N., Herr, K. (2022). Elderspeak communication and pain severity as modifiable factors to rejection of care in hospital dementia care. *Journal of the American Geriatrics Society*. doi: [10.1111/jgs.17910](https://doi.org/10.1111/jgs.17910)
20. Walker, E. A., **Ward, C.**, Oleson, J., Sapp, C., McCreery, R. W., Tomblin, J. B., Moeller, M. P., (2022). Language growth in children with mild to severe hearing loss who received early intervention by 3 months or 6 months of age. *Journal of Early Hearing Detection and Intervention*. doi: [10.26077/e97b-7add](https://doi.org/10.26077/e97b-7add)
19. Shaw, C., **Ward, C.**, Gordon, J., Williams, K. N., Herr, K. (2022). Characteristics of elderspeak communication in hospital dementia care: findings from the Nurse Talk observational study. *International Journal of Nursing Studies*. doi: [10.1016/j.ijnurstu.2022.104259](https://doi.org/10.1016/j.ijnurstu.2022.104259)
18. Horak, S., **Ward, C.** (2022). Evaluating a state child care assistance program using administrative data. *Evaluation and Program Planning*. doi: [10.1016/j.evalprogplan.2022.102094](https://doi.org/10.1016/j.evalprogplan.2022.102094)
17. Eskandari, A., Narayanasamy, S., **Ward, C.**, Priya, S., Aggarwal, T., Elam, J., Nagpal, P. (2022). Prevalence and significance of incidental findings on computed tomography pulmonary angiograms: a retrospective cohort study. *The American Journal of Emergency Medicine*. doi: [10.1016/j.ajem.2022.01.064](https://doi.org/10.1016/j.ajem.2022.01.064)
16. **Ward, C.**, Brown, G., Oleson, J. (2021). An individual level infectious disease model in the presence of uncertainty from multiple, imperfect diagnostic tests. *Biometrics*. doi: [10.1111/biom.13579](https://doi.org/10.1111/biom.13579)
15. Lence, T., Lockwood, G. M., Storm D. W., **Ward, C.**, Cooper, C. S. (2021). The utility of renal sonographic measurements in differentiating children with high grade congenital hydronephrosis. *Journal of Pediatric Urology*. doi: [10.1016/j.jpuro.2021.07.021](https://doi.org/10.1016/j.jpuro.2021.07.021)
14. Priya, S., Aggarwal, T., **Ward, C.**, Bathla, G., Jacob, M., Gerke, A., Hoffman, E., Nagpal, P. (2021). Radiomics side experiments and DAFIT approach in identifying pulmonary hypertension using Cardiac MRI derived radiomics based machine learning models. *Scientific Reports*. doi: [10.1038/s41598-021-92155-6](https://doi.org/10.1038/s41598-021-92155-6)

