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### CONTACT INFORMATION

**Address:** Department of Mathematical Sciences, M-306 Martin Hall, Clemson University, Clemson, SC 29634  
**Email:** rrgrove6@gmail.com  
**Web page:** <http://people.clemson.edu/~rgrove/>  
**Telephone:** (609)-635-5377  
**Citizenship:** United States of America

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### EDUCATION

2013–2017 **Ph.D. in Mathematical Sciences**, *Clemson University*, Clemson, SC.  
QPA: 3.75, Dissertation: N/A  
2012–2013 **M.S. in Applied Mathematics**, *Indiana University of Pennsylvania*, Indiana, PA.  
QPA: 3.83, Thesis: Immersed Boundary modeling of journal bearings in a viscoelastic fluid  
2008–2012 **B.S. in Physics**, *Indiana University of Pennsylvania*, Indiana, PA.  
QPA: 3.95, Minor: Computer Science  
2008–2012 **B.S. in Applied Mathematics**, *Indiana University of Pennsylvania*, Indiana, PA.  
QPA: 3.95

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### RESEARCH INTERESTS

Geometric Multigrid	Advection-Diffusion equations
Finite Element Method	Navier-Stokes equations
deal.II	Mantle Convection Simulation
Parallelization	Parallel Linear Algebra

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### PROGRAMMING LANGUAGES

C++ (with MPI and OpenMP)	Java
C (with MPI)	HTML
Python	SQL
Fortran	Visual Basic
Matlab	Lingo/Lindo
R	

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### SOFTWARE PACKAGES (\* implies contributor of)

deal.II\* (open source finite element library)  
ASPECT\* (open source mantle convection program using deal.II)  
GRIPS\* (evolutionary multi-objective nonlinear solver)

ViCE\* (visual contour editor)  
UNCOLA\* (analytical collision avoidance software package)  
AMPL, CPLEX, and Girobi (nonlinear and linear optimization)  
LaTeX & Beamer  
Sage

## PLATFORMS

Linux

Ubuntu

## COMPUTATIONAL MATHEMATICS

Finite element method  
Stabilization schemes  
Viscoelastic fluid flow  
Navier Stokes equations  
Stochastic models and processes  
Linear, nonlinear, & network optimization

Immersed boundary method  
Modeling and simulation  
Finite difference method  
Numerical linear algebra  
Numerical differential equations

## PHYSICS AND ENGINEERING

Nuclear physics  
Quantum mechanics  
Electricity & Magnetism  
Mechanics

Optics  
Electronics  
Satellites & space systems

## VERSION CONTROL

GIT

Subversion

## CONTRIBUTED TALKS (\* = received travel support)

**Title:** Immersed Boundary Modeling of Journal Bearings in a Viscoelastic Fluid  
**Event:** \*The 9th Annual UNCG Regional Mathematics and Statistics Conference  
**Location:** The University of North Carolina at Greensboro, Greensboro, NC  
**Date:** November 2, 2013

**Title:** Immersed Boundary Modeling of Journal Bearings in a Viscoelastic Fluid  
**Event:** Graduate Student Seminar  
**Location:** Clemson University, Clemson, SC  
**Date:** October 30, 2013

**Title:** Immersed Boundary Modeling of Journal Bearings in a Viscoelastic Fluid  
**Event:** \*Pennsylvania State System of Higher Education Mathematics Association  
**Location:** Clarion University, Clarion, PA

