

MICHAEL PEARCE

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University of Washington, Department of Statistics
Padelford Hall, Box 354322

EDUCATION

University of Washington, Seattle, WA

Sept. 2018 - Present

Ph.D. (anticipated) in statistics

Advisor: Elena Erosheva

Primary research interests include preference learning, peer review, and developing Bayesian statistical models for social science problems. Coursework in frequentist and Bayesian statistical inference, machine learning, nonparametric statistics, regression, and statistical demography. Passed first-year theory exam (June 2019), research preliminary exam (June 2020), and General Exam (April 2022).

St. Olaf College, Northfield, MN

Sept. 2013 - May 2017

B.A. in mathematics; concentration in statistics

Graduated *summa cum laude*. Member of *Phi Beta Kappa* (liberal arts honor society); member and treasurer of *Pi Mu Epsilon* (mathematics honor society). Mentor for high school students from underrepresented communities through the TRiO Upward Bound program in Minneapolis and St. Paul public schools (2013-14 and 2014-15 academic years).

RESEARCH EXPERIENCE

Research Assistant

Sept. 2020 - Present

University of Washington - Department of Statistics

Unified Modeling of Rating and Ranking Data

Supervisor: Elena Erosheva

Research Assistant

March 2020 - July 2021

University of Washington - Department of Statistics

Bayesian Forecasting of Maximum Human Lifespan to 2100

Supervisor: Adrian Raftery

Statistical Fellow

Sept. 2016 - Sept. 2017

St. Olaf College - Center for Undergraduate Research

Unsupervised Algorithm for Increased Spatial Resolution in Molecular Tagging Velocimetry Images

Supervisors: Rodrigo Sanchez-Gonzalez and Matthew Richey

WORK EXPERIENCE

Boeing Research and Technology

June - Dec. 2019; June - Sept. 2020

Applied Statistics Intern

Performed research involving nonparametric statistics, design of experiments, and aircraft COVID-19 modeling. Formulated, developed, and tested web-based statistical tools for company engineers. Consulted across the company, including end-to-end analysis and communication of findings.

Deloitte LLC

Oct. 2017 - Aug. 2018

Analytics Consultant

Verified the accuracy and completeness of complex statistical models using SAS, R, Python, and Excel for a global bank to ensure compliance with regulatory financial stress-testing. Analyzed anti-money laundering policy, practices, and legal requirements for a global bank, ultimately implementing changes to an existing customer on-boarding system.

SCHOLARLY PUBLICATIONS

Pearce, M. and Erosheva, E.A. “On the validity of bootstrap uncertainty estimates in the Mallows-Binomial model.” (preprint available on *arXiv*), (2022).

Pearce, M. and Erosheva, E.A. “A unified statistical learning model for rankings and scores with application to grant panel review.” *Journal of Machine Learning Research* (accepted for publication; preprint available on *arXiv*), (2022).

Pearce, M. and Raftery, A.E. “Probabilistic forecasting of maximum human lifespan by 2100 using Bayesian population projections.” *Demographic Research* 44.52 (2021): 1271–1294.

Pearce, M.*, Sparrow, Z.*, Mabote, T. R., Sanchez-Gonzalez, R. (2020). “stoBEST: An efficient methodology for increased spatial resolution in two-component molecular tagging velocimetry.” *Measurement Science and Technology* 32.3 (2020): 035302

*indicates authors contributed equally.

OTHER PUBLICATIONS

Pearce, M. and Raftery, A.E. “Will this be a record-breaking century for human longevity?” *Significance* (2021).

Pearce, M. and Raftery, A.E. “The maximum human life span will likely increase this century, but not by more than a decade” *The Conversation* (2021).

