

Curriculum Vitae
Yi Wang

Personal Information

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Education

- Ph.D., Mathematics, Princeton University, 2006-2011 Advisor: Prof. Sun-Yung Alice Chang
- M.S., Mathematics, Chinese University of Hong Kong, 2004-2006 Advisor: Prof. Juncheng Wei
- B.S., Mathematics, Wuhan University, 2001-2004

Employment

- Assistant Professor (tenure-track), Johns Hopkins University, 2015-now
- Szegö Assistant Professor, Stanford University, 2011-2014

Visiting Positions

- Member, Institute for Advanced Study (IAS), 2014-2015
- Research Fellow, MSRI, 2013 Fall Program: Optimal Transport: Geometry and Dynamics
- Postdoctoral Fellow, MSRI, 2011 Fall Program: Quantitative Geometry

Academic Interests

- Conformal Geometry, Fully Nonlinear PDEs, Harmonic Analysis

Awards and Fundings

- 2019-2024 NSF CAREER Award DMS-1845033, Conformal Geometry and Monge-Ampere Type Equations
- 2016-2019 NSF Grant DMS-1612015, Geometric Analysis in Conformal Geometry and Fully Nonlinear Elliptic PDEs
- 2012-2015 NSF Grant DMS-1205350, Geometric Inequalities and Fully Nonlinear Elliptic Equations

- 2011-2013 AMS-Simons Travel Grant

Publication List

- 18. *On a fully nonlinear sharp Sobolev trace inequality, to appear in Calculus of Variations and Partial Differential Equations, joint with Jeffrey Case, submitted.*
- 17. *Nonuniqueness for a fully nonlinear boundary Yamabe-type problem via bifurcation theory, joint with Jeffrey Case and Ana Claudia Moreira, to appear in Calculus of Variations and Partial Differential Equations.*
- 16. *On the Sobolev-Poincaré inequality of CR-manifolds, joint with Paul Yang, to appear in International Mathematics Research Notices.*
- 15. *Boundary operators associated to the σ_k -curvature, joint with Jeffrey Case, Advances in Mathematics, Vol. 337, 83-106.*
- 14. *Integrability of scalar curvature and normal metric on conformally flat manifolds, joint with Shengwen Wang, Journal of Differential Equations, 265 (2018), no. 4, 1353-1370.*
- 13. *Fractional Poincaré inequality in various settings, joint with Yannick Sire, Bruno Pini Mathematical Analysis Seminar, (2017), 43-54.*
- 12. *A Dirichlet's principle for the k -Hessian, joint with Jeffrey Case, Journal of Functional Analysis, 275 (2018), no. 11, 2895-2916.*
- 11. *Fractional Poincaré inequality, joint with Yannick Sire, Calculus of Variations and Partial Differential Equations, 56 (2017), no. 2, Art. 35, 18 pp.*
- 10. *Isoperimetric inequality on CR manifolds with nonnegative Q -curvature, joint with Paul Yang, Annali della Scuola Normale Superiore di Pisa, (5) 18 (2018), no. 1, 343-362.*
- 9. *Totally finite Q -curvature on locally conformally flat manifolds, joint with Zhiqin Lu, Calculus of Variations and Partial Differential Equations, (2017), no. 4, Art. 98, 24 pp.*

- 8. *Approximation in fractional Sobolev spaces and Hodge system, joint with Pierre Bousquet, Russ Emmanuel, and Po-Lam Yung, Journal of Functional Analysis, 276 (2019), no. 5, 1430-1478.*
- 7. *Isoperimetric inequality, Q -curvature and A_p weights, Advances in Mathematics, Vol. 281 (2014), 823-844.*
- 6. *Some higher order isoperimetric inequalities via the method of optimal transport, joint with Sun-Yung Alice Chang, International Mathematics Research Notices, (2014), no. 24, 6619-6644.*
- 5. *Michael-Simon inequality for k -th mean curvatures, Calculus of Variations and Partial Differential Equations, Vol. 51, no. 1-2, 2014, 117-138.*
- 4. *A subelliptic Bourgain-Brezis inequality, joint with Po-Lam Yung, J. European Math. Soc., Vol. 16, no. 4, 2014, 649-693.*
- 3. *The Aleksandrov-Fenchel inequalities for quermassintegrals on k -convex domains, joint with Sun-Yung Alice Chang, Advances in Mathematics, Vol. 248 (2013), 335-377.*
- 2. *The isoperimetric inequality and quasiconformal maps on manifolds with finite total Q -curvature, International Mathematics Research Notices (IMRN), 2012, no. 2, 394-422.*
- 1. *On Aleksandrov-Fenchel inequalities for k -Convex domains, joint with Sun-Yung Alice Chang, Milan J. Math. Vol. 79, 2011, no. 1, 13-38.*
- *Finite total Q -curvature in conformal geometry and the CR geometry, Oberwolfach Report-Partial Differential Equations, Vol. 36, 2015.*
- *(Ph.D Thesis) On some geometric inequalities and applications, 2011, Princeton University.*
- *(Master Thesis) Locating the blow-up points of higher order Liouville equations, 2006, Chinese University of Hong Kong.*

