Nathanael Cox

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EDUCATION

Bachelor of Arts in Mathematics and Physics
Saint Olaf College, Northfield, MN GPA 3.71 May 2014
Distinction in Mathematics

Ph. D. in Mathematics
Concentration: Computational Science and Engineering
Purdue University, West Lafayette, IN GPA: 3.84 *Expected Date to Recieve:* May 2021

RELEVANT SKILLS

- Programming Experience: Python, VPython, Julia, C++
- CAD Software: Autodesk Inventor
- Mathematical Software: LaTeX, Sage
- Microsoft Office: Word, Excel, Powerpoint
- Strong Problem Solving Skills

WORK EXPERIENCE

Graduate Teaching Assistant 2014-Present
Purdue University, West Lafayette, IN

- Experience Teaching Precalculus, Calculus 1, Calculus 2, and grading Differential Equations 1, Differential Equations 2, and Advanced Mathematics for Physicists and Engineers.
- Responsible for lecturing; writing, administering, and grading quizzes; and writing and administering exams for 80 students per semester.

Undergraduate Research Experience Summer 2013
Iowa State University, Ames, IA

- Research Project in Combinatorial Matrix Theory.
- Gained collaboration skills and individual research experience working on a team of 11 students and faculty.
- Gained experience in programming with Sage.

Student Athlete Tutor Summer 2011, 2014
University of Notre Dame, Notre Dame, IN

- Tutored Student Athletes in first and second semesters of calculus.
- Tutored individually, in small groups, and in study hall sessions.

Physics Clinic Tutor 2012-2014
Saint Olaf College, Northfield, MN

- Tutored introductory level physics students in study hall style problem solving sessions.
- Worked with a variety of skill levels and backgrounds, gaining experience in how to explain problems at the student's level of understanding.

PUBLICATIONS

1. A. Berliner, C. Brown, J. Carlson, N. Cox, L. Hogben, J. Hu, K. Jacobs, K. Manternach, T. Peters, N. Warnberg, M.Young. Path Cover number, maximum nullity, and zero forcing number of oriented graphs and other simple digraphs. Involve 8, no. 1 (2015), 147-167.
2. S. Basu, N. Cox, S. Percival. On the Reeb Space of Definable Maps. 2018. arXiv.

RESEARCH TALKS

Purdue University Mini-RAAG Conference 2019 — March 4, 2019
On the Reeb Spaces of Definable Maps

Purdue University Topology Seminar — October 16, 2018
Reeb Spaces of Definable Maps

Purdue University Mini-RAAG Conference 2018 — April 24, 2018
Introduction to Reeb Spaces of Definable Maps

Purdue University Department of Mathematics Student Colloquium — February 21, 2018
An Introduction to O-minimal Structures

St. Olaf College Natural Sciences and Mathematics Honors Day Poster Session — May 2014
Maximum Number of Arcs on Digraph for a Given Zero Forcing Number

Midstates Consortium for Math and Science — October 2013
Poster Presenter

Northfield Undergraduate Mathematics Symposium — October 2013
Speaker