

# KATHLEEN CHAMPION

UNIVERSITY OF WASHINGTON · LEWIS HALL #214, BOX 353925 · SEATTLE, WA 98195  
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## EDUCATION

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**UNIVERSITY OF WASHINGTON** Seattle, WA  
Ph.D., Applied Mathematics *Expected August 2019*  
M.S., Applied Mathematics *December 2015*

- Advisors: Nathan Kutz & Steve Brunton

**DARTMOUTH COLLEGE** Hanover, NH  
B.A., Mathematics with High Honors *June 2011*

- Advisors: Alex Barnett & Amy Gladfelter
- Honors Thesis: Markov Chain Monte Carlo for Automated Tracking of Genealogy in Microscopy Videos

## AWARDS & HONORS

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Rising Stars in Computational & Data Sciences workshop participant 2019  
National Science Foundation Graduate Research Fellow 2016-2019  
Achievement Rewards for College Scientists (ARCS) Foundation Fellowship 2014-2017  
Best Poster Award, 2017 International Conference on Mathematical Neuroscience 2017  
Travel grant recipient, 2017 International Conference on Mathematical Neuroscience 2017  
SIAM Student Chapter Award 2017  
Computational Neuroscience Training Grant 2015-2016  
Boeing Fellowship 2014-2015  
Honorable Mention, National Science Foundation Graduate Research Fellowship Program 2015

## PROFESSIONAL EXPERIENCE

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**HERE TECHNOLOGIES** Seattle, WA  
Data Science Intern *Summer 2017*

**JOHNS HOPKINS UNIVERSITY APPLIED PHYSICS LABORATORY** Laurel, MD  
Associate Professional Staff *2011-2014*

**JOHNS HOPKINS UNIVERSITY APPLIED PHYSICS LABORATORY** Laurel, MD  
Technical Intern *Summer 2010*

**SKAION CORPORATION** North Chelmsford, MA  
Technical Intern *Fall 2009*

## RESEARCH EXPERIENCE

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**JAMES O. FREEDMAN PRESIDENTIAL SCHOLARSHIP PROGRAM** Hanover, NH  
Advisor: Alex Barnett (Mathematics) & Amy Gladfelter (Biology) *January-June 2010*

**HOWARD HUGHES MEDICAL INSTITUTE FELLOWSHIP PROGRAM** Hanover, NH  
Advisor: Jason Moore (Genetics) *September 2008-March 2009*

**DARTMOUTH COLLEGE WOMEN IN SCIENCE PROJECT** Hanover, NH  
Advisor: Afra Zomorodian (Computer Science) *January-June 2008*

## PUBLICATIONS

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Kathleen P. Champion, Bethany Lusch, J. Nathan Kutz, and Steven L. Brunton. *Data-driven discovery of coordinates and governing equations*. arXiv:1904.02107 (preprint). 2019.

Kathleen P. Champion, Steven L. Brunton, and J. Nathan Kutz. *Discovery of Nonlinear Multiscale Systems: Sampling Strategies and Embeddings*. SIAM Journal on Applied Dynamical Systems 18(1):312-333. 2019.

## PRESENTATIONS

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**Simultaneous discovery of coordinates and parsimonious dynamics** (talk)

Rising Stars in Computational & Data Sciences Workshop, Austin, TX, *April 9, 2019*

**Data-driven discovery of nonlinear dynamics** (talk)

2019 SIAM Conference on Computational Science and Engineering, Spokane, WA, *February 27, 2019*

**Whole-cortex imaging and analysis: interpreting neural activity across the mouse cortex** (team talk)

2017 Allen Institute Showcase, Seattle, WA, *December 14, 2017*

**Comparing models for brain-wide cortical activity** (poster)

2017 International Conference on Mathematical Neuroscience, Boulder, CO, *June 1, 2017*

**Inferring brain-wide dynamics from wide-field calcium imaging data** (talk)

2017 Neural Computation and Engineering Connection, Seattle, WA, *January 19, 2017*

**Determining the dimensionality of brain-wide activity from calcium imaging data** (talk)

SAMSI Workshop on Optical Imaging Data Analysis, Research Triangle Park, NC, *February 2, 2016*

**Discovering brain-wide spatiotemporal dynamics from high dimensional neural recordings** (poster & lightning talk)

2016 Neural Computation and Engineering Connection, Seattle, WA, *January 28, 2016*

**Discovering brain-wide spatiotemporal dynamics from high dimensional neural recordings** (poster & lightning talk)

Allen Institute Showcase 2015, Seattle, WA, *December 4, 2015*

**Using optimization to locate overlapping cell nuclei within microscopy images** (poster)

2010 Karen E. Wetterhahn Science Symposium, Hanover, NH, *May 21, 2010*

**Pulling donuts out of thin air: recovering a torus from a point set** (poster)

2008 Karen E. Wetterhahn Science Symposium, Hanover, NH, *May 23, 2008*

## TEACHING & OUTREACH

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<i>Committee member</i> , UW Applied Mathematics Diversity Committee	2017-present
<i>Mentor</i> , Women in Applied Math Mentorship Program	Spring 2018
<i>President</i> , Society for Industrial and Applied Mathematics UW Student Chapter	2016-2017
<i>Outreach Chair</i> , Society for Industrial and Applied Mathematics UW Student Chapter	2015-2016
<i>Guest Lecturer</i> , South Seattle College Math 238: Differential Equations	November 2016

*Co-organizer/instructor*, Women in Science and Engineering (WiSE) UP Summer Bridge Program  
 computational neuroscience mini-course June 2016

*Panelist*, Bellevue School District STEM Career Fair May 2016

*Teaching Assistant*, UW Neurobiology 450: Current Research Literature in Neurobiology Fall 2015

*Teaching Assistant*, UW AMath 383: Introduction to Continuous Mathematical Modeling Spring 2015

*Tutor*, Dartmouth College Math 13: Calculus of Vector-Valued Functions Spring 2009

## OTHER EDUCATION

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Operator Theoretic Methods in Dynamic Data Analysis and Control. Institute for Pure and Applied  
 Mathematics, Los Angeles, CA February 2019

Methods in Computational Neuroscience. Marine Biological Laboratory, Woods Hole, MA August 2016