

# Roya Beheshti Zavareh

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## General Information

Born: 1977, Esfahan, Iran

## Education

Massachusetts Institute of Technology, Cambridge, Massachusetts.  
Ph.D. in Mathematics, 1999-2003  
Thesis Advisor: Prof. Johan de Jong

Sharif University of Technology, Tehran, Iran  
B.S. in Mathematics, 1995-1999

## Research Interests

Algebraic geometry

## Positions

- Associate Professor, Washington University in St. Louis, 2013–present.
- Assistant Professor, Washington University in St. Louis, 2007–2013.
- Postdoctoral Fellow (Complementary Program), MSRI, Berkeley, 2006–2007
- Postdoctoral Fellow, Queen’s University, Kingston, Canada, 2004–2006
- Postdoctoral Fellow, Max-Planck-Institut für Mathematik, Bonn, Germany, 2003–2004

## Short-term Visits

- Columbia University, 2011–2012
- MSRI, Algebraic Geometry Program, February-May 2009
- Institut Mittag-Leffler, Sweden, June 2007
- Max-Planck-Institut für Mathematik, Germany, June-July 2006

## Grants

- Classroom innovation grant, Washington U. (undergraduate algebraic geometry Spring 2018)
- NSF, I-70 Algebraic Geometry Symposia (Co-Principal Investigator) 2016–2020
- Simons Collaboration Grants for Mathematicians, 2015–2020
- NSF, Principal Investigator DMS1204567, 2012–2017
- Simons Collaboration Grants for Mathematicians, 2011–2012
- AWM travel grant, 2010
- Fund for Scholarly and Professional Development, Queen’s University (2006)

## Honors

- Rosenblith Fellowship, Department of Mathematics, MIT, 2000
- Liberty Mutual Fellowship, Department of Mathematics, MIT, 1999
- International Olympiad in Informatics (Netherlands 1995), bronze medal

- International Mathematical Olympiad (Hong Kong 1994), silver medal

## Publications

- Chow groups of 1-cycles in hypersurfaces of low-degree in preparation
- Positivity results for spaces of rational curves (with E. Riedl) preprint, 2017
- Hypersurfaces with too many rational curves  
*Mathematische Annalen*, 360 (2014), Issue 3-4, 753-768.
- Rational curves in hypersurfaces (with Mohan Kumar)  
*Journal of the Ramanujan Math. Society*, 28a (2013) 1–20.
- Low degree hypersurfaces in rational homogeneous varieties and their spaces of rational curves, preprint
- Spaces of rational curves in complete intersections (with Mohan Kumar)  
*Compositio Math.*, 149 (2013) 1041–1060.
- Fibers of projections and submodules of deformations (with D. Eisenbud)  
*Current Developments in Algebraic Geometry, MSRI Publications*, 2010.
- Fibers of generic projections of smooth varieties (with D. Eisenbud)  
*Oberwolfach Reports*, 26 (2008)
- Fibers of generic projections (with D. Eisenbud)  
*Compositio Math.*, 146 (2010) no. 2, 435-456.
- Non-uniruledness results for spaces of rational curves on hypersurfaces  
*Algebra and Number Theory* 6 (2012), no.4, 669–687
- Rational surfaces in index-one Fano hypersurfaces (with J. Starr),  
*J. Algebraic Geometry*, 17 (2008) 255–274.
- Lines on projective hypersurfaces  
*J. Reine Angew. Math. (Crelle's Journal)*, 592 (2006), 1–21.
- Linear subvarieties of smooth hypersurfaces  
*Internat. Math. Res. Notices*, 49 (2005), 3055–3063.
- Elliptic surfaces and Azumaya algebras (with A. J. de Jong, A. Ghitza, M. Lieblich, D. Testa), A book based on Johan de Jong's lectures on the same topic, *in preparation*.
- Lines on Fano hypersurfaces  
*Ph.D Thesis, MIT, May 2003*.
- Elementary number theory, challenging problems (with M. Mirzakhani)  
*Fatemi Publishers, Tehran, Iran, 1999* (book in Farsi).

