Connor Shrader

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EDUCATION

University of Utah (UofU)   (August 2023 – present)
- Ph.D. in mathematics.

University of Central Florida (UCF)   (August 2019 – May 2023)
- B.S. in mathematics, computational track.
- General computer science minor.
- Cumulative GPA: 4.0 (summa cum laude).
- Undergraduate Thesis: Predation and Harvesting in Spatial Population Models.

HONORS AND AWARDS

- Genetics Training Grant, UofU (July 2024).
- Hernandez Mathematics Award for Undergraduate Achievement, UCF Mathematics Department (April 2023).
- Pi Mu Epsilon Honor Society (March 2023).
- Judge's Choice Award, UCF Student Scholar Symposium (March 2023).
- Outstanding Presentation Award, Gulf Coast Undergraduate Research Symposium at Rice University (October 2022).
- Honors Undergraduate Thesis Scholarship, UCF College of Sciences (October 2022).
- Provost Scholarship, UCF (August 2019 – May 2023).
- Florida Bright Futures Academic Scholars Award (August 2019 – May 2023).
- President's Honor Roll, UCF (August 2019 – May 2023).

PUBLICATIONS

1. Gabriel Ackall and **Connor R. Shrader** (July 2023), "A Comparative Study of Penalized Regression and Machine Learning Algorithms in High Dimensional Scenarios." SIAM Undergraduate Research Online Volume 16. DOI 10.1137/22S1538302.

PRESENTATIONS

- Fred R. Adler, James A. Gagnon, **Connor R. Shrader**, Andrea L. Sposato, Jenna M. Weber (January 2025), "Population Dynamics of Spermatogonial Stem Cells." Oral presentation at Joint Mathematics Meetings (Seattle, Washington).
- Fred R. Adler, James A. Gagnon, **Connor R. Shrader**, Andrea L. Sposato, Jenna M. Weber (August 2024), "Modeling Spermatogenesis in the Zebrafish Testis." Oral presentation at the University of Utah Mathematical Biology Seminar (Salt Lake City, Utah).
- **Connor R. Shrader** (January 2024), "Predation and Harvesting in Spatial Population Models." Oral presentation at Joint Mathematics Meetings (San Francisco, California).

- **Connor R. Shrader** (July 2023), "Predation and Harvesting in Spatial Population Models." Poster presentation at the Society for Mathematical Biology Annual Meeting (Columbus, Ohio).
- **Connor R. Shrader** (March 2023), "Predation and Harvesting in Spatial Population Models." Poster presentation at the UCF Student Scholar Symposium (Orlando, Florida).
- Björn Sandstede and **Connor R. Shrader** (January 2023), "Analysis and Physical Interpretation of Data Driven Manifold Coordinates." Poster presentation at Joint Mathematics Meetings (Boston, Massachusetts).
- **Connor R. Shrader** (October 2022), "Analysis and Physical Interpretation of Data Driven Manifold Coordinates." Oral presentation at the Gulf Coast Undergraduate Research Symposium (Houston, Texas).
- **Connor R. Shrader** (September 2022), "Analysis and Physical Interpretation of Data Driven Manifold Coordinates." Oral presentation at the New Connections in Mathematics Symposium (Durham, North Carolina).
- **Connor R. Shrader** (October 2021), "An Analysis of Penalized Regression in High-dimensional Scenarios." Oral presentation at the Council of Undergraduate Research REU Symposium (virtual).
- **Connor R. Shrader** (July 2021), "An Analysis of Penalized Regression in High-dimensional Scenarios." Oral presentation at the Clemson MATH REU Conference (virtual).

UNDERGRADUATE RESEARCH EXPERIENCE

Honors Undergraduate Thesis in Mathematical Biology (January 2022 – April 2023)
Advisor: Andrew Nevai, University of Central Florida
- Studied the role of space and harvesting on the long-term persistence of populations.
- Formulated and analyzed multiple reaction-diffusion models that consider different harvesting strategies.
- Resulted in a poster presentation, oral defense, and an undergraduate thesis.

Brown University Research Experience for Undergraduates in Data Science
Advisor: Björn Sandstede, Brown University (June 2022 – July 2022)
- Eight-week research program funded by the National Science Foundation.
- Investigated the behavior of manifold learning algorithms when applied to data resulting from simulated mathematical models.
- Successfully embedded high-dimensional data into low-dimensional embeddings and found physical interpretations for the embedding coordinates.
- Resulted in a paper report, a poster, and oral presentations at two conferences.

North Carolina A&T State University and Elon University Joint Research Experience for Undergraduates in Mathematical Biology (May 2021 – July 2021)
Advisor: Seongtae Kim, North Carolina A&T State University.
- Ten-week summer research program funded by the National Science Foundation.
- Analyzed the effectiveness of penalized regression models and other statistical models using Monte Carlo simulations and empirical data.
- Resulted in a publication, a poster, and three oral presentations.

TEACHING

Graduate Teaching Assistant   (August 2023 – December 2023)
MATH 2250: Differential Equations and Linear Algebra (UofU)
- Led weekly discussion sessions for 40 undergraduate engineering students.
- Wrote and graded lab assignments and held weekly office hours.

Undergraduate Learning Assistant   (January 2020 – April 2023)
UCF Mathematics Assistance and Learning Lab
- Tutored students in Intermediate Algebra, College Algebra, Trigonometry, and Precalculus.
- Answered questions during class, provided help with software, and proctored exams.
- Trained new employees and supervised the lab.
- Received Employee of the Year award for the 2020-2021 academic year.

Undergraduate Teaching Assistant   (June 2020 – December 2020)
MAT 1033C: Intermediate Algebra (UCF)
- Answered student questions during online lectures.
- Held office hours through Zoom and email.

SERVICE

Recruitment Committee Member   (August 2024 – present)
University of Utah Graduate Student Advisory Committee
- Planning the recruitment weekend for prospective graduate students in March 2025.

Retention, Promotion, and Tenure Committee Member   (August 2024 – present)
University of Utah Graduate Student Advisory Committee
- Review the teaching profile of math department faculty going up for tenure.
- Observe lectures and interview graduate student mentees.

Outreach Committee Member   (August 2024 – present)
University of Utah Association for Women in Mathematics
- Organize math- and STEM-related outreach activities in the Salt Lake City community.

Teaching Assistant   (June 2023)
UCF Summer Mathematics Institute
- Assisted in a week-long summer camp at UCF for local high school students.
- Led multiple workshops and activities for students (including a college student panel and tutorials in Matlab, LaTeX, and OEIS).

President (September 2022 – April 2023)

Collegiate Mathematical Society at UCF (math club)

- Re-registered a student organization that went inactive in 2020 due to COVID-19.
- Planned and led general body meetings (every two weeks) and officer meetings.
- Hosted presentations by students and faculty, disbursed research and career opportunities, recruited competition participants, and planned social and outreach activities.
- Received $2,000 in funding to send eight students to the American Mathematical Society 2023 Spring Southeastern Sectional Meeting.

COMPETITIONS

- Successful Participant in the Consortium for Mathematics and its Applications Interdisciplinary Competition in Modeling (February 2022).
- Participant in the Putnam Lowell Putnam Mathematical Competition (December 2019, February 2021, December 2021, December 2022).