

Ross Hamilton Parker

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EDUCATION

Brown University

Ph.D. in applied mathematics

Advisor: Björn Sandstede

Thesis: Nonlinear waves in the fifth-order Korteweg-de Vries equation

Providence, RI

Dec 2019

CUNY Hunter College

M.A. in pure mathematics

New York, NY

Jan 2013

University of Pennsylvania School of Medicine

M.D.

Philadelphia, PA

May 2009

Bowdoin College

B.A. summa cum laude with highest honors in music, minor in chemistry

Thesis: The First Service of Thomas Morley: an edition, performance, and commentary

Brunswick, ME

May 1998

ACADEMIC AND PROFESSIONAL APPOINTMENTS

Southern Methodist University

RTG postdoctoral fellow / instructor

Dallas, TX

Aug 2020 - present

Brown University

Visiting assistant professor / Deans' faculty fellow

Full fellowship support for the fall semester, and appointment as a visiting assistant professor for the spring semester.

Providence, RI

Sep 2019 - May 2020

Columbia University Medical Center

Internship in internal medicine

New York, NY

Jul 2009 - Jul 2010

PUBLICATIONS AND PREPRINTS

- [1] Ross Parker and Alejandro Aceves. Standing-wave solutions in twisted multicore fibers. *Physical Review A*, 103:053505, May 2021. doi:10.1103/PhysRevA.103.053505.
- [2] Ross Parker and Alejandro Aceves. Multi-pulse solitary waves in a fourth-order nonlinear Schrödinger equation. *Physica D: Nonlinear Phenomena*, 422:132890, March 2021. doi:10.1016/j.physd.2021.132890.
- [3] Efstathios G. Charalampidis, Ross Parker, Panayotis G. Kevrekidis, and Stéphane Lafortune. The stability of the b -family of peakon equations. *arXiv e-prints*, December 2020. arXiv:2012.13019.
- [4] Ross Parker and Björn Sandstede. Periodic multi-pulses and spectral stability in Hamiltonian PDEs with symmetry. *arXiv e-prints*, October 2020. arXiv:2010.05728.
- [5] Todd Kapitula, Ross Parker, and Björn Sandstede. A reformulated Krein matrix for star-even polynomial operators with applications. *SIAM Journal on Mathematical Analysis*, 52(5):4705–4750, September 2020. doi:10.1137/19M124246X.

- [6] Ross Parker, P.G. Kevrekidis, and Björn Sandstede. Existence and spectral stability of multi-pulses in discrete Hamiltonian lattice systems. *Physica D: Nonlinear Phenomena*, 408:132414, July 2020. doi: 10.1016/j.physd.2020.132414.

TEACHING

Southern Methodist University

Math 3304: Introduction to linear algebra	Spring 2021
Math 1337: Calculus I	Fall 2020

Brown University

APMA 1360: Applied dynamical systems	Spring 2020
Intensive review of analysis for incoming graduate students	Summer 2019
APMA 1650: Statistical inference I	Summer 2016
APMA 350: Applied ordinary differential equations (teaching assistant)	Spring 2016
APMA 1650: Statistical inference I (teaching assistant)	Fall 2015

Pedagogy Training

Course design seminar. Sheridan Center for Teaching and Learning, Brown University	2019
Explored integrated course design principles, and developed syllabi, assignments, and activities for two courses.	
Teaching consultant program. Sheridan Center for Teaching and Learning, Brown University	2017
Developed and refined skills in peer observation and feedback, leadership, and discussion facilitation.	
Reflective teaching program. Sheridan Center for Teaching and Learning, Brown University	2015
Developed and refined fundamental teaching and assessment strategies and communication skills using a student-centered, evidence-based approach.	

Mentoring

Directed Reading Program. Division of Applied Mathematics, Brown University	2019
Mentored undergraduates in an independent reading project on the application of dynamical systems to neuroscience.	

Other

Mathematics tutor. Noyce Scholars program, CUNY Hunter College	2011 - 2013
Tutored students in a scholarship program for future secondary school math teachers in calculus, differential equations, linear algebra, abstract algebra, real and complex analysis, probability, and numerical methods.	
Teaching and laboratory assistant. Bowdoin College	1995 - 1998
Introductory chemistry, physics, and music theory.	

