

Katie Oliveras, Ph.D.

Associate Professor, Mathematics

☎ 206.851.5330 ✉ oliveras@seattleu.edu 🏠 katieoliveras.com 📞 0000-0002-6001-2252 👤 [oliveras](#)

Research Interests

Ordinary and Partial Differential Equations, Inverse Problems, Model Reduction, Asymptotics, Multiple-Scale Methods, Conservation Laws, Stability Analysis, Nonlinear Waves, Integrable Systems, Hamiltonian Systems, Mathematical Modeling, Numerical Methods

Education

University of Washington

Ph.D. in Applied Mathematics

Seattle, WA

2003 - 2009

Ph.D. Thesis: "Stability of Periodic Surface Gravity Water Waves"

Washington University in St. Louis

B.S. in Systems Science & Engineering

St. Louis, MO

1999 - 2003

Minors in Robotics and Psychology (Neuroscience). Thesis: "Orientation Detection of Stimuli from the Cortical Waves of Fresh Water Turtles"

Academic Positions

Seattle University

Associate Professor of Mathematics

Seattle, WA

2018 -

Assistant Professor of Mathematics

2012 - 2018

Full-Time Instructor in Mathematics

2009 - 2012

Visiting Positions

Yale - NUS

Visiting Associate Professor

Singapore

Jan 2019 - June 2019

University of Vienna

Visiting Research Scholar

Vienna, AT

Oct 2018 - Dec 2020

Institute for Computational and Experimental Research in Mathematics, Brown University

Visiting Semester Participant, Singularities and Waves In Incompressible Fluids

Providence, RI

January 2017 - May 2017

Newton Institute, University of Cambridge

Visiting Scholar, Theory of Water Waves

Cambridge, UK

July 2014 - Aug 2014

Societies and Professional Organizations

SIAM-NWCS **Vice-President**, SIAM Activity Group on Nonlinear Waves and Coherent Structures

2019 - 2020

PNW-SIAM **Vice-President**, Pacific-Northwest Section of SIAM

2018 - 2019

SIAM-NWCS **Secretary**, SIAM Activity Group on Nonlinear Waves and Coherent Structures

2017 - 2018

SIAM **Member**, Society for Industrial and Applied Mathematicians (SIAM)

2002 - current

Honors & Awards

SU-CSE **Faculty Innovation Award**, College of Science & Engineering, Seattle University

2016

SU-Wide **Outstanding Faculty Member of the Year**, University-wide award voted on by the SU Class of 2014

2014

SU-CSE **Outstanding Teacher Award**, College of Science & Engineering

2014

PNWMAA **Project NExT Section Fellow**, Pacific Northwest Section of the MAA

2012

Skills

Mathematics Free-Boundary Problems, Conservation Laws, Integrable Systems, Inverse Problems, Numerical Methods, Control Theory

Programming Python, Matlab, Julia, with experience in C/C++, C#, Java, TensorFlow

Publications

In Preparation

- A different derivation of conservation laws for water waves** *In Preparation*
K Oliveras and S Calatola-Young 2021
ArXiv: 2105.07580
- Conservation laws for surface & internal waves: a new perspective** *In Preparation*
S Calatola-Young and K Oliveras 2021
- Reconstructing wave profiles from real-time pressure measurements** *In Preparation*
K Oliveras, G Greenstein, and R Keller 2021
- A weak formulation of water waves in surface variables** *In Preparation*
K Oliveras 2020
ArXiv: 2008.00940

