

# Ethan Ancell

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## EDUCATION

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### University of Washington

Ph.D. in Statistics, Advisor: Daniela Witten

Seattle, WA

Sep 2022–Jun 2027 (Expected)

### Utah State University

B.S. in Mathematics and Statistics (*Dual Major, Magna Cum Laude*)

Logan, UT

Aug 2018–May 2022

## PUBLICATIONS

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### Published

1. M. Kong, **E. Ancell**, D. Witten, L. Zweifel, “Valence and salience encoding in the central amygdala”, *eLife* *13:RP101980*, 2024.

### Submitted

1. **E. Ancell**, D. Witten, D. Kessler, “Post-selection inference with a single realization of a network”, *arXiv preprint arXiv:2508.11843*, 2025.
2. A. Gordon-Fennell, B. Benowitz, J. Barbakh, I. Montequin, A. Campuzano, H. Stevenson, E. Lu, M. Hjort, **E. Ancell**, M. Critz, D. Witten, and G. Stuber, “Lateral Hypothalamic Glutamate and GABA Neurons Cooperatively Shape Striatum-Wide Dopamine Dynamics During Consumption”, *bioRxiv preprint*, 2025.
3. M. Hjort, Z. Garrett, **E. Ancell**, M. Bruchas, D. Witten, N. Steinmetz, G. Stuber, “Neural Dynamics of a Prefrontal Cortex to Ventral Tegmental Area Circuit Drive Cognitive Flexibility by Accelerating Contingency Degradation”, 2024.

### Technical Reports

1. **E. Ancell**, P. Xiao, B. Debusschere, C. Bennett, P. Hays, “An out-of-distribution discriminator based on Bayesian neural network epistemic uncertainty”, *arXiv preprint arXiv:2210.10780*, 2022.
2. **E. Ancell** and B. Bean, “Autocart – spatially-aware regression trees for ecological and spatial modeling”, *arXiv preprint arXiv:2101.08258*, 2021.

## WORK EXPERIENCE

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### Statistical Consultant

Center for Statistics and the Social Sciences (CSSS)

Seattle, WA

Sep 2022 - Current

- Held consulting appointments for PhD students and postdoctoral fellows in many fields, including social science, political science, psychology, nursing, environmental science, and social work

### Statistical Consultant

UW Center of Excellence in Neurobiology of Addiction, Pain, and Emotion (NAPE)

Seattle, WA

Sep 2022 - Current

- Provided statistical consulting for graduate students, postdoctoral fellows, and faculty involved with NAPE
- Developed methods to conduct valid inference on regression relationships between neural data and behavior in neuroscience experimental trials
- Presented periodically in NAPE seminars and training events, instructing neuroscientists in modern statistical methodology

### Research and Development Intern

Sandia National Laboratories (Advisors: T. Patrick Xiao and Christopher Bennett)

Albuquerque, NM

Jun 2023 - Sep 2023

- Designed simulations to compare methods for signal detection, including a comparison between theoretically derived optimal detectors and neural network based approaches

### Research and Development Intern

Sandia National Laboratories (Advisors: Bert Debuschere and T. Patrick Xiao)

Livermore, CA

May 2022 - Aug 2022

- Wrote a technical report covering a method for out-of-distribution detection using Bayesian neural network epistemic uncertainty
- Trained Bayesian neural networks with Tensorflow for computer vision regression tasks with military and government applications

### Research Intern

Utah Climate Center (Advisor: Brennan Bean)

Logan, UT

Summer 2021

- Implemented and researched statistical methods for a sub-seasonal high-resolution soil moisture forecasting platform
- Used R and Python code to automate the estimation of volumetric soil moisture at a 2-kilometer resolution at 6-hourly intervals using the University of Utah's Center for High Performance Computing platform
- Implemented a testing process to select an optimal spatial statistics model for use in the forecasting platform, including linear models, random forests, and generalized additive models with splines on the sphere

## INVITED SEMINARS AND PRESENTATIONS

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- **Anzell, E.**, & Witten, D. (2025, March). Post-selection inference with a single realization of a network. Poster session presented at the Conference on Stress, Pain, Emotion, Addiction, and Reward (SPEAR). Friday Harbor, WA.
- **Anzell, E.**, & Witten, D. (2024, October). Determining statistical significance in behavioral-neural activity linear models. Invited seminar presented to the Imaging & Genetics Workshop hosted by the UW Center of Excellence in Neurobiology, Addiction, Pain, and Emotion. Seattle, WA.
- **Anzell, E.**, & Witten, D. (2023, April). Determining statistical significance in behavioral-neural activity linear models. Invited seminar presented to the University of Washington Center of Excellence in Neurobiology, Addiction, Pain, and Emotion. Hosted virtually.
- **Anzell, E.** (2022, April). Ensemble kernel density estimation. Poster session presented at the National Conference for Undergraduate Research, hosted virtually.
- **Anzell, E.**, & Bean, B. (2021, August). Autocart: spatially aware regression trees for ecological and spatial modeling. Poster session presented at Joint Statistical Meetings, hosted virtually.
- **Anzell, E.**, & Moon, K. (2021, April). Ensemble kernel density estimation. Poster session presented at USU Student Research Symposium, hosted virtually.
- **Anzell, E.** (2021, February). Autocart: spatially aware regression trees for ecological and spatial modeling. Poster session presented at Utah Research on Capitol Hill, hosted virtually.
- **Anzell, E.** (2020, December). Autocart: spatially aware regression trees for ecological and spatial modeling. Poster session presented at: USU Fall Student Research Symposium, hosted virtually.
- **Anzell, E.** (2020, October). Autocart: spatially aware regression trees for ecological and spatial modeling. Poster session presented at SIAM Northern States Section Student Chapters Conference, hosted virtually.