PRESENTATIONS

Invited Talks

Instability bubbles for periodic multi-pulse solutions to Hamiltonian systems	Virtual
<i>Annual Meeting of the SIAM Texas-Louisiana Section</i>	18 Oct, 2020
Multi-pulse solitary waves in Hamiltonian systems	Virtual
<i>SMU Math Colloquium</i>	24 Sep, 2020
Spectral stability of periodic multi-pulses in the 5th Order KdV equation	Snowbird, UT
<i>SIAM Conference on Applications of Dynamical Systems 2019</i>	19-23 May, 2019

Spectral stability of multi-pulses via the Krein matrix <i>IMACS Conference on Nonlinear Evolution Equations and Wave Phenomena</i>	Athens, GA 17-19 Apr, 2019
Stability of double pulse solutions to the 5th order KdV equation <i>Applied Mathematics Colloquium, University of Massachusetts</i>	Amherst, MA 13 Feb, 2018
Stability of double pulse solutions to the 5th order KdV equation <i>Brown/BU Joint Dynamics and PDE Seminar</i>	Boston, MA 30 Nov, 2017

Contributed Talks

Solitons and multi-solitons: a spatial dynamics approach <i>SIAM Math Slam, Brown University</i>	Providence, RI 8 Nov, 2018
Stability of double pulse solutions to the 5th order KdV equation <i>Applied Mathematics Graduate Seminar, Brown University</i>	Providence, RI 11 Dec, 2017

Posters and Multimedia Presentations

Spectral stability of multi-pulse solutions to the suspension bridge equation <i>KuMuNu 2019</i>	Columbia, MO 27-28 Apr, 2019
Spectral stability of multi-pulse solutions to the suspension bridge equation <i>Dynamics Days 2019</i>	Evanston, IL 4-6 Jan, 2019
Stability of double pulse solutions to the 5th order KdV equation <i>SIAM Conference on Nonlinear Waves and Coherent Structures 2018</i>	Anaheim, CA 11-14 Jun, 2018
Stability of double pulse solutions to the 5th order KdV equation <i>KuMuNu 2018</i>	Lawrence, KS 21-22 Apr, 2018
Stability of double pulse solutions to the 5th order KdV equation <i>Dynamics Days 2018</i>	Denver, CO 4-6 Jan, 2018
Conway's Game of Lights <i>New York World Maker Faire 2013</i> Evolving cellular automata displayed on a 10×20 grid of individually addressable RGB LEDs, controlled by Arduino and Raspberry Pi microcontrollers	New York, NY 21-22 Sep, 2013

WORKSHOPS

Brown-ICERM-Kobe Summer Simulation School Workshop on high performance computing in collaboration with Kobe University, Japan	17-31 Aug, 2015
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OUTREACH AND SERVICE

Co-organizer <i>Brown/BU/UMass joint dynamical systems and PDE seminar</i>	Providence, RI 2019 - 2020
Minisymposium organizer <i>SIAM Conference on Applications of Dynamical Systems 2019</i> MS20 Existence and stability of nonlinear waves: theory and numerical computations	Snowbird, UT May 2019
Co-organizer, weekly graduate student seminar <i>Division of Applied Mathematics, Brown University</i>	Providence, RI 2018 - 2019
Review session leader, real analysis <i>Division of Applied Mathematics, Brown University</i>	Providence, RI 2017 - 2020

Vice president <i>Brown University SIAM student chapter</i>	Providence, RI 2017 - 2019
Small group discussion leader, reflective teaching seminar <i>Sheridan Center for Teaching and Learning, Brown University</i>	Providence, RI 2017
Department liaison <i>Sheridan Center for Teaching and Learning, Brown University</i>	Providence, RI 2015 - 2020
Co-chair, Pinewoods Scottish Sessions <i>Royal Scottish Country Dance Society, Boston Branch</i>	Boston, MA 2018
Co-chair, Pinewoods Scottish Sessions <i>Royal Scottish Country Dance Society, Boston Branch</i>	Boston, MA 2017

TRAVEL GRANTS

SIAM student travel award Attendance and minisymposium presentation at SIAM Conference on Applications of Dynamical Systems 2019	19-23 May, 2019
Brown University graduate school travel award Attendance and minisymposium presentation at IMACS 2019	17-19 April, 2019
Brown University graduate school travel award Attendance and poster presentation at SIAM Conference on Nonlinear Waves and Coherent Structures 2018	11-14 June, 2019

HONORS AND AWARDS

Alpha Omega Alpha <i>Medical honor society</i>	University of Pennsylvania 2008
Phi Beta Kappa <i>Undergraduate honor society</i>	Bowdoin College 1998
Sue Winchell Burnett Senior Prize in Music <i>Awarded to the senior who has made the most significant contribution to the department</i>	Bowdoin College 1998
Edwin Herbert Hall Sophomore Prize in Physics <i>Awarded to the best sophomore scholar in the field of physics</i>	Bowdoin College 1996
CRC First Year Prize in Chemistry <i>Recognizes outstanding achievement and promise in chemistry</i>	Bowdoin College 1995