

Andrew M. Stocker

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Education

University of Colorado Boulder (2016–present)

- Ph.D in Mathematics (expected Spring 2022)
- Thesis Title: *C^* -Algebras of Expansive Dynamical Systems*
- Advisor: Dr. Robin Deeley
- Graduate School Summer Fellowship (2020)

University of San Francisco (2013–2016)

- B.Sc. in Mathematics
- Graduated cum laude with a GPA of 3.99

Research

Doctoral Research with Dr. Robin Deeley (University of Colorado Boulder, 2019–present)

We are investigating expansive dynamical systems and C^* -algebras constructed from them. In particular I have identified and developed the theory of a class of expansive dynamical systems called *synchronizing systems* which builds on work done by Klaus Thomsen, Ian Putnam, Jack Spielberg, and others. A paper on the topic is currently in preparation.

REU with Dr. Magdalena Czubak (University of Colorado Boulder, 2017)

Worked with other graduate students and undergraduates on investigating the local and global wellposedness of wave equations. Our goal was to gain some introductory experience with research and also experience mentoring undergraduate students.

Teaching

Teaching Assistant

Duties include leading recitations and facilitating group work with an emphasis on active learning. Also responsible for grading and tutoring students in the MARC (Mathematics Academic Resource Center).

- Calculus I (Fall 2016, Spring 2017)
- Calculus II (Spring 2019, Fall 2019, Spring 2020, Fall 2020)
- Calculus III (Fall 2018)

Instructor

Worked as primary instructor for several Calculus courses. Duties include teaching for four days per week, creating course materials, writing exams, and being the main contact point for students. I created my own lectures and in class activities and quizzes, and participated in developing my own teaching skills and those of my peers.

- Calculus I (Fall 2017, Spring 2018)
- Calculus III (Spring 2021, Fall 2021)

Calculus II Assistant Coordinator (2019–2020)

Assistant in coordinating the many sections of Calculus II that are offered in the mathematics department at University of Colorado Boulder. My main duties included working with the graduate teaching assistants and undergraduate learning assistants on developing their teaching skills, and preparing new course materials that would be given to students. I have also developed a portfolio of activities for calculus students which reflect our active learning goals.

Dynamical Systems REU with Dr. Robin Deeley (2021)

Duties for the REU (Research Experience for Undergraduates) include organizing a small group of driven undergraduate students in researching hyperbolic dynamical systems. In particular we aimed to compute the Putnam Homology for several examples of inverse limit Smale spaces. My responsibilities include giving several presentations and leading the undergraduate students in problem solving sessions. Primarily I was responsible for teaching the undergraduate students and preparing them for the research we aimed to do. This project is ongoing.

Burton W. Jones Teaching Excellence Award (2021–2022)

Presentations

Conference Presentations

- *C*-Algebras from Expansive Dynamical Systems*. May 12th 2021, GPOTS 2021, *virtual conference*.
- *Expansive Dynamical Systems and their C*-algebras*. Aug 11th 2021, YMC*A 2021, University of Münster, Münster, Germany.
- *Expansive Dynamical Systems and their C*-algebras*. Invited speaker, Sept 20th 2021, University of Wyoming, Laramie, Wyoming.
- *C*-Algebras of Expansive Dynamical Systems*. November 14th 2021, Groupoidfest 2021, University of Colorado Colorado Springs, Colorado Spring, Colorado.

Attended Conferences

- AMS Fall Sectional, San Francisco State University, Oct 2018, San Francisco, California.
- Joint Mathematics Meetings, January 2020, Denver, Colorado.
- YMC*A 2019, Aug 2019, Copenhagen, Denmark.

Seminars

- *Chromatic Homotopy Theory*, Speaker, Topology Seminar, Fall 2019, University of Colorado Boulder.
- *Morita Equivalence*, Speaker, Functional Analysis Seminar, Fall 2020, University of Colorado Boulder.
- *Introductory Category Theory Seminar*, Organizer and Speaker, Fall 2021, University of Colorado Boulder.
- *Graduate Student Seminar*, Speaker, 2016–2021, University of Colorado Boulder.

Service

Mathematics Department Graduate Mentor Program (2019–2021)

Worked as a mentor for first year mathematics graduate students. The goal of the mentor program is to help first year graduate students become part of the social and academic culture at CU Boulder. We meet several times throughout the semester to answer questions and advise the students on their first year courses and experiences.

Community Building (2016–2021)

- Incoming student welcome weekend organizer. Organized various dinner events, graduate student panels, and other activities.
- Organized extracurricular events for the mathematics department.
- Participated in Diversity Committee events and teaching workshops.

Category Theory Seminar (2021)

Organized an introductory seminar for first and second year graduate students on category theory. We followed Emily Rhiel's book *Category Theory in Context*.

REU Program (2017, 2021)

I have been involved in the REU (Research Experience for Undergraduates) on several occasions at University of Colorado Boulder. Initially as a researcher in 2017, and later on as a leader in 2021.

Other Skills

Software Development (@amstocker on GitHub)

- Extensive experience in Python and web development (HTML, JS, CSS, React, other web technologies). Also some experience in C, C++, Java (Android development), Rust, Haskell, and other languages and libraries.
- Scientific computing in python using Numpy, Scipy, and other libraries
- First Place team in AccelerateSF 2015 Hackathon
- Contributions to open source projects, in particular distributed systems projects such as IPFS

References

References available upon request