**Date:** April 17-18, 2013

**Title:** Immersed Boundary Modeling of Journal Bearings in a Viscoelastic Fluid

**Event:** \*Allegheny Mountain Section of the Mathematical Association of America Spring 2013 meeting

**Location:** Indiana University of Pennsylvania, Indiana, PA

**Date:** April 5-6, 2013

**Title:** Comparison of Nonlinear and Linear Stabilization Schemes for Advection-Diffusion Equations

**Event:** Computational Mathematics Seminar

**Location:** Clemson University, Clemson, SC

**Date:** October 30, 2014

**Title:** Comparison of Nonlinear and Linear Stabilization Schemes for Advection-Diffusion Equations

**Event:** \*The 10th Annual UNCG Regional Mathematics and Statistics Conference

**Location:** The University of North Carolina at Greensboro, Greensboro, NC

**Date:** November 1, 2014

**Title:** Comparison of Nonlinear and Linear Stabilization Schemes for Advection-Diffusion Equations

**Event:** Graduate Student Seminar

**Location:** Clemson University, Clemson, SC

**Date:** November 5, 2014

**Title:** Comparison of Nonlinear and Linear Stabilization Schemes for Advection-Diffusion Equations

**Event:** Fall Southeastern Sectional Meeting of the American Mathematical Society

**Location:** The University of North Carolina at Greensboro, Greensboro, NC

**Date:** November 8-9, 2014

**Title:** How to Get a Summer Internship

**Event:** Graduate Student Seminar

**Location:** Clemson University, Clemson, SC

**Date:** September 23, 2015

**Title:** An Introduction to Graduate School

**Event:** Graduate Student Seminar

**Location:** Clemson University, Clemson, SC

**Date:** August 26, 2015

**Title:** Comparison of Nonlinear and Linear Stabilization Schemes for Advection-Diffusion Equations

**Event:** \*The 11th Annual UNCG Regional Mathematics and Statistics Conference

**Location:** The University of North Carolina at Greensboro, Greensboro, NC

**Date:** November 7, 2015

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## POSTER PRESENTATIONS (\* = received travel support)

**Title:** Comparison of Nonlinear and Linear Stabilization Schemes for Advection-Diffusion Equation

**Event:** \*2015 SIAM Conference on Computational Science and Engineering

**Location:** The Calvin L. Rampton Salt Palace Convention Center, Salt Lake City, UT

**Date:** March 14-18, 2015

**Title:** Comparison of Nonlinear and Linear Stabilization Schemes for Advection-Diffusion Equations

**Event:** AGU 2015 Fall Meeting

**Location:** Moscone Convention Center, San Francisco, SC

**Date:** December 14-18, 2015

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## PANELS (\* = received travel support)

**Event:** AWM's Summer Opportunities Panel

**Location:** E-4 Martin Hall, Clemson, SC

**Date:** October 20, 2015

**Event:** \*Alumni Panel

**Location:** STRGT 226/229, Indiana, PA

**Date:** October 12, 2015

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## CONFERENCES ATTENDED WITHOUT PRESENTATION (\* = received travel support)

**Event:** \*2014 SIAM Student Conference

**Location:** West Virginia University, Blacksburg, WV

**Date:** March 8, 2014

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## SERVICE (\* = received travel support)

**Position:** SIAM Webmaster

**Location:** Clemson University, Clemson, SC  
**Date:** Fall 2014 - Present

**Position:** GSG Senator  
**Location:** Clemson University, Clemson, SC  
**Date:** Fall 2015 - Present

**Position:** GSG Financial Committee  
**Location:** Clemson University, Clemson, SC  
**Date:** Fall 2015 - Present

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## WORKSHOPS GIVEN

**Event:** Personal Webpage Workshop  
**Location:** Clemson University, Clemson, SC  
**Date:** April 15, 2015  
**Comment:** Conducted a workshop to help graduate students create their own personal webpage

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## WORKSHOPS ATTENDED

**Event:** ASPECT Hackathon  
**Location:** Texas A&M University, College Station, TX  
**Date:** May 14-23, 2014

**Event:** ASPECT Hackathon  
**Location:** UC Davis Marine Lab, Bodega Bay, CA  
**Date:** May 20-30, 2015

**Event:** deal.II Hackathon  
**Location:** Texas A&M University, College Station, TX  
**Date:** August 3-7, 2015

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## INTERNSHIPS

**Job Title:** Member of the Technical Staff  
**Location:** The Aerospace Corporation, Chantilly, VA  
**Date:** June 1, 2015 to August 14, 2015  
**Description:** Developer and analyst of multiple software packages including: GRIPS, ViCE, and UNCOLA.

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## WORK EXPERIENCE

**Job Title:** Graduate Teacher of Record

**Location:** Clemson University, Clemson, SC  
**Date:** August 26, 2015 to present  
**Description:** Taught MATH 1060 (Calculus of One Variable I) in Fall '15 and now teach MATH 1080 (Calculus of One Variable II) in Spring '16.

