Elizabeth **Eisenhauer**

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EDUCATION

PENNSYLVANIA STATE UNIVERSITY **State College, PA**
PhD in Statistics, GPA 3.8 / 4.0 2017 – May 2022 (Expected)

- **Dissertation:** Advances in Stochastic Models for Animal Movement and Assessment of Probability Attitudes
- **Honors:** Distinguished Graduate Fellowship and Vollmer-Kleckner Scholarship in Science

THE COLLEGE OF NEW JERSEY **Ewing, NJ**
BA in Mathematics with a Statistics specialization, GPA 3.8 / 4.0 2013 – 2017

- **Honors Thesis:** Structural Equation Modeling of Signaling Networks in Head and Neck Squamous Cell Carcinoma
- **Honors:** *magna cum laude*, Departmental Honors, Phi Beta Kappa, Pi Mu Epsilon Mathematics Honor Society

RESEARCH PUBLICATIONS

- Wijeyakulasuriya, Dhanushi A., **Elizabeth W. Eisenhauer**, Benjamin A. Shaby, and Ephraim M. Hanks. "Machine learning for modeling animal movement." *PloS one* 15.7 (2020): e0235750.
- **Eisenhauer, Elizabeth**, and Ephraim Hanks. "A lattice and random intermediate point sampling design for animal movement." *Environmetrics* (2020): e2618.

RESEARCH EXPERIENCE

PENNSYLVANIA STATE UNIVERSITY **State College, PA**
Graduate Researcher 2018 – present

- **Project 1:** Proposed a novel sampling design called lattice and random intermediate points (LARI) for animal movement data inspired by an existing sampling design in geostatistics. Compared LARI and regular samples in a stochastic differential equation model framework with three examples: (1) a carpenter ant dataset estimating spline representations of potential and motility surfaces; (2) guppy dataset with regression; (3) a simulated example using Bayesian analysis.
- **Project 2:** Developed and compared flexible latent state and varying coefficient models for yearly movement of golden eagles.
- **Project 3:** Developed the Survey of Probability Attitudes (SPA) to measure students' attitudes toward probability. Obtained Penn State IRB exempt status. Administered the pre and post SPA in 20 Penn State course sections in Spring 2021 through collaboration with 15 instructors.

THE COLLEGE OF NEW JERSEY **Ewing, NJ**
Undergraduate Researcher 2016 – 2017

- Creation of structural equations and graphical models to understand the limits of learnability of cell signaling networks based on high-throughput biological measurements with a focus on cell signaling networks in head and neck squamous cell carcinoma.

TEACHING EXPERIENCE

PENNSYLVANIA STATE UNIVERSITY **State College, PA**
Instructor

- STAT 401: Experimental Methods (In Person and Virtual) Spring & Fall 2021
- STAT 200: Elementary Statistics (Virtual) Summer 2020 & Summer 2021
- MATH/STAT 318: Elementary Probability (In Person and Virtual) Fall 2019, Spring 2020, & Fall 2020

PENNSYLVANIA STATE UNIVERSITY **State College, PA**
Lab Instructor

- STAT 200: Elementary Statistics Fall 2018

PROFESSIONAL EXPERIENCE

PENNSYLVANIA STATE UNIVERSITY CONSULTING CENTER **State College, PA**
Statistical Consultant Spring 2021
- Advised over 10 clients from a variety of disciplines on appropriate statistical research methods

THE COLLEGE OF NEW JERSEY OFFICE OF STUDENT ACTIVITIES **Ewing, NJ**
Graphic Designer 2014 – 2016
- Consulted with faculty and student organizations on how best to meet their design goals
- Completed individual graphic design projects and packages (logos, posters, t-shirt designs, and murals)

TERRACYCLE, INC. **Ewing, NJ**
Operations Intern 2015 – 2016
- Analyzed shipping operations through manipulation of Excel spreadsheets
- Improved zero-waste office collection program

THE RAINBIRD FOUNDATION **Madison, WI**
Statistics Project Manager 2014 – 2015
- Compilation of a national child abuse database through collaboration with state agencies

PROFESSIONAL DEVELOPMENT

INVITED PRESENTATIONS

Pennsylvania State University Probability and Financial Mathematics Seminar May 2020
- **Topic:** Modeling COVID-19 with an SIR model accounting for temperature.

