

# Christopher O'Neill

Department of Mathematics  
Duke University  
Box 90320  
Durham, North Carolina 27708-0320

(919) 660-2832 (office)  
musicman@math.duke.edu  
<http://www.math.duke.edu/~musicman>

---

## EDUCATION

**Duke University** 2009 – present  
*Ph.D. in Mathematics*, expected May 2014  
Thesis area: Algebraic Geometry and Combinatorics  
Thesis advisor: Ezra Miller

**San Francisco State University** 2004 – 2009  
*B.A. in Mathematics*, 2009  
*B.S. in Computer Science*, 2009

## RESEARCH EXPERIENCE

**Duke University, Mathematics Dept.** 2009 – Present  
*Graduate Student*  
Courses in Commutative Algebra, Algebraic Geometry,  
Algebraic Topology, and Computational Topology

**Internship at OPSWAT, Inc.** 2005 – 2010  
*Software Engineer*  
Developed security software in C++ and Java.

## TEACHING EXPERIENCE

**Duke University, Mathematics Dept.** 2009 – Present  
*Graduate Student Instructor*

- Lab TA for Math 31L.08L in Fall 2009. Participated in help room.
- Lecturer for Math 25L.06 in Fall 2010. Graded all homework/exams, and participated in help room.
- Lecturer for Math 25L.04 in Fall 2011. Graded all homework/exams, and participated in help room.

## AWARDS

- TA for The 2012 Pacific Undergraduate Research Experience in Mathematics, lead by John Little, University of Hawaii at Hilo, Summer 2012
- Summer Research Fellowship from Duke Graduate School, Summer 2012 (Declined)

## PUBLICATIONS AND PRESENTATIONS

- Poster at San Francisco State University's College of Science and Engineering Poster Showcase, titled "Periods of Coefficients of Ehrhart Quasipolynomials of 2-Dimensional Polytopes" (with Anastasia Chavez), Spring 2007. Advisor: Matthias Beck
- Poster at San Francisco State University's College of Science and Engineering Poster Showcase, titled "Implementing a Basic Tracker on Mac OS X with Cocoa and CoreAudio", Spring 2008. Advisor: William Hsu

- Poster at San Francisco State University's College of Science and Engineering Poster Showcase, titled "Unimodality of Order Polynomials Through the Study of Ehrhart Series of Order Polytopes", Spring 2009. Advisor: Matthias Beck
- Talk in Graduate/Faculty Seminar in Duke Mathematics Department on February 11th, 2011, titled "Ehrhart Theory and Lattice Point Enumeration in Polytopes"
- Talk in Graduate/Faculty Seminar in Duke Mathematics Department on November 4th, 2011, titled "Matroids, and How to Make Your Proofs Multitask"

### **SELECTED ACTIVITIES**

- Participated in Congreso Colombiano de Matematicas and Coloquio Latinoamericano de Algebra in Medellin, Colombia, Summer 2007
- Participated in Binghamton University Graduate Algebra and Topology Conference, November 2009
- Participated in 2010 Clifford Lectures at Tulane University, March 2010
- Participated in Texas Algebraic Geometry Symposium at Rice University, April 2011
- Attended summer program in Cluster Algebras and Cluster Combinatorics at MSRI in Berkeley, 2011
- Participated in Binghamton University Graduate Algebra and Topology Conference, November 2011
- Attended Research Triangle Lectures in Combinatorics, November 2010 at Duke University, April 2011 at NCSU, November 2011 at UNC Chapel Hill
- Qualifying exam in Algebra and Topology passed, January 2011