

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

Feb 2020

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

EMPLOYMENT

Southern Methodist University

RTG Postdoctoral Fellow

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

PUBLICATIONS AND PREPRINTS

- [1] Ross Parker and Björn Sandstede. Periodic multi-pulses and spectral stability in Hamiltonian PDEs with symmetry. *arXiv e-prints*, October 2020. [arXiv:2010.05728](https://arxiv.org/abs/2010.05728).
- [2] 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:<https://doi.org/10.1137/19M124246X>.
- [3] Ross Parker and Alejandro Aceves. Multi-pulse solitary waves in a fourth-order nonlinear Schrödinger equation. *arXiv e-prints*, September 2020. [arXiv:2009.01647](https://arxiv.org/abs/2009.01647).
- [4] 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](https://doi.org/10.1016/j.physd.2020.132414).

TEACHING

Experience

Instructor <i>APMA 1360: Applied Dynamical Systems</i>	Brown University <i>Spring 2020</i>
Instructor <i>Intensive review for incoming graduate students</i>	Brown University <i>Summer 2019</i>
Instructor <i>APMA 1650: Statistical Inference I</i>	Brown University <i>Summer 2016</i>
Teaching assistant <i>APMA 350: Applied Ordinary Differential Equations</i>	Brown University <i>Spring 2016</i>
Teaching assistant <i>APMA 1650: Statistical Inference I</i>	Brown University <i>Fall 2015</i>
Tutor <i>Noyce Scholars Program</i> 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	CUNY Hunter College <i>2011 - 2013</i>
Introductory chemistry, physics, and music theory <i>Teaching and Laboratory Assistant</i>	Bowdoin College <i>1995 - 1998</i>

Pedagogy Training

The Harriet W. Sheridan Center for Teaching and Learning <i>Course Design Seminar</i> Explored integrated course design principles, and developed syllabi, assignments, and activities for two courses.	Brown University <i>2019</i>
The Harriet W. Sheridan Center for Teaching and Learning <i>Teaching Consultant Program</i> Developed and refined skills in peer observation and feedback, leadership, and discussion facilitation.	Brown University <i>2017 - 2018</i>
The Harriet W. Sheridan Center for Teaching and Learning <i>Teaching Seminar: Reflective Teaching</i> Developed and refined fundamental teaching and assessment strategies and communication skills based on how students learn.	Brown University <i>2015 - 2016</i>

Mentoring

Division of Applied Mathematics <i>Directed Reading Program</i> Mentored one undergraduate in an independent reading project on the application of dynamical systems to neuroscience.	Brown University <i>2019</i>
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PRESENTATIONS

Invited Talks

Spectral Stability of Periodic Multi-Pulses in the 5th Order KdV Equation <i>SIAM Conference on Applications of Dynamical Systems 2019</i>	Snowbird, UT <i>19-23 May, 2019</i>
Spectral Stability of Multi-pulses via the Krein Matrix <i>IMACS Conference on Nonlinear Evolution Equations and Wave Phenomena</i>	Athens, GA <i>17-19 April, 2019</i>

Stability of Double Pulse Solutions to the 5th order KdV Equation
Applied Mathematics Colloquium, University of Massachusetts

Amherst, MA
13 Feb, 2018

Stability of Double Pulse Solutions to the 5th order KdV Equation
Brown/BU Joint Dynamics and PDE Seminar

Boston, MA
30 Nov, 2017

Contributed Talks

Solitons and Multi-Solitons: A Spatial Dynamics Approach
SIAM Math Slam, Brown University

Providence, RI
8 Nov, 2018

Stability of Double Pulse Solutions to the 5th order KdV Equation
Applied Mathematics Graduate Seminar, Brown University

Providence, RI
11 Dec, 2017

Posters and Multimedia Presentations

Spectral Stability of Multi-Pulse Solutions to the Suspension Bridge Equation
KuMuNu 2019

Columbia, MO
27-28 Apr, 2019

Spectral Stability of Multi-Pulse Solutions to the Suspension Bridge Equation
Dynamics Days 2019

Evanston, IL
4-6 Jan, 2019

Stability of Double Pulse Solutions to the 5th order KdV Equation
SIAM Conference on Nonlinear Waves and Coherent Structures 2018

Anaheim, CA
11-14 Jun, 2018

Stability of Double Pulse Solutions to the 5th order KdV Equation
KuMuNu 2018

Lawrence, KS
21-22 Apr, 2018

Stability of Double Pulse Solutions to the 5th order KdV Equation
Dynamics Days 2018

Denver, CO
4-6 Jan, 2018

Conway's Game of Lights
New York World Maker Faire 2013

New York, NY
21-22 Sep, 2013

Evolving cellular automata displayed on a 10×20 grid of individually addressable RGB LEDs, controlled by Arduino and Raspberry Pi microcontrollers

WORKSHOPS

Brown-ICERM-Kobe Summer Simulation School

17-31 Aug, 2015

Workshop on high performance computing in collaboration with Kobe University, Japan

OUTREACH AND SERVICE

Co-organizer
Brown/BU/UMass Joint Dynamical Systems and PDE Seminar

Providence, RI
2019-2020

Minisymposium organizer
SIAM Conference on Applications of Dynamical Systems 2019

Snowbird, UT
May 2019

MS20 Existence and Stability of Nonlinear Waves: Theory and Numerical Computations

Co-organizer, weekly graduate student seminar
Division of Applied Mathematics, Brown University

Providence, RI
2018-2019

Review session leader, real analysis
Division of Applied Mathematics, Brown University

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>The Harriet W. Sheridan Center for Teaching and Learning</i>	Providence, RI 2017
Department Liaison, Applied Mathematics <i>The Harriet W. Sheridan Center for Teaching and Learning</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 Award for attendance and minisymposium presentation at SIAM Conference on Applications of Dynamical Systems 2019	19-23 May, 2019
Brown University graduate school travel award Award for attendance and minisymposium presentation at IMACS 2019	17-19 April, 2019
Brown University graduate school travel award Award for 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>This award recognizes outstanding achievement and promise in chemistry</i>	Bowdoin College 1995

WORK EXPERIENCE

Internship in Internal Medicine <i>Columbia University Medical Center</i>	New York, NY 2009 - 2010
Emergency Medical Technician <i>Emergency Department, Brigham and Women's Hospital</i>	Boston, MA 2001 - 2004
Freelance Musician <i>Organist and Piano Accompanist</i>	Boston, MA 1998 - 2001