

Derek Handwerk

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801-870-7874

RESEARCH INTERESTS

Pattern Formation, Dynamical Systems, PDEs, Population Balance Modeling, General Applied Math

EDUCATION

Colorado State University

2019 Ph.D. Mathematics (*In progress*)

Advisor: Patrick Shipman

University of Washington

2014 M.S. Applied Mathematics

Project: *Continuation methods to detect Hopf bifurcations in a large network*

Advisor: Eli Shlizerman

University of Utah

2013 B.S. Applied Mathematics

PUBLICATIONS

In Preparation

D. Handwerk, R.G. Finke. *Modeling the Formation of Metal Nanoparticles*

RESEARCH EXPERIENCE

Graduate Research Assistant, Math Department (Fall and Spring 2018, Fall 2017)

Summer Research Fellow, Math Department (Summer 2018)

Graduate Research Assistant, Chemistry Department (Summer 2017)

TEACHING EXPERIENCE

Colorado State University (Instructor of Record)

Calculus for Biologists I – Math 155 (Spring 2017)

Introduction to Differential Equations – Math 340 (Fall 2015)

ADDITIONAL EXPERIENCE

Colorado State University

Assistant Director of PACE¹ Center (Spring, Summer, Fall, 2016)

FUNDING AND AWARDS

2018 Summer Research Fellowship, CSU Math Department

2018 SIAM Student Chapter Certificate of Recognition

2017 CSU Graduate Student Council Travel Award

¹ Paced Algebra to Calculus electronically

TALKS AND POSTERS

Invited

- 2018 SIAM Central States, October 6, *Effects of Anisotropies in Pattern Forming Systems*
2017 SIAM Central States, September 30, *A Demonstration of the Julia Programming Language*
2017 SIAM Conference on Dynamical Systems, May 23, *Patterns in the Starch-Iodine Reaction*

Posters

- 2018 CSU Graduate Student Showcase, November 13, *Phase Equations of the Anisotropic Complex Ginzburg-Landau Equation*
2017 SIAM Annual Meeting, July 11, *Patterns in the Starch-Iodine Reaction*

Colorado State University

- 2018 CSU SPAMlab, *Dynamics of Modulated Wave Trains*
CSU SPAMlab², *Instabilities and Anisotropies in Pattern Forming Systems*
CSU Grad Student Seminar, *Instabilities in Patterns*
2017 CSU Grad Student Seminar, *Conservation Laws, The Finite Volume Method, and the Population Balance Equation*
CSU PDElab, *Overview of the Kuramoto-Sivashinsky Equation*
2016 CSU Grad Student Seminar, *How Does a Zebra Get Its Stripes?*
CSU Grad Student Seminar, *The Lax-Milgram Theorem and an Intro to Sobolev Spaces*
2015 CSU Grad Student Seminar, *Primer on Dynamical Systems*

SERVICE

- 2018 Founder and co-organizer SPAMlab Graduate Seminar
2018-19 Graduate Student Mentor
2018 Summer REU Mentor
2018-19 Association for Women in Mathematics (AWM) Mentor
2017-18 President SIAM CSU Student Chapter
2017-18 Graduate Student Representative on Math Dept. Graduate Committee
2017-19 Secretary AMS CSU Student Chapter (Founding member)
2016-17 Vice President SIAM CSU Student Chapter
2015-16 Treasurer SIAM CSU Student Chapter
2017, 2016, 2015 Volunteer Math Day at CSU
2015 Supervisor for Math Circles, June 22-26
2015 Organizer of CSU Graduate Student Seminar, Fall Semester

CONFERENCE, WORKSHOPS, AND SUMMER SCHOOLS

Upcoming

- 2018 SIAM Central States Meeting, October 5-7

Attended

- 2018 SIAM Annual Meeting, July 9-13
2017 SIAM Central States Meeting, September 29 to October 1
2017 SIAM Annual Meeting, July 10-14
2017 SIAM Conference on Dynamical Systems, May 21-25
2017 SIAM Front Range Applied Mathematics Student Conference, March 4

² Solving Problems in Applied Math

2015 MSRI Summer Graduate School on Systems Biology, June 29 to July 10
2016 SIAM Front Range Applied Mathematics Student Conference, March 5
2015 SIAM Conference on Dynamical Systems, May 17-21
2015 SIAM Conference on Computational Science and Engineering, March 14-18

PROFESSIONAL ORGANIZATIONS

SIAM (Society for Industrial and Applied Mathematics)
AMS (American Mathematical Society)
AWM (Association for Women in Mathematics)

PROGRAMMING

MATLAB, Julia, Python, Mathematica, C++