13. Priya, S., Lui, Y., **Ward, C.**, Le, N., Neetu, S., Maheshwarappa, R., Monga, V., Zhang, H., Sonka, M., Bathla G. (2021). Radiomic based machine learning performance for a three class problem in neuro-oncology: time to test the waters? *Cancers*. doi: [10.3390/cancers13112568](https://doi.org/10.3390/cancers13112568)
12. Priya, S., Agarwal, A., **Ward, C.**, Locke, T., Monga, V., Bathla G. (2021) Survival prediction in glioblastoma on post-contrast magnetic resonance imaging using filtration based first-order texture analysis: comparison of multiple machine learning models. *The Neuroradiology Journal*. doi: [10.1177/1971400921990766](https://doi.org/10.1177/1971400921990766)
11. Priya, S., Lui, Y., **Ward, C.**, Le, N., Neetu, S., Maheshwarappa, R., Monga, V., Zhang, H., Sonka, M., Bathla G. (2021). Machine learning based differentiation of glioblastoma from brain metastasis using MRI derived radiomics. *Scientific Reports*. doi: [10.1038/s41598-021-90032-w](https://doi.org/10.1038/s41598-021-90032-w)
10. Priya, S., Aggarwal, T., **Ward, C.**, Bathla, G., Jacob, M., Gerke, A., Hoffman, E., Nagpal, P. (2021). Radiomics detection of pulmonary hypertension via texture-based assessments of cardiac MRI: a machine-learning model comparison. *Journal of Clinical Medicine*. doi: [10.3390/jcm10091921](https://doi.org/10.3390/jcm10091921)
9. Bathla G., Priya, S., Lui, Y., **Ward, C.**, Le, N., Neetu, S., Maheshwarappa, R., Monga, V., Zhang, H., Sonka, M. (2021). Radiomics-based differentiation between glioblastoma and primary central nervous system lymphoma: a comparison of diagnostic performance across different MRI sequences and machine learning techniques. *European Radiology*. doi: [10.1007/s00330-021-07845-6](https://doi.org/10.1007/s00330-021-07845-6)
8. Priya, S., **Ward, C.**, Locke, T., Neetu, S., Maheshwarappa, R., Monga, V., Bathla G. (2021). Glioblastoma and primary central nervous system lymphoma: differentiation using MRI derived first-order texture analysis - a machine learning study. *The Neuroradiology Journal*. doi: [10.1177/1971400921998979](https://doi.org/10.1177/1971400921998979)
7. **Ward, C.**, Oleson, J., Tomblin, B., Walker, E. (2020). Modeling population and subject-specific growth in a latent trait measured by multiple instruments over time using a hierarchical Bayesian framework. *Journal of Applied Statistics*. doi: [10.1080/02664763.2020.1817346](https://doi.org/10.1080/02664763.2020.1817346)
6. Kandemirli, S., Chopra, S., Priya, S., **Ward, C.**, Locke, T., Soni, N., Srivastava, S., Jones, K., Bathla, G. (2020). Presurgical detection of brain invasion status in meningiomas based on first-order histogram based texture analysis of contrast enhanced imaging. *Clinical Neurology and Neurosurgery*. doi: [10.1016/j.clineuro.2020.106205](https://doi.org/10.1016/j.clineuro.2020.106205)
5. Bathla, G., Ortega-Gutierrez, S., Klotz, E., Juergens, M., Zevallos, C. B., Ansari, S., **Ward, C.**, Policeni, B., Samaniego, E., Derdeyn, C. (2020). Comparing the outcomes of two independent computed tomography perfusion softwares and their impact on therapeutic decisions in acute ischemic stroke. *Journal of NeuroInterventional Surgery*. doi: [10.1136/neurintsurg-2020-015827](https://doi.org/10.1136/neurintsurg-2020-015827)
4. Bathla, G., Priya, S., Samaniego, E., Deo, S. K., Fain, N. H., Soni, N., **Ward, C.**, Derdeyn, C. P. (2020). Cerebral computed tomographic angiography using third-generation reconstruction algorithm provides improved image quality with lower contrast and radiation dose. *Neuroradiology*. doi: [10.1007/s00234-020-02406-y](https://doi.org/10.1007/s00234-020-02406-y)
3. Hartley, C. C., Renner, L. M., **Ward, C.** (2019). A new factor solution for the domestic violence-related financial issues scale (DV-FI). *Journal of Interpersonal Violence*. doi: [10.1177/0886260519860888](https://doi.org/10.1177/0886260519860888)
2. **Ward, C.**, Oleson, J., Jones, K., Charlton, M. (2018). Showcasing cancer incidence and mortality in rural ZCTAs using risk probabilities via spatio-temporal Bayesian disease mapping. *Applied Spatial Analysis and Policy*. doi: [10.1007/s12061-018-9276-4](https://doi.org/10.1007/s12061-018-9276-4)

1. Saletta, M., Goffman, L., **Ward, C.**, Oleson, J. (2018). Influence of language load on speech motor skill in children With specific language impairment. *Journal of Speech, Language, and Hearing Research*. doi: [10.1044/2017-JSLHR-L-17-0066](https://doi.org/10.1044/2017-JSLHR-L-17-0066)

