

# Diana White

Current CV as of December 8, 2006

## Contact Information

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## Education

Ph.D. University of Nebraska (UNL), Lincoln, NE; May, 2007 (expected)  
Mathematics, Thesis: *Proper Resolutions and their Applications*  
Research Area: Commutative Algebra, Homological Algebra  
Advisor: Sean Sather-Wagstaff (currently at Kent State University)

M.S. University of Illinois (UIUC), Urbana, IL; August, 1997  
Mathematics.

B.S. U.S. Air Force Academy, Colorado Springs, CO; May, 1996  
Mathematics.

## Employment

Teaching Assistant/Fellow, University of Nebraska-Lincoln; 2004 – present.

Teaching Assistant/Fellow, University of Illinois at Urbana-Champaign; 2000 – 2004.

Instructor, University of Colorado-Denver, 1999 – 2000.

Intelligence Officer, US Air Force, 1996 – 2000

## Awards

Project Fulcrum Fellowship, UNL; Spring 2006 – Spring 2007.

GAANN Fellowship, UNL; Summer and Fall 2005.

Departmental Graduate Teaching Award Finalist, UIUC; 2003, 2004.

VIGRE Fellowship, UIUC; Spring and Fall 2003.

Departmental Graduate Teaching Award Nominee, UIUC; 2002.

Incomplete List of Instructors Ranked as Excellent by their Students, UIUC; Fall 2000, Spring 2001.

## Memberships in Professional Societies

American Mathematical Society

Association for Women in Mathematics

Mathematical Association of America

Society for Industrial and Applied Mathematics

## Publications

- [3] *An Euler characteristic for modules of finite  $G$ -dimension*; with S. Sather-Wagstaff, *Math. Scand.*, to appear. Available from arXiv:math.AC/0601538.
- [2] *Gorenstein projective dimension with respect to a semidualizing module*; submitted. available from arXiv:math.AC/0611711.
- [1] *Foxby equivalence over associative rings*; with H. Holm, submitted. available from arXiv:math.AC/0611838.

## Papers in Preparation

- [2] *Homological dimensions with respect to a semidualizing module*; with R. Takahashi, submission expected January 2007.
- [1] *Comparison of relative cohomologies*; in preparation.

## Invited Talks

### Conference

- [8] *Absolute, Relative and Tate Cohomology with respect to a semidualizing module*; Special Session on Commutative Algebra and Algebraic Geometry, Joint Math Meetings, New Orleans, LA; January 2007.
- [7] *Relative cohomology with respect to a semidualizing module*, Special Session on Commutative Algebra, Regional Workshop in the Mathematical Sciences, University of Nebraska, Lincoln, NE; October 2006.
- [6] *Comparison of relative cohomologies*; Special Session on Commutative Algebra, AMS Sectional Meeting, University of Utah, Salt Lake City, UT; October 2006.
- [5] *Strict  $G_C$ -projective resolutions*; Hilbert Functions and Monomial Resolutions, Cornell University; May 2006.
- [4]  *$C$ -strict resolutions*; Special Session on Hilbert Functions and Resolutions, AMS Sectional Meeting, San Francisco State, CA; April 2006.
- [3] *An Euler characteristic for modules of finite  $G$ -dimension*; Nebraska Commutative Algebra Conference, University of Nebraska, Lincoln, NE; May 2005.
- [2] *An Euler characteristic for modules of finite  $G$ -dimension*, Special Session on Homological Algebra and Its Applications, AMS Sectional Meeting, Texas Tech University, Lubbock, TX; April 2005.
- [1] *Free resolutions, the Euler number, and a generalization*; Special Session on Commutative Algebra, Seventh Regional Workshop in the Mathematical Sciences, University of Nebraska; October 2004.

## Seminar

- [2] *Gorenstein dimension and Euler characteristics* (2 talks); Algebra Seminar, Kent State University; October 2006.
- [1] *An Euler characteristic for modules of finite G-dimension*; Algebra Seminar, UC-Riverside; April 2006.

## Seminar Talks at UNL and UIUC

- $G_C$ -projective dimension*, Commutative Algebra Seminar, UNL; September 2006.
- G-dimension and  $G_C$ -dimension*, Commutative Algebra Reading Seminar, UNL; September 2006.
- Lescot paper* (2 talks), Commutative Algebra Reading Seminar, UNL; June 2006.
- Homology over local homomorphisms* (6 talks), Commutative Algebra Reading Seminar, UNL; September 2005 – April 2006.
- Introduction to curvature and complexity* (2 talks), Commutative Algebra Reading Seminar, UNL; March 2005.
- G-Euler number* (2 talks), Commutative Algebra Seminar, UNL; January 2005.
- Free resolutions*, Graduate Student Seminar, UNL; October 2004.
- Introduction to differential graded algebras* (2 talks), Commutative Algebra Reading Seminar, UNL; September 2004.
- Homological characterizations of regular and Gorenstein rings*, Commutative Algebra/Algebraic Geometry Graduate Student Seminar (GSS), UIUC; December 2003.
- Gorenstein dimension*, Commutative Algebra/Algebraic Geometry GSS, UIUC; September 2003.
- Algebraic geometry* (4 talks), Algebraic Geometry GSS, UIUC; Summer 2003.
- Thesis of Peskine-Szpiro* (11 talks), Commutative Algebra GSS, UIUC; Summer and Fall 2002.
- The discrete log problem*, Combinatorics and Number Theory Seminar, UIUC; July 2001.
- Not all elliptic curves are secure*, Information Protection Seminar, UIUC; May 2001.
- An introduction to the NTRU cryptosystem*, Information Protection Seminar, UIUC; August 2000.

