

# Travis Askham

## Curriculum Vitae

September 2017

Address: University of Washington  
Lewis Hall  
Box 353925  
4182 W Stevens Way NE  
Seattle, WA 98195-3925 USA

Email: askham@uw.edu  
Website: faculty.washington.edu/askham

### Education and Qualifications

2016      Ph.D.    New York University  
2010      M.A.    University of California Los Angeles  
2010      B.Sc.    University of California Los Angeles

### Professional Appointments

2016 –      Research Associate of Applied Mathematics, Department of Applied Mathematics,  
University of Washington

### Publications

#### Journal Articles & Books

- [1] Travis Askham and Antoine J Cerfon, An adaptive fast multipole accelerated poisson solver for complex geometries. *Journal of Computational Physics*, 344:1–22, 2017.
- [2] Travis Askham, *Integral-equation methods for inhomogeneous elliptic partial differential equations in complex geometry*. Ph.D. thesis, New York University, 2016.
- [3] Travis Askham and Leslie Greengard, Norm-preserving discretization of integral equations for elliptic PDEs with internal layers I: the one-dimensional case. *SIAM Review*, 56(4):625–641, 2014.

#### Preprints

- [1] Travis Askham and J Nathan Kutz, Variable projection methods for an optimized dynamic mode decomposition. *arXiv preprint arXiv:1704.02343*, 2017.
- [2] Manas Rachh and Travis Askham, Integral equation formulation of the biharmonic dirichlet problem. *arXiv preprint arXiv:1705.09715*, 2017.

### Honors & Awards

2016      Wilhelm Magnus Memorial Prize, Courant Institute of Mathematical Sciences  
2010      Daus Award in Mathematics, University of California Los Angeles

### Grants & Fellowships

2015      Dean's Dissertation Fellowship, New York University  
2010–2015    Henry M. MacCracken Fellowship, New York University

### Teaching Experience

#### University of Washington

Scientific Computing

#### Courant Institute of Mathematical Sciences

Numerical Methods I (Reader)  
Analysis I (Teaching Assistant)  
Ordinary Differential Equations (Teaching Assistant)

## Research Experience

2012–2015 Research Assistant, Courant Institute of Mathematical Sciences, New York University. Principal Investigator: Leslie Greengard. Project: Novel methods for electromagnetic simulation and design

## Conference Activity

### Participation

- 2017 Talk. Variable projection for Generalizing the Dynamic Mode Decomposition, SIAM CSE. Atlanta, GA, USA
- 2017 Talk. An algorithm for the DMD with unevenly spaced time samples, BIRS Workshop on Data-Driven Methods. Banff, Alberta, Canada
- 2016 Talk. Integral-Equation Methods for Inhomogeneous Elliptic PDEs (and applications), SIAM Annual Conference. Boston, MA, USA
- 2014 Poster. Volume Integrals in Complex Geometry: A Case Study of Poisson's Equation, CBMS-NSF Conference: Fast-Direct Solvers for Elliptic PDEs, Dartmouth College. Hanover, NH, USA
- 2013 Poster. On the discretization of integral equations for divergence-form PDEs with internal layers, Integral Equations Methods: Fast Algorithms and Applications (BIRS Workshop), Banff International Research Station. Banff, Alberta, Canada
- 2013 Talk. On the discretization of integral equations for elliptic PDEs with internal layers, Mid-Atlantic Numerical Analysis Day, Temple University. Philadelphia, PA, USA

### Organization

- 2017 Mini-symposium. Data-driven characterization, control, and uncertainty quantification of dynamical systems, SIAM CSE. Atlanta, GA, USA

## Service to Profession

### Referee

Journal of Computational Physics

### Member

SIAM (since 2011)

## Skills

### Coding

Mastery Fortran77, MATLAB

Proficiency C99/C++, L<sup>A</sup>T<sub>E</sub>X

Familiarity OpenMP, OpenCL (in C99), Python, Julia, PHP, HTML

### Speaking & Reading

English (native)

Spanish (elementary proficiency)

## Biographical

Born 1987

Citizen United States