Referred Journal Articles

- Nonlinear traveling internal waves in depth-varying currents** *J. Fluid Mech.*
K Oliveras and C W Curtis 2018
DOI: 10.1017/jfm.2018.679
- A method to recover water-wave profiles from pressure measurements** *Wave Motion*
V Vasan, K Oliveras, D Henderson, and B Deconinck 2017
DOI: 10.1016/j.wavemoti.2017.08.003
- Water-wave profiles from pressure measurements: extensions** *Appl. Math. Lett.*
V. Vasan and K Oliveras 2017
DOI: 10.1016/j.aml.2017.01.017
- Shallow waves in density stratified shear currents** *Eur. J. Mech. B/Fluids*
C. W. Curtis, K.L. Oliveras, and T. Morrison 2017
DOI: 10.1016/j.euromechflu.2016.09.016
- Relationships between the pressure and the free surface independent of the wave speed** *Contemp. Math.*
K Oliveras and V Vasan 2015
DOI: 10.1090/conm/635
- The instabilities of periodic traveling water waves with respect to transverse perturbations** *Contemp. Math.*
K Oliveras and B Deconinck 2015
DOI: 10.1090/conm/635
- Pressure beneath a traveling wave with constant vorticity** *DCDS/A*
V Vasan and K Oliveras 2014
DOI: 10.3934/dcds.2014.34.3219
- A new single equation for the water-wave problem** *J. Fluid Mech.*
K Oliveras and V Vasan 2013
DOI: 10.1017/jfm.2012.591
- Recovering the water-wave profile from pressure data** *SIAM J. Appl. Math*
K Oliveras, V Vasan, B Deconinck, and D Henderson 2012
DOI: 10.1137/110853285
- Relating the bottom pressure and the surface elevation in the water wave problem** *J. Nonlinear Math. Phys.*
B. Deconinck, K. L. Oliveras, and V. Vasan 2012
DOI: 10.1142/S1402925112400141
- The instability of periodic surface gravity waves** *J. Fluid Mech.*
B Deconinck and K Oliveras 2011
DOI: 10.1017/S0022112011000073

Book & Technical Reviews

Invited Book Review: Differential Equations with Boundary Value Problems, Brannan & Boyce

K Oliveras

DOI: [10.1137/SIREAD000054000002000391000001](https://doi.org/10.1137/SIREAD000054000002000391000001)

SIAM Review

2012

Articles

Judges Commentary: The Southwest States' Energy Compact

K Oliveras, S Hancock, and D H Olwell

URL: comap.com/product/?idx=1629

UMAP Journal

2018

Judges Commentary: Cooperate and Navigate

C Overdeep, K Oliveras, and D H Olwell

URL: comap.com/product/?idx=1605

UMAP Journal

2017

Judges Commentary: The Goodgrant Challenge Papers

D H Olwell, C Overdeep, and K Oliveras

URL: comap.com/product/?idx=1565

UMAP Journal

2016

Presentations

Invited Seminars, Colloquia, and Workshops (≥ 45 minutes)

Conservation Laws for Water Waves & Multiple Scales: Euler \rightarrow Asymptotic Models

Applied Maths Seminar, University College - London

London, UK

February, 2021

Conservation Laws for the Water Wave Problem - A Different Perspective

One World - Waves, International Online Colloquia

Sheffield, UK

April, 2020

Measuring Waves Using Pressure and Other Inverse Problems

Applied Mathematics Colloquia, University of Colorado - Boulder

Boulder, CO

January, 2020

A Reformulation of the Water Wave Problem: Asymptotic Models and Conservation Laws

Mathematical Theory of Water Waves, MFO, Oberwolfach

Oberwolfach, Germany

July, 2019

Wave Reconstruction

Nonlinear Waves - Theory Computation, and Real-World Applications, Tsinghua Sanya International Mathematics Forum

Sanya, China

January, 2019

Inverse Problems: Measuring Waves Using Pressure

Seminar on Qualitative Theory of Differential Equations, Comenius University

Bratislava, Slovakia

November, 2018

Measuring Waves: Using Mathematics to Predict Tsunamis

The First Drexel Waves Workshop, Drexel University

Philadelphia, PA

May, 2018

An Assortment of Topics (A single equation for waves with vorticity)

Nonlinear Water Waves - an Interdisciplinary Interface, The Erwin Schrödinger International Institute

