

Ryan Grove

Curriculum Vitae

CONTACT INFORMATION

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EDUCATION

2013–2017 **Ph.D. in Mathematical Sciences**, *Clemson University*, Clemson, SC.
QPA: 3.76, 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

RESEARCH INTERESTS

Finite Element & Difference Methods Navier-Stokes & Stokes equations
Geometric Multigrid

PROGRAMMING LANGUAGES

C++ with MPI & OpenMP Matlab
C with MPI R
Python Java, HTML, SQL
Fortran Lingo/Lindo

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

Windows

COMPUTATIONAL MATHEMATICS

Finite element & difference methods
Geometric Multigrid
Navier Stokes & Stokes equations
Linear, nonlinear, & network optimization
Stabilization schemes
Viscoelastic fluid flow

Stochastic models and processes
Immersed boundary method
Modeling and simulation
Numerical differential equations
Numerical linear algebra

PHYSICS AND ENGINEERING

Nuclear physics
Quantum mechanics
Electricity & Magnetism
Mechanics

Optics
Electronics
Satellites & space systems

VERSION CONTROL

GIT

Subversion

RESEARCH APPOINTMENTS

Appointment: Traveling Fellow

Location: Heidelberg University, Germany

Date: June - August 2016

Appointment: Melt in the Mantle

Location: Cambridge University, England

Date: May 2016

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

Title: Discretizations and multigrid solver for problems related to fluid flow

Event: *Melt in the Mantle

Location: Isaac Newton Institute, Cambridge, England

Date: May 26, 2016

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

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

CONFERENCES ATTENDED WITHOUT PRESENTATION (* = received travel support)

Event: *2014 SIAM Student Conference

Location: West Virginia University, Blacksburg, WV

Date: March 8, 2014

SERVICE

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

WORKSHOPS GIVEN

Event: Written Documents for Job Applications

Location: Clemson University, Clemson, SC

Date: January 27, 2016

Comment: Conducted a workshop to help graduate students create their own personal documents for job applications

Event: How to get an Internship

Location: Clemson University, Clemson, SC

Date: ?, 2015

Comment: Conducted a workshop to help graduate students figure out how to get internships

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

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

Event: Geometric PDEs and Their Approximations
Location: Texas A&M University, College Station, TX
Date: January 10-16, 2016

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.

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 taught/teaching MATH 1080 (Calculus of One Variable II) in Spring '16 and '17.

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.

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.

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

MEMBERSHIPS

08/2013 - SIAM (Society for Industrial and Applied Mathematics)
present

10/2015 - AWM (Association for Women in Mathematics)
present

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