

Jonathan A. Cox

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Education

Ph.D. in Mathematics, **Oklahoma State University**, Stillwater, OK 2004

B.S. in Mathematics, **Wisconsin Lutheran College**, Milwaukee, WI 1997

Professional Experience

Assistant Professor State University of New York at Fredonia
2006-present

Assistant Professor University of Louisiana at Monroe
2004-2006

Visiting Graduate Student University of Illinois at Urbana-Champaign
2002-2004

Publications

Uniformly primary ideals (with A. Hetzel), *Journal of Pure and Applied Algebra*, 212(1):1–8, 2008.

A presentation for the Chow ring of $\overline{\mathcal{M}}_{0,2}(\mathbb{P}^1, 2)$, *Communications in Algebra*, 35(11): 3391–3414, 2007, math.AG/0504575.

An additive basis for the Chow ring of $\overline{\mathcal{M}}_{0,2}(\mathbb{P}^r, 2)$, *Symmetry, Integrability and Geometry: Methods and Applications (SIGMA)*, 3(2007) 085, 16 pages, math.AG/0501322.

Contributed Talks

Grand finale: The Basel Problem as a culminating objective in Calculus II, *Joint Mathematics Meetings, New Orleans*, January 2011.

Intuitively clearer explanations for the sum of squares formula, *Joint MAA Seaway Section & NYSMATC Region 1 Meeting, Monroe Community College*, October 2007.

Uniformly primary ideals, *MAA Joint Metro-Seaway Section Meeting, Marist College*, October 2006.

Uniformly Primary Ideals: A preliminary report, *MAA Louisiana/Mississippi Section Meeting, Louisiana Tech University*, February 2006.

Counting curves in an ambient space: An algebraic geometer's view of string theory, *MAA Louisiana/Mississippi Section Meeting, University of Southern Mississippi*, March 2005.

A Variety of Moduli for Elliptic Curves, *MAA Oklahoma–Arkansas Section Meeting, Oklahoma Christian University*, March 2001.

Invited Talk

String theory and the enumerative geometry of curves, Tennessee Technological University, October 2005.

Select Seminar Talks

See <http://www.fredonia.edu/faculty/math/JonathanCox/math/talks.html> for a comprehensive list.

The Basel Problem, Euler, and University Calculus II, Sigma Xi Fredonia Chapter, SUNY Fredonia, September 17, 2010

Geometric Algebra: From Babylonia to Trigonometry, Sigma Xi Fredonia Chapter, SUNY Fredonia, February 26, 2010.

Groups Measure Symmetry, Sigma Xi Fredonia Chapter, SUNY Fredonia, March 27, 2009.

Intuitively clearer proofs of the sum of squares formula, Sigma Xi Fredonia Chapter, SUNY Fredonia, December 7, 2007.

An introduction to moduli problems and moduli spaces: Moduli functors and stacks, ULM Algebra Group Seminar, February 4, 2005.

Equivariant intersection theory, localization, and moduli spaces of stable maps, Graduate Student Seminar on Gromov-Witten Invariants and Related Topics, UIUC, November 12, 2003.

Why is $\mathcal{O}(1)$ called the twisting sheaf? Graduate Student Commutative Algebra/Algebraic Geometry Seminar, UIUC, September 23, 2003.

A graduate student's perspective, Mathfest for prospective graduate students, OSU, November 2, 2001.

Seminars Organized

- ULM Algebra Group Seminar, University of Louisiana at Monroe, Fall 2004-Spring 2005
- Mirror Symmetry Graduate Student Algebraic Geometry Seminar, University of Illinois at Urbana-Champaign, Spring 2004
- Graduate Student Seminar on Gromov-Witten Invariants and Related Topics, University of Illinois at Urbana-Champaign, Fall 2003
- Graduate Student Algebraic Geometry Seminar, University of Illinois at Urbana-Champaign, Fall 2002-Spring 2003
- Algebraic Geometry Learning Seminar, Oklahoma State University, Fall 2000-Spring 2001

Professional Memberships

- American Mathematical Society (AMS)
- Mathematical Association of America (MAA)

Awards

- **Listed in Marquis *Who's Who in America***, 2010 & 2011
- **Project NExT Fellowship**, Mathematical Association of America, 2005-2006
- **Distinguished Graduate Fellowship**, Oklahoma State University, 2001-2004
 - The Distinguished Graduate Fellowship provides scholarly recognition and financial support for one to three years to those considered to be among the nation's top graduate school applicants. My fellowship was renewed in 2002 and 2003.
- **E. K. McLachlan Award**, Oklahoma State University, 2001
 - This award is given to a graduate student who is making progress toward the doctoral degree and has an outstanding record of performance in graduate study.
- **O. H. Hamilton Fellowship**, Oklahoma State University, 1999
 - This fellowship is given at most one time each academic year to an OSU student beginning Ph.D. work in mathematics. The student should have earned an A in all topology courses taken and should have an outstanding graduate academic record.
- **Dean's Tuition Waiver**, Oklahoma State University, 1997-2000
 - This three year waiver was given to at most three incoming mathematics graduate students each year.
- **Honorable Mention**, COMAP Mathematical Contest in Modeling, 1997
 - Highest ranking among 16 Wisconsin teams
- **Nicolas Bourbaki Award**, Wisconsin Lutheran College, 1995
 - This scholarship is the highest honor conferred by the Department of Mathematics.
- **Honors in Calculus Award**, Wisconsin Lutheran College, 1994

Research Interests

Algebraic geometry encompasses my general sphere of interest. My doctoral work involved Gromov-Witten invariants and the intersection theory of moduli spaces of stable maps. I am also interested in exploring the relation between commutative algebra and algebraic geometry. This includes describing the connections between properties of ring extensions and properties of morphisms of affine schemes. Most recently, in work with Hetzel, I developed the notion of a *uniformly primary ideal* and probed its geometric significance.

