

Milena Hering

University Address

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Employment

August 2009	University of Connecticut, Storrs, Assistant Professor (tenure track).
August 2008 – June 2009	University of Utah, Salt Lake City, Post Doc.
September 2006 – August 2008	Institute of Mathematics and its Applications, Minneapolis, Post Doc.
April–August 2006	Freie Universität Berlin, Wissenschaftliche Angestellte.
January–March 2006	University of Michigan, Ann Arbor, Research Fellow.

Visiting Positions

February – May 2011	Mittag-Leffler Institut, Stockholm.
June, August 2010	Mathematisches Forschungsinstitut Oberwolfach, Oberwolfach Leibniz Fellow.
June – July 2009	Mathematisches Forschungsinstitut Oberwolfach, Oberwolfach Leibniz Fellow.
January – May 2009	The Mathematical Sciences Research Institute, Member.
June–August 2007	Max–Planck–Institut für Mathematik Bonn, Visitor.

Education

2000–2005	<i>University of Michigan at Ann Arbor, USA.</i> PhD.D in mathematics under supervision of William Fulton. Thesis title: <i>Szygies of toric varieties.</i> Degree referral date: April 2006.
1999–2000	<i>Cambridge University, England.</i> Certificate of Advanced Study in Mathematics (Part III), (with distinction). Essay under supervision of Alessio Corti. Essay title: <i>The Hilbert scheme of points on surfaces.</i>
1998–1999	<i>University of California at Berkeley, USA.</i> Transfer undergraduate student.
1996–1998	<i>Eberhard–Karls–Univeristät Tübingen, Germany.</i> Vordiplom.

Publications and preprints

The ring of evenly weighted points on the line (with B. Howard), in preparation.

The T-graph of a multigraded Hilbert scheme (with D. Maclagan), in preparation.

Few smooth d-Polytopes with n lattice points. (with Tristram Bogart, Christian Haase, Benjamin Lorenz, Benjamin Nill, Andreas Pfaffenholz, Francisco Santos, and Hal Schenck), arXiv:1010.38870, submitted.

Cox rings and pseudoeffective cones of projectivized toric vector bundles (with J.González, Sam Payne and Hendrik Süß), arXiv:1009.5238, submitted.

Positivity for toric vector bundles (with M. Mustață and S. Payne), arXiv:0805.4035,
Annales de l'Institut Fourier 60 (2010), fascicule 2, 607-640.

Multigraded regularity and the Koszul property, Journal of Algebra 323 (2010), 1012-1017. arXiv:0712.2251.

Syzygies of toric varieties, PhD.D. thesis, University of Michigan, 2006.

Syzygies, multigraded regularity and toric varieties (with H.Schenck and G.Smith), Compositio Math. 142 (2006), 1499–1506, arXiv:math/0502240.

Asymptotic cohomological functions of toric divisors (with A. Küronya and S. Payne), Advances in Mathematics, 207 (2006), no. 2, 634–645, arXiv:math/0501104.

The Membrane Inclusion Curvature Equations

(with J.C. Faugere and J. Phan), Advances in Applied Mathematics, Vol 31, Issue 4, 643–658, 2003.

Honors

- 2009 Oberwolfach Leibniz Fellowship.
- 2000–2002 Fellow of the “German National Merit Foundation.”
(Studienstiftung des deutschen Volkes).
- since 1999 Member of Darwin College, Cambridge.
- 1998–1999 Stipend of the Rotary foundation.

Grants

- April 2011 – March 2014 Collaborative Research: AGNES - Algebraic Geometry Northeastern Series, we were promised \$20000
- July 2010 – June 2013 NSF grant on Varieties with torus actions: algebra and combinatorics, \$120000.
- April 2010 – March 2011 NSF grant (Co-PI)
SM: Collaborative Proposal. AGNES - Algebraic Geometry Northeastern Series, \$27900

Teaching

- Algebra I, Fall 2010.
- Applied Linear Algebra, Fall 2010.
- Probability, Spring 2010.
- Transition to advanced mathematics, Spring 2010.
- Algebraic Geometry I, Fall 2009
- Multivariable Calculus, Fall 2009.
- Business algebra at the University of Utah, Fall 2008.
- Mentor for the undergraduate course on toric varieties taught by Jessica Sidman at the “Program for Women in Mathematics,” IAS, 2007.
- Class on complex analysis at Freie Universität Berlin, 2006.
- Graduate student instructor at the University of Michigan in Calculus 105, 115 and 116 for seven terms 2000–2005.

Presentations

Edinburgh-Glasgow-Aberdeen Algebraic Geometry Seminar, Glasgow, June 20 2011.

“Coxrings of toric vector bundles.”

Kollegseminar der Algebra und Topologie, Universität Osnabrück, May 24 2011.

“Coxringe von torischen Vektorbündeln.”

Oberseminar, Universität Tübingen, May 19 2011.