## Invited Talks (since 2007)

- Stanford University algebraic geometry seminar, February 2018
- University of Michigan algebraic geometry seminar, October 2017
- Conference "Spring meeting in Algebraic Geometry" Tehran, Iran, April 2017
- University of Illinois in Chicago algebraic geometry seminar, April 2017
- University of Kansas algebraic Geometry seminar, March 2017
- Northwestern University algebraic Geometry seminar, March 2017

- Northwestern University, Mini-course on Stable rationality (3 lectures) February/March 2017
- Workshop on rational subvarieties in characteristic  $p$ , AIM, California, October 2016
- Conference "Rational points and algebraic geometry", CIRM, Luminy, France, September 2016
- Conference "Summer meeting of Canadian Math Society", Edmonton, Canada, June 2016
- Conference "Algebraic Geometry", UC. San Diego, January 2016
- University of Los Andes, Bogota, Colombia, Colloquium, March 2016
- Workshop "Bochum-Essen-Wuppertal joint meeting", Bochum, Germany, June 2015
- Cornell University algebraic geometry seminar, April 2015
- Conference "Frontiers in Mathematical Sciences", Tehran, Iran, December 2014
- Harvard-MIT algebraic geometry seminar, Harvard University, April 2014.
- MSRI algebraic geometry seminar, May 2013
- Conference in honor of S. Shahashahani's 60th Birthday, Sharif University, Iran, December 2012
- CUNY Algebra Seminar, May 2012
- Columbia University algebraic geometry Seminar, April 2012
- University of Connecticut algebra Seminar, March 2012
- IMPA Algebraic Geometry Seminar, Brazil, February 2012
- Algebraic Geometry Northern Series Workshop, Stony Brook University, November 2011
- 40 Years and Counting: AWM's Celebration of Women in Mathematics, Brown University September 2011
- Western Algebraic Geometry Symposium, Stanford University, April 2011
- KUMUNU, University of Nebraska-Lincoln, April 2011
- AMS joint meeting, special session on Moduli Spaces, New Orleans, January 2011
- V Iberoamerican Congress on Geometry, Pucon, Chile, December 2010
- ICM, satellite conference on complex geometry and group actions, Hyderabad, India August 2010
- University of Georgia Algebraic Geometry Seminar, January 2010
- University of Georgia VIGRE Seminar, January 2010
- Princeton Algebraic Geometry Seminar, December 2009
- University of Illinois at Chicago Algebraic Geometry Seminar, November 2009
- Caltech Algebraic Geometry Seminar, June 2009
- Workshop on spaces of curves and diophantine problems, Columbia University June 2009
- MSRI, Algebraic Geometry Program, April 2009
- Oberwolfach workshop on Classical Algebraic Geometry, Germany, June 2008
- Workshop on Geometry and Syzygies, Korea Advanced Institute of Science and Technology, November 2008
- SUNY Algebraic Geometry Seminar, October 2008
- UC Berkeley Commutative Algebra and Algebraic Geometry Seminar, March 2008
- The Show-me Algebraic Geometry Conference, University of Missouri, Columbia May 2008
- University of British Columbia Algebraic Geometry Seminar, October 2007
- Institute for Theoretical Physics and Mathematics, Tehran, Iran, July 2007
- Mittag-Leffler Institutue, Sweden, June 2007
- Chalmers University, Sweden, June 2007
- UC Berkeley Commutative algebra and Algebraic Geometry Seminar, April 2007
- Stanford University Algebraic Geometry Seminar, May 2007

## Teaching

- Washington University:
  - Undergraduate Algebraic Geometry (Spring 2018)
  - Graduate Complex Analysis II (Spring 2018)
  - Graduate Complex Analysis I (Fall 2017)
  - Introduction to Algebraic Geometry (Fall 2016)
  - Calculus II (Spring 2014, Spring 2016)
  - Topics in Algebraic Geometry (Spring 2011)
  - Abstract Algebra (Spring 2011)
  - Linear Algebra (Fall 2010)
  - Graduate Algebra II (Spring 2010, Spring 2017)
  - Graduate Algebra I (Fall 2009, Fall 2016)
  - Complex Variables (Fall 2009, Fall 2015)
  - Multivariable Calculus (Fall 2008, Fall 2012, Fall 2014)
  - Algebraic Geometry II (Spring 2008)
  - Algebraic Geometry I (Fall 2007)
- Outreach:
  - Pre-calculus, Missouri Eastern Correctional Center (Fall 2016)