Vienna, Austria

November, 2017

Measuring Waves Using Pressure

SUMMER REU, Seattle University

Seattle, WA

July, 2017

Instabilities in Fluids Under Linear Shear

Water-Waves Workshop, ICERM, Brown University

Providence, RI

April, 2017

Relationships between Pressure, Bathymetry, and Wave-Height

Fluids Seminar, University of Bergen

Bergen, Norway

March, 2017

Flow over a Sill: Relationships between Bathymetry, and Wave-Height

ICERM Semester Program on Water-Waves, ICERM, Brown University

Providence, RI

February, 2017

Understanding Water Waves: Using new ideas to understand nonlinear Phenomena

2016 Modern Mathematics Workshop (Part of the SACNAS National Conference)

Long Beach, CA

October, 2016

Relationships between Stability in Model Equations

ENC Seminar Series, Air Force Institute of Technology, Wright Patterson AFB

Dayton, OH

June, 2015

Measuring Waves and Other Inverse Problems

Mathematics Colloquia, San Diego State University

San Diego, CA

November, 2014

Bifurcation & Stability in Traveling Waves with Vorticity

Isaac Newton Institute for Mathematical Sciences, University of Cambridge

Cambridge, UK

June, 2014

Stability of Traveling Wave Solutions to Euler's Equations

Spectral Analysis, Stability, and Bifurcations in Modern Nonlinear Physical Systems, Banff International Research Station

Banff, Canada

November, 2012

Simple Ideas in Big Problems

ACMS Seminar, University of Washington

Seattle, WA

March, 2012

Measuring Waves, Using Mathematics to Predict Tsunamis

Undergraduate Math Colloquia, Seattle University

Seattle, WA

February, 2012

Invited Conferences

Stability of Periodic Traveling Waves with Linear Shear

AIMS Conference

Taipei, Taiwan

July, 2018

Measuring Waves Using Pressure - Time Dependent Problems

SIAM Conference on Nonlinear Waves and Coherent Structures

Anaheim, CA

June, 2018

Measuring Waves Using Pressure

Joint Mathematics Meetings

San Diego, CA

January, 2018

A Single Time-Dependent Equation for the Water-Wave Problem

Conference in Honor of Harvey Segur's 75th Birthday, University of Washington

Seattle, WA

August, 2017

Instabilities of two-stratified fluids under linear shear

Geometrical Methods, non Self-Adjoint Spectral Problems, & Stability of Periodic Structures, Casa Matemática Oaxaca, Mexico

Oaxaca, Mexico

June, 2017

Relationships between pressure, bathymetry, and wave-height

Theoretical and Computational Aspects of Nonlinear Surface Waves, Banff international Research Station

Banff, Canada

October, 2016

Stability of Density Stratified, Periodic, Traveling Waves with a Rigid Lid: Preliminary Results

AMS Western Sectional Meeting, University of Denver

Denver, CO

October, 2016

Relationships between pressure, bathymetry, and wave-height

The Fourth International Conference: Nonlinear Waves - Theory and Applications, Tsinghua University

Beijing, China

July, 2016

Stability of Periodic Traveling Waves with Constant Vorticity

Joint Mathematics Meetings

Seattle, WA

January, 2016

Recovering the Water-Wave Surface from Pressure Measurements

Joint Mathematics Meetings

Seattle, WA

January, 2016

Measuring Waves and Other Inverse Problems

MAA PNW Section Meeting, University of Washington, Tacoma

Tacoma, WA

April, 2015

A Reduction of the Euler Equations to a Single Time-Dependent Equation

SIAM Conference on Nonlinear Waves and Coherent Structures

Cambridge, UK

August, 2014

Relationships between Pressure and Wave Height

2013 SIAM Conference on the Applications of Dynamical Systems

Snowbird, UT

May, 2013

Relationships between Pressure, Vorticity, and Wave Height

AMS 2013 Spring Western Sectional Meeting

Boulder CO

April, 2013

Stability of Traveling Wave Solutions to Euler's Equations

The Eighth IMACS International Conference on Nonlinear Evolution Equations and Wave Phenomena: Computation and Theory

