

# Xumin Jiang

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## CONTACT INFORMATION

Department of Mathematics  
Fordham University  
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## RESEARCH INTERESTS

Differential geometry, analysis of partial differential equations,

## EDUCATION

### University of Notre Dame

Ph.D. in Mathematics, May 2016

- Advisor: Qing Han and Karsten Grove

### Nanjing University

Ph. D. candidate in mathematics, Sep 2008 - Jun 2011

- Advisor: Gang Tian
- B.S. in computer science, Jun 2008

## EMPLOYMENT

### Fordham University

Lecturer, Department of Mathematics, Sep 2023 - present

Peter M. Curran Visiting Assistant Professor, Department of Mathematics, Aug 2019 - Aug 2023

### Rutgers University

Hill Assistant Professor, Department of Mathematics, Rutgers University, Sep 2016 - Jul 2019.

## PUBLICATIONS

1. A continuous cusp closing process for negative Kähler-Einstein metrics, with X. Fu and H.-J. Hein, to appear at Geom. Func. Anal.,  
*Arxiv preprint* <https://arxiv.org/abs/2401.11468>
2. The singular sets of degenerate and nonlocal elliptic equations on Poincaré-Einstein manifolds, with Y. Sire and R. Zhang, submitted,  
*Arxiv preprint* <https://arxiv.org/abs/2309.09948>
3. Asymptotics of Kähler-Einstein metrics on complex hyperbolic cusps, with X. Fu and H.-J. Hein,  
Calc. Val. P. D. E., <https://doi.org/10.1007/s00526-023-02613-4>
4. The Loewner-Nirenberg Problem in cones, with Q. Han and W. Shen,  
Submitted. *Arxiv preprint* <https://arxiv.org/abs/2012.06799>
5. Boundary expansion for the Loewner-Nirenberg problem in domains with conic singularities,  
J. Funct. Anal. 281 (2021), no. 7, 109122. 35 (58)
6. Free-boundary regularity on the focusing problem for the  $Q_k$  Curvature Flow with flat sides I, with Ling Xiao,  
J. Funct. Anal. 280 (2021), no. 2, 108792, 37 pp. 53E10
7. Asymptotic expansions of complete Kahler-Einstein metrics with finite volume on quasi-projective manifolds, with Yalong Shi,  
Sci. China Math. 65 (2022), no. 9, 1953-1974

8. Optimal regularity of constant curvature graphs in Hyperbolic space, with L. Xiao,  
Calc. Var. P.D.E., 58:133 (2019)
9. Isometric embedding with nonnegative Gauss curvature under the graph setting,  
Discrete Contin. Dyn. Syst. 39 (2019), no. 6, 3463-3477.
10. Asymptotics and convergence for the complex Monge-Ampère equation, with Q. Han,  
Accepted at Annals of PDE. *Arxiv preprint* <https://arxiv.org/abs/1806.05371>.
11. Boundary regularity of minimal graphs in the hyperbolic space, with Q. Han,  
Journal für die reine und angewandte Mathematik (2023),  
<https://doi.org/10.1515/crelle-2023-0040>
12. The convergence of boundary expansions and the analyticity of minimal surfaces  
in the hyperbolic space, with Q. Han,  
Submitted. *Arxiv preprint* <https://arxiv.org/abs/1801.08348>.
13. Boundary expansions for minimal graphs in the hyperbolic space, Thesis (Ph.D.),  
University of Notre Dame (2016).

CONFERENCE  
TALKS

*Asymptotics of Kähler-Einstein metrics on complex hyperbolic cusps*, Union College Math Conference - Session on Differential Geometry and Geometric Analysis , Union College (Jun 2022)

*The Loewner-Nirenberg problem in domains with conic singularities*, AMS Sectional Meeting, University of Connecticut Hartford (Apr 2019)

*Boundary expansions for minimal graphs in the hyperbolic space*, AMS Sectional Meeting, Michigan State University (Mar 2015)

*Boundary expansion for the complex Monge-Ampère equation*, Geometric Analysis Seminar, School of Mathematical Sciences, Xiamen Univeristy (May 2015)