## TEACHING

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### Instructor of Record

- **CSSS Math Camp**, University of Washington September 2025  
*Co-taught with Todd Nobles (Department of Sociology)*
- **Review of Mathematics for Social Scientists (CSSS 505)**, University of Washington Winter 2025

### Teaching Assistant

- **Statistical Machine Learning for Data Scientists (DATA 558)**, University of Washington Spring 2025  
*Instructed by Daniela Witten (Professor, Departments of Statistics and Biostatistics)*
- **Nonparametric Regression and Classification (STAT/BIOST 527)**, University of Washington Spring 2024  
*Instructed by Eardi Lila (Assistant Professor, Department of Biostatistics)*
- **Modern Regression Methods (STAT 5100)**, Utah State University Spring 2021  
*Instructed by Brennan Bean (Associate Professor, Department of Mathematics and Statistics)*
- **Introduction to Statistics (STAT 1045)**, Utah State University Fall 2019, Spring 2020, Fall 2020  
*Instructed by KimberLeigh Hadfield (Senior Lecturer, Department of Mathematics and Statistics)*

### Guest Lecturer

- **Linear Regression and Maximum Likelihood Estimation** April 9, 2025  
*Statistical Machine Learning for Data Scientists (DATA 558), University of Washington*
- **Random Forests** May 29, 2024  
*Nonparametric Regression and Classification (STAT/BIOST 527), University of Washington*

## AWARDS AND SCHOLARSHIPS

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- **Dorothy M. Gilford Teaching Award** December 2025  
*Awarded by the UW Department of Statistics for excellence in teaching*
- **USU College of Science Scholar of the Year** Fall 2021–Spring 2022  
*Awarded to a single senior in the USU College of Science in the 2021-2022 academic year*
- **Barry M. Goldwater Scholarship** March 2021  
*Nationally recognized award for undergraduate excellence in STEM research and academics*
- **USU Peak Research Fellowship** June - August 2020  
*Fellowship funded by David and Terry Peak at USU supporting an independent undergraduate summer research project*
- **USU Undergraduate Research and Creative Opportunities Grant** June - August 2020  
*Fellowship supporting an independent undergraduate summer research project*
- **Robert and Christi Heal Scholarship** Fall 2020–Spring 2021  
*Merit-based scholarship for a junior majoring in statistics*
- **USU Math/Statistics Recitation Leader of the Year** Fall 2019–Spring 2019  
*Awarded by the USU Department of Mathematics and Statistics for excellence as a teaching assistant and recitation leader*
- **USU Dean's Admission Scholarship** Fall 2018

## SERVICE AND MENTORING

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- **Graduate Student Coordinator for the UW Statistics Undergraduate Directed Reading Program** Jun 2024 –Current
- **Mentor for the UW Statistics Undergraduate Directed Reading Program**  
Projects and Mentee(s):
  - Statistical Inference in Genetic Studies Winter 2026
    - \* Lily Yao
  - Asymptotics Without The Sample Size Going to Infinity Winter 2026
    - \* Andy Zhang (*B.S. Statistics*)
  - Multiple Testing Autumn 2025  
(co-mentored with Kayla Irish, Department of Statistics at UW)
    - \* Elly Lee (*B.S. Statistics [Data Science Track]*)
    - \* Maia Czerwonka (*B.S. Statistics and Psychology*)
  - Statistics for Weather and Avalanche Forecasting Spring 2025  
(co-mentored with Clinton Alden, Mountain Hydrology Research Group at UW)
    - \* Joey Huang (*B.S. Statistics*)
  - Survival Analysis Winter 2025
    - \* Alexis Destefano (*B.S. Statistics*)
    - \* Sherry Ren (*B.S. Statistics*)
  - Robust Statistics Autumn 2024
    - \* Yu He Zhang (*B.A. Statistics, M.S. Statistics at UW*)
    - \* Anthony Xing (*B.S. Computer Science and Mathematics*)
  - Data Splitting and Thinning Spring 2024
    - \* Hansen Zhang (*B.S. Statistics [with Honors], M.S. Statistics at UW*)
  - Random Matrix Theory Winter 2024
    - \* Abigail Cummings (*B.A. International Relations and National Security Studies*)
    - \* Hansen Zhang (*B.S. Statistics [with Honors], M.S. Statistics at UW*)
  - Information Theory Autumn 2023
    - \* Abigail Cummings (*B.A. International Relations and National Security Studies*)
  - Classical Papers in Statistics Spring 2023
    - \* Janice Kim (*M.S. Data Science at UW, Data Analyst at Tesla*)
  - Statistics in Neuroscience Winter 2023
    - \* David Ye (*B.S. Applied and Mathematical Computational Sciences, ML Engineer at AI Institute in Dynamical Systems*)
- **1st Round Reviewer for UW Department of Statistics PhD Admissions Committee** December 2024, 2025
- **UW Department of Statistics MS Theory Exam Tutor** Spring 2024  
(1st year qualifying theory exam for MS and PhD students)
- **Mentor for The Pacific Alliance for Low-Income Inclusion in Statistics and Data Science (PALilSaDS)** Feb 2024 –Current
- **Reviewer for UW Department of Statistics Pre-Application Review Service** Autumn 2022, 2023, 2024
- **USU Data Science Club President** Aug 2021–May 2022

## TECHNICAL SKILLS

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- **R and RStudio:** 6 years of experience.
- **Statistical Consulting:** 3 years of experience.
- **Scientific Python Stack:** 3 years of experience.

## PROFESSIONAL MEMBERSHIP

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- **American Statistical Association** Jun 2021–Current