

# Emily L. Norton

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## EDUCATION

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|--------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|
| <b>Johns Hopkins University</b><br>Bloomberg School of<br>Public Health (BSPH) | <b>PhD in Biostatistics</b> (GPA 4.00)<br>Dissertation: <i>Improving cancer risk prediction models using<br/>diverse datasets: Methods and applications.</i><br>Advisor: Dr. Nilanjan Chatterjee             | 2022 - 2027<br>(anticipated) |
| <b>University of Hawai'i at<br/>Mānoa (UHM)</b>                                | <b>MS in Oceanography</b> (GPA 3.90)<br>Thesis: <i>Empirical and bio-physical modeling studies of<br/>dispersal barriers for marine plankton.</i><br>Advisor: Dr. Erica Goetze                               | 2010 - 2013                  |
| <b>Bowdoin College</b>                                                         | <b>BA in Biology (major), Mathematics (minor)</b><br><i>Summa Cum Laude</i><br>Thesis: <i>Mathematical Modeling of Underwater Walking in<br/>the Green Crab, Carcinus maenas</i><br>Advisor: Dr. Amy Johnson | 2006 - 2010                  |

## EMPLOYMENT

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| <b>Statistics Intern, Pfizer</b><br>Developed a comprehensive risk model for COPD; applied observational causal inference methods.                             | May-August 2026         |
| <b>Research Scientist, University of Washington (UW)</b><br>Forecast ocean conditions and built habitat models to inform fisheries management decisions.       | May 2017-September 2022 |
| <b>Research Technician, Brown University</b><br>Investigated the evolutionary diversity of the reproduction pathways in <i>Candida spp.</i> using CRISPR/Cas9. | June 2016-May 2017      |
| <b>Senior Planner, Maine Coastal Program</b>                                                                                                                   | July 2015-May 2016      |
| <b>NOAA Coastal Management Fellow, Maine Coastal Program</b><br>Managed a bathymetric mapping and seafloor habitat classification project.                     | July 2013-July 2015     |

## PUBLICATIONS

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\* denotes undergraduate co-author

### Manuscripts in Preparation

3. **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.
2. **Norton, E.L.**, Kraft, P., Brantley, K., Ahearn, T., Garcia-Closas, M., Eliassen, A.H., ..., and Chatterjee, N. GENMETA-Lite: A Fast and Flexible Approach to Federated Learning with Disparate Covariate Information Across Studies.
1. **Norton, E.L.**, Ahearn, T., Mukhopadhyay, S., Balasubramanian, J., Kim, E., Li, S.\*, ..., and Chatterjee, N. Cross-population validation and projection of multi-cancer risk models incorporating genetic and non-genetic factors.

