

RYAN PATRICK CREEDON

Department of Applied Mathematics
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EDUCATION

University of Washington

- **Doctor of Philosophy** in Applied Mathematics (Exp.) Jun 2022
– Advisor: Bernard Deconinck
- **Master of Science** in Applied Mathematics Dec 2017

Penn State University

Schreyer Honors College

- **Master of Science** in Meteorology May 2016
– Advisor: Raymond G. Najjar
- **Bachelor of Science** in Mathematics (*Highest Distinction*) May 2016
- **Bachelor of Science** in Meteorology (*Highest Distinction*) May 2016

INTERESTS & PREFERRED LANGUAGES

Interests Stability Theory, Nonlinear Waves, Asymptotics & Perturbation Theory, Integrable Systems, Dynamical Systems, Applied Complex Analysis, Lie Theory, Bifurcation Theory, Fluid Dynamics

Languages (In order of familiarity) MATLAB, Mathematica, Maple, Python, FORTRAN 90, R

RESEARCH EXPERIENCE

Orbital Stability of Periodic Traveling Waves of Focusing mKdV March 2019 -
Department of Applied Mathematics, University of Washington Bernard Deconinck

high-frequency Instabilities in the Water Wave Problem March 2018 -
Department of Applied Mathematics, University of Washington Bernard Deconinck

Variability of Mixed Layer Depth Diffusivities at OCS KEO and Papa Nov 2014 - Aug 2016
Pacific Marine Environmental Laboratory, Seattle, WA Meghan F. Cronin

Principal Component Analysis of the Old World Drought Atlas May 2014 - Aug 2014
Lamont-Doherty Earth Observatory, Palisades, NJ Jason E. Smerdon

PUBLICATIONS

1. **R. Creedon**, D. Deconinck, and O. Trichtchenko, *A perturbative approach to high-frequency instabilities of the Kawahara equation*, To be submitted, Spring 2020.
2. **R. Creedon**, D. Deconinck, and O. Trichtchenko, *On the collision condition for gravity waves*, To be submitted, Spring 2020.

TEACHING EXPERIENCE

University of Washington

Instructorship:

- **Amath 353**, Partial Differential Equations & Waves Jun 2020 - Aug 2020
- **Amath 352**, Applied Linear Algebra & Numerical Analysis Jan 2020 - Mar 2020
Adjusted Median Teaching Evaluations: 4.6/5.0
Response Rate: 93%
- **Amath 353**, Partial Differential Equations & Waves Jun 2019 - Aug 2019
Adjusted Median Teaching Evaluations: 5.0/5.0
Response Rate: 91%

Teaching Assistantship:

- **Amath 353**, Partial Differential Equations & Waves Mar 2020 - Jun 2020
- **Amath 352**, Applied Linear Algebra & Numerical Analysis Sep 2019 - Dec 2019
- **Amath 351**, Ordinary Differential Equations Jan 2019 - Mar 2019
- **Amath 567**, Applied Complex Analysis Sep 2018 - Dec 2018
- **Amath 353**, Partial Differential Equations & Waves Jun 2018 - Aug 2018
- **Amath 351**, Ordinary Differential Equations Jun 2018 - Aug 2018
- **Amath 569**, Advanced Methods for Partial Differential Equations Mar 2018 - Jun 2018
- **Math 125 CC/CD**, Calculus II Sep 2016 - Dec 2016
Adjusted Median Teaching Evaluations: 4.9/5.0 5.0/5.0
Response Rate: 63% 70%

Penn State University

Teaching Assistantship:

- **Meteorology 421**, Atmospheric Dynamics Jan 2016 - May 2016

Tutoring:

- **Math 140**, Calculus I, Guided Study Group Leader Aug 2014 - Dec 2015
- **Math 140, 141, 230**, Calculus I-III, Penn State Learning Tutor Sep 2013 - Dec 2015
- **Math 220**, Linear Algebra, Penn State Learning Tutor Sep 2013 - Dec 2015
- **Math 251**, Differential Equations, Penn State Learning Tutor Sep 2013 - Dec 2015

TALKS

1. **R. Creedon**, *Asymptotics of high-frequency bubbles of the Kawahara equation*, UW AMATH Mathematical Methods Reading Group, University of Washington, Nov 2019.
2. **R. Creedon**, *Characteristics of high-frequency bubbles in a shallow water model with full dispersion*, UW AMATH Mathematical Methods Reading Group, University of Washington, May 2019.
3. **R. Creedon**, *Eigenvalue collisions in the trivial solution spectrum of the full Euler equations*, UW AMATH Mathematical Methods Reading Group, University of Washington, October 2018.
4. **R. Creedon**, *Necessary conditions for high-frequency instability in Stokes waves*, UW AMATH Mathematical Methods Reading Group, University of Washington, April 2018.
5. K. Maas, Liu, B., Marcinko, K., **Creedon, R.**, Nguyen, R., *Math in the real world*, Summer Bridge to Success Program, University of Washington, July 2017.
6. R. Keane, **Creedon, R.**, *Synchronization of Kuramoto oscillators*, Amath 575 Final Project, Department of Applied Mathematics, University of Washington, June 2017.
7. **R. Creedon**, *The nonlinear Rossby wave problem*, Amath 573 Final Project, Department of Applied Mathematics, University of Washington, December 2016.
8. **R. Creedon**, *Seasonal and regional variability in north Pacific upper-ocean turbulence*, NOAA 2015 Science Symposium, Silver Spring, MD, July 2015.