Teaching Enhancement

- You, too, Can Be a Clickable Calculus Expert, Maplesoft workshop, New Orleans, January 2011
- SUNY Fredonia Professional Development Center Teachers' Retreat, May 2010
- Seaway Section NExT workshops, April 2008, April 2009, & April 2010
- Exploring Multivariable Calculus Using Maple, an MAA PREP Workshop, June 2007
 - This one week online workshop greatly enriched my knowledge of the capabilities of the computational math program Maple. Participants worked in groups to design our own Maple worksheets. An electronic network was set up so we can continue to discuss using Maple in our teaching.
- Academy for Teaching Excellence, University of Louisiana at Monroe, Fall 2005
 - In weekly sessions, enrolled faculty learned from and shared with colleagues from across the ULM campus. Topics included learning styles, motivation, how we learn versus how we teach, class rules, class format and size, scoring rubrics, assessment issues, and making the transition from students to professionals.
- Project NExT Workshop, Albuquerque, NM, August 2005
 - I attended discussion sessions with other new mathematics professors and lectures by expert mathematics teachers. We formed a network through which we regularly communicate about the whole spectrum of issues relevant to those beginning an academic career. (I also attended a one day workshop in August 2006.)
- Teaching Preparation Seminar, Oklahoma State University, Spring 1998
- Teacher Training Program in Mathematics, Oklahoma State University, Fall 1997

Teaching Experience

- Assistant Professor, SUNY Fredonia, 2006-Present
 - **University Precalculus**, Spring 2011
 - **Why Mathematics?**, Fall 2007
 - **University Calculus I**, five semesters, including Fall 2010
 - **University Calculus II**, five semesters, including Spring 2011
 - **University Calculus III**, Fall 2007 & Fall 2010
 - **Honors Problem Solving**, Spring 2008 & Spring 2011
 - **Mathematical Structures and Proof**, Spring 2008, Fall 2009, & Spring 2011
 - **Linear Algebra**, Fall 2006 & Spring 2007
 - **Abstract Algebra I**, Fall 2008
 - **Abstract Algebra II**, Spring 2009
 - **History of Mathematics**, Spring & Fall 2010
 - **Independent Study (Galois Theory)**, Fall 2009
- Assistant Professor, University of Louisiana at Monroe, 2004-2006
 - **Honors Mathematics: Conics**, Spring 2006.
 - * My proposal for this course was approved to fulfill the mathematics requirement for students in the University Honors Program. Topics included classical conics and tastes of rubber geometry, linear algebra, trigonometry, and complex numbers.
 - **Calculus (third semester)**, Spring 2006.
 - **College Algebra with Review**, Fall 2005-Spring 2006.
 - **Calculus (second semester)**, Fall 2005.
 - **The Nature of Mathematics**, Fall 2004-Fall 2005.
 - **Calculus (first semester)**, Fall 2004-Spring 2005.
- Teaching Assistant, University of Illinois at Urbana-Champaign, 2002
 - **Numeracy**, 2002.
 - **Calculus for Social Scientists, I**, 2002.
- Teaching Assistant, Oklahoma State University, 1997-2001
 - **Calculus I**, 1999-2001 (3 semesters).
 - **Applications of Modern Math**, 1999-2001 (3 semesters).
 - **Elementary Calculus**, 1998.
 - **Intermediate Algebra**, 1998.

Select Conferences Attended

- Joint Mathematics Meetings,
 - January 2011 (New Orleans), January 2007 (New Orleans),
January 2006 (San Antonio), January 2004 (Phoenix)
- MAA Mathfest
 - August 2010 (Pittsburgh), August 2008 (Madison), August 2006
(Knoxville), August 2005 (Albuquerque)
- Ohio State University/University of Michigan Algebraic Geometry Work-
shops,
 - March 2004 (Columbus) and November 2003 (Ann Arbor)
- Learning Stacks and Computational Methods through Problem-Solving,
University of Illinois at Urbana-Champaign, June 2002
- Park City Mathematics Institute Graduate Summer School, July 2001

Select Service

Reviewer, Wiley (Chapter of a new calculus text), October-November 2010
 Game show host, Seaway Showdown: Students versus Faculty, October 2010
 Moderator, Time Management session, Seaway NExT workshop, April 2010
 Reviewer, NY State Mathematics Teachers' Journal, 4 articles, 2007-2010
 "Creating a Winning Portfolio" panel, SUNY Fredonia PDC, November 2009
 Task Force on University Senate Representation, SUNY Fredonia, October-
 November 2009
 MATH 210 Committee, SUNY Fredonia, Fall 2009
 University Senate, SUNY Fredonia, August 2008-present
 Student Program Committee, MAA Seaway Section, January 2008-present
 Seaway NExT advisory committee, MAA Seaway Section, January 2008-
 present
 Safety Committee (Fenton Hall Building Safety Coordinator), SUNY Fredo-
 nia, Fall 2007-present
 University Calculus Committee, SUNY Fredonia, 2006-present
 Public Relations Committee, SUNY Fredonia, 2006-present
 Reviewer, Mathematics Magazine, July 2007
 Chair, Tenure-track Search Committee, ULM, Spring 2006
 Corresponding Secretary for the ULM chapter of Kappa Mu Epsilon, 2005-
 2006
 Chair, MATH 113 [Precalculus] Committee, ULM, Fall 2005