Ryan C. Thompson

Curriculum Vitae

Department of Mathematics
University of North Georgia
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EDUCATION

Ph.D., Mathematics, May 2015, *University of Notre Dame*, Notre Dame, IN. Advisor: Dr. Alex Himonas, Dissertation: "The Cauchy Problem for the 2-component Camassa-Holm System"

M.S., Mathematics, August 2012, *University of Notre Dame*, Notre Dame, IN. Advisor: Dr. Alex Himonas

B.S., Mathematics, Minor: History, December 2009, (Magna Cum Laude) *North Georgia College & State University*, Dahlonega, GA

PUBLICATIONS

R. C. Thompson, *The periodic Cauchy problem for the 2-component Camassa-Holm system*, Differential and Integral Equations, **26** (2013), 155-182.

A. Himonas, R. C. Thompson, *Persistence properties and unique continuation for a generalized Camassa-Holm equation*, Journal of Mathematical Physics, **55**, No. 9 (2014).

J. Holmes, R. C. Thompson, *Classical Solutions to the Generalized Camassa-Holm Equation*, Journal of Advances in Differential Equations, **22**, No. 5-6 (2017), 339-362.

R. C. Thompson, *Decay Properties of Solutions to a 4-parameter Family of Wave Equations*, Journal of Mathematical Analysis and Applications, **451** (2017), 393-404.

J. Holmes, R. C. Thompson, *Well-posedness and Continuity Properties of the Fornberg-Whitham Equation in Besov Spaces*, Journal of Differential Equations, **263**, No. 7 (2017), 4355-4381.

R. C. Thompson, *The Cauchy Problem for the 1-D Gurevich-Zybin System*, Journal of Mathematical Physics, **60**, No. 5 (2019).

J. Holmes, R. C. Thompson, F. Tiğlay, *Nonuniform Dependence of the R-b-family system in Besov Spaces*, Zeitschrift für Angewandte Mathematik und Mechanik (Journal of Applied Mathematics and Mechanics), https://doi.org/10.1002/zamm.202000329 (2021).

J. Holmes, R. C. Thompson, F. Tiğlay, *Continuity of the Data-to-Solution Map for the FORQ Equation in Besov Spaces*, Journal of Differential and Integral Equations, **34**, No. 5-6 (2021), 295-314.

J. Holmes, R. C. Thompson, F. Tiğlay, *The Cauchy Problem for the Gurevich-Zybin System*, Journal of Mathematical Physics, **63**, No. 4 (2022).

G. Burkhalter, R. C. Thompson, M. Waldrep, *Classical Solutions of the Fornberg-Whitham Equation*, Journal of Involve, **18**, No. 2 (2025), 239-260.

J. Holmes, R. C. Thompson, F. Tiğlay, *Viscous Burgers' Equation on the Half-Line*, Preprint (2025).

J. Holmes, K. Massey, R. C. Thompson, *The Cauchy Problem for the Integrable RZQ Equation*, Submitted to Zeitschrift für Angewandte Mathematik und Physik (Journal of Applied Mathematics and Physics) (November 2025)

ACADEMIC EMPLOYMENT

Mathematics Tutorial Center, North Georgia College & State University, 2005-2009.

Teaching Assistant, University of Notre Dame, 2011-2015.

Assistant Professor of Mathematics, University of North Georgia, 2015-2020.

Associate Professor of Mathematics, University of North Georgia, 2020-2024.

Professor of Mathematics, University of North Georgia, 2024-Present.

TEACHING EXPERIENCE

Instructor

MATH 10110: Principles of Finite Math

MATH 10250: Elements of Calculus I

MATH 1113: Precalculus

MATH 1450: Calculus I

MATH 2460: Calculus II

MATH 2470: Calculus III

MATH 3000: Ordinary Differential Equations

MATH 3010: Partial Differential Equations

MATH 3650: Linear Algebra

MATH 4010: Advanced Differential Equations & Mathematical Physics

MATH 4160: Fourier Analysis

MATH 4180: Complex Analysis

MATH 4200: Real Analysis I

MATH 4210: Real Analysis II

MATH 4900: Topics in Complex Analysis

Teaching Assistant

MATH 22550: Calculus III

MATH 22750: Ordinary Differential Equations

MATH 22580: Linear Algebra/Differential Equations

Grader

MATH 60370: Basic Complex Analysis (Fall 2014)

AWARDS/TRAINING

Awards

Clark Mathematics Award, Department of Mathematics, North Georgia College & State University, Fall 2008.

