Ryan Grove

Curriculum Vitae

CONTACT INFORMATION

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Citizenship: United States of America

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

RESEARCH INTERESTS

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

PROGRAMMING LANGUAGES

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

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 & Magnestism
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

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 Palance 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 (* = 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

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

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 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: Assissted 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 - present SIAM (Society for Industrial and Applied Mathematics)

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

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 Regressional 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