SELECTED MEDIA COVERAGE

Washington Post “Want to add healthy years to your life? Here’s what new longevity research says.” (Oct. 11, 2021)

Southern Weekly (China) “What is the limit of human life span?” (Sept. 16, 2021)

CNBC “Researchers say the probability of living past 110 is on the rise — here’s what you can do to get there” (July 17, 2021)

Elemental (Medium) “How Long Can Humans Really Live?” (July 15, 2021)

Gulf News “Surviving up to 150: How long can a person live?” (July 12, 2021)

Indian Express “Can a person live to age 124, 135 or 150? Some optimism, some caveats” (July 6, 2021)

The South African “Rise of the supercentenarians: Today’s kids could live for 130 years” (July 4, 2021)

UW News “How long can a person live? The 21st century may see a record-breaker” (July 1, 2021)

CONFERENCE PARTICIPATION

Joint Statistical Meetings, Washington, D.C. August 2022
Using ranking data for decision-making (topic-contributed paper session; organizer and chair)
Fast Bayesian estimation for ranking models (speed session)

ISBA World Meeting, Montreal, Canada June 2022
Joint Bayesian inference for rankings and ratings under heterogeneous preferences (poster session)

Working Group on Model-Based Clustering, Athens, Greece (virtual) October 2021
Unified latent class modeling of scores and rankings applied to grant panel review (poster session)

Joint Statistical Meetings, Seattle, WA (virtual) August 2021
Unified latent class modeling of score and rank data applied to grant panel review (speed session)

International Conference on Machine Learning (virtual) July 2021
Workflow Chair (ranked data processing)

MAA MathFest , Chicago, IL	July 2017
<i>A new method for computational analysis of high-speed gas flows</i> (Pi Mu Epsilon student paper session)	
National Conference on Undergraduate Research , Memphis, TN	April 2017
<i>Analysis of high-speed gaseous flows using molecular tagging velocimetry and the Hough transform</i> (poster presentation)	

TEACHING AND MENTORSHIP

Dorothy M. Gilford Award	Nov. 2021
<i>University of Washington</i>	
<i>For outstanding performance by a graduate teaching assistant during the prior year.</i>	
Washington eXperimental Mathematics Lab (WXML) Mentor	
<i>University of Washington</i>	
“Improving Panel Consensus Tool (ImPaCT)”	Autumn 2021
Directed Reading Program Mentor	
<i>University of Washington</i>	
“Social Choice Analysis of Peer Review Data”	Spring 2022
“Voting, Ranking, and Preference Modeling”	Autumn 2021
“Nonlinear Regression”	Winter 2020, Winter 2021, Spring 2021
“History and Practice of Data Communication”	Autumn 2020
Teaching Assistant	
<i>University of Washington</i>	
Applied Statistics Capstone (STAT 528)	Winter 2021, Winter 2022
Multivariate Data Analysis for the Social Sciences (CSSS 589)	Autumn 2021
Statistics and Philosophy of Voting (STAT 498 / CSSS 594)	Autumn 2020
Elements of Statistical Methods (STAT 311)	Autumn 2018, Winter 2019
Introduction to Probability and Mathematical Statistics III (STAT 342)	Spring 2019
Statistical Reasoning (STAT 220)	Autumn 2019
Supplemental Instruction Leader	
<i>St. Olaf College</i>	
Calculus II (MATH 126)	Spring 2017
Modern Computational Mathematics (MATH 242)	Spring 2017

READING GROUP AND LAB PARTICIPATION

Statistical and ML Methodology for the Social Sciences Working Group	Apr. 2021 - Present
Applied Bayesian and Computational (ABC) Statistics Working Group	Sept. 2019 - Present
Statistics Education Reading Group	Sept. 2019 - Present
Statistical Learning Applied to Biostatistics (SLAB) Lab	Sept. 2019 - March 2020
Space-Time Reading Group	Jan. - May 2019

DEPARTMENTAL SERVICE

Diversity, Inclusion, Community, and Equity (DICE) Committee	Sept. 2020 - Present
Undergraduate Statistics Degree Program Revamp Committee	Sept. 2021 - June 2022

SKILLS

Programming	R (fluent), Python (proficient)
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