## Peer-Reviewed Publications

14. Brantley, K.D., Ahearn, T.U., **Norton, E.L.**, MacInnis, R., Palmer, J.R., Fortner, R.T., ..., and Kraft, P. 2026. Performance of general-population breast cancer risk prediction models in an international consortium. *Journal of the National Cancer Institute* (in review; preprint available at <https://doi.org/10.64898/2026.08.20.26360899>)
13. Saenger, C., McElhany, P., **Norton, E.L.**, Busch, D.S., Siedlecki, S.A., Alin, S.R., ..., and Bednarsek, N. 2023. Evaluating environmental controls on the exoskeleton density of larval Dungeness crab via micro computed tomography. *Frontiers in Marine Science*, section Global Change and the Future Ocean. <https://doi.org/10.3389/fmars.2023.1095253>
12. **Norton, E.L.**, Kaplan, I., Siedlecki, S., Hermann, A., Alin, S.R., Newton, J., ..., 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>
11. Schroeder, I. D., Leising, A., Bograd, S., deWitt, L., Garfield, N., ..., **Norton, E.L.**, ..., and Munsch, S. 2021. Ecosystem Status Report of the California Current for 2020–21: A Summary of Ecosystem Indicators Compiled by the California Current Integrated Ecosystem Assessment Team (CCIEA). Climate and Ocean Drivers, U.S. Department of Commerce, NOAA Technical Memorandum NMFS-NWFSC-170, pp. 8-28. <https://doi.org/10.25923/x4ge-hn11>
10. Berger, H., Siedlecki, S.A., Matassa, C., Alin, S.R., Kaplan, I.C., ..., **Norton, E.L.**, and Newton, J. 2021. Seasonality and life history complexity determine vulnerability of Dungeness crab to multiple climate stressors. *AGU Advances* 2, e2021AV000456. <https://doi.org/10.1029/2021AV000456>
9. Siedlecki, S.A., Pilcher, D., Howard, E.M., Deutsch, C., MacCready, P., **Norton, E.L.**, ..., and Klinger, T. 2021. Coastal processes modify projections of some climate-driven stressors in the California Current System. *Biogeosciences* 18(9):2871-2890. <https://doi.org/10.5194/bg-18-2871-2021>
8. Malick, M.J., Siedlecki, S.A., **Norton, E.L.**, Kaplan, I.C., Haltuch, M.A., Hunsicker, M.E., ..., 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>
7. **Norton, E.L.**, Siedlecki, S., Officer, S.\*, Kaplan, I., Fisher, J., Morgan, C., ..., and Feely, R.A. 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>
6. Bednarsek, N., Feely, R.A., Beck, M.W., Alin, S.R., Siedlecki, S.A., Calosi, P., **Norton, E.L.**, ..., and Spicer, J.I. 2020. Exoskeleton dissolution with mechanoreceptor damage in larval Dungeness crab related to severity of present-day ocean acidification vertical gradients. *Science of the Total Environment* 716:136610. <https://doi.org/10.1016/j.scitotenv.2020.136610>
5. Litzow, M.A., Hunsicker, M.E., Bond, N.A., Burke, B.J., Cunningham, C., Gosselin, J.L., **Norton, E.L.**, ..., 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>
4. **Norton, E.L.**, Sherwood, R.K., and Bennett, R.J. 2017. Development of a CRISPR-Cas9 system for efficient genome editing of *Candida lusitanae*. *mSphere* 2:e00217-17. <https://doi.org/10.1128/mSphere.00217-17>
3. Goetze, E., Andrews, K.R., Peijnenburg, K.T.C.A., Portner, E., and **Norton, E.L.** 2015. Temporal stability of genetic structure in a mesopelagic copepod. *PLoS ONE* 10(8):e0136087. <https://doi.org/10.1371/journal.pone.0136087>

2. Andrews, K. R., **Norton, E. L.**, Fernandez-Silva, I., Portner, E., and Goetze, E. 2014. Multilocus evidence for globally distributed cryptic species and distinct populations across ocean gyres in a mesopelagic copepod. *Molecular Ecology* 23:5462-5479. <https://doi.org/10.1111/mec.12950>
1. **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>

## TEACHING EXPERIENCE

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### American University of Armenia

#### *Instructor of Record*

- Fully responsible for syllabus and daily lectures; will write and grade homework, quizzes, and exams.  
**PH319 Introductory Biostatistics** October 2026

### Johns Hopkins University

#### *Lead Teaching Assistant*

- Led 2-3 in person and online laboratory sessions for up to 50 students each week for a class of ~600 students. Produced solutions for homework problems. Beta-tested midterm and final exams.  
**140.621 Statistical Methods in Public Health I** August–October 2024, 2025  
**140.622 Statistical Methods in Public Health II** October–December 2026  
**140.623 Statistical Methods in Public Health III** January–March 2025, 2026

#### *Teaching Assistant*

- Held office hours and graded homework.  
**140.622 Statistical Methods in Public Health II** October–December 2023  
**140.623 Statistical Methods in Public Health III** January–March 2024  
**140.624 Statistical Methods in Public Health IV** March–May 2024  
**140.776 Statistical Computing** August–October 2023  
**140.614 Data Analysis Workshop II** June 2023

### University of Hawai'i at Mānoa

#### *Teaching Assistant*

- Led weekly recitation sessions. Graded homework and exams.  
**OCN312 Geomathematics** August–December 2011

## RESEARCH SUPERVISION

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### Undergraduate Student Supervisor

- Sara Li (Johns Hopkins University 2025-present)
  - Project: Validation of cancer risk prediction models in the Prostate, Lung, Colorectal, and Ovarian (PLCO) Cancer Screening Trial.
- Henna Parmar (Johns Hopkins University 2024)
  - Project: Data harmonization of breast cancer risk factors across cohorts with heterogeneous covariates.
- Owen Yazzie (University of Arizona; UW Intern 2022)

- Project: Validating a Dungeness crab meat quality tool to inform fisheries management decisions.
- Celine King (Fairfield University; UW Intern 2021)
  - Project: Building a Dungeness crab meat quality model to support fisheries monitoring planning.
- Suzanna Officer (Whitman College; UW Intern 2017)
  - Project: Forecasting Dungeness crab distributions along the Washington and Oregon coast.