Athens, GA

March, 2013

Recovering the Water-Wave Surface from Pressure Measurements <i>2013 Joint Mathematics Meetings</i>	<i>San Diego, CA</i> <i>January, 2013</i>
Stability of Traveling Wave Solutions to Euler's Equations with Constant Vorticity <i>SIAM Conference on Nonlinear Waves and Coherent Structures</i>	<i>Seattle, WA</i> <i>June, 2012</i>
Recovering the water-wave surface from pressure measurements. <i>2011 SIAM Conference on Analysis of Partial Differential Equations</i>	<i>San Diego, CA</i> <i>November, 2011</i>
Recovering the water-wave surface from pressure measurements. <i>Waves 2011, 10th International Conference on Mathematical and Numerical Aspects of Waves</i>	<i>Vancouver, Canada</i> <i>July, 2011</i>
Stability of Water Waves <i>2010 SIAM Conference on Nonlinear Waves and Coherent Structures</i>	<i>Philadelphia, PA</i> <i>August, 2010</i>
Stability of Stationary Periodic Solutions to the Euler Equations <i>The Second International Conference: Nonlinear Waves-Theory and Applications</i>	<i>Beijing, China</i> <i>June, 2010</i>
Stability of Stationary Periodic Solutions to the Euler Equations <i>AMS 2009 Fall Eastern Section Meeting</i>	<i>State College, PA</i> <i>October, 2009</i>
Determining the Stability of Periodic Solutions to Euler's Equations <i>The Sixth IMACS International Conference on Nonlinear Evolution Equations and Wave Phenomena: Computation and Theory</i>	<i>Athens, GA</i> <i>March, 2009</i>
Stability of One-dimensional Water Waves <i>AMS 2008 Fall Westerns Section Meeting</i>	<i>Vancouver, Canada</i> <i>October, 2008</i>
Stability of One-dimensional Water Waves <i>2008 SIAM Conference on Nonlinear Waves and Coherent Structures</i>	<i>Rome, Italy</i> <i>July, 2008</i>

Contributed Conference Presentation

Stability of waves with constant vorticity - further developments <i>IMACS International Conference on Nonlinear Evolution Equations and Wave Phenomena: Computation and Theory</i>	<i>Athens, GA</i> <i>March, 2017</i>
Stability of waves with constant vorticity <i>IMACS International Conference on Nonlinear Evolution Equations and Wave Phenomena: Computation and Theory</i>	<i>Athens, GA</i> <i>April, 2015</i>
Stability of Stationary Periodic Solutions to the Euler Equations <i>ICIAM 2011, 7th International Congress on Industrial and Applied Mathematics</i>	<i>Vancouver, Canada</i> <i>July, 2011</i>

Research Group Presentations

Reconstructing Waves from Pressure: Time-Dependent Relationships and Experiments <i>University of Washington - Nonlinear Waves Research Group</i>	<i>Seattle, WA</i> <i>April, 2021</i>
Conservation Laws for Water Waves & Asymptotic Models <i>University of Washington - Nonlinear Waves Research Group</i>	<i>Seattle, WA</i> <i>March, 2021</i>
Preliminary Research: Conservation Laws and Asymptotic Models <i>University of Washington - Nonlinear Waves Research Group</i>	<i>Seattle, WA</i> <i>December, 2019</i>
A Single Time-Dependent Equation for the Water-Wave Problem <i>University of Washington - Nonlinear Waves Research Group</i>	<i>Seattle, WA</i> <i>October, 2014</i>
Stability of Periodic Traveling Waves with Constant Vorticity <i>University of Washington - Nonlinear Waves Research Group</i>	<i>Seattle, WA</i> <i>November, 2013</i>
Stability of Traveling Wave Solutions (analysis and numerics) <i>University of Washington - Nonlinear Waves Research Group</i>	<i>Seattle, WA</i> <i>May, 2013</i>
Recovering the Surface from Pressure Measurements <i>University of Washington - Nonlinear Waves Research Group</i>	<i>Seattle, WA</i> <i>October, 2012</i>

