

CONTACT INFORMATION	Email: shagen@davidsonacademy.unr.edu Website: http://sarahhagen.weebly.com https://www.davidsonacademy.unr.edu/	The Davidson Academy 1164 N. Virginia St. Reno, NV 89503
CURRENT POSITION	<i>Mathematics Teacher</i> The Davidson Academy, Reno, NV	
PREVIOUS POSITIONS	<i>Visiting Assistant Professor of Mathematics</i> Western Oregon University, Monmouth, OR <i>Graduate Teaching Assistant</i> Oregon State University, Corvallis, OR	
EDUCATION	Oregon State University , Corvallis, OR Ph.D., Mathematics, 2020 M.S., Mathematics, 2017 Smith College , Northampton, MA Post-Baccalaureate Certificate, 2014 Harvard University Extension School , Cambridge, MA M.A., Mathematics for Teaching, 2013 Reed College , Portland, OR B.A., Philosophy, 2006	
AWARDS/HONORS	<i>William F. Burger Graduate Teaching Award</i> Oregon State University Math Department, 2019 <i>OMSI Science Communication Fellowship</i> OMSI/Oregon State University College of Science, 2019 <i>Graduate Student Honorable Mention in Coursework</i> (now called the Outstanding Performance in Coursework Award) Oregon State University Math Department, 2017 <i>USC Summer School on Mathematical Fluids Fellowship</i> University of Southern California, 2017 <i>Provost Distinguished Graduate Fellowship</i> Oregon State University Graduate School, 2016 <i>Class Marshal</i> for academic distinction Harvard University Extension School, 2013 <i>Dean's List</i> for academic achievement Harvard University Extension School, 2013 <i>Edwin N Garlan Memorial Prize</i> for outstanding scholarship in philosophy Reed College, 2006	

RESEARCH
OVERVIEW

Advisor: Dr. Radu Dascaluic
Dissertation: “On the Existence of Solutions to the Incompressible Navier-Stokes Equations with Constant Energy and Enstrophy”
Fields: Analysis, PDEs, Dynamical Systems, Mathematical Fluids
Funded: National Science Foundation—DMS grant 1211413

PUBLICATIONS

Dascaluic, R., Hagen, S. *Spectral Structure of Solutions to the Navier-Stokes Equations with Constant Energy and Enstrophy*
[Accepted, December 2020: Pure and Applied Functional Analysis]

Hagen, S. *Active Learning and the Transformation of a Graduate Student Instructor*
AMS Blog on Teaching and Learning
<https://blogs.ams.org/matheducation/2020/06/04/active-learning-and-the-transformation-of-a-graduate-student-instructor/>

RESEARCH
PRESENTATIONS

“Spectral Structure of Solutions to the NSE with Constant Energy and Enstrophy”
AMS Fall Western Sectional Meeting, October 2020

“On the Impossibility of Ghost Solutions on the Global Attractor of the Incompressible Navier-Stokes Equations”
Oregon State University, Analysis Seminar, May 2019

“Constant-Energy Solutions of the 3-D Incompressible Navier Stokes Equation”
Oregon State University, Analysis Seminar, June 2017

“Constant-Energy Solutions of the Stokes Equation”
Oregon State University, Analysis Seminar, October 2016

“Enumerating Finite Topologies”
Oregon State University, Topology Seminar, November 2015

“Isomorphism-Invariant Splines”
Hudson River Undergraduate Mathematics Conference, April 2014

“New Work on Generalized Splines”
Joint Math Meetings, January 2014

TEACHING AND
PEGAGOGY
PRESENTATIONS

“Best-Practices for Teaching and Tutoring”, (co-created with Branwen Purdy)
Coffee Creek Correctional Facility, *Inmate Tutor Workshop*, January 2020

“Teaching with the TRIUMPHS Projects” (Invited hour-long presentation)
New Mexico State University, *TRIUMPHS Graduate Student Workshop*, July 2019

“Creating Effective, Inclusive, and Sustainable Mathematics Outreach”
Oregon State University, *Building Inclusive, Equitable, Respectful and Welcoming Mathematical Communities Seminar*, March 2019

“A Transition-to-Graduate-School Boot Camp Using Active Learning and Primary Historical Sources”
Joint Math Meetings, Baltimore, MD, January 2019

Various “neat math” talks
Oregon State University, REU Colloquium Series, Summer 2016, 2017, 2018, 2019
Western Oregon University, Pi Mu Epsilon Induction Ceremony, 2019
Western Oregon University, Pi Day celebration

TEACHING
EXPERIENCE

Classes Taught as Instructor

Algebraic Reasoning (MTH 103)
Applied College Mathematics (MTH 110)
Elementary Functions (MTH 112)
Differential and Integral Calculus (MTH 251 and 252)
Multivariate Calculus (MTH 254)
Advanced Calculus I and II (MTH 311 and 312)
Fourier Analysis (MTH 420)
Qualifying Exam Prep Seminar (MTH 507)
Graduate Student Boot Camp

As Graduate Teaching Assistant

College Algebra (MTH 111)
College Algebra [e-campus] (MTH 111)
Business Calculus [e-campus] (MTH 241)
Differential Calculus (MTH 251)
Differential Calculus [e-campus] (MTH 251)
Infinite Series and Sequences (MTH 253)