Outstanding Graduate Student Teacher Award for Excellence in Teaching, Kaneb Center for Teaching and Learning, University of Notre Dame, Spring 2014.

National Science Foundation (NSF) grant awarded for the 38th Southeastern-Atlantic Regional Conference on Differential Equations (SEARCDE) held at UNG-Gainesville October 6-7, 2018. Award No. 1833126.

Faculty Undergraduate Summer Engagement (FUSE) grant awarded to fund summer research with two undergraduate students in the field of partial differential equations at UNG during the summer of 2022.

Presidential Semester Incentive Award: Grant awarded by UNG for a full semester sabbatical to be taken in the Spring of 2024. Focus will be on solving initial boundary value problems for convection-diffusion equations using a unified transform method.

Training

Summer Graduate School on Dispersive Partial Differential Equations, Mathematical Sciences Research Institute (MSRI), Berkeley, CA, Summer 2014.

PRESENTATIONS

Introduction to Complex Analysis, First-Year Orientation, University of Notre Dame, 2011.

Nonuniform Dependence of the 2-component Camassa-Holm Equation, Midwest PDE Seminar, University of Memphis, 2012.

Blow-up phenomena of the Camassa-Holm equation, Graduate Student Seminar, University of Notre Dame, 2012.

Nonuniform Dependence of the 2-component Camassa-Holm Equation, 9th AIMS Conference on Dynamical Systems, Differential Equations and Applications, Orlando, FL, 2012.

Introduction to Complex Analysis, First-Year Orientation, University of Notre Dame, 2013.

The Black-Scholes Formula, Financial Mathematics Seminar, University of Notre Dame, 2013.

Nonuniform Dependence of the 2-component Camassa-Holm Equation, 8th IMACS International Conference on Nonlinear Evolution Equations and Wave Phenomena: Computation and Theory, University of Georgia, 2013.

The Euler Equations, Math Club, University of North Georgia, 2013.

The Maximum Principle, Financial Mathematics Seminar, University of Notre Dame, 2014.

Persistence Properties and Unique Continuation for a Generalized Camassa-Holm Equation, Topics in Euler's equation for incompressible fluids, University of Notre Dame, 2014.

Persistence Properties and Unique Continuation for a Generalized Camassa-Holm Equation, 9th IMACS International Conference on Nonlinear Evolution Equations and Wave Phenomena: Computation and Theory, University of Georgia, 2015.

The Cauchy Problem for the CH2 System, 8th Workshop in Geometrical Analysis of PDEs and Several Complex Variables, Serra Negra, Brazil, 2015.

A Generalized Shallow Water Wave Equation, Mathematics Colloquium, University of North Georgia, Department of Mathematics, 2015.

Classical Solutions for the Generalized Camassa-Holm Equation, UNG Faculty Research Day, University of North Georgia, 2015.

Classical Solutions for the Generalized Camassa-Holm Equation, 11th AIMS Conference on Dynamical Systems, Differential Equations and Applications, Orlando, FL, 2016.

Well-posedness and Continuity Properties of the Fornberg-Whitham Equation in Besov Spaces, Joint Mathematics Meetings, Atlanta, GA, 2017.

Decay Properties of Solutions to a 4-parameter Family of Wave Equations, 10th IMACS International Conference on Nonlinear Evolution Equations and Wave Phenomena: Computation and Theory, University of Georgia, 2017.

Solitary Waves, Senior Mathematics Seminar, Randolph-Macon College, Richmond, VA, 2017.

Well-posedness and Continuity Properties of the Fornberg-Whitham Equation in Besov Spaces, AMS Sectional Meeting, The Ohio State University, Columbus, OH, 2018.

On the Evolution of Dark Matter, 11th IMACS International Conference on Nonlinear Evolution Equations and Wave Phenomena: Computation and Theory, University of Georgia, 2019.

Nonuniform Dependence of the R-b-family system in Besov Spaces, 12th IMACS International Conference on Nonlinear Evolution Equations and Wave Phenomena: Computation and Theory, University of Georgia, 2022.

Introduction to Distributions, UNG Math Club, University of North Georgia, 2022.

Continuity Properties of a Geophysical Model for Equatorial Water Waves, The Ohio State University PDE Seminar, 2022.

Classical Solutions of the Fornberg-Whitham Equation, Midwest PDE Seminar, University of Notre Dame, 2023.

Continuity Properties of a Generalized Camassa-Holm System, Midwest PDE Seminar, The Ohio State University, 2024.