Under Pressure

University of Washington - Nonlinear Waves Research Group

Seattle, WA

April, 2011

Stability of Traveling Wave Solutions to Euler's Equations

University of Washington - Nonlinear Waves Research Group

Seattle, WA

October, 2010

Teaching Related Presentations

Modeling Epidemics: Intervention Strategies

Seattle University - CMME 2910 - Interdisciplinary Approaches to Modeling COVID

Seattle, WA

April, 2021

Modeling Epidemics: Compartment Models

Seattle University - CMME 2910 - Interdisciplinary Approaches to Modeling COVID

Seattle, WA

April, 2021

Embracing the CORE while Remote

SU Forum for Perspective Students and Their Parents

Seattle, WA

July, 2020

Teaching Online at Seattle University

Faculty Showcase - Professor Katie Oliveras

Seattle, WA

July, 2020

Lessons Learned from Teaching Online

CDLI Brown-Bag Lunch Series (Seattle University)

Seattle, WA

October, 2016

The Ultimate Brownie Pan & Solving the World Water Crisis: A recap of the 2013 M C M

Undergraduate Math Colloquia, Seattle University

Seattle, WA

February, 2013

Research Students

Reece Keller

Time-Dependent Pressure Reconstructions

Seattle University

Mar 2020 - current

Gabriel Greenstein

Time-Dependent Pressure Reconstructions

Seattle University

Mar 2020 - current

Sultan Aitzhan

Derivation of Model Equations on the Half Line

Yale-NUS, Singapore

Jun 2019 - Jun 2020

Salvatore Calatola-Young

Derivation of General Conservation Laws for Water Waves

Seattle University

Jun 2018 - current

Jesse Goncalves

Conservation Laws and Finite Volume Methods for Dispersive Water Waves

Seattle University

Sep 2017 - Aug 2018

Julia Gorman

Stability and Evolution of Solutions to PDEs

Seattle University

Sep 2017 - Dec 2017

Joseph Nakao

Flow Over Uneven Bathymetry

Seattle University

Nov 2015 - Dec 2017

Daniel Ferguson

Flow Over Uneven Bathymetry

Seattle University

Jun 2015 - Jun 2017

Robert Nesting

Numerical Approximations of the Eigenvalue of the Heat Equation for various shaped domains

Seattle University

Sep 2014 - Jun 2015

Fintan Garrett

Numerical Approximations of the Eigenvalue of the Heat Equation for various shaped domains

Seattle University

Sep 2014 - Dec 2014

P. Lamar McBride

Asymptotic relationships between the shape of waves and the shape of bathymetry

Seattle University

Sep 2014 - Jun 2015

Charles Rackson

Numerical Approximations of the Eigenvalue of the Heat Equation for various shaped domains

Seattle University

Sep 2014 - Jun 2015

Kelsey Hopkins

Asymptotic relationships between the shape of waves and the shape of bathymetry

Seattle University

Sep 2014 - Jun 2015

Loren Klemesrud*Numerical Approximations of the Eigenvalue of the Heat Equation for various shaped domains**Seattle University**Sep 2014 - Jun 2015***Rory Jens***Asymptotic relationships between the shape of waves and the shape of bathymetry**Seattle University**Sep 2014 - Jun 2015***Mason Brewer***Geometry and the Unified Transform Method**Seattle University**Jun 2014 - Jun 2016***Louis Ash-Kauffman***Well-posed Problems via the Unified Transform Method**Seattle University**Jan 2014 - Jun 2016***Uyen Le***Solving the Heat Equation on Various Domains - The Unified Transform Method**Seattle University**Mar 2013 - Jun 2014***Edward Charlesworth***Relationships between Pressure and Wave Height**Seattle University**Dec 2012 - Jun 2014***Patrick Sprenger***Stability of Traveling Wave Solutions with Constant Vorticity**Seattle University**Mar 2012 - Jun 2014***Erica Yoshimoto***Capillary Water Waves: Traveling Wave Solutions**Seattle University**Feb 2011 - Jun 2012*

