Emily L. Norton

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EDUCATION AND TRAINING

Johns Hopkins University Bloomberg School of Public Health (BSPH)	PhD Candidate in Biostatistics (GPA 4.00) *Advisor: Dr. Nilanjan Chatterjee*	**May 2027 (anticipated)**
University of Hawai'i at Mānoa (UHM)	MS in Oceanography (GPA 3.90) *Advisor: Dr. Erica Goetze*	**August 2013**
Bowdoin College	BA in Biology (major), Mathematics (minor), summa cum laude *Advisor: Dr. Amy Johnson*	**May 2010**

GRANT FUNDING

Innovation in Cancer Informatics Grant — "Development of a Universal Breast Cancer Risk Prediction Tool for the Diverse US Population Using Data from 2.4 million women across 29 cohorts" **2025-2026**

RESEARCH EXPERIENCE

Johns Hopkins University

Graduate Student Research Assistant | Baltimore, MD **August 2022 – present**

- Building and validating cancer risk prediction models to inform cancer prevention strategies
- Developing statistical methods to handle missing covariate data in meta-analysis and federated learning contexts (GENMETA-Lite)
- Conducting simulation studies to compare the efficiency of missing data methods applied at the individual-level versus meta-analysis level (40 hrs/wk)

Pfizer

Intern | Cambridge, MA **May – August 2026**

- Developing a comprehensive risk prediction model for chronic obstructive pulmonary disease (COPD) by combining real world data using GENMETA-Lite
- Estimating a causal effect for time to event data in a real world data study

University of Washington (UW) — Cooperative Institute for Climate, Ocean, and Ecosystem Studies (CICOES) / Joint Institute for the Study of the Ocean and Atmosphere (JISAO)

Research Scientist | Seattle, WA **May 2017 – September 2022**

- Forecast ocean conditions for the Pacific Northwest shelf waters on seasonal timescales to help inform decision-making by managers in the Dungeness crab, sardine, and hake fisheries
- Explored the relationships between environmental conditions and habitat for larval and adult Dungeness crab
- Investigated plankton community structure with genetic metabarcoding
- Provided technical support for collaborative projects by writing programs in R, Matlab, Python, Fortran, and Bash (40 hrs/wk)

Brown University

Research Assistant | Providence, RI **June 2016 – May 2017**

- Investigated the evolutionary diversity of the reproduction pathways in *Candida spp*. using CRISPR/Cas9
- Automated the identification of and ranked potential CRISPR/Cas9 engineered constructs through the development of concise and efficient scripts in R (40 hrs/wk)

University of Hawai'i at Mānoa

Graduate Research Assistant | Honolulu, HI **August 2010 – July 2013**

- Conducted biophysical numerical modeling in Matlab and genetic population structure analyses to evaluate the relative importance of physical and biological forces driving connectivity in a circumglobal copepod species (20 hrs/wk)
- Thesis: Empirical and bio-physical modeling studies of dispersal barriers for marine plankton

ADDITIONAL WORK EXPERIENCE

Maine Coastal Program (Maine Department of Agriculture, Conservation and Forestry)

Senior Planner | Augusta, ME **July 2015 – May 2016**

NOAA Coastal Management Fellow | Augusta, ME **July 2013 – July 2015**

PUBLICATIONS

Manuscripts in Preparation

Norton, E.L., Ahearn, T., Garcia-Closas, M., Kraft, P., and Chatterjee, N. Development of a universal breast cancer risk prediction tool for the diverse US population using data from 2.4 million women across 29 cohorts.

Norton, E.L., Kraft, P., Brantley, K., Ahearn, T., Garcia-Closas, M., and Chatterjee, N. GENMETA-Lite: A Fast and Flexible Approach to Federated Learning with Disparate Covariate Information Across Studies.

Norton, E.L., Ahearn, T., Mukhopadhyay, S., Balasubramanian, J., Kim, E., Li, S., Pal Choudhury, P., Garcia-Closas, M., and Chatterjee, N. Validation and population projection of multi-cancer risk incorporating polygenic risk scores and non-genetic factors.

