William P. Minicozzi II

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Education

Ph.D. in Mathematics, Stanford University, 1994.
Dissertation: *Geometric Variational Problems related to Symplectic Geometry.*
Advisor: Richard M. Schoen.

B.A. in mathematics, Princeton University, 1990.

Appointments

2007- : Krieger-Eisenhower Professor of Mathematics, Johns Hopkins University.
2002-07: J.J. Sylvester Professor of Mathematics, Johns Hopkins University.
2000- : Professor, Johns Hopkins University.
1998-00: Associate Professor, Johns Hopkins University.
1994-98: Assistant Professor, Johns Hopkins University.
1994-95: Visiting Member, Courant Institute, New York University.

Honors and grants

2004- : NSF Grant DMS-0405695, 5 years.
2001-04: NSF Grant DMS-0104187, 3 years.
1998-03: Alfred P. Sloan Foundation Research Fellow.
1998-01: NSF Grant DMS-9803144, 3 years.
1995-98: NSF Postdoctoral Research Fellowship.
1990-94: NSF Graduate Research Fellowship.

2006: Invited address, Geometry section, Madrid ICM.
2006: Mathematics department teaching award.
2004: Mathematics department teaching award.
2004: Finalist for School of Arts & Sciences excellence in teaching award.

Ph.D. Students

Sirong Zhang: Ph.D. 2004, *Curvature Estimates for Constant Mean Curvature Surfaces in 3-Manifolds.*
Brian Dean: Ph.D. 2004, *Some Results On Stable Compact Embedded Minimal Surfaces in 3-manifolds.*
Giuseppe Tinaglia: Ph.D. 2005, *Multi-valued graphs in embedded constant mean curvature disks.*

Current students: Christine Breiner, Caleb Hussey, Siddique Khan, Steve Kleene, Joel Kramer,

Longzhi Lin, and Leili Shahriyari.

Professional Service

Editor, Geometriae Dedicata (2008–).

Editor, Transactions of the American Mathematical Society (2007–).

Editor, Analysis & PDE (2007–).

Editor, Journal of Topology and Analysis (2007–).

Associate Editor, American Journal of Mathematics (2001–).

Reviewer for: NSF program in geometric analysis, NSF panels, NSERC.
Committee: AMS Eastern Section Program Committee (2/1/04–2/1/06).

Referee for: *Acta Math., Advances in Math., American J. of Math., Annals of Math., Arch. Rat. Mech. Anal., Bulletin of the AMS, Calculus of Variations and PDE, Comm. in Analysis and Geometry, Duke Math. J., Comm. on Pure and Applied Math., Electronic Res. Announcements of the AMS, Experimental Math., Indiana University Math. J., International J. of Math. and Math. Sciences, International Math. Research Notices, Inventiones Mathematicae, J. of the AMS, J. of Differential Geometry, Math. Research Letters, Mathematische Annalen, Mathematische Zeitschrift, Mich. Math. J., Proc. of the AMS., Proc. of the National Academy of Sciences, Trans. of the AMS*

Organized: 1998–99 JAMI conference with Professors Morava, Spruck, and Nishikawa (Sendai).
2006: Geometric Analysis and Nonlinear elliptic PDE's with Professors Caffarelli, Evans, and Guan.

Selected recent invited talks

2009 Georgia International Topology conference, Athens, Georgia, May 18 to May 29, 2009.

Pacific Northwest Geometry Seminar, University of British Columbia, May 2-3, 2009.

University of Michigan, Colloquium, April 14, 2009.

University of Pennsylvania, Geometry-Topology seminar, October 23, 2008.

2008 Ahlfors-Bers Colloquium, Rutgers University, May 8–11, 2008.

2008 Geometry Festival, Duke University, April 25–27, 2008.

Lehigh University, Colloquium, April 17, 2008.

University of Notre Dame, Colloquium, March 19, 2008.

Workshop on Elliptic and Parabolic problems in Geometry, Stanford University, January 19-20, 2008.

Calculus of Variations in Physics, Geometry, & Economics: Fields Institute Mini-Symposium, Toronto, December 11, 2007.

Harvard University, Joint Mathematics Colloquium, November 15, 2007.

