



UNIVERSITY
OF NOTRE DAME

DEPARTMENT OF MATHEMATICS

CLAUDIA POLINI

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Education:

Postdoctoral position; Michigan State University, 1995-1998

Ph. D., Rutgers University, 1995

B.S., Università degli Studi di Padova, Italy, 1990

Positions:

Director of the Center for Mathematics at Notre Dame, 2011-present

Glynn Family Honors Collegiate Professor of Mathematics; University of Notre Dame, 2017-present

Rev. John Cardinal O'Hara, C.S.C Professor of Mathematics; University of Notre Dame, 2010-present

Research Professor in the Commutative Algebra Program at MSRI, 2012-13

Professor; University of Notre Dame, 2009-present

Associate Professor; University of Notre Dame, 2004-2009

Assistant Professor; University of Notre Dame, 2001-2004

Assistant Professor; University of Oregon, 2000-2001

Assistant Professor; Hope College, 1998-2000

Honors and Awards:

Fellow of the American Mathematical Society

Simons Visiting Professorship

Scholarly Leave:

MSRI, Fall 2012 and Spring 2013

Purdue University, Fall 2005

MSRI, Fall 2002

Grants:

NSF research grant, 2019-2022

NSF research grant, 2016-2019

NSF research grant, 2012-2016

NSA research grant, 2011-2013

NSA research grant, 2009-2011

NSF research grant, 2006-2010

NSA research grant, 2006-2008

NSF research grant, 2002-2006
NSF research grant, 1999-2002
NSF grant for the *Center for Mathematics at Notre Dame* (Co-PI), 2019-2021
IMA grant for *Thematic Program in Commutative Algebra and its Interaction with Algebraic Geometry*, 2018-2019
NSA grant for *Thematic Program in Commutative Algebra and its Interaction with Algebraic Geometry*, 2018-2019
NSF grant for the *Center for Mathematics at Notre Dame* (Co-PI), 2018-2019
NSF grant *Algebra and Geometry Meetings in the Midwest* (Co-PI), 2015-2018
NSF grant for the *Center for Mathematics at Notre Dame* (Co-PI), 2014-2017
NSF grant for the *Program on Motivic Invariants and Singularities* (Co-PI), 2013
NSA grant for the *Connections for Women: Joint Workshop on Commutative Algebra and Cluster Algebras* (Co-PI), 2012
IMA grant for the *Midwest Commutative Algebra and Geometry Conference at Purdue*, 2011
NSF grant for *Special Algebra Meetings in the Midwest* (Co-PI), 2008-2011
NSF EMSW21-MCTP grant (Co-PI), 2006-2011
NSF grant for the *PASI: Commutative Algebra and its Connections to Geometry* (Co-PI), 2009
ONR grant for *AWM Workshops* (Co-PI), 2007-2009
NSF-OISE US-Brazil cooperative research grant, 2006-2007
NSF grant for the *Midwest Algebra, Geometry and their Interactions Conference*, 2005
IMA grant for the *Midwest Algebra, Geometry and their Interactions Conference*, 2005
AWM-NSF mentor travel grant, 2002
NATO-CNR fellow, 1997-1998
CNR postdoctoral fellow, 1995-1996
CNR fellow, 1991-1992
CNR dissertation fellow, 1989-1990
AWM travel grant, 1997
AWM postdoctoral award, 1996

Editorial Boards:

Journal of Commutative Algebra, 2008-current
Proceedings of the AMS, 2018-current
Journal of Algebra, 2020-current

Supported Research Visits:

Institute for Advanced Study, Princeton, Summer Collaborators program, June 2020 (awarded but declined due to other commitments)
Mathematical Sciences Research Institute (MSRI), Berkeley, 2020 Summer Research in Mathematics (SWiM), June 2020 (awarded but declined due to COVID)
Mathematisches Forschungsinstitut Oberwolfach (MFO), Germany, Research in Pairs, September 2019, July 2018, June 2018, July 2016, June 2005

CIRM, Luminy, France, Research in Pairs, October 2019, November 2018, July 2017, June 2015, June 2013, June 2011, June 2007, May 2006

AIM, San Jose', California, SQUARE, June 2019, July 2018

Università di Genova, Italy, (Simons Visiting Professorship) February 2019

Vietnam Institute for Advanced Study in Mathematics (VIASM), June 2016, August 2014

Extended Research Visits:

University of Pernambuco, Recife, Brazil, November 2019

IMPA, Rio de Janeiro, Brazil, December 2018

Purdue University, at least two weeks every year since 2001

University of Kentucky, June 2012, May 2011, March 2009

Universidade Federal de Pernambuco, Brasil, August 2007, July-August 2006, August 2005, July-August 2004, August 2002