POSTERS

1. R. Najjar, **Creedon, R.**, Cronin, M., *Deviations from climatological turbulence below the mixed layer in the North Pacific*, American Geophysical Union Ocean Sciences Meeting, New Orleans, LA, February 2016.
2. **R. Creedon**, Cronin, M., Najjar, R., *Daily variability of ocean mixed layer base diffusivities in the northeast Pacific*, American Meteorology Society Annual Meeting, New Orleans, LA, January 2016.
3. **R. Creedon**, *Interpretations of 20th century patterns in tree-ring reconstruction of European hydro-climate*, Lamont 2014 Intern Symposium, Palisades, NJ, August 2014.

SUMMER SCHOOLS, WORKSHOPS, & READINGS

Teaching and Learning in Higher Education The Graduate School, University of Washington	Apr 2019 - Jun 2019
Solving Problems in Multiply Connected Domains CBMS Program, University of California Irvine	Jun 2018
Workshop in Nonlinear Waves Department of Mathematics, Drexel University	May 2018
Pedagogy Reading Group Department of Applied Mathematics, University of Washington	Sep 2017 -
Mathematical Methods Reading Group Department of Applied Mathematics, University of Washington	Mar 2017 -
Applied PDE's Reading Group Department of Applied Mathematics, University of Washington	Mar 2017 -
Topics in Nonlinear Water Waves The Burgers Summer School Program, University of Maryland	Jun 2016

OUTREACH & SERVICE

Graduate Student Representative Department of Applied Mathematics, University of Washington	Sep 2019 -
Student Assistant for Department 50th Applied Mathematics: The Next 50 Years Department of Applied Mathematics, University of Washington	Mar 2019 - Jun 2019
Mentor of Rohan Sabhaya Making Connections Program	Feb 2019 -

Women's Center, University of Washington

Outreach Chair of SIAMUW

Sep 2018 - Sep 2019

Society for Industrial and Applied Mathematics: UW Student Chapter
Department of Applied Mathematics, University of Washington

Webinar Planner

Dec 2017

SIAM Pacific Northwest Section Talks
Society for Industrial and Applied Mathematics

Event Planner

Nov 2017

Inaugural Business, Industry, & Government Networking Event
Department of Applied Mathematics, University of Washington

Math Tutor

Oct 2017 -

Making Connections Program
Women's Center, University of Washington

President of SIAMUW

Sep 2017 - Sep 2018

Society for Industrial and Applied Mathematics: UW Student Chapter
Department of Applied Mathematics, University of Washington

Mentor of Jorge Cisneros

Sep 2017 - Jun 2018

First-Year Graduate Student Mentorship Program
Department of Applied Mathematics, University of Washington

Conference Staff

Aug 2017

Recent Advances in Nonlinear Waves
Department of Applied Mathematics, University of Washington

President of Chi Epsilon Pi

Aug 2015 - May 2016

Chi Epsilon Pi, Meteorological Honor Society
Department of Meteorology and Atmospheric Science, Penn State University

SELECTED AWARDS & HONORS

Achievement Rewards for College Scientists (ARCS) Foundation Fellowship

Sep 2016 -

The Graduate School, University of Washington

The Ruth Jung Chinn Endowed Fellowship

Sep 2016 -

Department of Applied Mathematics, University of Washington

Commencement Marshall for the Department of Meteorology

May 2016

College of Earth and Mineral Sciences, Penn State University

EMSAGE Laureate

May 2016

College of Earth and Mineral Sciences, Penn State University

The Jerome N. Behrmann Scholarship in Meteorology

Apr 2016

Department of Meteorology and Atmospheric Science, Penn State University

Research Assistantship Department of Meteorology and Atmospheric Science, Penn State University	Aug 2015 - May 2016
Werner A. Baum Scholar American Meteorological Society	Aug 2015 - May 2016
The John A. Dutton Award in Atmospheric Dynamics Department of Meteorology and Atmospheric Science, Penn State University	Apr 2015
The Physical Meteorology Award Department of Meteorology and Atmospheric Science, Penn State University	Apr 2015
Barry M. Goldwater Honorable Mention Barry Goldwater Scholarship and Excellence in Education Foundation	Apr 2015
Ernest F. Hollings Scholar National Oceanic and Atmospheric Administration	Apr 2014 - Dec 2015
Phi Kappa Phi Scholar Phi Kappa Phi Honor Society	Mar 2014 -
Penn State Schreyer Honors Scholar Penn State University	Aug 2012 - May 2016

PROFESSIONAL AFFILIATIONS

Association for Women in Mathematics	Oct 2017 -
Mathematical Association of America	Oct 2017 -
American Mathematical Society	Sep 2016 -
Society for Industrial and Applied Mathematics	Sep 2016 -
American Geophysical Union	Nov 2015 -
American Meteorological Society	Nov 2014 -

OTHER SKILLS

- Proficient in Windows PC, OSX, & Linus/Unix operating systems.
- Proficient in MS Office Suite and L^AT_EX, including Beamer and Tikz packages.
- Proficient in Inkscape.