

Dan A. Lee

CONTACT INFORMATION	65-30 Kissena Blvd Department of Mathematics Queens College CUNY Flushing, New York 11367	(617) 290-3212 dalee@post.harvard.edu
RESEARCH INTERESTS	Geometric analysis, including problems in general relativity, scalar curvature, minimal submanifolds, and conformal geometry.	
ACADEMIC POSITIONS	CUNY Graduate Center Professor Associate Professor Assistant Professor	2022–present 2015–2022 2010–2015
	Queens College, CUNY Professor Associate Professor Assistant Professor	2022–present 2015–2022 2008–2015
	Duke University Assistant Research Professor	2005–2008
EDUCATION	Stanford University Ph.D. in Mathematics Advisor: Richard Schoen	2001–2005
	Harvard University A.B. in Mathematics and Physics, <i>magna cum laude</i>	1996–2000
TEXTBOOK	Dan A. Lee, <i>Geometric Relativity</i> , AMS Graduate Studies in Mathematics series 201 (2019).	
RESEARCH PAPERS	Lan-Hsuan Huang and Dan A. Lee, <i>Equality in the spacetime positive mass theorem II</i> , submitted for publication, arXiv:2302.06040 .	
	Dan A. Lee, Martin Lesourd, and Ryan Unger, <i>Density and positive mass theorems for incomplete manifolds</i> , submitted for publication, arXiv:2201.01328 .	
	Demetre P. Kazaras, Marcus A. Khuri, and Dan A. Lee, <i>Stability of the positive mass theorem under Ricci curvature lower bounds</i> , to appear <i>Math. Res. Lett.</i> , arXiv:2111.05202 .	

Lan-Hsuan Huang and Dan A. Lee, *Bartnik mass minimizing initial data sets and improvability of the dominant energy scalar*, to appear in J. of Differential Geom., arXiv:2007.00593.

Dan A. Lee, Martin Lesourd, and Ryan Unger, *Density and positive mass for initial data sets with boundary*, to appear in Comm. Math. Phys., 395 (2022), no. 2, 643–677.

Lan-Hsuan Huang, Dan A. Lee, and Raquel Perales, *Intrinsic flat convergence of points and applications to stability of the positive mass theorem*, Ann. Henri Poincaré, 23 (2022), no. 7, 2523–2543.

Lan-Hsuan Huang and Dan A. Lee, *Trapped surfaces, topology of black holes, and the positive mass theorem*, Notices Amer. Math. Soc., 69 (2022), no. 4, 536–545.

Gregory J. Galloway and Dan A. Lee, *A note on the positive mass theorem with boundary*, Lett. Math. Phys., 111 (2021), no. 4, Paper no. 111.

Jeffrey L. Jauregui and Dan A. Lee, *Lower semicontinuity of ADM mass under intrinsic flat convergence*, Calc. Var. Partial Differential Equations 60 (2021), no. 5, Paper no. 193.

Lan-Hsuan Huang and Dan A. Lee, *Equality in the spacetime positive mass theorem*, Comm. Math. Phys., 376 (2020), no. 3, 2379–2407.

Jeffrey L. Jauregui and Dan A. Lee, *Lower semicontinuity of mass under C^0 convergence and Huisken's isoperimetric mass*, J. Reine. Angew. Math. 756 (2019), 227–257.

Dan A. Lee (joint with Lan-Hsuan Huang), *The equality case of the spacetime positive mass theorem*, Oberwolfach Reports, Report No. 36/2017.

Dan A. Lee, *Lower semicontinuity of Huisken's isoperimetric mass*, Nonlinear analysis in geometry and applied mathematics, 91–98, Harv. Univ. Cent. Math. Sci. Appl. Ser. Math., 1, Int. Press, Somerville, MA, 2017.

Lan-Hsuan Huang, Dan A. Lee, and Christina Sormani, *Intrinsic flat stability of the positive mass theorem for graphical hypersurfaces of Euclidean space*, J. Reine Angew. Math. 727 (2017), 269–299. Corrigendum: J. Reine Angew. Math. 785 (2022), 273–274.

Michael Eichmair, Lan-Hsuan Huang, Dan A. Lee, and Richard Schoen, *The spacetime positive mass theorem in dimensions less than eight*, J. Eur. Math. Soc. (JEMS) 18 (2016), no. 1, 83–121.

Dan A. Lee and André Neves, *Penrose inequality for asymptotically locally hyperbolic spaces with nonpositive mass*, *Comm. Math. Phys.* 339 (2015), no. 2, 327–352.

Dan A. Lee and Philippe G. LeFloch, *The positive mass theorem for manifolds with distributional curvature*, *Comm. Math. Phys.* 339 (2015), no. 1, 99–120.