Università di Genova, Italy, July 2002, June 2001, June 2000

Centro de Algebra da Universidade de Lisboa (CAUL), Portugal, June 1998

Publications:

Refereed papers

- [1] Andrea Gombani and Claudia Polini, *On approximate modeling of linear Gaussian processes*, New directions in time series analysis, Part II, IMA Vol. Math. Appl., vol. 46, Springer, New York, 1993, pp. 177–193.
- [2] Alberto Corso, Claudia Polini, and Wolmer V. Vasconcelos, *Links of prime ideals*, Math. Proc. Cambridge Philos. Soc. **115** (1994), 431–436.
- [3] Alberto Corso and Claudia Polini, *Links of prime ideals and their Rees algebras*, J. Algebra **178** (1995), 224–238.
- [4] Alberto Corso and Claudia Polini, *Reduction number of links of irreducible varieties*, J. Pure Appl. Algebra **121** (1997), 29–43.
- [5] Claudia Polini and Bernd Ulrich, *Linkage and reduction numbers*, Math. Ann. **310** (1998), 631–651.
- [6] Alberto Corso, Claudia Polini, and Maria Vaz Pinto, *Sally modules and associated graded rings*, Comm. Algebra **26** (1998), 2689–2708.
- [7] Claudia Polini and Bernd Ulrich, *Necessary and sufficient conditions for the Cohen-Macaulayness of blowup algebras*, Compositio Math. **119** (1999), 185–207.
- [8] Claudia Polini, *A filtration of the Sally module and the associated graded ring of an ideal*, Comm. Algebra **28** (2000), 1335–1341.
- [9] Alberto Corso and Claudia Polini, *On residually S_2 ideals and projective dimension one modules*, Proc. Amer. Math. Soc. **129** (2001), 1309–1315.
- [10] Alberto Corso and Claudia Polini, *Strongly Cohen-Macaulay ideals of small second analytic deviation*, Bull. London Math. Soc. **33** (2001), 662–668.

- [11] Alberto Corso, Claudia Polini, and Bernd Ulrich, *The structure of the core of ideals*, Math. Ann. **321** (2001), 89–105.
- [12] Alberto Corso, Claudia Polini, and Bernd Ulrich, *Core and residual intersections of ideals*, Trans. Amer. Math. Soc. **354** (2002), 2579–2594.
- [13] Alberto Corso, Claudia Polini, and Bernd Ulrich, *Core of projective dimension one modules*, Manuscripta Math. **111** (2003), 427–433.
- [14] Alberto Corso, Laura Ghezzi, Claudia Polini, and Bernd Ulrich, *Cohen-Macaulayness of special fiber rings*, Comm. Algebra **31** (2003), 3713–3734. Special issue in honor of Steven L. Kleiman.
- [15] Claudia Polini and Bernd Ulrich, *A formula for the core of an ideal*, Math. Ann. **331** (2005), 487–503.
- [16] Alberto Corso, Claudia Polini, and Maria Evelina Rossi, *Depth of associated graded rings via Hilbert coefficients of ideals*, J. Pure Appl. Algebra **201** (2005), 126–141.
- [17] Claudia Polini, Bernd Ulrich, and Wolmer V. Vasconcelos, *Normalization of ideals and Briançon-Skoda numbers*, Math. Res. Lett. **12** (2005), 827–842.
- [18] Alberto Corso, Claudia Polini, and Wolmer V. Vasconcelos, *Multiplicity of the special fiber of blowups*, Math. Proc. Cambridge Philos. Soc. **140** (2006), 207–219.
- [19] Claudia Polini, Bernd Ulrich, and Marie A. Vitulli, *The core of zero-dimensional monomial ideals*, Adv. Math. **211** (2007), 72–93.
- [20] Alberto Corso and Claudia Polini, *Hilbert coefficients of ideals with a view toward blowup algebras, Syzygies and Hilbert functions*, Lect. Notes Pure Appl. Math., vol. 254, Chapman & Hall/CRC, Boca Raton, FL, 2007, pp. 41–65.
- [21] Louiza Fouli, Claudia Polini, and Bernd Ulrich, *The core of ideals in arbitrary characteristic*, Michigan Math. J. **57** (2008), 305–319.
- [22] Andrew Kustin, Claudia Polini, and Bernd Ulrich, *Divisors on rational normal scrolls*, J. Algebra **332** (2009), 1748–1773.
- [23] Louiza Fouli, Claudia Polini, and Bernd Ulrich, *Annihilators of graded components of the canonical module and the core of standard graded algebras*, Trans. Amer. Math. Soc. **362** (2010), 6183–6203.
- [24] Andrew Kustin, Claudia Polini, and Bernd Ulrich, *Rational normal scrolls and the defining equations of Rees algebras*, J. reine angew. Math. **650** (2011), 23–65.
- [25] Andrew Kustin, Claudia Polini, and Bernd Ulrich, *Integral extensions and the a -invariant*, J. Pure Appl. Algebra **216** (2012), 2800–2806.
- [26] Claudia Polini and Yu Xie, *j -multiplicity and the depth of associated graded modules*, J. Algebra **379** (2013), 31–49.
- [27] David Cox, Andrew Kustin, Claudia Polini, and Bernd Ulrich, *A study of singularities on rational curves via syzygies*, Mem. Amer. Math. Soc. **1045** (2013).
- [28] Claudia Polini and Yu Xie, *Generalized Hilbert functions*, Comm. Algebra **42** (2014), 2411–2427.
- [29] Lin Kuei-Nuan and Claudia Polini, *Rees algebras of truncations of complete intersections*, J. Algebra **410** (2014), 36–52.
- [30] Robin Hartshorne and Claudia Polini, *Divisor class groups of singular surfaces*, Trans. Amer. Math. Soc. **367** (2015), 6357–6385.

