

**EDUCATION**

**Ph.D.** Mathematics, expected May 2011  
University of Nebraska-Lincoln  
Thesis: *Hilbert-Samuel and Hilbert-Kunz Functions of Zero-Dimensional Ideals*  
Thesis Advisor: Tom Marley

**M.S.** Mathematics, May 2007  
University of Nebraska-Lincoln

**B.S.** Mathematics, with a French minor, May 2005  
University Honors Scholar, Summa Cum Laude  
The University of Akron

**RESEARCH INTERESTS**

Commutative algebra  
In particular, the study of Hilbert-Samuel functions and polynomials, the Frobenius functor, and Hilbert-Kunz functions

**AWARDS AND FELLOWSHIPS**

**MCTP Traineeship, 2005-2006**  
Given to 3 advanced graduate students and 3 incoming first year students each year, this NSF-funded traineeship supplies full support for one year.

**Outstanding First Year Graduate Student, 2006**  
The Outstanding First Year Graduate Student was awarded to two graduate students in 2006.

**Emeritus Faculty Fellowship, 2007-2008**  
The Emeritus Faculty Fellowships are given each year to 5 students in the math department to support graduate student research.

**GAANN Traineeship, 2008-2009, 2009-2010**  
Funded through a grant from the US Department of Education, the GAANN Traineeship provides full support for one year.

**Preparing Future Faculty Fellow, 2010**  
The PFF program consists of a 5-week summer course to prepare students for the transition to faculty life and a fall mentorship with a faculty member at a partner institution.

**TEACHING EXPERIENCE**

**Graduate Teaching Assistant**  
The University of Nebraska-Lincoln, 2006-2011  
**Courses taught as principal instructor:**  
*Math 101 (College Algebra), 4 sections*  
*Math 102 (Trigonometry), 2 sections*  
*Math 103 (College Algebra and Trigonometry)*  
*Math 203 (Contemporary Mathematics), 3 sections*

**Courses taught as recitation instructor:**

*Math 106/Math 198 (Calculus I/Math Excel)*

Excel is an enhanced problem-oriented calculus recitation structured around group work and student presentations in class.

**Courses acting as convener:**

*Math 103 (College Algebra and Trigonometry)*

As convener, I wrote the course syllabus for all math 103 instructors and led the writing of the course project and final exam.

**Co-Instructor** for Analysis Qualifying Exam Workshop, Fall 2010

This workshop prepared students for the UNL analysis qualifying exam to be given in January.

**Graduate mentor** for IMMERSE in 2006, a six week summer program for students starting graduate school in the fall

**Teaching assistant** for Dynamical Systems and Chaos, a professional development summer course for high school mathematics teachers

**Counselor** for the Mathematics Resource Center, a tutoring center at UNL

**PUBLICATIONS**

*A Note on a Conjecture of Watanabe and Yoshida,*  
to appear in Communications in Algebra  
[arXiv:1004.4224](https://arxiv.org/abs/1004.4224)

*The geometry of the Dehn complex for a spatial graph,*  
with David Glasser, Kevin Penderghest, Mary Vacha and John Meier

J. Knot Theory Ramifications 18 (2009), no. 9, 1175-1191.

*A Theorem of Hochster and Huneke concerning Tight Closure and Hilbert-Kunz Multiplicity*  
preprint, at [www.math.unl.edu/~s-lmcdonn1](http://www.math.unl.edu/~s-lmcdonn1)

**INVITED TALKS**

**2011 Joint Mathematics Meetings**

*The Second Hilbert Coefficient of a Parameter Ideal in an Unmixed Ring*

New Orleans, LA, January 2011

**1059<sup>th</sup> AMS Meeting**

*Remarks on a Conjecture of Watanabe and Yoshida*

University of New Mexico, Albuquerque, NM, April 2010

**SEMINAR TALKS  
AND PANELS**

**UNL Commutative Algebra Seminar**

*Some open questions concerning Hilbert-Kunz multiplicities*  
University of Nebraska-Lincoln, March 2009

**“Compact CARS” – UNL Commutative Algebra Reading Seminar  
mini-conference**

*The Hilbert Kunz function and a Conjecture of Watanabe-Yoshida*  
University of Nebraska-Lincoln, March 2010

**Campus-wide Workshops for Graduate Teaching Assistants**

*On the panel: “From TA to TA: Advice from the Trenches”*  
University of Nebraska-Lincoln, August 2010

**Summer Undergraduate Mathematical Sciences Research  
Institute (SUMSRI)**

*On the panel: “SUMSRI Graduate School Panel Discussion”*  
Miami University, July 2009

**CONFERENCES  
ATTENDED**

**1059<sup>th</sup> AMS Meeting** - University of New Mexico, April 2010

**1051<sup>st</sup> AMS Meeting** - Baylor University, October 2009

**1047<sup>th</sup> AMS Meeting** - University of Illinois at Urbana-Champaign,  
March 2009

**2009 Joint Mathematics Meeting** - San Francisco, CA

**KUMUNU** - University of Nebraska-Lincoln, 2007, 2008, 2009

**A Macaulay 2 Conference** - Cornell University, March 2008

**Coding Theory Summer School** - Sophus Lie Conference Center,  
Nordfjordeid, Norway, June 2007

**2006 Joint Mathematics Meeting** - San Antonio, TX

**SERVICE**

Commutative algebra reading seminar, Fall 2010

*Organizer*

Campus-wide Workshops for Graduate Teaching Assistants, 2010

*Member of planning committee*

Graduate Advisory Committee, 2008-2009

*Graduate student representative*

Nebraska Conference for Undergraduate Women in Mathematics

*Volunteer*

KUMUNU, 2008 and 2009

*Volunteer*

International Conference on Geometric and Combinatorial Methods  
in Group Theory and Semigroup Theory (ICGS), 2009

*Volunteer*

**PROFESSIONAL  
MEMBERSHIPS**

American Mathematical Society, 2005-present

Association for Women in Mathematics, 2009-present