Lan-Hsuan Huang and Dan A. Lee, *Stability of the positive mass theorem for graphical hypersurfaces of Euclidean space*, *Comm. Math. Phys.* 337 (2015), no. 1, 151–169.

Dan A. Lee, *A positive mass theorem for metrics with weakened regularity*, *Oberwolfach Rep.* 11 (2014) no. 3, 2007–2010.

Dan A. Lee and Christina Sormani, *Stability of the positive mass theorem for rotationally symmetric Riemannian manifolds*, *J. Reine Angew. Math.* 686 (2014), 187–220.

Dan A. Lee, *A positive mass theorem for Lipschitz metrics with small singular sets*, *Proc. Amer. Math. Soc.* 141 (2013), no. 11, 3997–4004.

Dan A. Lee and Christina Sormani, *Near-equality of the Penrose Inequality for rotationally symmetric Riemannian manifolds*, *Ann. Henri Poincaré* 13 (2012), no. 7, 1537–1556.

Hubert L. Bray and Dan A. Lee, *On the Riemannian Penrose inequality in dimensions less than 8*, *Duke Math. J.* 148 (2009), no. 1, 81–106.

Dan A. Lee, *On the near-equality case of the Positive Mass Theorem*, *Duke Math. J.* 148 (2009), no. 1, 63–80.

Dan A. Lee and Robert Lipshitz, *Covering spaces and Q -gradings on Heegaard Floer homology*, *J. Symplectic Geom.* 6 (2008), no. 1, 33–59.

Dan A. Lee, *Connected sums of special Lagrangian submanifolds*, *Comm. Anal. Geom.* 12 (2004), no. 3, 553–579.

Dan Lee, Leanne Leer, Shara Pilch, and Yu Yasufuku, *Characterization of completions of reduced local rings*, *Proc. Amer. Math. Soc.* 129 (2001), no. 11, 3193–3200.

INVITED
CONFERENCE
TALKS

Workshop on Mathematical Relativity, Scalar Curvature and Synthetic Lorentzian Geometry at Fields Institute	Fall 2022
Recent Advances on Scalar Curvature Problems at Simons Center	Summer 2022
General Relativity Conference at Harvard CMSA	Spring 2022
Mini-Course for 4th Geometric Analysis Festival	Fall 2021
Geometric Analysis Mathematics Conference at University of Miami	Nov 2019
Mini-Course on Mathematical Relativity: A Riemannian Approach, at CIMAT in Guanajuato, Mexico	May 2019
Simons Center Workshop on Convergence and Low Regularity in General Relativity	May 2019
Institute for Advanced Study at Princeton Emerging Topics Working Group on Scalar Curvature and Convergence	Oct 2018
Workshop on Initial Data in General Relativity at University of Alaska Fairbanks	May 2018
Simons Center Spring School on Geometric Aspects of General Relativity (2 lectures)	Mar 2018
Oberwolfach Workshop on Analysis, Geometry and Topology of Positive Scalar Curvature Metrics	Aug 2017
AMS Southeastern Sectional Meeting Special Session on Geometric Analysis and General Relativity	Mar 2017
Banff International Research Station Workshop on Geometric Analysis and General Relativity	Jul 2016
AMS Eastern Sectional Meeting Special Session on Mathematical General Relativity	Mar 2016
Warwick-Imperial-Cambridge Geometric Analysis Workshop	Jul 2015
Fields Institute Conference on Constraint Equations and Mass-Momentum Inequalities	May 2015
Oberwolfach Workshop on Analysis, Geometry and Topology of Positive Scalar Curvature Metrics	Aug 2014
Geometric Analysis Conference in Lisboa	Jul 2014
Taiwan International Conference on Geometry	Dec 2013
Rutgers-CUNY Symposium on Geometric Analysis	Dec 2013
MSRI (Mathematical Sciences Research Institute) Conference on Initial Data and Evolution Problems in General Relativity	Nov 2013
Tsinghua Sanya International Mathematics Forum	Jan 2013
Beijing Summer Program in Mathematical Relativity	Jun 2011
AMS Eastern Sectional Meeting Special Session on Elliptic and Parabolic Problems in Geometry	May 2010
CUNY Geometric Analysis Conference on Bubbling Phenomena and Non-compactness	Mar 2010
International Conference on Geometry and Analysis at the Royal Institute of Technology in Stockholm	Aug 2008
Banff International Research Station Workshop on Minimal Submanifolds and Related Problems	Dec 2007