- [31] Alberto Corso, Claudia Polini, and Marilina Rossi, *Bounds on the normal Hilbert coefficients*, Proc. Amer. Math. Soc. **144** (2016), 1919–1930.
- [32] Andrew Kustin, Claudia Polini, and Bernd Ulrich, *The Hilbert series of the ring associated to an almost alternating matrix*, Comm. Alg. **44** (2016), 3053–3068.
- [33] Andrew Kustin, Claudia Polini, and Bernd Ulrich, *Blowups and fibers of morphisms*, Nagoya Math. J. **224** (2016), 168–201.
- [34] Andrew Kustin, Claudia Polini, and Bernd Ulrich, *The bi-graded structure of symmetric algebras with applications to Rees rings*, J. Algebra **469** (2017), 188–250.
- [35] Andrew Kustin, Claudia Polini, and Bernd Ulrich, *A matrix of linear forms which is annihilated by a vector of indeterminates*, J. Algebra **469** (2017), 120–187.
- [36] Andrew R. Kustin, Claudia Polini, and Bernd Ulrich, *The equations defining blowup algebras of height three Gorenstein ideals*, Algebra Number Theory **11** (2017), 1489–1525.
- [37] Alberto Corso, Shiro Goto, Craig Huneke, Claudia Polini, and Bernd Ulrich, *Iterated socles and integral dependence in regular rings*, Trans. Amer. Math. Soc. **370** (2018), 53–72.
- [38] Claudia Polini, Bernd Ulrich, Wolmer Vasconcelos, and Raffael Villarreal, *Indices of normalization of ideals*, J. Pure Appl. Algebra **223** (2019), 3681–3694.
- [39] Andrew Kustin, Claudia Polini, and Bernd Ulrich, *Degree bounds for local cohomology*, Proc. Lond. Math. Soc. **121** (2020), 1251–1267.
- [40] Claudia Polini, Ngo Viet Trung, Bernd Ulrich, and Javid Validashti, *Multiplicity sequence and integral dependence*, Math. Ann. **378** (2020), 951–969.
- [41] Robin Hartshorne and Claudia Polini, *Simple \mathcal{D} -module components of local cohomology modules*, J. Algebra **571** (2021), 232–257.
- [42] Robin Hartshorne and Claudia Polini, *Quasi-cyclic modules and coregular sequences*, Math. Z. (2021), to appear.
- [43] Hang Huang, Michael Perlman, Claudia Polini, Claudiu Raicu, and Alessio Sammartano, *Relations between the 2×2 minors of a generic matrix*, submitted for publication.
- [44] Ela Celikbas, Emilie Dufresne, Louiza Fouli, Elisa Gorla, Kuei-Nuan Lin, Claudia Polini, and Irena Swanson, *Rees algebras of maximal minors of sparse matrices*, submitted for publication.

Papers in preparation

- [45] Marc Chardin, Hamid Hassanzadeh, Claudia Polini, Aron Simis, and Bernd Ulrich, *Bounds on degree of Vector Fields*, preprint.
- [46] Andrew Kustin, Claudia Polini, and Bernd Ulrich, *Lower order Pfaffians and residual intersections of grade three Gorenstein ideals*, preprint.
- [47] Louiza Fouli, Jonathan Montaño, Claudia Polini, and Bernd Ulrich, *Core of monomial ideals*, preprint.
- [48] Alberto Corso, Craig Huneke, Claudia Polini, and Bernd Ulrich, *Distance in resolutions with applications to integral dependence, Loewvy length, and Blowup algebras*, preprint.
- [49] Gemma Colome', Claudia Polini, Bernd Ulrich, and Yu Xie, *Generalized Hilbert coefficients*, preprint.

