

Ryan Reed Grove

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CITIZENSHIP: United States of America

SKILLS, QUALIFICATIONS, AND EXPERTISE

Programming:

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

Software Packages: (* implies developer of)

- 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)
- deal.II* (open source finite element library)
- AMPL, CPLEX, and Gurobi (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
- Finite difference method
- Immersed boundary method
- Modeling and simulation
- Numerical linear algebra
- Numerical differential equations

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, stabilization schemes, and parallelization **QPA: 3.69/4.00**
- *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

- *Member of the Technical Staff, The Aerospace Corporation* Jun 2015 - Present
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

- **Research Assistant, Clemson University** *Aug 2013 - present*
Simulate problems in thermal convection using ASPECT software package.
Compare nonlinear stabilization schemes for advection-diffusion equations using deal.II.
- **Web Analyst, Indiana University of Pennsylvania** *Sep - Dec 2012*
Prepare and interpret multiple web traffic reports for the Communications Department.
Find efficient ways to query and maintain a large database of web traffic information.
- **ASPECT Hackathon, Various Universities** *May 2015 & May 2014*
Served as research and personal mentor to participants at this workshop.
Helped graduate students in the geoscientific community program in deal.II and use ASPECT.

CONFERENCE PRESENTATIONS AND SEMINARS

Given over **8** contributed talks and **1** poster session at seminars and conferences. This includes:

- **2015 SIAM Conference on Computational Science and Engineering** *Mar 2015*
The Calvin L. Rampton Salt Palace Convention Center, Salt Lake City, UT **Poster**
Title: "Comparison of Nonlinear and Linear Stabilization Schemes for Advection-Diffusion Equations"
- **Fall Southeastern Sectional Meeting of the American Mathematical Society** *Nov 2014*
The University of North Carolina at Greensboro, Greensboro, NC **Talk**
Title: "Comparison of Nonlinear and Linear Stabilization Schemes for Advection-Diffusion Equations"
- **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

- **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*
Respond to emergency calls such as QRS, fire, and hazardous materials calls.
- **Volunteer Assistant, Cambria Residential Services** *Aug 2006 - Jun 2012*
Take individuals with mental health disabilities into the community on social outings.
Cook, clean, and transport individuals with mental health disabilities.

HONORS, AWARDS, AND SCHOLARSHIPS

Received over **\$29,000** in honors, awards, and scholarships combined.

- **Travel Support** *2013 - present*
Received travel support for **6** conferences totalling around **\$3,000** over **2** years.
- **S-COAM, Indiana University of Pennsylvania** *2009 - 2013*
Scholarship renewed **7** times totalling around **\$25,000** over **4** years.
Participated in the Mathematics Enrichment Activities Network.