OTHER INVITED
TALKS

Texas A&M Noncommutative Geometry Seminar	Fall 2022
Harvard CMSA Member Seminar	Spring 2022
University of Münster Geometry Seminar	Spring 2021
Harvard CMSA General Relativity Seminar	Fall 2020
CUNY Graduate Center Geometric Analysis Seminar	Summer 2020
University of Chicago Geometric Analysis Seminar	Spring 2020
University of Pennsylvania Geometry-Topology Seminar	Fall 2019
University of Regensburg (Germany)	Summer 2017
Imperial College London Geometry and Analysis Seminar	Summer 2016
MSRI Geometric Analysis Seminar	Spring 2016
Stanford University Geometry Seminar	Spring 2016
Columbia University General Relativity Seminar (series)	Fall 2015
CUNY Graduate Center Differential Geometry Seminar	Fall 2015
Columbia University General Relativity Seminar	Fall 2014
CUNY Graduate Center Differential Geometry Seminar	Fall 2014
University of Connecticut Mathematics Colloquium	Spring 2014
Fordham University Mathematics Colloquium	Spring 2014
Rutgers-Newark Mathematics Colloquium	Spring 2013
Princeton Differential Geometry Seminar	Spring 2012
NYU Graduate Student and Postdoc Seminar	Fall 2011
Columbia University General Relativity Seminar	Fall 2011
MIT Geometric Analysis Seminar	Fall 2011
Syracuse University Analysis Seminar	Spring 2011
Queens College Colloquium	Spring 2011
Lehigh University Geometry & Topology Seminar	Fall 2010
Columbia University General Relativity Seminar	Spring 2010
Dartmouth College Geometry & Topology Seminar	Spring 2010
Duke University Geometry/Topology Seminar	Spring 2010
Stony Brook University Geometry/Topology Seminar	Fall 2009
Columbia University Geometry and Analysis Seminar	Fall 2009
CUNY Graduate Center Differential Geometry Seminar	Fall 2008
University of Miami Math Department Colloquium	Spring 2008
University of Arizona Special Geometry Seminar	Spring 2008
Queens College Colloquium	Spring 2008
UC Irvine – UC San Diego Differential Geometry Seminar	Spring 2007
Princeton Differential Geometry Seminar	Spring 2007
Duke University Informal Geometry Seminar	Fall 2006
Duke University Geometry/Topology Seminar	Fall 2005
UC Irvine Differential Geometry Seminar	Spring 2005
UC San Diego Differential Geometry Seminar	Spring 2005
Stanford University Geometry Seminar	Fall 2004

GRANT SUPPORT	Member, Harvard CMSA	Spring 2022
	ICM Rio Travel Support from AMS	Summer 2018
	Simons Visiting Professorship at Oberwolfach	Summer 2017
	Research Member, Differential Geometry program at MSRI (Mathematical Sciences Research Institute)	Spring 2016
	Research Member, Mathematical Relativity program at MSRI NSF Geometric Analysis Grant	Fall 2013 2008–2012
PROFESSIONAL ACTIVITIES	Co-organizer, Workshop on scalar curvature, minimal surfaces, and initial data sets	Spring 2022
	Co-organizer, New York General Relativity Seminar (joint sem- inar with Columbia and Stony Brook)	2013–2019
	Co-organizer, CUNY Differential Geometry Seminar	2008–2015
	Co-organizer, CUNY Symposium Recent Progress in General Relativity	Fall 2013
	Co-organizer, CUNY General Relativity Conference	Fall 2012
	Co-organizer, Duke Geometry/Topology Seminar	2005–2008
	Referee for AMS Graduate Studies in Mathematics series	
	Referee for Cambridge University Press mathematics books	
	Referee for Duke Mathematics Journal	
	Referee for Journal of Differential Geometry	
	Referee for American Journal of Mathematics	
	Referee for Journal für reine und angewandte Mathematik	
	Referee for Calculus of Variations and Partial Differential Equations	
	Referee for International Mathematics Research Notices	
	Referee for Living Reviews in Relativity	
	Referee for Communications in Partial Differential Equations	
	Referee for Communications in Mathematical Physics	
	Referee for Annales Henri Poincaré	
	Referee for Communications in Analysis and Geometry	
	Referee for Archive for Rational Mechanics and Analysis	
	Referee for Classical and Quantum Gravity	
	Referee for General Relativity and Gravitation	
	Referee for Mathematische Annalen	
	Referee for Journal of Geometric Analysis	
	Referee for Differential Geometry and Its Applications	
	Referee for Advances in Mathematical Physics	
	Referee for Annals of Global Analysis and Geometry	
Referee for Journal of Mathematical Physics		
Reviewer for Math Reviews		

SERVICE

Faculty Advisor to the Science Advisory Board	2021–present
Chair of Queens College Committee on Honors and Awards	2018–present
Member of Queens College Committee on Honors and Awards	2014–present
Chair of Queens College Subcommittee on Honorary Degrees	2016–2018
Member, Queens College Subcommittee on Honorary Degrees	2016–present
Member of Math Department Hiring Committee	2017–present
Member of Math Department Curriculum Committee	2013–present
Reviewer for PSC-CUNY Mathematics Panel	2011–present