Muhlenberg College Math/CS Colloquium Series January 2020
- **Topic:** A lattice and random intermediate point sampling design for animal movement.

Hawk Mountain Sanctuary Seminar October 2019
- **Topic:** A lattice and random intermediate point sampling design for animal movement.

CONTRIBUTED PRESENTATIONS

EURING Analytical Meeting & Workshop June 2021
- **Topic:** Modeling Yearly Patterns in Golden Eagle Movement
- **Awarded:** 2nd Place Student Award for Oral Presentations

Joint Statistical Meeting (JSM) August 2020
- **Topic:** Modeling migratory and residential movement of golden eagles

Virtual International Statistical Ecology Conference June 2020
- **Topic:** A lattice and random intermediate point sampling design for animal movement
- **Awarded:** Student Prize for Contributed Talk

Pennsylvania State University Statistics Department SMAC Talk January 2020
- **Topic:** A lattice and random intermediate point sampling design for animal movement

Joint Statistical Meeting (JSM) August 2019
- **Topic:** An irregular sampling design for animal movement.

POSTER PRESENTATIONS

United States Conference on Teaching Statistics (USCOTS) June 2021
- **Topic:** Survey of Probability Attitudes

Symposium on Data Science and Statistics (SDSS) June 2020
- **Topic:** A lattice and random intermediate point sampling design for animal movement
- **Awarded:** SDSS Student & Early Career Funding Award

Rao Prize Conference May 2019
- **Topic:** Comparing sampling designs for carpenter ant movement data

American Statistical Association's Statistics for the Environment (ENVR) Workshop October 2018
- **Topic:** Optimal sampling schemes for animal movement modeling
- **Awarded:** Travel funding by NSF grant

TCNJ Celebration of Student Achievement Poster Session May 2017
- **Topic:** Structural equation modeling of protein signaling networks in Head and Neck Squamous Cell Carcinoma

Eastern North American Region (ENAR) International Biometric Society Spring Meeting March 2017
- **Topic:** Structural equation modeling of protein signaling networks in Head and Neck Squamous Cell Carcinoma

TCNJ Mentored Undergraduate Summer Experience Poster Session September 2016

- **Topic:** Structural equation modeling of protein signaling networks in Head and Neck Squamous Cell Carcinoma

OTHER WORKSHOPS AND CONFERENCES

Electronic Conference on Teaching Statistics (eCOTS) May 2020
Preparing for Careers in Teaching Statistics and Data Science Workshop May 2020
STATMOS Spatial Statistics Workshop September 2019

- **Awarded:** Travel funding by STATMOS grant

United States Conference on Teaching Statistics (USCOTS) May 2019
5th Annual Summer School on Sustainable Climate Risk Management July 2017

SERVICE

METHODS IN ECOLOGY AND EVOLUTION
Reviewer July 2021

JOURNAL OF AGRICULTURAL, BIOLOGICAL, AND ENVIRONMENTAL STATISTICS
Reviewer June 2020

PENNSYLVANIA STATE STATISTICS DEPARTMENT CLIMATE AND DIVERSITY COMMITTEE
Committee Member October 2019 – Present

PENNSYLVANIA STATE STATISTICS GRADUATE STUDENT ASSOCIATION
Wellness Chair August 2018 – May 2019

TCNJ ENVIRONMENTAL CLUB
President May 2016 – May 2017
Secretary May 2015 – May 2016

TCNJ VEG LIFE CLUB
Vice President & Co-Founder May 2016 – May 2017

TECHNICAL SKILLS

- **Computer Programming:** Advanced in R, Stan, & Latex; Exposed to MATLAB, SAS, C++, HTML, & CSS
- **Software**: Adobe Creative Suite, Excel, PowerPoint, Word, & Minitab