As Grader for Graduate Courses

Real Analysis I and II (MTH 511 and 512)
Numerical Analysis I (MTH 551)
Probability I (MTH 564)
Differential Geometry (MTH 534)
General Relativity (MTH 535)
Cumulative GPA: 4.0

DIVERSITY
ADVOCACY

Association for Women in Mathematics
Vice President of the OSU student chapter (current)

Building Inclusive, Equitable, Respectful and Welcoming Mathematical Communities Seminar
Invited Speaker

Equitable and Inclusive Instruction in Mathematics Workshop
Professional development workshop attendee

500 Women Scientists - Eugene
Invited Speaker

Coffee Creek Correctional Facility
Inmate Tutor Workshop Creator/Organizer

Discovering the Scientist Within
Mathematics Outreach to Young Women

Salem Boys and Girls Club
Mathematics Outreach to Minority Youth

Sonia Kovalsky Day
Mathematics Outreach to low-income middle school girls

We Have Work To Do podcast presented by OSU's Office of Institutional Diversity
Invited Guest
https://soundcloud.com/user-494320671/episode-six-naomi-fitter-and-sarah-hagen?fbclid=IwAR2qHT975_1TN7jQGG31FQetfNN44XrMqdcnHOa3-Lc6LvOW0x_W_xMef0

DEPARTMENTAL
SERVICE

OSU Math Department Outreach Coordinator, Summer 2019-Present
Organizer of multiple recurring outreach events
Contact person for email outreach@math.oregonstate.edu.
Creator of the math department outreach website <https://math.oregonstate.edu/outreach>

OSU Graduate Student Recruitment Booth Facilitator, 2019
Representative chosen to run the graduate student recruitment booth at the Joint Math Meetings

Letter Writer in Support of Promotion [multiple years]
Student representative chosen to write a letter in support of promotion of 4 distinct faculty members

Full Professor Promotion Review—Student Committee Member, 2017
Member of student committee to recommend promotion of candidate to Full Professor

Associate Professor Tenure Review—Student Committee Chair, 2016
Chair of student committee to recommend promotion of candidate to Assoc. Prof. with Tenure

Instructor Review—Student Committee Member, 2016
Member of student committee to recommend promotion of candidate to Senior Instructor

OUTREACH

Founding Member of the OSU Graduate Student Outreach Council, October 2018-Present
The GSOC is an interdisciplinary graduate student outreach council in the College of Science

Founder of the OSU Mathematics Outreach Working Group, Summer 2018-Present
The MOWG is a group of outreach enthusiasts in the mathematics department who meet regularly to organize mathematics outreach events

Public Lectures

Delivered 8 public lectures over the past several years at the following events/venues: Da Vinci Days Science Festival, OSU Space Grant Festival, Corvallis-Benton Public Library, 500 Women Scientists Eugene Pub Talk Series, Tsunami Bookstore

Talk Titles:

“The Geometry of Ancient Greek Astronomy”
“More Pi, Please!”
“How Big is Infinity?”
“Pi without Circles”
“Pi... Probably”

Math Demo Booths

Organized and run 7 math demo booths at the following events/venues: Oregon Museum of Sci-

ence and Industry, Eugene Science Center, The Arts Center, Da Vinci Days Science Festival, OSU Discovery Days

Booth Activity Titles:

“Order and Chaos in Fluid Flow”
“Tic-Tac-Totally Crazy”
“Pi Throwing Contest”
“Arts and Crafts with Möbius Strips”

Math Workshops

Organized and run or participated in 5 workshops at the following events/venues: Coffee Creek Correctional Facility (minimum and medium security), Discovering the Scientist Within, Salem Boys and Girls Club, Sonia Kovalesky Day

Workshop Topics

Logic puzzles
Spherical projection with 3D printed shapes
‘Tic-tac-totally crazy’
Geometry and astronomical measurements

Math and Comedy

Organized, consulted on, and participated in 7 mathematical comedy outreach events at the following venues: The Majestic Theatre, The Drake Bar, Oregon State University

Event Titles

“Singu-Hilarity: A Robot Comedy Variety Show” (5 events)
Semi-annual math and science variety show produced by an OSU robotics professor
“OSU Math Club Presents Sammy Obeid”
Comedy show featuring math teacher turned math-related stand-up comedian
“The Laughmaticians”
Math and science stand-up comedy fundraiser for the Eugene Science Center

Articles featuring my outreach

“Think Too Much: Math ‘Fanatic’ Offers Another Slice of Pi”

Corvallis Gazette-Times, March 9, 2019

https://www.gazettetimes.com/opinion/editorial/think-too-much-math-fanatic-offers-another-slice-of-pi/article_41015cd7-b2d3-5845-bf0b-3ecb610d18b1.html

“Making Math Cool at Da Vinci Days”, July 2018

Oregon State University College of Science IMPACT Magazine, July 26, 2018

<http://impact.oregonstate.edu/2018/07/making-mathematics-cool-at-da-vinci-days/>

“Mathematics Graduate Students Devote Time to Community Outreach Activities”

Oregon State University College of Science IMPACT Magazine, June 21, 2018

<http://impact.oregonstate.edu/2018/06/mathematics-graduate-students-devote-time-community-outreach-activities/>