Scholarly Development

Grant Funding

Collaborative Proposal: Nonlinear Waves and Vorticity in Oceanic Flows*National Science Foundation Award: DMS-1715082***\$ 166,215.00***2017-2021***Measuring Waves Using Pressure***Seattle University - Summer Faculty Fellowship***\$ 7,100.00***2017***Undergraduate Research in the Eigenseminar (Joint with E Bahuaud)***Center for Undergraduate Research in Mathematics (Joint with Eric Bahuaud)***\$ 25,800.00***2014-2015***Various Aspects of the Water Wave Problem***National Science Foundation Award: DMS-1313049***\$ 153,765.00***2013-2017***Various Aspects of Water Waves***AMS - Simons Collaboration Grant***\$ 4,400.00***2013*

Workshops Attended

Mathematical Theory of Water Waves*Mathematisches Forschungsinstitut Oberwolfach, Funded Participant**Oberwolfach, Germany**Jul 2019***Nonlinear Water Waves - an Interdisciplinary Interface***The Erwin Schrödinger International Institute, Funded Participant**Vienna, Austria**Nov 2017***Geometrical Methods, non Self-Adjoint Spectral Problems, & Stability of Periodic Structures***Casa Matemática, Funded Participant**Oaxaca, Mexico**Jun 2017***Singularities and Waves In Incompressible Fluids***Institute for Computational and Experimental Research in Mathematics (ICERM), Brown University, Semester Participant**Providence, RI**Jan - May 2017***Theoretical and Computational Aspects of Nonlinear Surface Waves***Banff International Research Station, Funded Participant**Banff, Canada**Oct 2016***Theory of Water Waves***Isaac Newton Institute for Mathematical Sciences, University of Cambridge, Visiting Fellow**Cambridge, UK**Summer 2014***Spectral Analysis, Stability, and Bifurcation in Modern Nonlinear Physical Systems***Banff International Research Station, Participant**Banff, Canada**Nov 2012*

Stability of Coherent Structures and Patterns

PIMS-NSF Workshop, Funded Participant

Seattle, WA

Jun 2012

Nonlinear Wave Dynamics

Fields Institute Workshop, Carleton University, Funded Participant

Ottawa, Canada

Aug 2008

Multidimensional Localized Structures

SIAM NWCS Workshop, Universita di Roma "La Sapienza", Funded Participant

Rome, Italy

Jul 2008

Stability of Nonlinear Waves

PIMS-VIGRE Workshop, University of Washington, Funded Participant

Seattle, WA

Sep 2006

New Perspectives on Boundary Value Problems and their Asymptotics

NSF/CMBS Workshop, University of Texas, Pan American, Funded Participant

Edinburg, TX

May 2005

Teaching

Seattle University

MATH 3910	Special Topics: Dynamical Systems
MATH 3910	Special Topics: Modern Control Theory
MATH 3440	Nonlinear Systems & Modeling
MATH 3430	Introduction to Complex Analysis
MATH 2340	Differential Equations
MATH 1335	Calculus II - Integral Calculus
MATH 1230	Calculus for the Life Sciences
MATH 1130	Elements of Calculus for Business
MATH 1120	College Algebra for Business
MATH 1021	Precalculus: Algebra
MATH 1000	Functions and Algebraic Methods
UCOR 1200	The Mathematics of Epidemics
UCOR 1200	Quantitative Reasoning for Health Care

Seattle University - Reading Courses

MATH 4990	Mathematical Theory of Waves
MATH 4990	Normal Forms
MATH 4960	Linear Programming I
MATH 4960	Calculus of Variations
MATH 4960	Optimal Control Theory
MATH 4960	High Performance Computing
MATH 4960	The Unified Transform Method
MATH 4960	Mathematics & Game Theory
MATH 4960	Research in Fluids
MATH 4960	Linear Programming II
MATH 3960	Discrete Dynamical Systems
MATH 2960	Discrete Dynamical Systems