Journal Papers in Submission

- **Ward, C.**, Deardon, R., Schmidt, A. (Revisions Requested by *Statistics in Medicine*). Multivariable behavioral change modeling of epidemics in the presence of undetected infections. [ArXiv link](#).
- **Ward, C.**, Novotny, B., Moore, R., Guo, R., Nevala, W. K., Fogarty, Z., Markovic, S. N., Wang, C. (Revisions Requested by *Biostatistics*). Scalable inference for spatial generalized mixed models for use in multiplexed imaging analysis.
- Mehta, T., **Ward, C.**, Kaltenborn, Z. P., Pestka, D., Beebe, T. J., Melton, G. B., Koopmeiners, J. (Revisions Requested by *Biometrics*). Bayesian Dynamic Borrowing for Pragmatic Cluster Randomized Controlled Trials.
- Ward, M. A., Deardon, R., Deeth, L. E., **Ward, C.** (Submitted). Bayesian Epidemic Models with Dynamic Adherence to Protective Behaviour Changes.
- Shaw, C., Isaac, G., Weimar, L., **Ward, C.** (Submitted). Length of Stay by Restraint Type in Hospital Dementia Care: A Retrospective Analysis.
- Agyei, F., Dei-Adomakoh, Y., Tancred, T., Telke, S., Ametorwo, R., Olayemi E., Asamoah-Akuoko, L., Appiah, B., Segbefia, C., **Ward, C.**, Yawson, A.E., Adu-Afarwuah, S., Benneh-Akwasi Kuma, A., Fiifi Ofori-Acquah, S., Baba Adongo, P., Ebo Acquah, M., Ofori, F., Daneku, J., Danso, I., Nana Afua Amegadoe, A., Delaney, M., Reilly, C. (Submitted). BLOODSAFE Iron and Nutritional Counselling Strategy (BLIS): Protocol for a Randomized Controlled Trial to Enhance Blood Availability and Safety in Ghana.

Textbooks & Book Chapters

- Jiang, J., Suman, S., **Ward, C.**, Moore, R. M., Fogarty, Z. C., Leontovich, A., Nevala, W. K., Atherton, C. A., Schimke, J. M., Markovic, S. N. (2025). Spatial Multiplexed Immunofluorescence Imaging Exploring the Tumor Immune Microenvironment of Melanoma. *Cancer Detection and Diagnosis: A Handbook of Emerging Technologies*. CRC Press, 2025. 190-197. doi: [10.1201/9781003449942](https://doi.org/10.1201/9781003449942)
- **Ward, C.**, Nolte, C. (2023). An Intuitive, Interactive, Introduction to Biostatistics. doi: [10.25820/work.006232](https://doi.org/10.25820/work.006232)

TEACHING

Institution/Course	Role	Semester	Delivery Method	Class Size
University of Minnesota				
PUBH:8452 Models for Dependent Data	Instructor	Spring 2026	In-person	12
PUBH:8472 Spatial Biostatistics	Instructor	Spring 2025	In-person	15
PUBH:7402 Biostatistics Modeling and Methods	Instructor	Spring 2023	In-person	14
	Instructor	Spring 2024	In-person	15
University of Calgary				
STAT:205 Introduction to Statistical Inquiry	Instructor	Winter 2022	Online/ Hybrid	180
University of Iowa				
BIOS:4120 Introduction to Biostatistics	Instructor	Summer 2019	In-person	7
	Instructor	Fall 2019	Online	27
	Instructor	Spring 2020	Online	33
	Instructor	Summer 2020	Online	65
Iowa Summer Institute in Biostatistics	Guest Lecturer	Summer 2021	Online	15
Topic: Epidemic Modeling	Guest Lecturer	Summer 2022	Online	11
	Guest Lecturer	Summer 2024	Online	16
EPID:5540 Public Health Surveillance Topic: COVID-19 Modeling	Guest Lecturer	Fall 2020	Hybrid	16

ADVISING

Role	Student	Department	Completion Date
PhD Advisor	Tanvi Mehta	Biostatistics (Co-advised by Joe Koopmeiners)	Expected Summer 2026
	Brent Strong	Biostatistics	Expected Spring 2027
PhD Committee Member	Jordan Aron	Biostatistics	June 2025
	Isabel Ricke	Epidemiology & Community Health	July 2025
	Ammar Yasir	Environmental Health Sciences	Expected Spring 2027
	William Finical	Environmental Health Sciences	Expected Spring 2027
MS Thesis Advisor	Mark Lamin	Biostatistics	August 2025
	Cheryl Huang	Biostatistics	Expected Summer 2026
MPH ILE Committee Member	Katrin O'Grady	Public Health Data Science	May 2026
	Hamza Mohamoud	Public Health Data Science	July 2026