## GRANT FUNDING

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**Innovation in Cancer Informatics Grant** 2025-2026  
 “Development of a Universal Breast Cancer Risk Prediction Tool for the Diverse US Population Using Data from 2.4 million women across 29 cohorts” (\$112,000; Writer (Ineligible to be Co-PI because of graduate student status))

**NOAA Project of Special Merit Grant** 2015  
 “Benthic exploration and habitat classification: Tools for building resiliency in Maine” (\$198,722; Co-PI)

**Maine Outdoor Heritage Fund Grant** 2015  
 “Benthic habitat characterization of Maine’s coastal waters” (\$14,403; Co-PI)

## PRESENTATIONS

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### Invited Talks

7. Federated learning with missing covariates and distribution shifts. **Joint Statistical Meetings**. Boston, MA. August 2026.
6. GENMETA-Lite: A Fast and Flexible Approach to Federated Learning with Disparate Covariate Information Across Studies. **Biostatistics Education and Student Training (BEST) Seminar**. Baltimore, MD. February 2026.
5. Math that drives oceanography: A case study of statistical modeling of Dungeness crab catch rates to support fisheries management. **Fitchburg State Math Department**. Online. November 2021.
4. Seasonal forecasting of Dungeness crab catch rates in Oregon and Washington. **California Current Integrated Ecosystem Assessment Monthly Meeting**. Online. May 2021.
3. Seasonal forecasting of Dungeness crab catch rates in Oregon and Washington. **NOAA Northwest Fisheries Science Center Monthly Lab Meeting**. Online. January 2021.
2. Mapping Maine’s seafloor: Maine Coastal Mapping Initiative. **Port Safety Forum**. Portland, ME. December 2015.
1. Mapping Maine’s seafloor: Maine Coastal Mapping Initiative. **The Nature Conservancy Brown Bag Webinar**. Online. Brunswick, ME. April 2015.

### Contributed Talks

8. GENMETA-Lite: A Fast and Flexible Approach to Federated Learning with Disparate Covariate Information Across Studies. **ENAR 2026 Spring Meeting**. Indianapolis, IN. March 2026.

7. Seasonal ocean forecasts promote dynamic management of the Dungeness crab fishery in Washington and Oregon, U.S.A. **Ocean Sciences Meeting**. Online. February 2022. Abstract 4482.
6. Enhanced dynamical downscaling of global climate projections to regional scales using machine learning. **PICES Annual Meeting**. Online. Oct 2021. Abstract 15112.
5. The importance of environmental exposure history in forecasting Dungeness crab megalopae occurrence using J-SCOPE, a high-resolution model for the US Pacific Northwest. **PICES Annual Meeting**. Victoria, Canada. October 2019. Abstract 14301.
4. Maine Coastal Mapping Initiative progress update: Applications and utilization of high resolution multibeam echosounder data. **Maine Geological Survey Annual Meeting**. Augusta, ME. November 2015.
3. Aggregate exploration and habitat classification: Tools for building resiliency in Maine. **Geological Society of America Northeastern Section Meeting**. Bretton Woods, NH. March 2015.
2. Maine bathymetric update: Maine Coastal Mapping Initiative. **Maine GIS Users Group Annual Conference**. Portland, ME. February 2015.
1. What mechanisms underlie dispersal barriers for marine plankton? **Association for the Sciences of Limnology and Oceanography (ASLO) Aquatic Sciences Meeting**. New Orleans, LA. February 2013.

## Posters

12. Cross-population validation and projection of multi-cancer risk models incorporating genetic and non-genetic factors. **inHealth Precision Medicine Symposium**. Baltimore, MD. May 2026.
11. 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. Abstract 6667.
10. GENMETA-Lite: A fast and flexible approach to federate learning with disparate covariate information across studies. **PHAISE AI Research Day**. Baltimore, MD. March 2026.
9. 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.
8. 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. Abstract 1325.
7. Seasonal ocean forecasts promote dynamic management of the Dungeness crab fishery in Washington and Oregon, U.S.A. **Daily to Decadal Ecological Forecasting along North American Coastlines Workshop, CLIVAR**. Hybrid (Virtual/In-person). April 2022. Poster presentation.
6. The importance of environmental exposure history in forecasting Dungeness crab megalopae occurrence using J-SCOPE, a high-resolution model for the US Pacific Northwest. **Ocean Sciences Meeting**. San Diego, CA. February 2020. Abstract PC44A-1850.

