MICHAEL PEARCE

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Reed College, Department of Mathematics and Statistics
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APPOINTMENTS

Assistant Professor of Statistics
Reed College, Department of Mathematics and Statistics 2023 - Present

EDUCATION

University of Washington, Seattle, WA 2018 - 2023
Ph.D., Statistics (*Statistics in the Social Sciences track*)
Advisor: Elena A. Erosheva

St. Olaf College, Northfield, MN 2013 - 2017
B.A., Mathematics (*Statistics concentration*)
Summa cum laude, Phi Beta Kappa

SCHOLARLY PUBLICATIONS

Gallo, S.A., **Pearce, M.**, Lee, C.J., and Erosheva, E.A. (2023) "A new approach to peer review assessments: Score, then rank." *Research Integrity and Peer Review* 8.10: 10.

Pearce, M. and Erosheva, E.A. (2023+) "Modeling preferences: A Bayesian mixture of finite mixtures for rankings and ratings" *arXiv preprint arXiv:2301.09755* (*under revision*)

Perlman, M. and **Pearce, M.** (2023+) "Estimating the ratio of means in a zero-inflated Poisson mixture model." (*under revision*)

Pearce, M. and Erosheva, E.A. (2022) "On the validity of bootstrap uncertainty estimates in the Mallows-Binomial model." *arXiv preprint arXiv:2206.12365.*

Pearce, M. and Erosheva, E.A. (2022) "A unified statistical learning model for rankings and scores with application to grant panel review." *Journal of Machine Learning Research* 23.210: 1–33.

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

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

**indicates authors contributed equally.*

OTHER PUBLICATIONS

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

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

TEACHING AND MENTORSHIP

Reed College
Instructor, MATH 141 (Introduction to Probability and Statistics) Fall 2023

University of Washington
Instructor of Record, CSSS 508 (Introduction to R for Social Scientists) Autumn 2022, Spring 2023
Teaching Assistant, STAT 528 (Applied Statistics Capstone) Winter 2021, Winter 2022
Teaching Assistant, CSSS 589 (Multivariate Data Analysis for the Social Sciences) Autumn 2021
Teaching Assistant, STAT 498/CSSS 594 (Statistics and Philosophy of Voting) Autumn 2020
Teaching Assistant, STAT 311 (Elements of Statistical Methods) Autumn 2018, Winter 2019
Teaching Assistant, STAT 342 (Introduction to Probability and Mathematical Statistics) Spring 2019
Teaching Assistant, STAT 220 (Statistical Reasoning) Autumn 2019
Directed Reading Program Mentor, "Social Choice Analysis of Peer Review Data" Spring 2022
Directed Reading Program Mentor, "Voting, Ranking, and Preference Modeling" Autumn 2021
Directed Reading Program Mentor, "Nonlinear Regression" Winter 2020, Winter 2021, Spring 2021
Directed Reading Program Mentor, "History and Practice of Data Communication" Autumn 2020
Washington eXperimental Mathematics Lab Mentor, "Improving Panel Consensus Tool" Autumn 2021

St. Olaf College
Supplemental Intructor, MATH 126 (Calculus II) Spring 2017
Supplemental Instructor, MATH 242 (Modern Computational Mathematics) Spring 2017
Student Mentor, TRiO Upward Bound Program 2013 - 2015

CONFERENCE PARTICIPATION

International Meeting of the Psychometrics Society, College Park, MD July 2023
"Improving preference analysis: Joint models for ordinal and cardinal data" (presentation)

NeurIPS, New Orleans, LA December 2022
"A Unified Statistical Learning Model for Rankings and Scores with Application to Grant Panel Review" (Journal-to-Conference Track Poster Session)

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
"A new method for computational analysis of high-speed gas flows" (Pi Mu Epsilon student paper session)

National Conference on Undergraduate Research, Memphis, TN April 2017
"Analysis of high-speed gaseous flows using molecular tagging velocimetry and the Hough transform" (poster presentation)

SELECTED MEDIA COVERAGE

BBC News (Brazil) "Por que cada vez mais pessoas estão vivendo até os 100 anos?" (July 11, 2022)

Stats and Stories (Podcast) "The Age of the Supercentenarian" (April 29, 2022) `https://statsandstories.net/health1/the-age-of-the-supercentenarian`.

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)

PROFESSIONAL EXPERIENCE

Boeing Research and Technology 2019 - 2020
Applied Statistics Intern

Deloitte LLC 2017 - 2018
Analytics Consultant

SOFTWARE

rankrate: Statistical Tools for Preference Learning with Rankings and Ratings. R package available on CRAN.

HONORS AND AWARDS

Scholar Award *(NeurIPS)* 2022
Dorothy M. Gilford Teaching Award *(University of Washington)* 2021

ACADEMIC SERVICE AND OUTREACH

University of Washington
Reviewer, Pre-Application Review Service (PARS) 2022
Reviewer, PhD Admissions 2020, 2021
Founder, Queer Union for (Bio)statistician Inclusion and Community (QUBIC) 2022-2023
Undergraduate Curriculum Revamp Committee 2021-2022