Book Edited

- [50] Sam Evens, Michael Gekhtman, Brian C. Hall, Xiaobo Liu, and Claudia Polini (eds.), *Mathematical Aspects of Quantization*, Contemporary Mathematics, vol. 583, American Mathematical Society, Providence, RI, 2012.
- [51] Alberto Corso and Claudia Polini (eds.), *Commutative Algebra and Its Connections to Geometry*, Contemporary Mathematics, vol. 555, American Mathematical Society, Providence, RI, 2011.
- [52] Alberto Corso, Juan Migliore, and Claudia Polini (eds.), *Algebra, geometry and their interactions*, Contemporary Mathematics, vol. 448, American Mathematical Society, Providence, RI, 2007.
- [53] Luchezar L. Avramov, Marc Chardin, Marcel Morales, and Claudia Polini (eds.), *Commutative algebra*, Contemporary Mathematics, vol. 331, American Mathematical Society, Providence, RI, 2003.

Ph.D. Students:

Bonnie Smith, 2010, *Cores of monomial ideals*

Angela Kohlhaas, 2010, *The core of an ideal and its relationship to the adjoint and the coefficient ideals*

Jeffrey Madsen, 2016, *Equations of Rees algebras and singularities of rational plane curves*

Kathleen Analdi, 2016, *Regularity of Tor, LCM-Duals, and Hilbert functions*

Whitney Liske, 2019, *On the coordinate ring of a projection of a degree two veronese variety*

Taylor Ball (current)

Postdocs Mentored:

Y. Xie, 2009-2012

Kuei-Nuan Lin (via the AWM-NSF mentoring travel program), 2011-2012

Paolo Mantero, MSRI, Fall 2012

Alessio Sammartano, 2018-2021

Undergraduate Student Advised:

Margaret Doig (2005-06)

Adam Booher (2006-08)

Christina Jamroz (2010-11)

Edward Sanchez (2011-13)

Caroline Jansen (2013-15)

Austin Rodgers (2013-16)

Katherine Gallagher (2018-19)

Graduate Summer Schools:

Syzygies, from Theory to Applications, CIMPA school, João Pessoa, Brazil, November 2019 (4 lectures)

CIME-CIRM Course on Recent Developments in Commutative Algebra, Levico Terme, Italy,

July 2019 (5 lectures)

Thematic Program in Commutative Algebra and its Interaction with Algebraic Geometry, MSRI Summer School, University of Notre Dame, June 2019 (5 lectures, plus 8 exercises sessions)

International Meeting in Commutative Algebra and Related Areas, San Carlos, Brazil, July 2017 (3 lectures)

Commutative Algebra and Related Topics. MSRI Summer School, Okinawa, Japan, May-June 2017 (5 lectures, plus 8 exercises sessions)

Selected Invited Conferences/Talks:

Virtual Commutative Algebra Seminar (two lectures), IIT Bombay (India), November 2020

Fellowship of the Ring, National Seminar in Commutative Algebra, MSRI, Berkeley, June 2020

Southwest Local Algebra Meeting, Tulane University, March 2020

Women in Commutative Algebra (WICA), BIRS Workshop, Banff, Canada, October 2019

XXIII Coloquio Latinoamericano de Álgebra, Plenary Talk, Mexico City, August 2019

Special Session in Algebraic Geometry and Commutative Algebra, XXIII Coloquio Latinoamericano de Álgebra, Mexico City, August 2019

Morgantown Algebra Days, West Virginia University, April 2019

Singularities and Homological Aspects of Commutative Algebra, MFO, Oberwolfach, Germany, February 2019

XXV Brazilian Algebra School, Campinas, Brazil, December 2018

New Trends in Syzygies, BIRS Workshop, Banff, Canada, June 2018

CA+, University of Minnesota, September 2017

International Conference On Commutative Algebra and its interaction to Combinatorics, Discrete Geometry and Singularity Theory, Ha Long, Vietnam, September 2017

International Conference on Commutative Algebra, Hanoi, Vietnam, September 2017

International Meeting in Commutative Algebra and Related Areas, San Carlos, Brazil, July 2017

The Prospects for Commutative Algebra, International Conference, Osaka, Japan, July 2017

Ordinary and Symbolic Powers of Ideals, CMO-BIRS Workshop, Oaxaca, Mexico, May 2017

