Noah Corbett

Boca Raton, FL | 561.297.3340
ncorbett2014@fau.edu
Homepage | linkedin

Summary

I am a fourth year doctoral candidate in the Department of Mathematics and Statistics at Florida Atlantic University studying computational dynamical systems and differential equations. In my current research, I am developing methods that employ functional-analytic techniques and computer-assisted proofs to calculate connecting orbits in chaotic systems of ordinary differential equations and state-dependent delay differential equations, as well as travelling wave solutions of partial differential equations. In general, I view the computer as an invaluable tool in mathematics research and I enjoy learning and developing computational techniques to study open problems in mathematics.

Education

Doctor of Philosophy, Mathematics — *Fall 2024 (Expected)*

Florida Atlantic University
- 3.98/4.00 GPA

Master of Science, Mathematics — *2020*

Florida Atlantic University
- MS Presentation: *The Stable Manifold Theorem*
- 4.00/4.00 GPA

Bachelor of Science, Mathematics — *2018*

Florida Atlantic University
- Minor in Statistics
- 3.84/4.00 GPA

Professional Experience

Graduate Teaching Assistant — *2018-Current*

Florida Atlantic University

- Duties include tutoring, grading, and teaching for undergraduate courses in mathematics and statistics

Graduate Research Assistant — *2020-2021, 2022-2024*

Florida Atlantic University
- Partially supported to perform data analysis on an NSF-funded project in collaboration with FAU's College of Education

NSF Mathematical Sciences Graduate Research Intern — *2023*

U.S. Army Corps of Engineers' Research and Development Center

- Intensive summer-long applied mathematics research program, funded by the NSF and administered by ORISE

Teaching Experience

As Course Instructor
- MAS 2103 Matrix Theory (Spring 2024)
- MAC 2312 Calculus with Analytic Geometry 2 (Fall 2023, Spring 2023)
- MAP 3305 Engineering Mathematics 1 (Fall 2022, Spring 2022)
- MAC 1105 College Algebra (Fall 2021)
- STA 2023 Introductory Statistics (Spring 2020)
- MAC 2233B Methods of Calculus (Fall 2019)

As Teaching Assistant/Embedded Tutor
- MAS 2103 Matrix Theory (Summer 2024)
- MAD 3400 Numerical Methods (Fall 2023)
- MAD 2104 Discrete Mathematics (Summer 2022)
- STA 3100 Computational Statistics (Spring 2021)

Publications

[1] **"Periodic orbits for state-dependent delay differential equations"** *Submitted April 2024*
with V. Naudot

[2] **"Predicting State Switches in Chaotic Dynamical Systems"** *Submitted March 2024*
with K. Pilkiewicz and M. Mayo

[3] **"Stability of Travelling Waves: A Computer-Assisted Approach"** *In preparation*
with J. Mireles-James

[4] **"Recruitment and Retention of STEM Teachers in High Need Schools: an Alumni Survey Analysis of Selected NSF Robert Noyce Programs"** *In preparation*
with D. Kumar and S. Moffitt

[5] **"A Mixed Method Study of STEM Teacher Supply to High Need Schools in Florida and Texas"** *In preparation*
with D. Kumar, S. Moffitt, and C. Restrepo-Widney

Posters, Presentations, & Lectures

Periodic Orbits for State-Dependent Delay Differential Equations

Paper presented at:

- 2024 Florida Women in Math Day, Florida Atlantic University, Boca Raton, FL. *April 21, 2024*
- *Special Session on Recent Developments in Nonlinear and Computational Dynamics,* Spring 2024 AMS Eastern Sectional Meeting, Howard University, Washington, D.C. *April 7, 2024*
- Graduate Student Seminar, Florida Atlantic University, Boca Raton, FL. *March 29, 2024*

Predicting State Switches in Chaotic Dynamical Systems

Paper presented at:

- 13th Annual FAU Broward Research Symposium, Florida Atlantic University, Davie, FL. *November 17, 2023*
- Graduate Student Seminar, Florida Atlantic University, Boca Raton, FL. *November 2, 2023*
- Analysis & Applications Seminar, Florida Atlantic University, Boca Raton, FL. *October 19, 2023*
- 2023 NSF MSGI Summer Research Symposium (*Virtual Event*) *August 22, 2023*
- Environmental Processes Branch Seminar, USACE ERDC, Vicksburg, MS. *August 10, 2023*

The Stable Manifold Theorem

- M.S. Presentation, Florida Atlantic University *April 17, 2020*

The Dynamics of Circle Maps and Denjoy's Theorem

- Multi-class lecture for graduate course in Dynamical Systems at Florida Atlantic University *February 2020*

The Fourier Transform, Regularity, and Sobolev Embedding

- Lecture for graduate course in Partial Differential Equations at Florida Atlantic University *November 2019*

Programming Experience

Languages ***Experienced:*** MATLAB | R | LaTeX ***Familiar:*** Python | SageMath

Relevant Skills INTLAB | RStudio | R Markdown | ggplots2 | Shiny | NumPy

Fellowships & Scholarships

Isaac Schur Graduate Scholarship *2021*

- Awarded to graduate students in mathematics who have successfully passed two qualifying exams, maintained a high GPA in graduate studies, and received distinguished letters of recommendation from two professors
- Award of $1,000

FAU Presidential Fellowship *2018-2020*

- Two-year fellowship awarded to doctoral students who have exhibited an excellent academic record and excellent letters of recommendation as determined by faculty at the time of admission
- Award of $5,000 per year for the first two years of graduate studies

Florida Bright Futures Scholarship *2018-2019*

- Undergraduate scholarship awarded to Florida public university attendees with distinguished GPAs and SAT scores

Activities

Graduate Student Seminar, Organizer *2022-Current*

- Organized and co-hosted weekly seminars, with presentations by graduate students and faculty within FAU's Department of Mathematical Sciences

AMS Student Chapter

President *2023-Current*

- Organized and lead chapter meetings, aided in organizing chapter events, and recruited officers and members for AMS student chapter.

Treasurer *2022-2023*

- Managed funds and purchases for AMS-related events and activities at Florida Atlantic University

Florida Atlantic Jazz Orchestra, Lead Trombone *2016-2017, 2024-Current*

- Attended biweekly rehearsals and performed at various venues for concerts and events as the first-chair trombone player

Certificates & Honors

- ACS Disaster Response Certificate (2024)
- CITI Responsible Conduct of Research Certificate (2023)
- CITI Social & Behavioral Research Investigators Certificate (2022)
- CRLA Level 3 Certified Tutor (2018)
- FAU Honors Program (2015-2018)