

Lan-Hsuan Huang

Email: lan-hsuan.huang@uconn.edu · Website: <https://lhuang.math.uconn.edu>

Department of Mathematics, University of Connecticut, Storrs, CT 06269, USA

Citizenship: Taiwan and USA

Research interests

General Relativity and Geometric Analysis

Academic Positions

University of Connecticut

2020–present Professor

2016–2020 Associate Professor

2012–2016 Assistant Professor

Institute for Advanced Study

2018–2019 von Neumann Fellow

Columbia University

2009–2012 Ritt Assistant Professor

Education

2004–2009 **Stanford University**, PhD in Mathematics (Advisor: Richard Schoen)

2000–2004 **National Taiwan University**, BS in Mathematics

Honors and Awards

2024 Fellow of the AMS

2018-2019 von Neumann Fellow at Institute for Advanced Study

2018-2019 Simons Fellow in Mathematics, Simons Foundation

2015-2022 NSF CAREER Award

Selected Invited Talks

2023 van Winter Memorial Lecture in Mathematical Physics, University of Kentucky

2023 International Congress of Basic Science (ICBS), Beijing

2021 International Congress of Mathematical Physics (ICMP), Geneva, Switzerland

Editorial Board

2022-present Associate Editor, Journal of Mathematical Physics

NSF grants

2023-2026 DMS 2304966: Geometric Boundary Value Problems in General Relativity (PI, \$350,358)

2022-2023 DMS 2231711: Conference: NEWGA - Northeast Workshop in Geometric Analysis (PI, \$31,999)

2022-2025 Civil, Mechanical and Manufacturing Innovation (CMMI)-2130668 “Collaborative Research: Computational Design of Multi-functional Minimal-Surface Lattice Structures” (co-PI, \$281,459)

2020-2024	DMS-2005588 “Mass Rigidity and Curvature Problems in Mathematical Relativity” (PI, \$250,336)
2015-2023	NSF CAREER Award (PI, \$400,648)
2013-2016	DMS-1308837 “Geometric Partial Differential Equations in General Relativity” (PI, \$282,249)
2010–2013	DMS-1005560 (DMS-1301645) “Geometric Problems in General Relativity” (PI, \$125,645)

Mentorship

PhD students	Aidan Wood , current
	Paul Tee , current
	Hyun Chul Jang , PhD 2020, Harry Bateman Research Instructor at CalTech
	Daniel Martin , PhD 2018, tenure-track Assistant Professor at University of Hartford
Post-doctors	Zhongshan An (2019-2022) current research post-doctor at University of Michigan
	Armando Cabrera (2016-2017) current post-doctor at University of Tübingen
	Alan Parry (2013-16) current Associate Professor and Department Chair at Utah Valley University

Selected Publications

- *Static vacuum extensions with prescribed Bartnik boundary data near a general static vacuum metric* (with Z. An), arXiv:2206.00079 [math.DG], accepted by **Annals of PDE**
- *Existence of static vacuum extensions with prescribed Bartnik boundary data* (with Z. An), **Cambridge Journal of Mathematics** Vol. 10, No. 1 (2022), pp. 1-68.
- *Bartnik mass minimizing initial data sets and improvability of the dominant energy scalar* (with D. Lee), arXiv:2007.00593 [math.DG] (to appear in **Journal of Differential Geometry**)
- *Equality in the spacetime positive mass theorem* (with D. Lee), **Communications in Mathematical Physics** 376 (2020), no. 3, 2379–2407.
- *Spacetime positive mass theorem in dimensions less than eight* (with M. Eichmair, D. Lee, and R. Schoen), **Journal of European Mathematical Society**, 18 (2016), no. 1, 83–121
- *Hypersurfaces with nonnegative scalar curvature* (with D. Wu), **Journal of Differential Geometry** 95 (2013) 249–278.
- *Foliations by stable spheres with constant mean curvature for isolated systems with general asymptotics*, **Communications in Mathematical Physics** 300 (2010), no. 2, 331-373.