**Job Title:** Member of the Technical Staff  
**Location:** The Aerospace Corporation, Chantilly, VA  
**Date:** June 1, 2015 to August 14, 2015  
**Description:** Create a test suite for the Genetic Resources for Innovation and Problem Solving (GRIPS) program.

**Job Title:** Research Assistant  
**Location:** Clemson University, Clemson, SC  
**Date:** August 30, 2013 to May 1, 2015  
**Description:** Simulate problems in thermal convection using ASPECT.

**Job Title:** Teaching Assistant  
**Location:** Clemson University, Clemson, SC  
**Date:** August 21, 2013 to December 13, 2013  
**Description:** Assisted in MATH 1080 (Calculus of One Variable II).

**Job Title:** Sub aide  
**Location:** Cambria Residential Services, Richland, PA  
**Date:** June 4, 2012 to May 31, 2013  
**Description:** Cook, clean, and transport individuals with mental health disabilities.

**Job Title:** Web Analyst, Research Assistant  
**Location:** Indiana University of Pennsylvania, Indiana, PA  
**Date:** September 7, 2012 to December 14, 2012  
**Description:** Prepare and interpret multiple web traffic reports for the IUP Communication Department.

**Job Title:** Teaching Assistant  
**Location:** Indiana University of Pennsylvania, Indiana, PA  
**Date:** February 4, 2013 to May 13, 2013  
**Description:** Tutor at the IUP branch campuses located in Punxsutawney and Northpointe, Pennsylvania.

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## VOLUNTEER WORK

**Job Title:** Volunteer Assistant

**Location:** Cambria Residential Services, Richland, PA

**Date:** 08/2006 - 06/2012

**Description:** Take individuals with mental health disabilities into the community on outings.

**Job Title:** Volunteer Firefighter

**Location:** Portage Area Fire Department, Portage, PA

**Date:** July 10, 2012 to May 31, 2013

**Description:** Respond to emergency calls such as QRS, fire, and hazardous materials calls.

**Job Title:** Volunteer Tutor

**Location:** Indiana University of Pennsylvania, Indiana, PA

**Date:** 08/2009 - present

**Description:** Tutor for calculus, differential equations, physics, and statistics.

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## HONORS AND AWARDS

**Society:** Sigma Alpha Lambda Honor Fraternity

**Location:** Indiana University of Pennsylvania, Indiana, PA

**Date:** Fall 2009 - Spring 2012

**Society:** Phi Kappa Phi Honor Fraternity

**Location:** Indiana University of Pennsylvania, Indiana, PA

**Date:** Fall 2010 - Spring 2011

**Award:** Deans List

**Location:** Indiana University of Pennsylvania, Indiana, PA

**Date:** Fall 2008 - Spring 2012

**Scholarship:** S-COAM

**Location:** Indiana University of Pennsylvania, Indiana, PA

**Date:** Academic years 2009 - 2013

**Award:** Outstanding Graduate Student Presentation Award

**Location:** The University of North Carolina at Greensboro, Greensboro, NC

**Date:** November 7, 2015

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## MEMBERSHIPS

- 08/2013 - SIAM (Society for Industrial and Applied Mathematics)  
present
- 10/2015 - AWM (Association for Women in Mathematics)  
present

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## KEY COURSES

Introduction to Scientific Computing  
Data Structures  
Stochastic Processes  
Stochastic Models  
Mathematical Programming  
Finite Element Method  
Finite Element Method in Scientific Computing  
Network Flow Programming  
Linear Analysis  
Matrix Analysis  
Probability  
Analysis for Applied Mathematics  
Complex Analysis  
Ordinary and Partial Differential Equations  
Applied Regression Analysis and Design of Experiments  
Modeling and Simulation  
Advanced Simulation  
Applied Statistical Methods  
Deterministic Models in Operations Research  
Stochastic Models in Operations Research  
Linear Algebra  
Mathematical Statistics  
Advanced Mathematics for Applications  
Theoretical Physics  
Electricity and Magnetism  
Nuclear Physics  
Mechanics  
Thermal and Statistical Physics  
Optics  
Electronics  
Quantum Mechanics  
Modern Physics