## Seminars Organized

- Commutative Algebra Reading Seminar* (co-organizer), UNL; Fall 2005 – present.
- Commutative Algebra/Algebraic Geometry Graduate Student Seminar (GSS)*, UIUC; Fall 2003.
- Introduction to Varieties and Schemes GSS*, UIUC; Summer 2003.
- Commutative Algebra GSS*, UIUC; Summer and Fall 2002.
- Elliptic Curves and Cryptography Seminar*, UIUC; Fall 2001.

## Teaching Activities

### Courses Taught

Methods include lecture, group work, and computer-based instruction with Mathematica and DERIVE. I was a full-responsibility instructor for all courses listed.

*Analytic Geometry and Calculus I.*

*Analytic Geometry and Calculus II.*

*Analytic Geometry and Calculus III.*

*Linear Algebra.*

*Linear Algebra with Mathematica.*

*Business Calculus* (large lecture).

*Calculus for Social Scientists.*

*Mathematics Matters: Course for Elementary School Teachers.*

### Project Fulcrum

From Spring 2006 – Spring 2007, I was partnered with middle-school math and science teachers, bringing inquiry-based activities into their classrooms as part of Project Fulcrum. This program is funded by an NSF GK-12 grant at the University of Nebraska and is designed to give future researchers in science, mathematics and engineering a realistic picture of the issues facing K-12 education and the roles they can play in addressing those issues.

### Math in the Middle (MM)

I have been affiliated with the Math in the Middle Institute Partnership since Fall 2005. This is a 26-month master's degree program for middle-level teachers (grades 5-8) via a combination of on-campus classes and distance learning. The goal is for the teachers to develop strong mathematics content knowledge, develop the ability to conduct "action research" on their teaching practices, cultivate leadership skills, and apply this acquired knowledge and skill in their classrooms and at the school or district level. I have worked as a Graduate Assistant for the following courses:

*Experimentation, Conjecture, and Reasoning*; Fall 2006.

*Functions, Algebra, and Geometry*; Summer 2006.

*Math as a Second Language*; Summer 2006.

### Other Teacher Training

In addition to Project Fulcrum and Math in the Middle, I have been involved in the following teacher-outreach programs.

*Functions, Algebra, and Geometry*, Scottsbluff, NE, co-instructor with J. Lewis and H. Soto; Summer, 2006.

*Discrete Math for High-School Teachers*, Lincoln Public Schools summer professional development, Graduate Assistant and Lecturer; Summer 2005.

### Correspondence Courses

Correspondence Grader – Calculus I,II, and III, Business Calculus, Guided Individual Study, UIUC; Summer 2003 – Summer 2004.

## Advanced Graduate Teaching Certificate

I was one of only 3 graduate students university-wide to complete the Advanced Graduate Teacher Certificate Program (AGTC) at UIUC during the 2003 – 2004 academic year. According to the AGTC website, “The ACTC honors graduate students who have made exceptional contributions in classroom teaching, the scholarship of teaching and learning, and service related to teaching. The AGTC is designed for a select group of graduate students who are outstanding TAs and is a collaborative effort among academic units, the Graduate College, and the Center for Teaching Excellence. The AGTC focuses on seven competencies: Teaching Experience, Continuing Education, Teaching Other TAs, Mentoring, Service, Scholarship of Teaching and Learning, and Instructional Technology.”

## Mentoring New Teaching Assistants

I mentored approximately 16 new TAs at UIUC over the 2 year period from Fall 2002 – Spring 2004. Activities with each mentee included:

- Classroom observations (1-2 per semester), plus pre- and post-observation meeting
- Informal early feedback reviews (1-2 per semester)
- Continuing education workshops within the mathematics department (3-4 per semester)
- Informal consultation
- ICES (Student Feedback Forms) review

## Teaching Courses Taken or Audited

*Math Ways: Art of Teaching* (audited), UNL; Spring 2006.

*College Teaching and Academic Careers* (taken), UIUC; Spring 2004.

## Curriculum Development

*Matrices for middle-school teachers*

I assisted Jim Lewis with the development of 4 hours of matrix curriculum as part of the capstone course for the Math in the Middle Program.

## Service Activities

Homeschool Science Fair/Math Night Booth, Lincoln, NE;  
Graduate student representative; Spring 2006.

Carnegie Initiative on the Doctorate Committee, UNL;  
Member; Fall 2005 – Spring 2006.

*Introduction to Graduate School*, IMMERSE program, UNL  
Panelist; Summer 2005.

Nebraska Math Day, UNL;  
Math Bowl Judge and Proctor; Fall 2004.

Oral Competition, Illinois Council for the Teacher’s of Mathematics (ICTM) State Math Contest, UIUC.  
Judge; Spring 2004.

*Basics of Teaching: Preparing a Lecture*, Orientation for new Teaching Assistants, UIUC  
Co-presenter with Prof. Sean Sather-Wagstaff, UIUC; Fall 2003.

*Effective Grading*, Orientation for new Teaching Assistants, UIUC; Fall 2003.  
Panelist; Fall 2003.

ICTM, UIUC;  
Proctor; Spring 2003.

*Finding an Advisor*, UIUC  
Panelist; Fall 2003.

Campus Orientation Program, UIUC;  
Microteaching Facilitator; Fall 2003.

*Graduate Algebra Comprehensive Exam Prep and Problem Solving Seminar*, UIUC  
Organizer/Lecturer; Summer 2001, Spring 2002 and Spring 2003.

## References

*Luchezar Avramov*, avramov@math.unl.edu, (402)472-3085

*Srikanth Iyengar*, iyengar@math.unl.edu, (402)472-7241

*John Meakin* (teaching), jmeakin@math.unl.edu, (402)472-7244

*Sean Sather-Wagstaff* (advisor), sather@math.kent.edu, (330)672-9090