

# Roya Beheshti Zavareh

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Washington University in St. Louis  
beheshti@math.wustl.edu  
<http://www.math.wustl.edu/~beheshti>

**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

**Grants/Awards**            • NSF, Principal Investigator DMS-2101935, 2021–2024  
                                 • 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  
                                 • Teaching award, Washington University, 2018  
                                 • 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)  
                                 • 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

- Higher Fano manifolds (with C. Araujo, A-M Castravet, K. Jabbusch, S. Makarova, (E. Mazzon, L. Taylor, N. Viswanathan), submitted for publication.
- Rational curves on del Pezzo surfaces in positive characteristic (with B. Lehmann, E. Riedl, S. Tanimoto), preprint.
- Restrictions on rational surfaces lying in very general hypersurfaces (with E. Riedl) submitted for publication
- Moduli spaces of rational curves on Fano threefolds (with B. Lehmann, E. Riedl, S. Tanimoto), submitted for publication
- Linear subvarieties of hypersurfaces (with E. Riedl) *Duke Math Journal*, 170 (10), 2263–2288.
- Positivity results for spaces of rational curves (with E. Riedl) *Algebra and Number Theory*, Volume 14, 2 (2020), 485-500.
- 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.
- 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)

- University of Chicago algebraic geometry seminar, April 2021
- Princeton University algebraic geometry seminar, March 2021

- Columbia University algebraic geometry seminar, November 2020
- University of Pittsburg, Colloquium, January 2020
- Conference on Hodge theory in Honor of D. Arapura's 60th Birthday, Madison, September 2019
- AIM Workshop on Rationality problems in algebraic geometry, July 2019
- U. Washington algebraic geometry seminar, Seattle, October 2018
- Western Algebraic Geometry Symposium, U. Oregoaan, Eugene, October 2018
- ICERM workshop on Birational Geometry and Arithmetic, Providence, May 2018
- 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
- 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 Institute, 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