CONFERENCES ATTENDED

AMS Sectional Meeting, University of Notre Dame, November 2010.

AMS Sectional Meeting, Georgia Southern University, March 2011.

Midwest PDE Seminar, University of Notre Dame, November 2011.

Midwest Numerical Analysis Days, University of Notre Dame, May 2012.

9th AIMS Conference on Dynamical Systems, Differential Equations and Applications, Orlando, FL, July 2012.

Midwest PDE Seminar, University of Memphis, November 2012.

8th IMACS International Conference on Nonlinear Evolution Equations and Wave Phenomena: Computation and Theory, University of Georgia, March 2013.

Midwest PDE Seminar, University of Michigan, May 2013.

Midwest PDE Seminar, Purdue University, November 2013.

Midwest PDE Seminar, Northwestern University, May 2014.

Mini Conference on Topics in Euler's equation for incompressible fluids, University of Notre Dame, May 2014.

Joint Mathematics Meetings, San Antonio, TX, January 2015.

9th IMACS International Conference on Nonlinear Evolution Equations and Wave Phenomena: Computation and Theory, University of Georgia, April 2015.

8th Workshop in Geometrical Analysis of PDEs and Several Complex Variables, Serra Negra, Brazil, August 2015.

40th SIAM Southeastern Atlantic Section Conference, Athens, GA, March 2016.

Annual Shanks Conference & Lecture, International Conference on Evolution Equations, Vanderbilt University, May 2016.

11th AIMS Conference on Dynamical Systems, Differential Equations and Applications, Orlando, FL, July 2016.

Joint Mathematics Meetings, Atlanta, GA, January 2017.

10th IMACS International Conference on Nonlinear Evolution Equations and Wave Phenomena: Computation and Theory, University of Georgia, March 2017.

AMS Sectional Meeting, The Ohio State University, March 2018.

38th SEARCDE, University of North Georgia, October 2018.

MAA Southeastern Sectional Conference, Lee University, March 2019.

11th IMACS International Conference on Nonlinear Evolution Equations and Wave Phenomena: Computation and Theory, University of Georgia, April 2019.

AMS Sectional Meeting, Purdue University (online), March 2022.

12th IMACS International Conference on Nonlinear Evolution Equations and Wave Phenomena: Computation and Theory, University of Georgia, March 2022.

MAA Southeastern Sectional Conference, Coastal Carolina University, March 2023.

Midwest PDE Seminar, University of Notre Dame, May 2023.

Midwest PDE Seminar, The Ohio State University, May 2024.

ACADEMIC SERVICE

Differential Equations Curriculum Committee (UNG)   2015-2016
Served as a committee member in reviewing a proposal of a new differential equations course and also revised the current differential equations curriculum.

Reviewer for Mathematical Reviews AMS   2016-2021
Review papers for the AMS that have been accepted to various academic journals in the field of partial differential equations. Current list of reviewed articles is available upon request.

Special Session Co-Organizer SEAS 2016   2016
Served as a co-organizer of a special session dedicated to the analysis and computation techniques in partial differential equations modelling fluid flow at the 40th SIAM Southeastern Atlantic Section Conference in Athens, GA. Session Title: PDEs for Fluid Mechanics with Applications in Medical Biology.

Search Committee Member (UNG)   2017
Served as a member of a search committee to hire a new assistant professor of mathematics for the Mathematics Department at the University of North Georgia.

Core Curriculum Subcommittee (UNG)   2017
Served as a committee member in reviewing and making proposed changes to the current core curriculum in mathematics and science to better serve the students at UNG.

Search Committee Chair (UNG)   2018
Served as chair of a search committee to hire a new assistant professor of mathematics for the Mathematics Department at the University of North Georgia.

Subcommittee Member & Chair SEARCDE 2018 (UNG)   2018

Served as a committee member and chair of multiple committees formed to organize the 38th Southeastern-Atlantic Regional Conference on Differential Equations to be held at UNG October 6-7, 2018.

Math/Dual Degree Curriculum Committee Chair (UNG) 2019-2022
Served as chair of a committee designed to review any proposed changes to the mathematics and dual degree program at the University of North Georgia.

Open House Committee Member (UNG) 2021-2022
Served as member of a committee designed to organize a UNG Mathematics Department information booth at UNG's open house to advertise our programs in mathematics and mathematics education to prospective students.

Departmental Promotion & Tenure Committee (UNG) 2021-2022
Served as member of a committee that reviewed applications for promotion and tenure from faculty members in the department of mathematics.