*Boundary expansion for Kähler Einstein metrics in the pseudoconvex domain*, International Workshop On Conformal Geometry and Geometric PDE, Beijing International Center for Mathematical Research, Peking University (Jun 2015)

INVITED TALKS

*Kähler-Einstein metrics on complex hyperbolic cusps with a continuous cusp closing process*, Differential Geometry, Topology, and special structures Seminar, City University of New York (Oct 2022)

*Kähler-Einstein metrics on complex hyperbolic cusps*, Nonlinear Analysis Seminar, Rutgers University (Oct 2021)

*Asymptotic behavior of Kähler-Einstein metrics with isolated log canonical singularities*, Geometric Seminar, Stony Brook University (Apr 2020)

*Asymptotic expansion of quasi-projective KE metrics*, Purdue Geometry/Geometric Analysis Seminar, Purdue University (Apr 2019)

*Minimal graphs in the hyperbolic space*, Geometric Analysis Seminar, City University of New York (Oct 2018)

*The Loewner-Nirenberg problem in domains with conic singularities*, Analysis and Partial Differential Equations Seminar, Johns Hopkins University (Sep 2018)

*Boundary expansions of constant curvature graphs in the hyperbolic space*, Invited talk at College of Mathematics, Beijing Normal University, Beijing (Aug 2017)

*The linearization of the complex Monge-Ampère equation and the tangential estimates*, Lectures on Geometric PDEs, Beijing International Center for Mathematical Research, Peking University (Jun 2015)

*Boundary expansion for the complex Monge-Ampère equation*, Invited talk at College of Mathematics, Capital Normal University, Beijing (Jun 2015)

TEACHING  
EXPERIENCE

**Fordham University**

Spring 2024 Math 2006 Linear algebra I  
Spring 2024 Math 1203 Applied Calculus I (3 sessions)  
Fall 2023 Math 1700 Math Modeling  
Fall 2023 Math 1108 Math for Business: Finite (2 sessions)  
Fall 2023 Math 1207 Calculus II  
Spring 2023 Math 1207 Calculus II (2 sessions)  
Fall 2022 Math 1206 Calculus I (2 sessions)  
Spring 2022 Math 1207 Calculus II (2 sessions)  
Fall 2021 Math 1206 Calculus I (2 sessions)  
Spring 2021 Math 1207 Calculus II  
Fall 2020 Math 1108 Math for Business: Finite (2 sessions)  
Fall 2020 Math 2005 Multivariable Calculus II  
Spring 2020 Math 1207 Calculus II (2 sessions)  
Fall 2019 Math 1100 Finite Mathematics  
Fall 2019 Math 1206 Calculus I

**Rutgers University**

Spring 2019 Math 350 Linear algebra  
Fall 2018 Math 151 Calculus I for Mathematical and Physical Sciences  
Fall 2018 Math 152 Calculus II for Mathematical and Physical Sciences  
Spring 2018 Math 151 Calculus I for Mathematical and Physical Sciences  
Fall 2017 Math 252 Elementary Differential Equations,  
Fall 2017 Math 251 Multivariable Calculus  
Spring 2017 Math 350 Linear Algebra  
Spring 2017 Math 152 Calculus II for Mathematical and Physical Sciences  
Fall 2016 Math 151 Calculus I for Mathematical and Physical Sciences

**University of Notre Dame**

Fall 2015 Math 10350 Calculus A

PROFESSIONAL  
SERVICE

**Fordham University**

Spring 2020 Co-coordinator, Math 1108, Math for Business: Finite  
Fall 2020 Co-coordinator, Math 1108, Math for Business: Finite

HONORS AND  
AWARDS

**University of Notre Dame**

Spring 2016 Sady Prize for the Best Dissertation in Mathematics

**Fordham University**

Spring 2020 Fordham A&S Deans' Challenge Grant, Grant Leader: Melkana Brakalova  
Fall 2020 Fordham A&S Deans' Challenge Grant, Grant Leader: Melkana Brakalova