“Coxringe von torischen Vektorbündeln.”

Seminar, Mittag-Leffler Institut, March 14 2011.

“The T -graph of the Hilbert scheme of points in the plane.”

Algebraic Geometry seminar, Warwick, January 19 2011.

“Cox rings of toric vector bundles.”

Workshop on components of Hilbert schemes, AIM, July 20 2010.

“An introduction to the multigraded Hilbert scheme.”

Workshop, Universität Cottbus, July 15 2010.

“The moduli space of points on the projective line and quadratic Groebner bases.”

The Second CREST-SBM International Conference “Harmony of Gröbner bases and the modern industrial society”, Osaka, Japan, June–July 2010.

“The moduli space of points on the projective line and quadratic Groebner bases.”

FRAGMENT seminar, Colorado State University, March 2010.

“The moduli space of points on the projective line and quadratic Groebner bases.”

Valley Geometry seminar, UMass Amherst, February 12, 2010,

“The moduli space of points on the projective line and quadratic Groebner bases.”

Geometry-Algebra-Singularities-Combinatorics seminar, Northeastern University, November 30, 2009.

“The moduli space of points on the projective line and quadratic Groebner bases.”

UConn Math Club, University of Connecticut, November 11, 2009.

“Pick’s Formula.”

Algebra seminar, University of Connecticut, October 27, 2009.

“The moduli space of points on the projective line and quadratic Groebner bases.”

Lunch seminar, Universität Göttingen, July 8, 2009.

“The caterpillar polytope and its relatives.”

Combinatorial challenges in toric varieties, American Institute of Mathematics, April 28, 2009.

“Syzygies of toric varieties.”

AMS Western Sectional Meeting, Special Session on Algebra and Number Theory with Polyhedra, San Francisco State University, April 26, 2009.

“The caterpillar polytope and its relatives.”

Bay Area Discrete Math Day, UC Davis, April 4, 2009.

“The graph of monomial ideals.”

Reed Mathematics Colloquium, Reed College, February 19, 2009.

“Syzygies of toric surfaces.”

Algebraic Geometry Seminar, University of Utah, November 25, 2008.
“Positivity of toric vector bundles.”

Undergraduate Colloquium, University of Utah, November 5, 2008.
“Pick’s Theorem.”

AG Algebraische Geometrie, Universität Tübingen, June 26, 2008.
“Einbettungen des Modulraums von Punkten auf der projektiven Geraden.”

Humboldt Algebraic Geometry Seminar, Humboldt Universität zu Berlin, June 18, 2008.
“The moduli space of n points on the line and the Koszul property.”

Combinatorics Seminar, University of Minnesota, May 6, 2008.
“ T -graphs of Hilbert schemes of points in the plane.”

Algebraic Geometry Seminar, University of Iowa, April 4, 2008.
“Embeddings of the moduli space of n points on the projective line.”

AMS Special Session on Algebraic Combinatorial Geometry, Spring Eastern Meeting, March 15, 2008.
“Embeddings of the moduli space of points on the projective line. ”

Algebraic Geometry Seminar, University of Utah, February 26, 2008.
“The moduli space of points in \mathbb{P}^1 and the Koszul property.”

Algebraic Geometry Seminar, Stanford University, February 22, 2008.
“The moduli space of n points on the projective line and the Koszul property.”

Combinatorics and Geometry Seminar, Stanford University, February 20, 2008.
“The caterpillar polytope and its relatives.”

Colloquium, University of Connecticut, February 4, 2008.
“Syzygies of toric varieties. ”

Postdoc Seminar, Institute of Mathematics and its Applications, January 29, 2008.

Algebraic Geometry Seminar, Warwick University, January 14, 2008.
“Syzygies of toric varieties. ”

Seminar: Algebraische Geometrie, Freie Universität Berlin, December 20, 2007.
“Positivität torischer Vektorbündel.”

Mini workshop on Projective Normality of smooth toric varieties, Oberwolfach, August 16, 2007.
“Vanishing theorems.”

Program for women in mathematics, IAS, May 22, 2007.
“Syzygies of toric varieties. ”

Algebra-Geometry-Combinatorics Seminar, San Francisco State Univ, April 27, 2007.
“Syzygies of toric varieties. ”

Algebra Seminar, University of Pennsylvania, February 26, 2007.
“Syzygies of toric varieties. ”

Algebra and Combinatorics Seminar, Texas A&M, February 9, 2007.
“Syzygies of toric varieties. ”

GADGET Seminar, University of Texas, Austin, February 6, 2007.
“Syzygies of toric varieties. ”

Postdoc Seminar, Institute of Mathematics and its Applications, January 30.

“Syzygies of toric varieties.”

AMS Special Session on Computational Algebraic and Analytic Geometry for Low-Dimensional Varieties, Joint Meeting, New Orleans, January 8, 2007.