Yale-NUS, Singapore

YSC 4230	Ordinary and Partial Differential Equations
YSC 3244	Numerical Analysis

University of Washington, Seattle

AMATH 383	Introduction to Continuous Mathematical Modeling
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Senior Synthesis/Capstone Projects

Salvatore Calatola-Young <i>Conservation Laws for Water Waves</i>	Seattle University 2021
Gabriel Greenstein <i>Pressure and Water Waves (via Seattle Academy)</i>	Seattle Academy 2021
Sara Drippy <i>Optimal Scheduling - Using Linear Programming to Schedule Mathematics Faculty</i>	Seattle University 2020
Sultan Aitzhan <i>Derivation of Model Equations on Various Domains (via Yale-NUS)</i>	Yale-NUS 2020
Daniel Ferguson <i>Asymptotic Stability of Periodic Traveling Waves</i>	Seattle University 2017
Louis Ash-Kaufman <i>The Stefan Problem</i>	Seattle University 2016
Corey Quan <i>Game Theory and Differential Games</i>	Seattle University 2016
Devan Bickman <i>Optimizing Intervention During Epidemics (focus on Ebola)</i>	Seattle University 2015
Rory Jens <i>Asymptotic Relationships Between the Shape of Waves and the Shape of Bathymetry</i>	Seattle University 2015
Tyler Toutonghi <i>The Unified Transform Method for the Equation in Two Spatial Dimensions</i>	Seattle University 2015
Edward Charlesworth <i>Pressure Underneath Traveling Waves</i>	Seattle University 2014
Uyen Le <i>The Unified Transform Method and Numerics</i>	Seattle University 2014
Patrick Sprenger <i>Stability of Traveling Wave Solutions</i>	Seattle University 2014
Erica Yoshimoto <i>Calculating Capillary Water Waves</i>	Seattle University 2012

Professional Service

Professional Service - Positions Held

Conference Co-Organizer / Planning Committee <i>2nd Biennial Meeting of SIAM Pacific Northwest Section</i>	Seattle, WA Oct 2019 - Sep 2018
Vice President <i>SIAM Nonlinear Waves and Coherent Structures Activity Group</i>	SIAM - NWCS Jan 2019 - Dec 2020
Vice President <i>SIAM - PNW Section</i>	PNW - SIAM Jan 2018 - Dec 2019
Secretary <i>SIAM Nonlinear Waves and Coherent Structures Activity Group</i>	SIAM - NWCS Jan 2017 - Dec 2018
Judge for Problem C (Regional and National) <i>Mathematical Contest in Modeling Competition</i>	COMAP MCM Mar 2016 - Mar 2019

Professional Service - Ad Hoc

SIAM Annual Meeting: Session on Asymptotics and Numerics in the Theory of Nonlinear Waves <i>(Planned) Session Co-Organizer</i>	Spokane, WA (Planned) 2021
MAA Panel Discussion - Analysis & Differential Equations at Primarily Undergraduate Institutions <i>Speaker/Panelist</i>	MAA, Virtual 2021

