

# Ryan C. Thompson

## Curriculum Vitae

Department of Mathematics  
University of North Georgia  
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### EDUCATION

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- 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

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### PUBLICATIONS

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- 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. Tığlay, *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. Tığlay, *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.

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### ACADEMIC EMPLOYMENT

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- 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-Present.

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### TEACHING EXPERIENCE

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#### 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 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)

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## AWARDS/TRAINING

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### 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.

### Training

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

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## PRESENTATIONS

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*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.

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#### CONFERENCES ATTENDED

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- 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, March, 2019.

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

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#### ACADEMIC SERVICE

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Differential Equations Curriculum Committee (UNG)	2015-2016
<i>Served as a committee member in reviewing a proposal of a new differential equations course and also revised the current differential equations curriculum.</i>	
Reviewer for Mathematical Reviews AMS	2016-present
<i>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.</i>	
Special Session Co-Organizer SEAS 2016	2016
<i>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.</i>	
Search Committee Member (UNG)	2017
<i>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.</i>	

Core Curriculum Subcommittee (UNG)	2017
<i>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.</i>	
Search Committee Chair (UNG)	2018
<i>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.</i>	
Subcommittee Member & Chair SEARCDE 2018 (UNG)	2018
<i>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.</i>	
Math/Dual Degree Curriculum Committee Chair (UNG)	2019-present
<i>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.</i>	
Referee for the Journal of Boundary Value Problems (JBVP)	2018-present
<i>Referee papers for JBVP in the field of partial differential equations that have been submitted for publication.</i>	
Referee for the Journal of Dynamics and Differential Equations (JDDE)	2018-present
<i>Referee papers for JDDE in the field of partial differential equations that have been submitted for publication.</i>	
Referee for the Journal of Mathematical Problems in Engineering (MPE)	2019-present
<i>Referee papers for MPE in the field of partial differential equations that have been submitted for publication.</i>	

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#### OTHER PROFESSIONAL DEVELOPMENT

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Professional Development in Mathematics	2012
<i>Assisted in starting a seminar designed to help Mathematics Graduate Students prepare for and enter the job market.</i>	
PDEs Research Seminar	2011-2015
<i>Attend and participate in a weekly seminar that focuses on the various projects of my research group.</i>	
Financial Mathematics Seminar	2011-2015
<i>Attend and participate in a weekly seminar that focuses on financial mathematics.</i>	

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#### REFERENCES

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Prof. John Holmes Dept. of Math & Stats., Wake Forest University Winston-Salem, NC 27109 336-758-5300 holmesj@wfu.edu	Prof. Ed Green Dept. of Math, University of North Georgia Dahlonega, GA 30597 706-864-1809 ed.green@ung.edu
Prof. Dianna Spence Dept. of Math, University of North Georgia Dahlonega, GA 30597 706-864-1810 dianna.spence@ung.edu	Prof. Dionyssis Mantzavinos Dept. of Math, University of Kansas Lawrence, MA 66045-7594 785-864 4324 mantzavinos@ku.edu