“Syzygies of toric varieties.”

International conference on Toric Topology, Osaka City University, Osaka, May 2006.

“Syzygies of toric varieties.”

Seminar: Algebraische Geometrie, Freie Universität Berlin, April 2006.

“Syzygies of toric varieties.”

Undergraduate Math Club, University of Michigan, Ann Arbor, March 2006.

“Pick’s formula and applications.”

Valley Geometry Seminar, University of Massachusetts at Amherst, February 2006.

“Syzygies of toric varieties.”

Convex and Algebraic Geometry, Mathematisches Forschungsinstitut Oberwolfach, January 2006.

“Syzygies of toric varieties.”

AWM Workshop for Women Graduate Students and Recent Ph.D.’s, Joint meeting in San Antonio, Texas, January 2006.

Poster presentation on “Syzygies of toric varieties.”

Special session on Algebraic Geometry, Fall Central Section meeting, Lincoln, Nebraska, October 2005.

“Syzygies, multigraded regularity and toric varieties.”

Queen’s Algebraic Geometry Seminar, Queen’s University, Kingston, Ontario, September 2005.

“Syzygies of toric varieties.”

Special session on Algebraic Geometry, Second joint meeting of AMS, DMV and ÖMG at Mainz, June 2005.

“Asymptotic cohomological functions on toric varieties.”

AG Algebraische Geometrie, Eberhard–Karls–Universität Tübingen, June 2005.

“Asymptotic cohomological functions on toric varieties.”

Special session on Algebraic Geometry and Combinatorics, Spring Western Section meeting, Santa Barbara, California, April 2005.

“Syzygies, multigraded regularity and toric varieties.”

Student Algebraic Geometry and Commutative Algebra Seminar, University of Michigan at Ann Arbor, several presentations, 2002–2005.

Solving systems of polynomial equations (CBMS), Texas A&M University, May 2002.

“The membrane inclusion curvature equations.”

Effective Methods in Algebraic Geometry (MEGA), Bath, May 2000.

With Jean–Charles Faugere: “The membrane inclusion curvature equations.”

Conferences, summer schools and workshops

Toric Geometry and Applications, Leuven, June 2011.

Discrete, Tropical, and Algebraic Geometry, Goethe Universität Frankfurt, May 2011.

Solving polynomial equations, CIAM/KTH, February 2011.

Classical Algebraic Geometry, Oberwolfach, June 2010.

Workshop: Tropical Geometry in Combinatorics and Algebra, MSRI, October 2009.

Introductory Workshop: Tropical Geometry, MSRI, August 2009.

Connections for Women: Tropical Geometry, MSRI, August 2009.

The workshops within the Jumbo Algebraic Geometry program at MSRI 2009.

Toric Geometry, Oberwolfach, January 2009.

Algebraic and Analytic Geometry, Park City Mathematics Institute, July 2008.

Affine manifolds and Mirror Symmetry Workshop, Ann Arbor, April 2008.

Recent progress on the Moduli Space of Curves, Banff, Canada, March 2008.

Advances in Algebra and Geometry, MSRI, 2007.

Workshop on Schubert Calculus and Schubert Geometry at the Banff International Research Station, Banff, Canada, March 2007.

Moduli Spaces and Arcs in Algebraic Geometry, Cologne, 2006.

Algebraic Geometry conference, Bedlewo, 2006.

AMS Summer Research Institute in Algebraic Geometry, Seattle, 2005.

Graduate Student Warm-Up Workshop for AMS Summer Research Institute in Algebraic Geometry, Seattle, 2005.

Introduction to Multiplier Ideals, Universität zu Köln, 2005.

IAS/Park City Mathematics Institute (PCMI) on Algebraic Combinatorics, 2004.

Algebraic Geometry, Presentations of Young Researchers, Snowbird, 2004.

Basic Algebraic Geometry, ICTP, Trieste, 2003.

MEGA, Kaiserslautern, 2003.

Rocky Mountains Mathematics Consortium Summer Conference on Computational Algebra with Applications in Laramie, Wyoming, 1999.

Service

Co-organizer with Arend Bayer of AGNES conference at UConn, September 2010,
<http://www.agneshome.org/fall10>

Co-organizer of the *Algebraic Geometry Northeastern Series*, <http://www.agneshome.org/>.

Co-organizer with Jessica Sidman of Poster session at AGNES in Amherst, April 2010.

Co-organizer with Arend Bayer and Aaron Bertram of the Western Algebraic Geometry Seminar, November 8-9, 2008, see <http://www.math.utah.edu/~wags08/>.

Co-organizer with Diane Maclagan for a Special Session on “Toric varieties” at the Fall Eastern Section Meeting of the AMS at Rutgers University, October 6-7 2007.

Co-organizer of the Student Algebraic Geometry and Commutative Algebra Seminar at the University of Michigan, 2004–2005.

Reviewer for MathSciNet.