Invited Talks

- 2020 January, Taipei-Hsinchu Conference on Geometric Invariance and Partial Differential Equations, Taiwan.
- 2019 October, Recent advances in nonlinear problems, CUNY Graduate Center, New York
- 2019 May, AIM workshop on Symmetry and convexity in geometric inequalities, The American Institute of Mathematics (AIM), San Jose, California
- 2019 April, Geometry Festival, University of Maryland
- 2018 October, UCI-UCSD-UCR joint seminar, University of California, Irvine
- 2018 June 11-15, Nonlinear PDEs in Geometry and Physics, Cortona, Italy
- 2018 April 11, Geometry Lunch Seminar, Penn State University
- 2018 April 5, Colloquium, Penn State University
- 2018 January, Taipei Conference on Geometric Invariance and Partial Differential Geometry, Taiwan
- 2017 December, SIAM Conference on Analysis of Partial Differential Equations, Baltimore, Maryland
- 2017 November, AIM Workshop on Analysis and geometry on pseudohermitian manifolds, The American Institute of Mathematics (AIM), Palo Alto, California
- 2017 May, Geometric Properties of Local and non-Local PDEs, Birs Center, Oaxaca, Mexico
- 2017 April, Workshop in Geometry and Analysis on Manifolds, UC Santa Barbara
- 2017 April, Workshop in Optimal Transport and Economics, Birs Center, Banff, Canada
- 2017 March, Geometry and Topology seminar, Stony Brook University
- 2016 Oct, Princeton Rutgers Joint Geometric PDE Seminar, Princeton University
- 2016 July, Workshop on Geometric and Analytic Inequalities, Birs Center, Banff, Canada
- 2016 January, The Third Taiwan International Conference on Differential Geometry, Taiwan
- 2016 January, Differential Geometry: Connection for Women, MSRI
- 2015 August, Calculus of Variations and PDE, MFO, Oberwolfach, Germany
- 2015 June, International Workshop in Optimal Transport, University of Montpellier, France

- 2015 March, Princeton-Tokyo Workshop on Geometric Analysis, Tokyo University, Japan
- 2015 February, Analysis Seminar, McGill University, Canada
- 2014 June, Thematic Program on Nonlinear PDEs in Geometry and Physics, Center for Mathematics at Notre Dame University
- 2014 April, Differential Geometry Seminar, University of California, Irvine
- 2014 April, Colloquium, University of California, Santa Cruz
- 2014 January, Geometric Analysis and PDE Seminar, Johns Hopkins University
- 2014 January, Colloquium, University of Illinois at Urbana-Champaign
- 2013 December, Colloquium, Purdue University
- 2013 November, Colloquium, University of Minnesota
- 2013 June, Conference on Geometrical Analysis, Centre de Recerca Matemàtica (CRM), Spain
- 2013 April, Graduate Student and Postdoc Workshop on Mean Curvature Flow and Related Topics, MIT
- 2013 April, Norbert Wiener Harmonic Analysis Center Seminar, University of Maryland
- 2013 March, Geometric Analysis Seminar, Princeton University
- 2013 March, Workshop I: Analysis on Metric Spaces, IPAM, University of California, Los Angeles
- 2012 October, Geometry Seminar, Stanford University
- 2012 July, Workshop on Conformal and CR Geometry, Birs Center, Banff, Canada
- 2012 May, Workshop on Optimal Transportation and Differential Geometry, Birs Center, Banff, Canada
- 2012 April, Graduate Student and Postdoc Workshop on Mean Curvature Flow and Related Topics, MIT
- 2012 February, Geometric Seminar, Stanford University
- 2011 November, Differential Geometry Seminar, University of California, Santa Barbara
- 2011 September, Geometry/Topology Seminar, Duke University
- 2011 April, Seminar, Max Planck Institute, Potsdam, Germany
- 2011 April, Analysis and PDEs Seminar, John Hopkins University
- 2011 January, Nonlinear Analysis Seminar, Rutgers University
- 2010 December, Seminar, Chinese University of Hong Kong
- 2010 November, Workshop on Geometric Probability and Optimal Transportation, Fields Institute, University of Toronto, Canada

