Shengwen Wang

Contact information

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Employment

Aug 2022 - Now, Lecturer, Queen Mary University of London

Sep 2021 - Aug 2022, Research Fellow, University of Warwick

Sep 2019 - Aug 2021, Postdoctoral Research Assistant, Queen Mary University of London

Sep 2018 - Aug 2019, Riley Assistant professor, Binghamton University

Education

2023 - 2025, Postgraduate Certificate in Academic Practice, Queen Mary University of London

2012 - 2018, Ph. D in Mathematics (Advisor: Jacob Bernstein), Johns Hopkins University

2008 - 2012, B.S. in Mathematics, Chu Kochen Honors College, Zhejiang University

Research

Research interest:
Geometric analysis and geometric PDEs. I am interested in understanding the formation of singularities and developing/improving regularity theory of geometric partial differential equations such as minimal surfaces, mean curvature flows, Allen-Cahn and Ginzburg-Landau equations, etc.

Publications and Preprints:

- Round spheres are Hausdorff stable under small perturbation of entropy.
  J. Reine Angew. Math 758, 261-280 (2020).
- Integrability of scalar curvature and normal metric on conformally flat manifolds. (with Yi Wang)
  J. Differential equations 265, 1353-1370 (2018)
- On the topological rigidity of self shrinkers in $\mathbb{R}^3$. (with Alexander Mramor)
  Int. Math. Res. Not. 2020, 1933-1941 (2020)
- The level set flow of a hypersurface in $\mathbb{R}^4$ of low entropy does not disconnect. (with Jacob Bernstein)
  Comm. Anal. Geom. 29, 1523-1543 (2021)
- Low entropy and the mean curvature flow with surgery. (with Alexander Mramor)
  Calculus of Variations and PDE. 60, (2021).

- Almost Rigidity of Warped Tori. (with Brian Allen, Lisandra Hernandez-Vazquez, Davide Parise, Alec Payne)

  Geometriae Dedicata. 200, 153-171 (2019)

- Precise asymptotics near a pinched disk singularity formed by mean curvature flow. (with Gang Zhou)

  To appear in Nonlinear Anal.

- Second order estimates for transition layers and a curvature estimate for the parabolic Allen-Cahn. (with Huy Nguyen)

  To appear in Int. Mat. Res. Not.

- Quantization of the energy for the inhomogeneous Allen-Cahn mean curvature.. (with Huy Nguyen)

  To appear in Math. Ann.

- Brakke regularity for the Allen-Cahn flow. (with Huy Nguyen) preprint
- Allard Regularity for Abelian Yang-Mills-Higgs equation. (with Huy Nguyen) preprint
- On knotted self expanders of the mean curvature flow in $\mathbb{R}^3$. (with Alexander Mramor) preprint
- Perelman's entropy and Gromov–Hausdorff versus dynamical stability of round spheres. (with Reto Buzano) preprint

Awards and recognitions

2012-2015 George E. Owen Fellowship, Johns Hopkins University
2018 Grad Student Travel Grant to the Joint Mathematics Meetings

Invited talks

2017 October, JHU Analysis and PDE seminars
2017 October, UW Madison Geometry and Topology seminars
2017 Novermber, Rutgers Geometric Analysis conference
2018 January, San Diego AMS Joint Mathematics Meeting Geometric Analysis section
2018 March, CUNY Geometric Analysis seminars
2018 March, Binghamton Analysis seminars
2018 May, University of Tennessee Barrett Memorial Lectures 20-min talk sections
2018 October, Seminars in Analysis, Binghamton University
2019 April, Cornell University Analysis seminars
2019 April, AMS sectional meetings, Special Session on Convergence of Riemannian Manifolds
2019 July, HKUST Seminars on pure mathematics
2019 July, Discussion session in workshop on scalar curvature, Cortona, Italy
2019 July, Chongqing University seminars in the department of mathematics
2020 March, Oxford University PDE seminars
2020 March, Queen Mary University of London Geometry and Analysis seminars
2020 October, Warwick Analysis seminars (online)
2020 November, JHU Analysis and PDE seminars (online)
2020 November. University of Rochester Analysis seminars (online)
2021 April ,Young Geometeters Meeting Copenhagen (online)
2021 June, Geometric Analysis and Low-Dimensional Topology Mini-Symposium in 8th European Congress of Mathematics (online)
2021 September, CUNY Geometric Analysis seminars (online)
2021 November, CUHK Geometric Analysis seminars (online)
2022 April, Karlsruhe Institute of Technology Geometric Analysis seminars
2022 July, QMUL workshop on mean curvature flow and related topics

2022 September, QMUL Geometry and Analysis seminars
2022 October, Imperial College PDE seminars
2023 March, Oxford Geometry and Analysis seminars
2023 November, Donghua University seminars (online)
2023 November, University of Copenhagen Geometry Day
2024 January, The 3rd Global Youth Forum at the Institute of Geometry and Physics, USTC
2024 March, Internal School Colloquium, QMUL
2024 May, Peking University Analysis seminars
2025 May, KCL Geometry seminars, KCL
2025 Nov, KCL Analysis seminars, KCL
2025 Dec, Oxford PDE seminars, Oxford
2026 Nov, University of Copenhagen geometry seminars, Copenhagen

Teaching Experience

2014 Summer, Calculus II
2015 Summer, Linear Algebra (online summer course)
2018 Fall, Ordinary Differential Equations
2019 Spring, Ordinary Differential Equations
2019 Spring, Topics in analysis: geometry and analysis on manifolds
2020 Fall, LTCC course (for students in mathematical sciences in London): Introduction to mean curvature flow
2021 Fall, Differential Geometry
2022 Fall, Partial Differential Equations
2023 Fall, Partial Differential Equations
2024 Fall, Partial Differential Equations
2025 Spring, Introduction to Differential Geometry
2025 Fall, Partial Differential Equations
2026 Spring, Mathematics B
2026 Spring, LTCC course: Elliptic Partial Differential Equations
2026-2027, Mathematics B

Professional membership

Member of London Mathematical Society
Reviewer for Mathematical Reviews
Fellow of Higher Education Academy (FHEA)

Services

Referee service for American Journal of Mathematics, Journal of Geometric Analysis, Geometriae Dedicata, Geometry and Topology, Cambridge Journal of Mathematics, Calculus of Variations and Partial Differential Equations, Journal of Differential Geometry, Nonlinear Analysis, Crelle's Journal, Mediterranean Journal of Mathematics, Transactions of the AMS.

Mentoring for Directed Reading Program at JHU Spring 2018

Co-organising the Internal School Colloquium at QMUL 2022-2024

PhD defence examiner for Ali Muhammad in the University of Copenhagen 2023

Co-organising Geometry/Analysis/Gravitation seminars at QMUL 2023-2024

PhD Viva examiner for Christopher Wright in the University of Oxford 2025

PhD advising

Mara-Ioana Postolache, 2025-present (co-advised with Huy Nguyen, QMUL)
Lejie Xu, 2025-present (co-advised with Huy Nguyen, QMUL)

Language spoken

Chinese Mandarin, Cantonese, English