Jiayin Pan

CONTACT INFORMATION	Department of Mathematics
	University of California, Santa Cruz
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	Santa Cruz, CA 95064
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RESEARCH INTERESTS

Riemannian geometry, Ricci curvature and topology, Gromov-Hausdorff convergence.

EMPLOYMENT

Fall 2022 - Present   *Assistant Professor*
Department of Mathematics, University of California, Santa Cruz, CA, USA.

2021 - 2022 Academic Year   *Fields Postdoctoral Fellow*
Fields Institute, Toronto, ON, Canada.

2018 - 2021 Academic Years   *Visiting Assistant Professor*
Department of Mathematics, University of California, Santa Barbara, CA, USA.

EDUCATION

2012 - 2018 Academic Years   *Ph.D. in Mathematics*
Rutgers University, New Brunswick, NJ, USA.
Advisor: Xiaochun Rong

2008 - 2012 Academic Years   *B.S. in Mathematics*
Shanghai Jiao Tong University, China.

RESEARCH ARTICLES

The articles are listed in the reverse order they were finished and submitted to arXiv.

Universal non-CD of sub-Riemannian manifolds (with Dimitri Navarro)
arXiv:2507.00471

On the topology of manifolds with nonnegative Ricci curvature and linear volume growth (with Dimitri Navarro and Xingyu Zhu)
arXiv:2410.15488

Nonnegative Ricci curvature, splitting at infinity, and first Betti number rigidity (with Zhu Ye)
Adv. Math. 459 (2024), 110028

Ricci curvature and the fundamental groups of effective regular sets
J. Math. Study 58 (2025), no. 1, 3-21 (special issue in honor of Xiaochun Rong on his 70th birthday)

Nonnegative Ricci curvature, nilpotency, and Hausdorff dimension
to appear in *Math. Ann.*, arXiv:2309.01147

The Grushin hemisphere as a Ricci limit space with curvature ≥ 1
Proc. Amer. Math. Soc. Ser. B. 10 (2023), 71-75

Singular Weyl's law with Ricci curvature bounded below (with Xianzhe Dai, Shouhei Honda, and Guofang Wei)
Trans. Amer. Math. Soc. Ser. B. 10 (2023), 1212-1253

Examples of open manifolds with positive Ricci curvature and non-proper Busemann functions (with Guofang Wei)
Amer. J. Math. 148 (1), 235-246

Nonnegative Ricci curvature, metric cones, and virtual abelianness
Geom. & Topol. 28 (2024), 1409-1436

Examples of Ricci limit spaces with non-integer Hausdorff dimension (with Guofang

Wei)
Geom. Funct. Anal. 32 (2022), 676-685

Some topological results of Ricci limit spaces (with Jikang Wang)
Trans. Amer. Math. Soc. 375 (2022), 8445-8464

Nonnegative Ricci curvature and escape rate gap
J. Reine Angew. Math. 782 (2022), 175-196

On the escape rate of geodesic loops in an open manifold with nonnegative Ricci curvature
Geom. & Topol. 25 (2021), 1059-1085

Semi-local simple connectedness of non-collapsing Ricci limit spaces (with Guofang Wei)
J. Eur. Math. Soc. 24 (2022), no. 12, 4027-4062

Nonnegative Ricci curvature, almost stability at infinity, and structure of fundamental groups
Adv. Math. 474 (2025), 110310

Ricci curvature and isometric actions with scaling nonvanishing property (with Xiaochun Rong)
Unpublished preprint, arXiv:1808.02329

Nonnegative Ricci curvature, stability at infinity and finite generation of fundamental groups
Geom. & Topol. 23 (2019), 3203-3231

A proof of Milnor conjecture in dimension 3
J. Reine Angew. Math. 758 (2020), 253-260