FUNDING

Active

Title: Innovating the Evaluation of Rejection of Care in Hospital Dementia Care

PIs: Dr. Clarissa Shaw

Source: Alzheimer's Association

Period: Sept 2024 - Aug 2027

Role: Co-Investigator/Subcontract PI (10% salary support)

Award: \$200,000

Title: Air Pollution and Mortality Risk in Veterans with Chronic Respiratory Disease: Assessing the Role of Individual and Place-Based Risk Factors

PI: Dr. Jesse Berman

Source: NIH/NIEHS R01ES036225

Period: Aug 2024 - Jul 2029

Role: Co-Investigator (10% salary support)

Award: \$343,146

Title: Midwest Disease Modeling and Analytics Preparedness Center (MDAP)

PIs: Dr. Eva Enns, Dr. Kristin Sweet, Dr. Adams Dudley

Source: CDC

Period: Nov 2023 - Oct 2028

Role: Co-Investigator (5% salary support)

Award: \$17.5 million

Title: Quantitative Assessment of Pre-metastatic Immune Subversion as a Risk Factor for Melanoma Relapse

PI: Dr. Svetomir Markovic

Source: NIH/NCI R01CA260259

Period: Jun 2023 - Aug 2026

Role: Co-Investigator/Subcontract PI (5% salary support)

Award: \$59,634

Title: Spatial Analytics to Study the Tumor Microenvironment

PI: Dr. Caitlin Ward

Source: Collaboration Agreement with Mayo Clinic

Period: May 2025 - Feb 2026

Role: Principal Investigator (20% salary support)

Award: \$59,761

Title: The BLOODSAFE Data Coordinating Center: A Data Center for More Safe Transfusions in Sub-Saharan Africa

PI: Dr. Cavan Reilly

Source: NIH/NHLBI U24HL151541-03

Period: Jul 2020 - Jun 2026

Role: Co-Investigator (10% salary support)

Award: \$768,916

Completed

Title: Generating Synthetic Data to Measure Subcounty Health Inequities

PI: Dr. Harrison Quick

Source: County Health Rankings & Roadmaps

Period: Jan 2024 - Dec 2024

Role: Co-Investigator (20% salary support)

Award: \$97,536

Title: Simulation Based Inference in Introductory Statistics

Purpose: Creation of an interactive OER with embedded Shiny applications using simulation-based approaches to illustrate statistical concepts

Source: University of Iowa Libraries Open Educational Resources (OER) Grant

Period: May 2020 - May 2021

Role: Co-Principal Investigator

Award: \$6,000

PRESENTATIONS

Invited Talks

Aug 2025	Multivariable Behavioral Change Modeling of Epidemics in the Presence of Undetected Infections. <i>Joint Statistical Meetings (JSM)</i> . Nashville, TN.
May 2025	Fast Computation of Spatial GLMMs Applied to Large Single-Cell Imaging Data. <i>Statistical Society of Canada (SSC) Annual Meeting</i> . Saskatoon, SK.
Dec 2024	Estimating the Relative Importance of Multiple Data Sources Informing Behavioral Change in the Presence of Data Uncertainty During the COVID-19 Pandemic. <i>International Biometric Conference</i> . Atlanta, GA.
May 2023	Capturing Spatio-temporal Behavioral Change in Bayesian Epidemic Models. <i>Statistics in Medical Imaging</i> . Minneapolis, MN.
Oct 2022	Capturing Dynamic Behavioral Change in Bayesian Spatial Epidemic Models. <i>GEOMED 2022</i> . Virtual.
Jun 2022	Sound the Alarm: Modeling Behavioral Changes in Response to Epidemic Intensity. <i>Statistical Society of Canada (SSC) Annual Meeting</i> Virtual.
Apr 2022	Epidemic Modeling: Investigating Popular Approaches in the Context of COVID-19. University of Calgary O'Brien Institute for Public Health Seminar Series. Virtual.
Feb 2022	Sound the Alarm: Modeling Behavioral Changes in Response to Epidemic Intensity University of Minnesota Division of Biostatistics. Virtual.
Jan 2022	Sound the Alarm: Modeling Behavioral Changes in Response to Epidemic Intensity University of Iowa Department of Biostatistics. Virtual.
Dec 2021	Incorporating Infectious Duration-Dependent Transmission into Bayesian Epidemic Models. <i>Conference on Computational and Methodological Statistics</i> . Virtual.
Jul 2020	Introduction and Demonstration of an Interactive COVID-19 Forecasting Tool. University of Iowa College of Public Health Spotlight Series on COVID-19. Virtual.