Asymptotic Phenomena in Local Algebra and Singularity Theory, MFO, Oberwolfach, Germany, December 2016

KUMUNU 2016, University of Kansas, October 2016

First Joint Meeting Brazil - Italy in Mathematics, IMPA, Brazil, August 2016

Commutative Algebra and Its Interactions with Algebraic Geometry: Tight Closure, Linkage, and Syzygies. A conference in honor of Craig Huneke's 65th birthday, University of Michigan, July 2016

Workshop on Commutative Algebra, VIASM (Vietnam Institute for Advanced Study in Mathematics), Hanoi, Vietnam, June 2016 (2 talks)

Meeting in Commutative Algebra, Genova, Italy, October 2015

Joint colloquium RIMS (Research Institute for mathematical Sciences) and Kyoto University, Japan, December 2014

Workshop on Commutative Algebra, VIASM (Vietnam Institute for Advanced Study in Mathematics), Hanoi, Vietnam, August 2014 (2 talks)

International Conference on Commutative Algebra and Singularity Theory 2014, Toyama, Japan, July 2014

First Joint International Meeting of the Italian and Spanish Mathematical Societies, Special Session on Recent Developments in Commutative Algebra, Bilbao, Spain, July 2014

International Conference on Commutative Algebra and its Interaction with Algebraic Geometry, CIRM (Centre International de Recontres Mathématiques), Luminy, France, July 2013, November 2010, September 2008, May 2006, June 2003, June 2000

Workshop on The Commutative Algebra of Singularities in Birational Geometry: Multiplier Ideals, Jets, Valuations, and Positive Characteristic Methods, MSRI, Berkeley, May 2013

Workshop on Combinatorial Commutative Algebra and Applications, MSRI, Berkeley, December 2012

ALGA (Brazilian Meeting on Algebraic Geometry and Commutative Algebra): Special Edition in honor of the 70th birthdays of Steven Kleiman (MIT) and Aron Simis (UFPe), IMPA (Instituto de Matemática Pura e Aplicada), Rio de Janeiro, Brazil, August 2012

Algebra, Geometry and Combinatorics Day, Indianapolis, October 2011

Commutative Algebra in the Southeast Meeting, Columbia, March 2011

School and International Conference on Local Rings and Local Study of Algebraic Varieties, ICTP (International Centre for Theoretical Physics), Trieste, Italy, May 2010

Pan-American Advances Study Institute in Commutative Algebra and its Connections to Geometry, Olinda, Brazil, August 2009

Conference on Commutative Algebra, MFO, Oberwolfach, Germany, April 2009

GSU-USC Commutative Algebra Seminar, Columbia, November 2008

Commutative Algebra and its Interactions: A conference in honor of Mel Hochster, University of Michigan, July 2008

International Conference Towards Establishing a Cutting-Edge Platform for Commutative Ring Theory in the 21st Century, Yokohama, Japan, March 2008

International Conference on Hilbert Functions and Syzygies in Commutative Algebra and Combinatorics, Cortona, Italy, September 2007

International Conference on Commutative Algebra and its Interaction with Algebraic Geometry, BIRS, Banff, Canada, June 2007

Symposium on Commutative Ring Theory, Tokyo, Japan, November 2006

ALGA (Brazilian Meeting on Algebraic Geometry and Commutative Algebra), IMPA (Instituto de Matemática Pura e Aplicada), Rio De Janeiro, Brazil, July 2006

International Conference on Commutative Algebra, Hanoi, Vietnam, January 2006

International Conference on Commutative Algebra: Homological and Birational Theory, BIRS, Banff, Canada, September 2004

XVIII Escola De Algebra (XVIII Brazilian Algebra Meeting), Campinas, Brazil, July 2004

School on Commutative Algebra and its Interactions with Algebraic Geometry and Combinatorics, ICTP (International Centre for Theoretical Physics), Trieste, Italy, June 2004

Midwest Commutative Algebra and Geometry Meeting: A Conference in Honor of Joseph Lipman, Purdue University, May 2004

KUMUNU: 5th Algebra Day, University of Kansas, September 2003

International Conference on Commutative Algebra, Lisbon, Portugal, June 2003

First Joint Meeting between the AMS and the RSME (Real Sociedad Matemática Española), Special Session on Commutative Algebra: Geometric, Homological, Combinatorial and Computational Aspects, Sevilla, Spain, June 2003

Bluegrass Algebra Conference, University of Kentucky, April 2003

Workshop on Commutative Algebra: Local and Birational Theory, MSRI, Berkeley, December 2002

2002 Red Raider Mini-Symposium Series, Texas Tech University, November 2002

International Conference on Zero-Dimensional Schemes and Related Topics, Acitrezza, Italy, June 2002

