

Julia Ream

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Education

Ph.D. in Mathematics Florida State University Advisors: Mark Sussman and Marc T. Henry de Frahan	2023 (expected)
M.S. in Mathematics Florida State University Focus Area: Applied and Computational Mathematics	2020
B.S. in Mathematics Florida State University Focus Area: Applied and Computational Mathematics	2017
B.A. in Humanities Florida State University Focus Areas: Film Studies, Music History, English	2017

Research Interests

Hybrid Methods for Computational Fluid Dynamics, Multiphase Fluid Interaction, Numerical Methods for PDEs, Turbulence, High Performance Computing

Research Experience

NSF Mathematical Sciences Graduate Internship Lawrence Berkeley National Laboratory Advisors: Anne Felden and Marc Day Developed general software framework to build reduced chemical models based on Quasi-Steady State Approximations for incorporation into Exascale Computing Project's combustion codes <i>PeleLM</i> and <i>PeleC</i>	Berkeley, CA (remote) June 2020 - Aug. 2020
NSF Mathematical Sciences Graduate Internship National Renewable Energy Laboratory Advisor: Marc T. Henry de Frahan Analyzed turbulence physics around pseudocritical region of supercritical carbon dioxide round turbulent jet utilizing first-principles simulation code <i>PeleC</i> and high performance computing	Golden, CO June 2019 - Aug. 2019

Presentations

Talks

Adaptive Mesh Refinement Large Eddy Simulation of the Supercritical Carbon Dioxide Round Turbulent Jet, *SIAM Conference on Computational Science and Engineering*, March 2021, Virtual

Investigating the Turbulence Physics of a Supercritical Carbon Dioxide Round Jet, *APS 72nd Meeting of the Division of Fluid Dynamics*, Nov. 2019, Seattle, WA

Investigating the Impact of Supercritical Fluid Properties on the Turbulence Physics of the Round Turbulent Jet, *39th Southeastern-Atlantic Regional Conference on Differential Equations*, Oct. 2019, Daytona, FL

Association for Women in Mathematics Mentoring Network: Building Community and a Sense of Belonging in the Mathematical Sciences, *2nd Annual Symposium on Diversity and Inclusion in Research and Teaching*, September 2019, Tallahassee, FL

Numerical Simulations of the Supercritical Carbon Dioxide Round Turbulent Jet, *5th Annual Rocky Mountain Fluid Mechanics Research Symposium*, July 2019, Boulder, CO

Posters

Using computer simulations to understand complex fluids, *2022 FSU Fellows Forum*, March 2022, Tallahassee, FL (virtual)

Reducing the cost of chemical kinetics in combustion simulations, *2020 Summer Student Poster Session*, Aug. 2020, Berkeley, CA (remote)

Investigating Flow Field Properties of the Supercritical Carbon Dioxide Round Turbulent Jet, *2019 Summer Intern Poster Symposium*, Aug. 2019, Golden, CO

Employment

Graduate Teaching Assistant Aug. 2017 - present
FSU, Dept. of Mathematics

Taught variety of undergraduate math courses and additionally served as Administrative TA

Private Tutor Jan. 2022 - present
Tallahassee, FL

Tutored variety of math topics at the undergraduate and graduate level

Teaching Assistant June 2022 - Aug. 2022
Amherst College, Thrive Scholars Summer Program

Helped run 6-week Calculus I course for rising high school seniors from underserved communities across the US

Outreach and Programming Assistant March 2015 - July 2017
FSU, Robert Manning Strozier Library

Organized and participated in library outreach events including Resource Fair, Graduate Student Social, Monthly Book Display, Incoming Student Orientation, etc.

Peer Tutor Aug. 2015 - May 2017
FSU, Academic Center for Excellence

Led group review sessions and one-on-one appointments for courses up through Ordinary Differential Equations and Applied Linear Algebra

Teaching Experience

Instructor of Record

FSU, Dept. of Mathematics

Calculus with Analytic Geometry II

Fall 2021

Calculus with Analytic Geometry I

Spring 2021[†], Summer 2021[‡]

Pre-Calculus

Spring 2020, Fall 2020

Fall 2018

Recitation Instructor

FSU, Dept. of Mathematics

Discrete Mathematics I

Fall 2019

Calculus with Analytic Geometry I

Spring 2019

[†] Combined section 120 person lecture assisted by 2 additional recitation TAs

[‡] Piloted new textbook and homework software as on behalf of Textbook Search Committee

Outreach Experience

Undergraduate Student Mentor FSU, AWM Student Chapter	Aug. 2019 - Present
#togetHER Panel: How Can Women Support Women at FSU? FSU, Women Wednesdays	Nov. 2020
Graduate Student Representative Joint Mathematics Meeting, Graduate School Fair	Feb. 2020
Math Fun Day Volunteer FSU, Dept. of Mathematics	Feb. 2019, Feb. 2020
Library Ambassador FSU, Robert Manning Strozier Library	May 2015 - Aug. 2016

Leadership

Co-Chair - Graduate Student Council FSU, Dept. of Mathematics	Aug. 2021 - Present (member since March 2020)
President - Association for Women in Mathematics FSU, AWM Student Chapter	April 2019 - May 2021 (member since Aug. 2018)
Peer Leader - Outreach and Programming FSU, Robert Manning Strozier Library	Feb. 2016 - May 2017

Fellowships, Scholarships, and Awards

Clara Kibler Davis Award for Graduate Women FSU, Dept. of Mathematics	2019, 2021, 2022
Bettina Zoeller Richmond Award FSU, Dept. of Mathematics	2020, 2022
Graduate Student Leadership Award (nominated) FSU, Graduate School	2022
Distinguished Teaching Assistant FSU, Dept. of Mathematics	2021
Dwight B. Goodner Fellowship in Mathematics FSU, Dept. of Mathematics	2021
Best Presentation of Research Rocky Mountain Fluid Mechanics Research Symposium	2019

Certification, Training, and Skills

Scientific Programming C++, Python, Julia, Git, Bash, Fortran, Matlab, VisIt, Gmsh, R
Other L ^A T _E X, MS Office Suite

Memberships

Association for Women in Mathematics
American Physical Society
American Mathematical Society
Society for Industrial and Applied Mathematics
Pi Mu Epsilon Math Honor Society