Selected Peer-Reviewed Publications*

Norton, E.L., Kaplan, I., Siedlecki, S., Hermann, A., Alin, S.R., Newton, J., Corbett, K., Ayres, D., Schumacker, J., Bond, N., Richerson, K., and Alexander, M. 2023. Seasonal ocean forecasts to improve predictions of Dungeness crab catch rates, co-developed with state and tribal fishery managers. ICES Journal of Marine Science, fsad010. https://doi.org/10.1093/icesjms/fsad010

Malick, M.J., Siedlecki, S.A., **Norton, E.L.**, Kaplan, I.C., Haltuch, M.A., Hunsicker, M.E., Parker-Stetter, S.L., Marshall, K.N., Berger, A.M., Hermann, A.J., Bond, N.A., and Gauthier, S. 2020. Environmentally driven seasonal forecasts of Pacific hake distribution. Frontiers in Marine Science 7:578490. https://doi.org/10.3389/fmars.2020.578490

Norton, E.L., Siedlecki, S., Officer, S., Kaplan, I., Fisher, J., Morgan, C., Hermann, A., Alin, S.A., Feely, R.A., Saenger, C., Newton, J., and Bednarsek, N. 2020. The importance of environmental exposure history in forecasting Dungeness crab megalopae distribution using J-SCOPE, a high-resolution model for the US Pacific Northwest. Frontiers in Marine Science 7:102. https://doi.org/10.3389/fmars.2020.00102

Litzow, M.A., Hunsicker, M.E., Bond, N.A., Burke, B.J., Cunningham, C., Gosselin, J.L., **Norton, E.L.**, Ward, E.J., and Zador, S. 2020. The changing physical and ecological meanings of North Pacific Ocean climate indices. Proceedings of the National Academy of Sciences 117(14):7665-7671. https://doi.org/10.1073/pnas.1921266117

Norton, E.L., Sherwood, R.K., and Bennett, R.J. 2017. Development of a CRISPR-Cas9 system for efficient genome editing of Candida lusitaniae. mSphere 2:e00217-17. https://doi.org/10.1128/mSphere.00217-17

Norton, E. L., and Goetze, E. 2013. Equatorial dispersal barriers and limited connectivity among oceans in a planktonic copepod. Limnology and Oceanography 58:1581-1596. https://doi.org/10.4319/lo.2013.58.5.1581

*Full list of 12 publications (4 first author) available upon request.

SELECTED PRESENTATIONS & TALKS*

Invited Talks

Federated learning with missing covariates and distribution shifts. **Joint Statistical Meetings**. Boston, MA. August 2026. Invited oral presentation.

GENMETA-Lite: A Fast and Flexible Approach to Federated Learning with Disparate Covariate Information Across Studies. **Biostatistics Education and Student Training (BEST) Seminar**. February 2026. Invited talk.

Math that drives oceanography: A case study of statistical modeling of Dungeness crab catch rates to support fisheries management. **Fitchburg State Math Department Seminar Series**. November 2021. Invited talk.

Presentations

Norton, E.L., Ahearn, T., Mukhopadhyay, S., Balasubramanian, J., Kim, E., Li, S., Pal Choudhury, P., Garcia-Closas, M., and Chatterjee, N. Cross-population validation and projection of multi-cancer risk models incorporating genetic and non-genetic factors. American Association for Cancer Research (AACR) Annual Meeting, San Diego, CA. April 2026. Poster presentation: Abstract #6667.

Norton, E.L., Kraft, P., Brantley, K., Ahearn, T., Garcia-Closas, M., and Chatterjee, N. GENMETA-Lite: A Fast and Flexible Approach to Federated Learning with Disparate Covariate Information Across Studies. ENAR 2026 Spring Meeting, Indianapolis, IN. March 2026. Oral presentation.

Norton, E.L., Ahearn, T., Mukopadhyay, S., Balasubramanian, J., Kim, E., Pal Choudhury, P., Garcia-Closas, M., and Chatterjee, N. Modular and interpretable multicancer risk prediction of the 14 most common cancers in the U.S. to identify high-risk individuals missed by current age-based screening guidelines. inHealth Precision Medicine Symposium, Baltimore, MD. May 2025. Poster presentation.