SURVEY ARTICLES	The fundamental groups of open manifolds with nonnegative Ricci curvature *SIGMA* 16 (2020), 078, 16 pages (Special Issue on Scalar and Ricci Curvature in honor of Misha Gromov on his 75th Birthday) Universal covers of Ricci limit and RCD spaces (with Guofang Wei) *Differential Geometry in the Large*, London Mathematical Society Lecture Note Series (463), Cambridge University Press, 2020, Page 352-372. ISBN: 9781108884136. Spaces with Ricci Curvature Lower Bounds (with Guofang Wei) *Surveys in Geometric Analysis 2023*, pp 103-119, Science Press, Beijing, 2024. ISBN: 9787030789655.
FELLOWSHIPS & GRANTS	National Science Foundation, DMS-2304698, 9/1/2023 to 8/31/2026 Simons Foundation, Travel Support for Mathematicians, 9/1/2023 to 8/31/2028 Fields Postdoctoral Fellowship, 7/1/2021 to 6/30/2022 AMS-Simons Travel Grant, 7/1/2019 to 6/30/2021
ACADEMIC ACTIVITIES	Referee for the following journals: *Annals of Mathematics* *Geometric and Functional Analysis* *Journal of the European Mathematical Society* *Communications on Pure and Applied Mathematics* *Geometry & Topology* *Journal of Differential Geometry* *Journal für die Reine und Angewandte Mathematik* *Advances in Mathematics*

Calculus of Variations and Partial Differential Equations
Journal of Functional Analysis
Transactions of the American Mathematical Society
International Mathematics Research Notices
Journal of Geometric Analysis
Proceedings of the American Mathematical Society
Differential Geometry and its Application
International Journal of Mathematics
Symmetry, Integrability and Geometry: Methods and Applications
Journal of Topology and Analysis
Journal of Mathematical Study

Research Membership for SLMath program, *New Frontiers in Curvature: Flows, General Relativity, Minimal Submanifolds, and Symmetry* (August-September 2024)

Organizer of UCSC Mathematics Colloquium (24-25 AY)

Organizer of UCSC Geometry & Analysis Seminar (22-23 AY, 26 Winter)

Co-organizer of UCSB Differential Geometry Seminar (19-21 AYs)

SEMINAR/ COLLOQUIUM/ CONFERENCE TALKS	Special Session on Recent Developments in Geometric Analysis, AMS Western Sectional Meetings, Boise (March 7-8. 2026) Seminar, Northeast Normal University (Dec 21, 2025) Seminar, Capital Normal University (August 4, 2025) Symposium on Geometry at Large, Institute of Geometry and Physics (July 14-18, 2025) Seminar, Westlake University (July 11, 2025) Summer school on Optimal Transport, Heat flow and Synthetic Ricci bounds, North-Western University (June 17-21, 2025) Special Session on Differential Geometry, AMS Western Sectional Meeting at San Luis Obispo (May 3-4, 2025) Geometry & Analysis Seminar, University of California, Santa Cruz (April 30, 2025) Geometry/Topology Seminar, Rutgers University - New Brunswick (March 25, 2025) Geometric Analysis and Topology Seminar, Courant Institute (March 21, 2025) Mathematics Colloquium, University of California, Santa Cruz (February 5, 2025) SLMath Workshop on Recent progress on geometric analysis and Riemannian geometry (October 21-25, 2024) Workshop on Metric Geometry, Tianyuan Mathematics Research Center (July 1-5, 2024) International Conference in Differential Geometry on occasion of Professor Xiaochun Rong's 70th Birthday, Capital Normal University (June 15-16, 2024) Geometry/Topology Seminar, Rutgers University - New Brunswick (March 26, 2024) Geometry & Analysis Seminar, University of California, Santa Cruz (February 28, 2024) Differential Geometry Seminar, University of California, Berkeley (February 12, 2024) AMS Special Session on Metric Geometry and Topology, Joint Mathematics Meetings (January 4-6, 2024) Gromov's Not Only Scalar Curvature Seminar (November 29, 2023) Geometry Seminar, Stanford University (October 25, 2023) Mathematics Colloquium, University of California, Santa Cruz (October 12, 2023) Seminar, Capital Normal University (August 1-4, 2023) Geometry & Analysis Seminar, Shanghai Jiao Tong University (July 7, 2023) Modern Mathematics Lectures, Yau Mathematical Sciences Center, Tsinghua University (June 9, 2023) Noncommutative Geometry Seminar, Texas A&M University (April 12, 2023)

Geometric Analysis and Topology Seminar, Courant Institute of Mathematical Sciences (February 24, 2023)

Workshop on Geometry and Probability, Osaka University (February 14-16, 2023)

MSRI Special Session on Differential and Metric Geometry, Joint Mathematics Meetings (January 7, 2023)

AMS Special Session on Riemannian Manifolds with Lower Scalar Curvature Bounds, Joint Mathematics Meetings (January 4-5, 2023)