Colloque d'Algèbre Commutative: Interactions avec la Géométrie Algébrique, Institut Fourier, Grenoble, France, July 2001

Olga Taussky Todd Celebration of Careers in Mathematics for Women, MSRI, Berkeley, July 1999

CAUL (Centro de Algebra da Universidade de Lisboa), series of four lectures, Lisbon, Portugal, June 1998

Homological Methods in Commutative Algebra and Algebraic Geometry: a Conference in Honor of David Buchsbaum, University of Genova, Italy, June 1998

Encuentro Nacional de Álgebra y Geometría Algebraica, CIMAT (Centro de Investigación en Matemáticas), Guanajuato, Mexico, August 1997

Midwest Algebraic Geometry Conference, University of Notre Dame, November 1997

Summer School on Commutative Algebra, CRM (Centre de Recerca Matemàtica), Universitat Autònoma de Barcelona, Spain, July 1996

Workshop on Commutative Algebra and its Relation to Combinatorics and Computer Algebra, ICTP (International Centre for Theoretical Physics), Trieste, Italy, May 1994

Invited Talks:

New Mexico, Colloquium, December 2019

IMPA, Colloquium, Brazil, December 2018

Purdue University, October 2018, November 2017, September 2016, October 2014, April 2011, November 2010, April 2008, December 2005, November 2005, March 2003, April 2002, October 2001

University of Michigan, Commutative Algebra seminar, March 2018

University of Utah, Colloquium, November 2017

University of Arkansas, Colloquium, April 2016

University of Arkansas, Algebra Seminar, April 2016

Nihon University, Tokyo, Japan, December 2014

University of California, Riverside, Colloquium, March 2013

Tulane University, Colloquium, March 2012

University of Illinois at Urbana-Champaign, November 2010

University of Illinois Chicago, October 2009

University of Nebraska, Colloquium, September 2009, December 2003

University of Genova, Italy, June 2009, July 2002, June 2001, June 2000

Universidade Federal de Pernambuco, Recife, Brazil, July 2002, July 2004, August 2005, August 2006

University of Kentucky, Colloquium, April 2006, December 1999

University of Zurich, Colloquium, April 2005

University of Kansas, March 2005

Purdue University, Colloquium, February 2004

University of Notre Dame, Colloquium, February 2001

University of Notre Dame, February 2001

Rutgers University, November 2000

Michigan State University , Colloquium, February 2000

University of Oregon, Colloquium, January 2000

Michigan State University, October 1998, September 1999

University of Michigan, January 1997

Other Invited Conferences:

Midwest Women in Mathematics Symposium, University of Illinois at Urbana-Champaign, April 2016

AMS Annual Meeting, Special Session on Commutative Algebra, Seattle, January 2016

45 minutes talk at the AMS Special session on Commutative Algebra, Rutgers University, November 2015

AMS Special Session on Homological Aspects of Module Theory, Boca Raton, October 2009

AMS Special Session on Combinatorial and Geometric Aspects of Commutative Algebra, Bloomington, April 2008

AMS Special Session on Commutative Algebra, New Brunswick, October 2007

AMS Annual Meeting, Special Session on Syzygies in Commutative Algebra and Geometry, San Antonio, January 2006

AMS Special Session on Syzygies and Hilbert Functions, Tallahassee, March 2004

AMS Western Sectional Meeting, Special Session on Commutative Algebra, San Francisco, May 2003

AMS Special Session on Commutative Algebra, Ann Arbor, March 2002

AMS Special Session on Commutative Algebra, Lawrence, March 2001

AMS Special Session on Commutative Algebra, New York, November 2000

AMS Special Session on Commutative Algebra, Toronto, September 2000

AMS Annual Meeting, Special Session on Effective Methods and Commutative Algebra, Washington, January 2000

AMS Special Session on Commutative Algebra, Charlotte, October 1999

Joint Meeting of the AMS and SMM (Sociedad Matematica Mexicana), Special Session on Algebraic Geometry and Commutative Algebra, Denton, May 1999

AMS Annual Meeting, Special Session on Commutative Algebra and Algebraic Geometry, San Antonio, January 1999

AMS Special Session on Commutative Algebra, Montreal, September 1997

AMS Annual Meeting, Special Session on Commutative Algebra, San Diego, January 1997

AMS Special Session on Commutative Algebra, Lawrenceville, October 1996

AWM Workshop, AMS Annual Meeting, Orlando, January 1996

AMS Special Session on Commutative Algebra, Hartford, March 1995

Conference organizations:

Co-organizer of the Thematic Program in Commutative Algebra to be held at MSRI, Spring 2024.