Brantley, K.D., Ahearn, T., **Norton, E.L.**, Palmer, J., Zirpoli, G., Neuhouser, M.L., Barnett, M., Teras, L., Hodge, J., Rohan, T., Milne, R., Eliassen, A.H., Huang, H., Chen, Y., O'Brien, K., Kitahara, C., Anderson, G., Lee, I., Chatterjee, N., Garcia-Closas, M., Kraft, P., on behalf of the Breast Cancer Risk Prediction Project. Performance of common general-population breast cancer risk prediction models in 15 cohorts. American Association for Cancer Research (AACR) Annual Meeting, Chicago, IL. April 2025. Poster presentation: Abstract #1325.

*Full list of 24 presentations (3 invited) available upon request.

TEACHING EXPERIENCE

American University of Armenia

Instructor (Anticipated)

PH319 Introductory Biostatistics — Oct 2026

Johns Hopkins University

Lead Teaching Assistant

140.621 Statistical Methods in Public Health I — Aug – Oct 2024, 2025, 2026

140.622 Statistical Methods in Public Health II — Oct – Dec 2026

140.623 Statistical Methods in Public Health III — Jan – Mar 2025, 2026

Teaching Assistant

140.622 Statistical Methods in Public Health II — Oct – Dec 2023

140.623 Statistical Methods in Public Health III — Jan – Mar 2024

140.624 Statistical Methods in Public Health IV — Mar – May 2024

140.776 Statistical Computing — Aug – Oct 2023

140.614 Data Analysis Workshop II — Jun 2023

University of Hawai'i at Mānoa

Teaching Assistant

OCN312 Geomathematics — Aug – Dec 2011

SERVICE

Biostatistics Department TA Training Planning Committee (JHU) — **2024, 2025, 2026**

PhD Student Representative, Biostatistics Student Organization (JHU) — **2024-2025**

Biostatistics Department Retreat Social Committee & Activity Lead (JHU) **2024**
Fostering Diversity in Biostatistics Workshop Co-Lead (ENAR) **2024**

MENTORSHIP

Mentorship Committee Co-Lead, Biostatistics Student Organization (JHU) **2025-2026**
Peer Mentor, Biostatistics Student Organization (JHU) **2023-2026**

AFFILIATIONS & PROFESSIONAL MEMBERSHIPS

American Association for Cancer Research (AACR) **2026-present**
American Statistical Association (ASA) **2024-present**
Eastern North American Region (ENAR) of International Biometric Society (IBS) **2024-present**

AWARDS & HONORS

Louis I. and Thomas D. Dublin Award (BSPH) **2026**
Carol Eliasberg Martin Scholarship (BSPH) **2025-2026**
ASA BIOP Women in Statistics and Data Science (WSDS) Conference Travel Award **2025**
Science Communication Fellow (Pacific Science Center) **2019**
NOAA Coastal Management Fellowship **2013-2015**
Travel Award (UHM Graduate Student Organization) **2012**
Charles Caroll Everett Scholarship (Bowdoin College) **2010**
Donald and Harriet S. Macomber Prize in Biology (Bowdoin College) **2010**
INBRE Academic Year Supply Award (Bowdoin College) **2009**
Phi Beta Kappa **2009**
Abraxas Award (Bowdoin College) **2007**
Sarah and James Bowdoin Scholar (Bowdoin College) **2006-2010**
National Merit Scholar **2006**

PROFESSIONAL DEVELOPMENT

Summer Institute in Statistical Genetics, Georgia Institute of Technology **2024**
Writing for the General Public Workshop, University of Washington **2019**
Software Carpentry Workshop, University of Washington **2019**
Data Carpentry Workshop, University of Washington **2018**
C-MORE Virtual Workshop on Science Writing, University of Hawai'i at Mānoa **2012**

SKILLS

Technical: Proficient in R, RShiny, bash shell, Matlab, high performance computing (HPC). Familiar with Python and Stata.

Methods: Statistical genetics (polygenic risk score (PRS), Mendelian randomization (MR)), survival analysis (Cox proportional hazards model (CPHM), Kaplan-Meier (KM)), missing data (multiple imputation with chained equations (MICE), inverse probability weighting (IPW), doubly-robust (DR) methods, GENMETA, GENMETA-Lite), meta-analysis, federated learning, simulation studies, regression, cancer, risk prediction (iCARE), and risk communication.