- 2010 June, Differential Equation Seminar, Universitat Politècnica de Catalunya, Spain
- 2010 May, Analysis Seminar, McGill University, Canada

Teaching Experiences

- Fall 2019, Math 749 Topics in Differential Geometry, Johns Hopkins University
- Spring 2019, Math 631 Partial Differential Equations I, Johns Hopkins University
- Fall 2018, Math 109 Calculus II, 2 sections, Johns Hopkins University
- Fall 2017, Math 109 Calculus II, 2 sections, Johns Hopkins University
- Spring 2017, Math 731 Topics in Geometric Analysis, Johns Hopkins University
- Fall 2016, Math 749 Topics in Differential Geometry, Johns Hopkins University
- Fall 2016, Math 443 Fourier Analysis, Johns Hopkins University
- Fall 2015, Math 443 Fourier Analysis, Johns Hopkins University
- Fall 2015, Math 311 Complex Analysis, Johns Hopkins University
- Spring 2014, Graduate Course Math 258: Topics in Geometric Analysis, Stanford University
- Fall 2013, Math 53, 2 sections, Stanford University
- Spring 2013, Math 51, 2 sections, Stanford University
- Fall 2012, Math 51, 2 sections, Stanford University
- Spring 2012, Math 53, Stanford University
- Winter 2012, Math 51, 2 sections, Stanford University
- 2010, Instructor, Mat 104 Calculus, Freshman Scholars Institute (FSI), Princeton University
- 2009, Instructor, Mat 201 Multivariable Calculus, Department of Mathematics, Princeton University
- 2009, Review sessions tutor, PDE in Conformal Geometry, Women and Mathematics (WAM) program, Institute of Advanced Study
- 2007 Problem sessions tutor, Topics in Elliptic PDEs / Geometric Problems, Summer Program in Geometry and Analysis, Princeton University
- 2007-2010, Teaching assistant, MAT 104 (Calculus), MAT 201 (Multivariable calculus), MAT 200 (Linear Algebra and Calculus for economists), Mat 211 (Models, Proofs, And Applications), Mat 215 (Analysis in a Single Variable), Mat 303 (Ordinary Differential Equations), Mat 350 (Introduction to Differential Equations), Princeton University

Academic Services/Activities

- Co-organizer with Jacob Bernstein, Roberto De Leo, Stanley Einstein-Matthews and Yanir Rubinstein of Baltimore-Washington Metro Area Differential Geometry Seminar
- Co-organizer with Jacob Bernstein of Analysis Seminar, Johns Hopkins University
- Co-organizer of 2015 AMS Sectional Meeting Special Session in Geometric Analysis and Partial Differential Equation
- Nov 2016 Invited talk: Sculpting Klein Bottle, Severn School (a local private high school), Annapolis, MD
- Nov 2016 Invited talk: Introduction to Topology and Geometry, Severn School (a local private high school), Annapolis, MD
- Peer reviewer for journals

Supervising Graduate students:

- Caroline VanBlargan (3rd year)
- Organizing first-year graduate students mini-courses 2016-2017, 2017-2018, 2018-2019

Services

- Oral examination committee: Xiaoqi Huang, Caroline VanBlargan
- Thesis Defense reader/committee: Chenyun Luo, Dan Ginsberg
- Graduate Committee 2016-2019
- Noetherian Ring Committee 2015-2019
- Library Liaison 2016-2018