

Ryan Reed Grove

MAIL: M-306 Martin Hall
Clemson University
Clemson, SC 29634

EMAIL: rgrove@clemson.edu

TELEPHONE: (609)-635-5377

WEB PAGE: <http://people.clemson.edu/~rgrove/>

CITIZENSHIP: United States of America

SKILLS, QUALIFICATIONS, AND EXPERTISE

Programming:

- C++ with MPI & OpenMP
- C with MPI
- Python
- Matlab
- Fortran
- R
- Java, HTML, SQL

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, Gurobi (nonlinear and linear optimization)
- LaTeX & Beamer
- Sage

Platforms:

- Linux & Ubuntu

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 methods
- Modeling and simulation
- Numerical differential equations
- Numerical linear algebra

Physics & Engineering:

- Nuclear & quantum
- Electricity & magnetism
- Mechanics, optics, & electronics
- Satellites & space systems

Version Control:

- GIT & Subversion

EDUCATION

- *Ph.D., Mathematical Sciences, Clemson University* 2017(*expected*)
Thesis area: Finite element method, geometric multigrid, and parallelization **QPA: 3.76/4.00**
- *M.S., Applied Mathematics, Indiana University of Pennsylvania* 2013
Thesis area: Viscoelastic fluid flow, Navier Stokes equations **QPA: 3.83/4.00**
- *B.S., Physics & Applied Mathematics, Indiana University of Pennsylvania* 2012
(Dual Bachelorette Degrees) Minor: Computer Science **QPA: 3.95/4.00**

EMPLOYMENT

- *Graduate Teacher of Record, Clemson University* Aug 2015 - Present
Spring 2016 - Spring 2017: Teach MATH 1080 (Calculus of One Variable II)
Fall 2015: Taught MATH 1060 (Calculus of One Variable I)
- *Member of the Technical Staff, The Aerospace Corporation* Jun 2015 - May 2016
Create a test suite for the Genetic Resources for Innovation and Problem Solving (GRIPS) program.

INTERNSHIPS

- **Member of the Technical Staff, The Aerospace Corporation** Jun 2015 - Aug 2015
Developer and analyst of multiple software packages including: GRIPS, ViCE, and UNCOLA.

RESEARCH APPOINTMENTS

- **Traveling Fellow, Heidelberg University, Germany** Jun - Aug 2016
Researched higher order geometric multigrid for Stokes equations
- **Melt in the Mantle, Cambridge University, England** May 2016
Researched three-field Stokes flow to model melt migration
- **Research Assistant, Clemson University** Aug 2013 - present
Compared nonlinear stabilization schemes for advection-diffusion equations using deal.II.
- **ASPECT Hackathon, Various Universities** May 2015 & May 2014
Helped graduate students in the geoscientific community program in deal.II and use ASPECT.
- **deal.II Hackathon, Texas A&M University** Aug 2015
Served as research and personal mentor to participants at this workshop.

CONFERENCE, SEMINAR, & WORKSHOP PRESENTATIONS

Presented over **12** contributed talks and **2** posters, spoke at **2** panels, and led **3** workshops, including:

- **Melt in the Mantle** May 2016
The Isaac Newton Institute, Cambridge, England
Talk
Title: "Discretizations and multigrid solver for problems related to fluid flow"
- ***The 11th Annual UNCG Regional Mathematics and Statistics Conference** Nov 2015
The University of North Carolina at Greensboro, Greensboro, NC
Talk
Title: "Comparison of Nonlinear and Linear Stabilization Schemes for Advection-Diffusion Equations"
Award: Outstanding Graduate Student Presentation
- **Pennsylvania State System of Higher Education Mathematics Association** Apr 2013
Clarion University, Clarion, PA
Talk
Title: "Immersed Boundary Modeling of Journal Bearings in a Viscoelastic Fluid"

SERVICE AND VOLUNTEER WORK

- **GSG Finance Committee Chair, Clemson University** Aug 2015 - present
Also serving as a Graduate Student Government (GSG) senator
- **SIAM Webmaster, Clemson University** Aug 2014 - present
Maintainer of the website: <http://people.clemson.edu/~siam/>
- **Volunteer Firefighter, Portage Area Fire Department** Jul 2012 - May 2013
Responded to emergency calls such as QRS, fire, and hazardous materials calls.
- **Volunteer Assistant, Cambria Residential Services** Aug 2006 - Jun 2012
Took individuals with mental health disabilities into the community on social outings.
Cooked, cleaned, and transported individuals with mental health disabilities.

HONORS, AWARDS, AND SCHOLARSHIPS

Received over **\$30,000** in honors, awards, and scholarships combined.

- **Travel Support** 2013 - present
Received travel support for **7** conferences, seminars, and panels totalling around **\$4,000** over **4** years.
- **S-COAM, Indiana University of Pennsylvania** 2009 - 2013
Scholarship renewed **7** times totalling around **\$25,000** over **4** years.