international conference *Written Geometry: Commutative Algebra*, CIRM (Centre International de Recontres Mathématiques), Luminy, France, October 2020 (Postponed to 2022 because of COVID)

Co-organizer of the international conference *Written Geometry: Commutative Algebra*, CIRM (Centre International de Recontres Mathématiques), Luminy, France, October 2020 (Postponed to 2022 because of COVID)

Co-organizer of the special session *Commutative Algebra and Connections with Algebraic Geometry* at the AMS Meeting at Purdue University, April 2020

Co-organizer of the four-week thematic program *Commutative Algebra and its interactions with Algebraic Geometry*, Center for Mathematics, University of Notre Dame, May-June 2019

Co-organizer of the conference *Algebraic geometry and its broader implications: a celebration of Robin Hartshorne 80th and the book's 40th birthday*, University of Illinois at Chicago (UIC), March 2018

Co-organizer of the conference *Midwest Commutative Algebra and Algebraic Geometry Conference: A meeting in Honor of Juan Migliore*, University of Notre Dame, May 2016

Co-organizer of the conference *Midwest Commutative Algebra Conference*, Purdue University, August 2015

Co-organizer of a special session at the Mathematical Congress of the Americas, Guanajuato, Mexico, August 2013

Co-organizer of the conference *3rd Bluegrass Algebra Conference*, University of Kentucky, June 2012

Co-organizer of the conference *Commutative Algebra and Algebraic Geometry Conference*, University of Illinois at Urbana-Champaign, November 2011

Co-organizer of the conference *Midwest Algebra, Geometry and their Interactions Conference*, Purdue University, May 2011

Co-organizer of a special session at the AMS Meeting in Notre Dame, November 2010

Co-organizer of a Mathematics Research Communities in Commutative Algebra, Snowbird Resort, Utah, June 2010

Co-organizer of the conference *Midwest Algebra, Geometry and their Interactions Conference 2010*, University of Notre Dame, April 2010

Co-organizer of a special session at the AMS Meeting in Lexington, March 2010

Co-organizer of the summer school *PASI: Commutative Algebra and its Connections to Geometry*, Olinda, Brazil, August 2009

Co-organizer of the conference *Undergraduate Work in Mathematics*, Notre Dame, September 2007, November 2008

Co-organizer of the workshop *Integral Closure, Adjoint Ideals and Cores* at the American Institute of Mathematics, Palo Alto, December 2006

Co-organizer of a special session at the AMS Meeting in Notre Dame, April 2006

Co-organizer of the conference *Midwest Algebra, Geometry and their Interactions Conference*, University of Notre Dame, October 2005

Co-organizer of a special session at the AMS Meeting in Lawrenceville, April 2004

Co-organizer of a special session at the First International Joint Meeting of the AMS and UMI, Pisa, Italy, June 2002

Co-organizer of a special session at the First Joint Meeting of the AMS and SMF, Lyon, France, July 2001

Seminars organizations:

Organizer of a seminar for graduate and undergraduate students *Research in Commutative Algebra*, Notre Dame, 2013-2019

Organizer of a reading seminar in Commutative Algebra, Notre Dame, 2011-2015

Co-organizer of the Commutative Algebra and Algebraic Geometry Seminar, Notre Dame, 2006-2009

Organizer of a reading seminar for graduate and undergraduate students *Geometry of Syzygies*, Notre Dame, 2009-2010

Organizer of a seminar for graduate and undergraduate students *Research in Commutative Algebra*, Notre Dame, 2006-2010

Synergetic Activities:

Chair of the Committee on Publications of the American Mathematical Society (2018-2020)

External Member, Competition for Associate Professor in Algebra and Geometria, Università di Genova, Italy, Summer 2019

Member at Large to the Committee on Publications of the American Mathematical Society (2017-2020)

NSF Panels

NSA Panels

Reviewer for NSA

Reviewer for NSF

External reviewer for the RTG NSF grant at the University of Illinois at Chicago (UIC). (2016)

Organize a special AP Math partnership between local High School and Notre Dame (out-reach effort to local high school), 2012-2014

Colloquium Committee, MSRI, Berkeley, Fall 2012

Panelist at the Forum *Teaching the Principia: Igniting a Passion for Learning through First Year Coursework*, Notre Dame, May 2012.