5. The importance of exposure history in forecasting larval Dungeness crab distribution using J-SCOPE, a high-resolution model for the US Pacific Northwest. **Ocean Sciences Meeting**. Portland, OR. February 2018. Abstract OC14A-0404.
4. Under the sea: Exploring submerged geologic features using multibeam sonar. **Maine Geological Society Annual Meeting**. Augusta, ME. November 2015.
3. Empirical and biophysical modeling studies of dispersal barriers for marine plankton. **Ocean Sciences Meeting**. Honolulu, HI. February 2014.
2. Offshore bathymetric and backscatter data for ocean spatial planning in Maine. **Ocean Sciences Meeting**. Honolulu, HI. February 2014.
1. Testing an inverted pendulum model for underwater walking in the crab *Carcinus maenas*. **Society for Integrative and Comparative Biology (SICB) Annual Meeting**. Seattle, WA. January 2010.

## AWARDS & HONORS

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|                                                                                                   |           |
|---------------------------------------------------------------------------------------------------|-----------|
| Louis I. and Thomas D. Dublin Award (advancement of epidemiol. and biostat.), BSPH                | 2026      |
| Carol Eliasberg Martin Scholarship (research preventing cancers that affect women), BSPH          | 2025-2026 |
| Women in Statistics and Data Science (WSDS) Conference Travel Award, ASA BIOP                     | 2025      |
| Science Communication Fellow, Pacific Science Center                                              | 2019      |
| Coastal Management Fellowship, NOAA                                                               | 2013-2015 |
| Travel Award, UHM                                                                                 | 2012      |
| Charles Carroll Everett Scholarship (to pursue graduate education), Bowdoin College               | 2010      |
| Donald and Harriet S. Macomber Prize in Biology (outstanding student in Biology), Bowdoin College | 2010      |
| INBRE Academic Year Supply Award (competitive grant to support senior thesis), Bowdoin College    | 2009      |
| Phi Beta Kappa                                                                                    | 2009      |
| Abraxas Award, Bowdoin College                                                                    | 2007      |
| Sarah and James Bowdoin Scholar (top 20%), Bowdoin College                                        | 2006-2010 |
| National Merit Scholar                                                                            | 2006      |

## SERVICE

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|---------------------------------------------------------------------------|------------------|
| Planning Committee, Biostatistics Department TA Training, JHU             | 2024, 2025, 2026 |
| Mentorship Committee Co-Lead, Biostatistics Student Organization, JHU     | 2025-2026        |
| Invited Panelist, AI in the BSPH Classroom as part of Education Week, JHU | 2025             |
| PhD Student Representative, Biostatistics Student Organization, JHU       | 2024-2025        |
| Social Committee & Activity Lead, Biostatistics Department Retreat, JHU   | 2024             |
| Planning Committee, Fostering Diversity in Biostatistics Workshop, ENAR   | 2024             |
| Peer Mentor, Biostatistics Student Organization, JHU                      | 2023-present     |

## PROFESSIONAL DEVELOPMENT

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|---------------------------------------------------------------------------|--------------|
| Resources for Improving Statistical Education Working Group member, JHU   | 2025-present |
| Statistical Genomics Working Group member, JHU                            | 2024-present |
| Statistical Genetics Working Group member, JHU                            | 2022-present |
| Summer Institute in Statistical Genetics, Georgia Institute of Technology | 2024         |
| Writing for the General Public Workshop, UW                               | 2019         |
| Software Carpentry Workshop, UW                                           | 2019         |
| Data Carpentry Workshop, UW                                               | 2018         |

## AFFILIATIONS & PROFESSIONAL MEMBERSHIPS

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|-------------------------------------------------------------------------------|--------------|
| Washington Statistical Society (WSS)                                          | 2026-present |
| 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 |

## MEDIA

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2021: USC Dornsife. *Forecasting the Future of Dungeness Crabs*. ([link](#))  
2021: UW News. *How Dungeness Crabs' Complex Lifecycle Will be Affected by Climate Change*. ([link](#))  
2021: JISAO Magazine. *A Cruise on the Cusp*. ([link](#))  
2020: PMEL Awards. *NOAA Team Member of the Month*. ([link](#))  
2017: CICOES Staff Spotlight ([link](#))  
2009: Bowdoin College. *Coastal Studies Span Walking Crabs and Artful Tourists*. ([link](#))

## SKILLS

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**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.