SIAM DS Activity Group - Panel on Writing NSF DMS Proposals <i>Speaker/Panelist</i>	SIAM - DS 2021
Budding Scholars - Pursuing STEM Fields in College <i>Speaker/Panelist</i>	Seattle University 2021
National Science Foundation <i>Panelist/Grant Review</i>	NSF, Virtual 2021
National Science Foundation <i>Panelist/Grant Review</i>	NSF, Virtual 2020
National Science Foundation <i>Panelist/Grant Review</i>	Washington, DC 2019
National Science Foundation <i>Panelist/Grant Review</i>	Washington, DC 2018
JMM: AMS Special Session on Mathematical Problems in Ocean Wave Modeling & Fluid Mechanics <i>Session Co-Organizer</i>	San Diego, CA 2018
Association for Women in Mathematics <i>Poster Session Judge</i>	JMM - AWM 2018
JMM - Career Options for Undergraduates <i>Speaker/Panelist</i>	JMM Seattle 2016
JMM: AMS Special Session on Water Waves <i>Session Co-Organizer</i>	Seattle, WA 2016
PNW Section NExT: Panel on Conducting Successful Undergraduate Research <i>Speaker/Panelist</i>	PNW - MAA 2015
SIAM Student Chapter at UW-Seattle "Life at a Primarily Undergraduate Institution" <i>Speaker/Panelist</i>	SIAM - Student Chapter - UW 2015
National Science Foundation <i>Panelist/Grant Review</i>	Washington, DC 2014
IMACS Conference on Nonlinear Evolution Equations & Wave Phenomena: Session on Water Waves <i>Session Co-Organizer</i>	Athens, GA 2013
SIAM NWCS Conference: Session on Water Wave Bifurcations: Theory and Numerics <i>Session Co-Organizer</i>	Philadelphia, PA 2012
SIAM NWCS Conference: Session on Mathematical Models of Water Waves <i>Session Co-Organizer</i>	Seattle, WA 2010

Professional Service - Journal Referee

- Referee **Journal of Fluid Mechanics**
- Referee **European Journal of Mechanics - B/Fluids**
- Referee **Journal of Physics, A**
- Referee **Nonlinearity**
- Referee **Physics of Fluids**
- Referee **Physica D, Nonlinear phenomena**
- Referee **SIAM Journal of Applied Mathematics**

Academic Service

Academic Service - University-Level Service

Academic Assembly - Executive Committee <i>Vice President of Committees</i>	Seattle University Sep 2021 - current
Academic Technology Committee <i>Committee Member</i>	Seattle University Sep 2019 - current
Academic Assembly <i>Academic Assembly - Elected Representative</i>	Seattle University Sep 2017 - current

“Best Buddies” International - Seattle University Chapter

Faculty Advisor

Seattle University

Sep 2015 - current

Academic Assembly - Committee on Committees

Committee Member

Seattle University

Oct 2019 - Jun 2021

Seattle University - Summer Faculty Fellowship

Committee Member & Panelist

Seattle University

Sep 2019 - Jun 2021

Center for Digital Learning and Innovation

Faculty Liaison

Seattle University

Mar 2020 - Mar 2021

Instructional Continuity Working Group

Working Group Member

Seattle University

Mar 2020 - Jan 2021

UCOR Assessment Project

Faculty Member/Contributor

Seattle University

Sep 2017 - Jun 2018

Faculty Technology Committee

Committee Member

Seattle University

Sep 2016 - Jun 2018

Academic Service - College-Level Service

Systems Engineering Hiring Committee

Committee Member

Seattle University

Sep 2014 - Jun 2015

College Faculty/Staff Award Committee

Committee Member

Seattle University

Mar 2015 - Apr 2015

Systems Engineering Curriculum Development

Committee Member

Seattle University

Sep 2013 - Jun 2014

Academic Service - Departmental-Level Service

Department Sign Design Committee

Committee Member

Seattle University

May 2021 - May 2021

Instructor Hiring Committee

Committee Member

Seattle University

Nov 2020 - Jan 2021

Mathematical Competition in Modeling

Faculty Advisor

Seattle University

Jan 2012 - Apr 2018

Seattle University Mathematics Colloquia

Co-organizer

Seattle University

Sep 2012 - Jun 2017

Seattle University - Mathematics Department

Technology Coordinator

Seattle University

Sep 2013 - Aug 2016

Online Mathematics Placement Exam

Led Development of Online Exam

Seattle University

Feb 2014 - Jun 2014

Math 120 Textbook Selection

Committee Member

Seattle University

Sep 2012 - Dec 2012

Professional References

John Carter, Ph.D.

Professor, Mathematics Department, Seattle University

carterj1@seattleu.edu

206.296.5956

Bernard Deconinck, Ph.D.

Professor & Department Chair, Applied Mathematics, University of Washington

deconinc@uw.edu

206.543.6069