Special Session Co-Organizer AMS Sectional Meeting #1177 2021-2022
Served as a co-organizer of a special session dedicated to the analysis and computation techniques in partial differential equations modelling fluid flow at the AMS Spring Central Sectional Meeting to be held in West Lafayette, IN at Purdue University. Session Title: Analysis of Nonlinear Evolution Equations.

UNG Math Club Advisor 2022-present
Serving as faculty advisor to the UNG Math Club and assisting on items such as reserving rooms for club meetings, hosting talks/lectures for the club members, organizing club trips for conferences, etc.

Reviewer for CURCA Mini Grants (UNG) 2024
Served as a member of a review committee to referee mini grant applications written by undergraduates to the Center for Undergraduate Research and Creative Activities.

Search Committee Member (UNG) 2024-25
Served as a member of a search committee to hire new assistant professors of mathematics for the Mathematics Department at the University of North Georgia.

NCS STEM Committee Member (UNG) 2025-present
Served as a member of a national scholarships committee aimed at assisting students at UNG in writing their research proposals and/or applications for scholarships/grants as well as holding mock interviews.

Referee for the Journal of Boundary Value Problems (JBVP) 2018-present
Referee papers for JBVP in the field of partial differential equations that have been submitted for publication.

Referee for the Journal of Dynamics and Differential Equations (JDDE) 2018-present
Referee papers for JDDE in the field of partial differential equations that have been submitted for publication.

Referee for the Journal of Mathematical Problems in Engineering (MPE) 2019-present
Referee papers for MPE in the field of partial differential equations that have been submitted for publication.

Referee for the Journal of Mathematical Physics (JMP) 2021-present
Referee papers for JMP in the field of partial differential equations that have been submitted for publication.

Referee for the Rocky Mountain Journal of Mathematics (RMJM) 2021-present
Referee papers for RMJM in the field of partial differential equations that have been submitted for publication.

Referee for Zeitschrift für Angewandte Mathematik und Mechanik (ZAMM) 2021-present
  Referee papers for ZAMM in the field of partial differential equations that have been submitted for publication.

Referee for Involve 2022-present
  Referee papers for Involve in the field of partial differential equations that have been submitted for publication primarily by undergraduates or beginning graduate students along with their faculty mentors.

Referee for the Journal of Applied Numerical Mathematics (APNUM) 2022-present
  Referee papers for APNUM in the field of partial differential equations that have been submitted for publication.

Referee for the Journal of Mathematical Methods in the Applied Sciences (MMAS) 2023-present
  Referee papers for MMAS in the field of partial differential equations that have been submitted for publication.

Referee for the Journal of La Mathematica (LAMA) 2024-present
  Referee papers for LAMA in the field of partial differential equations that have been submitted for publication.

Referee for Zeitschrift für Angewandte Mathematik und Physik (ZAMP) 2025-present
  Referee papers for ZAMP in the field of partial differential equations that have been submitted for publication.

Referee for Nonlinear Analysis: Real World Applications (NA) 2025-present
  Referee papers for NA in the field of partial differential equations that have been submitted for publication.

OTHER PROFESSIONAL DEVELOPMENT

Professional Development in Mathematics 2012
  Assisted in starting a seminar designed to help Mathematics Graduate Students prepare for and enter the job market.

PDEs Research Seminar 2011-2015
  Attended and participated in a weekly seminar that focuses on the various projects of my research group.

Financial Mathematics Seminar 2011-2015
  Attended and participated in a weekly seminar that focuses on financial mathematics.

One World PDE Seminar 2021-2023
  Attended a virtual seminar that focuses on the analysis of partial differential equations.

Teaching Pedagogy Seminar 2023-2024
  Attended a seminar focussed on teaching pedagogy in the STEM fields. The seminar was focussed on discussing the text Understanding How We Learn: A Visual Guide and was held every other week during the spring semester of 2023. A follow up seminar is to occur this fall semester of 2023 discussing the text Small Teaching.

REFERENCES

Prof. John Holmes
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614-292-4975
holmes.782@osu.edu

Prof. Feride Tiğlay
Dept. of Math, The Ohio State University
Newark, OH 43055
740-755-7832
tiglay.1@osu.edu

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Dept. of Math, University of Pittsburgh
Pittsburgh, PA 15260
412-624-8357
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Dept. of Math, Catholic University of America
Washington, DC 20064
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Dept. of Math, University of Notre Dame
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