Referee for various journals

Organizer of the panel *Graduate School*, Notre Dame, April 2007

Panelist at the Forum *Teaching and Learning: What makes it a great experience for all involved?*, Notre Dame, May 2006

Reviewer for Mathematical Reviews

Women Outreach:

Co-organizer of a special session at the Association for Women in Mathematics (AWM) Research Symposium 2013 at Santa Clara University, California, March 2013

Moderator of the panel MSRI, August 2012

Co-organizer of the workshop *Connections For Women: Cluster Algebras and Commutative Algebra* at MSRI, Berkeley, August 2012

Faculty Advisor for the University student club AWM (Association of Women in Mathematics of the University of Notre Dame), a chapter of AWM at Notre Dame (2008-present)

Chair of the organizing committee of the workshop for women graduate students and recent Ph.D's at the Joint Mathematical Meetings, January 2007, 2006, 2005

Faculty Advisor for the University student club WAMND (Women in Applied Mathematics at Notre Dame)(2007-2009)

Panelist at the 7th Nebraska Conference for Undergraduate Women in Mathematics, University of Nebraska, February 2005

Panelist at the panel discussion *Balancing Career and Family*, Women in Science Graduate Leadership Team, Purdue University, April 2004

Panelist at the Olga Taussky Todd Celebration of Careers in Mathematics for Women, MSRI, July 1999

Committee Services:

Executive Committee, 2020-2022

Postdoc Search Committee, 2020-2021

Library Space Committee, 2020-2021

CoS Dean Review Committee, 2019

Faculty Senate Resolution Committee, 2018-2019

CAP in ACMS for the Full Professor case of Jon Hauenstein (Fall 2018)

Chair of the Special Opportunities Search Committee, 2018-2019

Committee on Appointments and Promotions (CAP), 2017-2020

Hiring Committee, 2016-2018

Provost Advisory Committee, 2015-2018

Algebra Search Committee, 2016-2017

Advisory Committee to the Provost to identify, evaluate, and recruit the Associate Provost and Vice President for Internationalization, 2015-2016

CAP in ACMS for the tenure case of Jon Hauenstein (Fall 2015)

ND LEAD Program, 2015-16

University Committee on Appeals, 2015-2018

Dean Search Committee, 2015

Zhejiang University Planning Committee, 2014-2015

Japan Delegation, 2014-2015

Committee on Appointments and Promotions (CAP), 2013-2015

Algebra Search Committee, 2013-2014

University Committee on Internationalization, 2011-2012

Reorganization Committee (Committee to rewrite the Organization Plan), Spring 2012

Long Term Hiring Committee, 2011-2012

Hiring Committee, 2011-2012

Algebra Search Committee, 2011-2012

Director of the Math Center, 2011-present

Committee on Appointments and Promotions (CAP), 2010-2012

Chair of the Postdoc Search Committee, 2010-2011

University Committee on International Studies, 2009-2011

Math Institute Committee, Spring 2010

Postdoc Search Committee, Summer 2009

Undergraduate Committee, 2008-2010

University Committee for the First Year of Studies, 2008-2010

Committee on Appointments and Promotions (CAP), 2008-2009

Faculty Senate, 2006-2009

Executive Committee Faculty Senate, 2008-2009

Algebra Search Committee, 2006-2007

Post Doc Search Committee, 2006-2007

Taliaferro prize selection committee, 2006

Graduate Council, 2005-2006

Hiring Committee, 2004-2005

Algebra Search Committee, 2004-2005

Service:

Letter writer (for undergraduate students, graduate students, postdoctoral fellows, and for evaluations of tenure and professorship)

Teaching mentor for Felix Janda (2020-2022)

Teaching mentor for Andrei Jorza (2013-2014)

Teaching mentor for Yu Xie (2009-2012)

Memberships in professional societies:

American Mathematical Society: 1990 - present

Association for Women in Mathematics: 1993 - present

Teaching at Notre Dame:

Graduate Classes:

Introduction to Algebraic Geometry

Basic Algebra

Homological Algebra

Commutative Algebra

Topics in Algebra

Undergraduate Classes:

Glynn Mathematics Seminar

Honors Mathematics

Honors Calculus I

Honors Algebra III

Honors Algebra IV

Calculus II for math major

Elements of Calculus I

Elements of Calculus II - Business

Elementary Calculus in Action

Elementary Calculus in Basic Science

Calculus I for math major

Introduction to Math Reasoning

Linear Algebra

Algebra

Independent Study in Commutative Algebra:

Adam Booher Fall 2006 and Spring 2007,

Cody Mack Spring 2009,

Eric Riedl, Jeffrey Madsen, Bernadette Boyle, Megan Patnott, Youngho Yoon, Graham Leach-Krouse Spring 2010,

Christina Jamroz Spring 2010, Summer 2010, Fall 2010 and Spring 2011

Edward Sanchez Spring 2012

Caroline Jansen and Austin Rodgers Fall 2014 and Spring 2015

Austin Rodgers Fall 2015 and Spring 2016