

# Longzhi Lin

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## Education

- 2005 – 2011 **PhD** in Mathematics, Johns Hopkins University  
Dissertation: *On the existence of closed geodesics and uniqueness of weakly harmonic maps*  
Advisor: [William P. Minicozzi II](#)
- 2001 – 2005 **BS** in Mathematics, University of Science and Technology of China
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## Professional Experience

### Appointments

- 2014 – *Assistant Professor*, Mathematics Department, University of California, Santa Cruz
- 2011 – 2014 *Hill Assistant Professor*, Department of Mathematics, Rutgers University

### Professional Affiliations & Visits

- 01–05, 2016 *Research Member*, Mathematical Sciences Research Institute (MSRI)
- 07.2015 The Beijing International Center for Mathematical Research (BICMR), China
- 2005 – *Member*, American Mathematical Society
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## Research Interests

Geometric Analysis & Partial Differential Equations

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## Fellowships, Awards & Honors

- 2016 Faculty Research Grant (FRG), Committee on Research at UC, Santa Cruz
- 2015 New Faculty Research Grant (NFRG), Committee on Research at UC, Santa Cruz
- 2014 American Mathematical Society (AMS) - National Science Foundation (NSF) Travel Grant, International Congress of Mathematicians (Seoul, Korea)
- 2013 – 2015 AMS-Simons Travel Grants
- 2010 – 2011 Research Fellowship, Johns Hopkins University
- 2004 Center for Talent of Math Fellowship, University of Science and Technology of China
- 2003 Guanghua Education Fellowship, University of Science and Technology of China
- 2002 Zhang Zongzhi Sci. & Tech. Fellowship, University of Science and Technology of China
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## Preprints

- [10] (joint with [Zheng Huang](#) and [Zhou Zhang](#)) Mean curvature flow in Fuchsian manifolds, preprint
- [9] Mean curvature flow of star-shaped hypersurfaces, [arXiv:1508.01225](#), preprint
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## Publications

- [8] (joint with [Natasa Sesum](#)) Blow-up of the mean curvature at the first singular time of the mean curvature flow, to appear in *Calculus of Variations and PDEs*
- [7] (joint with [Zheng Huang](#)) Stability of the surface area preserving mean curvature flow in Euclidean space, [Journal of Geometry](#), [10.1007/s00022-015-0260-8](#), January 2015
- [6] Uniformity of harmonic map heat flow at infinite time, [Analysis & PDE](#), Vol. 6 (2013), No. 8, 1899–1921
- [5] (joint with [Tobias Lamm](#)) Estimates for the energy density of critical points of a class of conformally invariant variational problems, [Advances in Calculus of Variations](#), Volume 6, Issue 4 (Jul 2012), 391–413
- [4] (joint with [Ling Xiao](#)) Modified mean curvature flow of star-shaped hypersurfaces in hyperbolic space, [Communications in Analysis and Geometry](#), Volume 20, Number 5 (2012), 1061–1096
- [3] Closed geodesics in Alexandrov spaces of curvature bounded from above, [Journal of Geometric Analysis](#), Volume 21, Issue 2 (2011), 429–454

- [2] (joint with [Lu Wang](#)) Existence of good sweepouts on closed manifolds, *Proceedings of the AMS*, 138 (2010), No. 11, 4081–4088
- [1] On the existence of closed geodesics and uniqueness of weakly harmonic maps, Thesis (Ph.D.), The Johns Hopkins University (2011), 76 pp. ISBN: 978-1124-75827-5

## Invited Conference Talks

- 06.2016 The 2016 Xiamen Workshop on Geometric Analysis, Xiamen University (China)
- 04.2016 AMS 2016 Spring Eastern Sectional Meeting, Special Session on PDE Methods in Geometric Flows, State University of New York at Stony Brook
- 07.2015 30th Brazilian Mathematics Colloquium, National Institute of Pure and Applied Mathematics (IMPA), Rio de Janeiro, Brazil
- 10.2014 AMS 2014 Fall Western Sectional Meeting, Special Session on Recent Progress in Geometric Analysis, San Francisco State University
- 12.2013 RU-CUNY Symposium on Geometric Analysis, Rutgers University and City University of New York (CUNY)
- 08.2013 Workshop on Minimal Submanifolds and Related Topics, Leibniz Universität Hannover, Hannover, Germany
- 06.2013 2013 Nanjing International Conference on Geometric Analysis, Nanjing University, China
- 04.2013 Workshop on Minimal Surfaces, 3-Manifold Topology and Related Topics, MIT
- 09.2012 AMS 2012 Eastern Sectional Meeting, Special Session on Geometric Evolution Equations, Rochester Institute of Technology
- 05.2012 2012 Lehigh University Geometry and Topology Conference, Lehigh University
- 03.2012 AMS 2012 Spring Eastern Sectional Meeting, Special Session on Topics in Geometric Analysis and Complex Analysis, George Washington University
- 04.2011 AMS 2011 Spring Eastern Section Meeting, Special Session on Topics in Partial Differential Equations and Geometric Analysis, College of the Holy Cross
- 10.2010 AMS 2010 Fall Eastern Sectional Meeting, Special Session on Geometric Analysis and Flows, Syracuse University
- 03.2010 FRG Workshop on Mean Curvature Flows and Related Topics, Johns Hopkins University
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## Invited Seminar Talks