Oct 2019	Accountable Communities of Health: Measuring Connectivity and Sustainability using Network Analysis. University of Iowa Public Policy Center. Iowa City, IA.
----------	--

Short Courses

Mar 2024	Bayesian Modelling of Epidemics: From Population to Individual-level Models. <i>ENAR</i> . Co-Instructor. Baltimore, MD.
Jun 2022	Bayesian Modelling of Epidemics: From Population to Individual-level Models. <i>ISBA World Meeting</i> . Co-Instructor. Montréal, QC.

Contributed Talks

Oct 2024	Fast Computation for Spatial Generalized Mixed Models for use in MxIF Imaging Analysis. <i>Women in Statistics and Data Science</i> . Reston, VA.
Jun 2022	Sound the Alarm: Modeling Behavioral Changes in Response to Epidemic Intensity. <i>ISBA World Meeting</i> . Montréal, QC.
Jun 2022	Bayesian Modeling of Dynamic Behavioral Change During the COVID-19 Pandemic. <i>Bayesian Young Statisticians Meeting</i> . Poster Presentation. Montréal, QC.
Aug 2020	An Individual Level Infectious Disease Model in the Presence of Uncertainty from Multiple, Imperfect Diagnostic Tests. <i>JSM</i> . Virtual.
Oct 2019	A Spatio-Temporal Infectious Disease Model in the Presence of Uncertainty from Multiple, Imperfect Diagnostic Tests. <i>WSDS</i> . Speed poster. Seattle, WA.
Aug 2019	Modeling Population and Subject-Specific Growth in a Latent Trait Measured by Multiple Instruments Over Time Using a Hierarchical Bayesian Framework. <i>JSM</i> . Poster presentation. Denver, CO.

SOFTWARE

- **BayesSEIR** - An R Package designed to simulate and fit Bayesian SEIR models of infectious disease spread using various methods to describe the infectious period.
<https://github.com/ceward18/BayesSEIR>

SERVICE

Professional

- Member - ENAR Regional Advisory Board (RAB), 2026-2029
- Member - 2025 ENAR Distinguished Student Paper Award Committee
- 2025 Joint Statistical Meetings (JSM) Associate Program Chair
- Member - 2024 ENAR Distinguished Student Paper Award Committee

- Refereed articles for the following journals

Statistical Methodology

Biostatistics (2)
 Bayesian Analysis (1)
 Statistics in Medicine (1)
 Spatial and Spatio-temporal Epidemiology (2)
 International Statistical Review (1)
 Journal of Agricultural, Biological, and
 Environmental Statistics (1)
 Canadian Journal of Statistics (1)

Applications

Epidemiology and Infections (1)
 Journal of the American Medical Association (1)
 PLOS ONE (1)
 BMC Public Health (1)
 BMC Infectious Diseases (1)
 Journal of Speech, Language, and
 Hearing Research (1)
 JAMA Network Open (3)
 Scientific Reports (4)
 Global Epidemiology (1)

Division of Biostatistics & Health Data Science, University of Minnesota

- Education Committee, 2025 - Present
- Exam Committee, 2022 - Present
- Diversity, Equity, and Inclusion Committee, 2023 - 2025

Department of Biostatistics, University of Iowa

- Biostatistics Student Organization
 - Mentorship Chair, 2020 - 2021
 - President, 2019 - 2020
 - Treasurer, 2018 - 2019
- Graduate Student Team Leader, COVID-19 Modeling Web Application, 2020
- Student Representative, Administrative Committee, 2019 - 2020
- Student Representative, Web-Based Instruction Resource Committee, 2019 - 2020

University of Iowa

- Graduate & Professional Student Government Grant Reviewer, 2019 - 2020

PROFESSIONAL ACTIVITY

- Member, American Statistical Association (ASA)
- Member, International Biometrics Society, Eastern North American Region (IBS/ENAR)
- Center for the Integration of Research, Teaching and Learning (CIRTL) Practitioner Level
 Teaching as Research (TAR) project: Evaluating Student Attitudes and Engagement in a
 Project-Enhanced Online Introduction to Biostatistics Course
- Member, Phi Beta Kappa