Geometric Analysis Seminar, Beijing International Center for Mathematical Research (December 14, 2022)

Geometry & Analysis Seminar, ZheJiang University (December 12, 2022)

Seminar, Capital Normal University (November 24, 2022)

Mathematics Colloquium, University of California, Santa Cruz (September 29, 2022)

Online BIRS-CMO Workshop on metric measure spaces with symmetry and lower Ricci curvature bounds (August 7-12, 2022)

Pacific Rim Complex & Symplectic Geometry Conference (August 1-5, 2022)

The 51st Barrett Memorial Lectures: Exotic continua in modern mathematics (June 9-12, 2022)

Hua-Luo-Gen Young Mathematician Forum, Chinese Academy of Sciences (May 27, May 30, June 2, 2022)

Metric measure spaces & convergence seminar (May 6, 2022)

Geometry/Topology Seminar, Indian Institute of Science (May 4, 2022)

MSRI Special Session on Metric Geometry and Topology, Joint Mathematics Meetings (April 8-9, 2022)

Seminar, Capital Normal University (April 7, 2022)

Graduate Students Topology Geometry Conference, Georgia Tech (April 1-3, 2022)

Geometry/Topology Seminar, University of Toronto (March 7, 2022)

Geometric Analysis Seminar, CUNY Graduate Center (February 24, 2022)

Topology/Geometry Seminar, University of Oregon (February 8, 2022)

Differential Geometry and Symplectic Topology Seminar, University of Minnesota, Twin Cities (February 3, 2022)

Geometric Analysis Seminar, University of Chicago (February 1, 2022)

Geometry/Topology Seminar, University of Science and Technology of China (November 4, 2021)

Geometry/Topology Seminar, Rutgers University-New Brunswick (September 14, 2021)

Geometry/Topology Seminar, University of Toronto (September 13, 2021)

Fields Postdoc Colloquium, The Fields Institute (September 10, 2021)

Mini course, Sun Yat-sen University (August 18 20 22, 2021)

Seminar, Capital Normal University (June 11, 2021)

Differential Geometry and Geometric Analysis Seminar, Princeton University (May 5, 2021)

Virtual seminar on geometry with symmetries (April 7, 2021)

Mathematics Colloquium, University of California, Santa Cruz (January 28, 2021)

Geometry/Topology Seminar, Rutgers University-New Brunswick (November 3, 2020)

Differential Geometry Seminar, University of California, Santa Barbara (October 16, 2020)

Differential Geometry Seminar, Centro de Investigacion en Matematicas (October 12, 2020)

2020 Virtual Workshop on Ricci and Scalar curvature (August, 2020)

Geometry/Topology Seminar, Stony Brook University (May 26, 2020)

Differential Geometry Seminar, University of California, Santa Barbara (February 21, 2020)

Differential Geometry Seminar, Nanjing University (December 21, 2019)

AMS Special Session on Topics in Global Geometric Analysis, University of California, Riverside (November 9 - 10, 2019)

Geometry/Topology Seminar, University of Toronto (October 28, 2019)
Differential Geometry Seminar, University of California, Berkeley (September 16, 2019)
Geometry/Topology Seminar, Rutgers University-New Brunswick (September 10, 2019)
Differential Geometry Seminar, University of California, Santa Barbara (April 19, 2019)
Differential Geometry Seminar, University of California, Irvine (February 12, 2019)
Differential Geometry Seminar, University of California, Santa Barbara (October 26, 2018)
Lecture series, Capital Normal University (July 27 - August 6, 2018)
Geometry Seminar, Eastern China Normal University (July 19, 2018)
Geometry & Analysis Seminar, ZheJiang University (July 2, 2018)
Geometry/Topology Seminar, Rutgers University-New Brunswick (March 20, 2018)
Geometry/Topology Seminar, Stony Brook University (February 13, 2018)
Geometry/Topology Seminar, Rutgers University-New Brunswick (October 17, 2017)
Geometric Analysis Seminar, Fudan University (August 24, 2017)
Young Mathematician Workshop on Differential and Metric Geometry, Capital Normal University (August 12-13, 2017)
Geometric Analysis Seminar, CUNY Graduate Center (May 11, 2017)
Geometry/Topology Seminar, Rutgers University-New Brunswick (November 15, 2016)
Workshop on Geometry and Analysis on Manifolds, Eastern China Normal University (July 16-17, 2016)