- 04.2016 Differential Geometry Seminar, UC Riverside
- 06.2015 PDE Seminar, Beijing Normal University
- 06.2015 PDE Seminar, Xiamen University

- 05.2015 Geometric Analysis Seminar, University of Oregon
- 05.2015 Differential Geometry Seminar, University of California, Santa Barbara
- 03.2015 Differential Geometry Seminar, University of California, Irvine
- 11.2014 Geometry Seminar, Stanford University
- 08.2014 PDE Seminar, Xiamen University, China
- 04.2014 PDE and Differential Geometry Seminar, University of Connecticut
- 04.2014 Analysis Seminar, Syracuse University
- 04.2014 Seminar, Lafayette College
- 03.2014 Nonlinear Analysis Seminar, Rutgers University
- 12.2013 Differential Geometry & Geometric Analysis Seminar, Princeton University
- 06.2013 Geometric Analysis Seminar, Zhejiang University, China
- 06.2013 Lecture Series, Beijing Normal University, China
- 06.2013 Geometry Seminar, Capital Normal University, China
- 06.2013 Lecture Series, University of Science and Technology of China, China
- 05.2013 Colloquium, Sun Yat-Sen University, China
- 04.2013 Colloquium, University of Toledo
- 03.2013 Analysis Seminar, Binghamton University, State University of New York (SUNY)
- 03.2013 Geometry/Topology Seminar, Binghamton University, State University of New York (SUNY)
- 03.2013 Karcher Colloquium, University of Oklahoma
- 03.2013 Geometry/Topology seminar, University of Oklahoma
- 01.2013 Geometric Analysis seminar, Cornell University
- 10.2012 PDE seminar, Xiamen University, China
- 05.2012 Nonlinear Analysis and PDEs Seminar, The Graduate Center, City University of New York
- 11.2011 Nonlinear Analysis Seminar, Rutgers University
- 10.2011 Student Seminar on PDE and Applications (lecture series), Rutgers University
- 04.2011 Differential Geometry Seminar, Harvard University
- 11.2010 Geometric Analysis Seminar, University of Alabama at Birmingham
- 11.2010 Differential Geometry Seminar, The Graduate Center, City University of New York (CUNY)
- 04.2010 Diff. Geom., Math. Phys., PDE Seminar, University of British Columbia, Vancouver, Canada

## Professional Services

- 2016 / 2017 Committee on Research (Academic Senate Committee, UC Santa Cruz)

- 2016 Graduate Admission Committee Member, Mathematics Department, UC Santa Cruz
- 2015 Visiting Assistant Professor Recruitment Committee Member, Mathematics Department, UC Santa Cruz
- 2015 Graduate Admission Committee Member, Mathematics Department, UC Santa Cruz
- 2014 – 2015 Colloquium Chair, Mathematics Department, UC Santa Cruz
- 2014 – Organizer, Geometriy & Analysis Seminar, Mathematics Department, UC Santa Cruz
- 2014 (with [Zheng Huang](#) and [Marcello Lucia](#), CUNY-College of Staten Island)  
Co-Organizer of [Special Session on Recent Progress in Geometric and Complex Analysis](#), Joint Meetings of the AMS, Baltimore, January 2014
- 2013 (with [Xiaodong Cao](#) and [Peng Wu](#), Cornell University)  
Co-Organizer of [Special Session on Parabolic Evolution Equations of Geometric Type](#), AMS Fall Eastern Sectional Meeting, Temple University, October 2013
- 2013 (with [Natasa Sesum](#), Rutgers University)  
Co-Organizer of [Workshop on Geometric Analysis and Nonlinear PDEs](#), Rutgers University, May 2013
- Reviewer for Mathematical Reviews (American Mathematical Society)
- Referee for (1) Transactions of the American Mathematical Society (TAMS)  
(2) International Mathematics Research Notices (IMRN)  
(3) Geometriae Dedicata  
(4) Potential Analysis
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## Teaching

### University of California, Santa Cruz (Instructor)

- Winter 2016 213A - Partial Differential Equations I
- Fall 2015 105A - Real Analysis; 121A - Differential Geometry
- Winter 2015 105A - Real Analysis; 205 - Analysis II
- Spring 2015 213B - Partial Differential Equations II (Topics in Geometric Analysis)

### Rutgers University (Instructor)

- Spring 2014 640:421 - Advanced Calculus for Engineering
- Fall 2013 640:421 - Advanced Calculus for Engineering

Spring 2013 640:421 - Advanced Calculus for Engineering  
Fall 2012 640:244 - Differential Equations for Eng. and Physics  
Summer 2012 640:251 - Multivariable Calculus  
Spring 2012 640:251 - Multivariable Calculus  
Fall 2011 640:152 - Calculus II  
640:251 - Multivariable Calculus

**Johns Hopkins University (Instructor)**

Summer 2010 110.202 - *Online* Calculus III  
Summer 2009 110.202 - Calculus III  
Summer 2008 110.202 - Calculus III