Princeton University, Geometry seminar, November 9, 2007.

Analysis seminar, MIT, May 2, 2007.

Brown University, Colloquium, April 27, 2007.

Bloomington Geometry Workshop, April 14, 2007.

University of Indiana, Colloquium, April 13, 2007.

London Mathematical Society Spitalfields Day, Warwick, March 26, 2007.

University of Maryland, Geometry seminar, February 12, 2007.

University of California, Berkeley, Colloquium, January 18, 2007.

University of Maryland, Geometry seminar, April 10, 2006.

International Congress of Mathematicians, Geometry section, Madrid, August 2006.

Rice University, Colloquium, December 1, 2005.

Michigan State University, Geometry seminar, October 28, 2005.

Michigan State University, Colloquium, October 27, 2005.

American Institute of Mathematics, Palo Alto, Workshop on the Moduli space of properly embedded minimal surfaces, June 6–10, 2005.

University of Wisconsin, Madison, Colloquium, April 29, 2005.

Columbia University, Geometry seminar, April 14, 2005.

Southern California Geometric Analysis Seminar, UCSD, February 19, 2005.

American Mathematical Society National Meeting, Special Session on Geometry, Atlanta, 2005.

Joint Princeton-NYU-Columbia Differential Geometry Seminar, Princeton University, December 10, 2004.

Publications

1. W.P. Minicozzi II, The Willmore functional on Lagrangian tori: Its relation to Area and Existence of Smooth Minimizers, *Jour. Amer. Math. Soc.* Vol. 8, No. 4 (1995) 761-791.

2. J. Cheeger, T.H. Colding, and W.P. Minicozzi II, Linear Growth Harmonic Functions on Complete Manifolds with Nonnegative Ricci Curvature, *GAFA* V. 5, No. 6 (1995) 948-954.

3. T.H. Colding and W.P. Minicozzi II, On Function Theory on Spaces with a lower Ricci curvature bound, *Math. Res. Lett.* 3 (1996) 241-246.

4. T.H. Colding and W.P. Minicozzi II, Harmonic functions with polynomial growth, *J. Diff. Geom.* v. 46, no. 1 (1997) 1-77.

5. T.H. Colding and W.P. Minicozzi II, Large scale behavior of kernels of Schrödinger operators, *Amer. J. Math.* 119 (1997) 1355-1398.

6. T.H. Colding and W.P. Minicozzi II, Generalized Liouville properties of manifolds, *Math. Res. Lett.* 3 (1996) 723-729.

7. T.H. Colding and W.P. Minicozzi II, Harmonic functions on manifolds, *Annals of Math.* 146, no. 3 (1997) 725-747.

8. T.H. Colding and W.P. Minicozzi II, Weyl type bounds for harmonic functions, *Inventiones Math.* 131 (1998) 257-298.

9. T.H. Colding and W.P. Minicozzi II, Liouville theorems for harmonic sections and applications *Comm. Pure Appl. Math.* 52 (1998) 113-138.

10. W.P. Minicozzi II and C.D. Sogge, Negative results for Nikodym maximal functions and related oscillatory integrals in curved space, *Math. Res. Lett.* 4 (1997) 221-237.

11. T.H. Colding and W.P. Minicozzi II, Convergence of embedded minimal surfaces without area bounds in three manifolds, *C.R. Acad. Sci. Paris* t. 327, Série I, (1998) 765-770.

12. T.H. Colding and W.P. Minicozzi II, Minimal surfaces, Courant Lecture Notes in Mathematics, vol. 4, 1999.

13. T.H. Colding and W.P. Minicozzi II, The space of embedded minimal surfaces of fixed genus in a 3-manifold I; Estimates off the axis for disks, *Annals of Math.*, 160 (2004) 27–68, math.AP/0210106.

14. T.H. Colding and W.P. Minicozzi II, The space of embedded minimal surfaces of fixed genus in a 3-manifold II; Multi-valued graphs in disks, *Annals of Math.*, 160 (2004) 69–92, math.AP/0210086.

15. T.H. Colding and W.P. Minicozzi II, The space of embedded minimal surfaces of fixed genus in a 3-manifold III; Planar domains, *Annals of Math.*, 160 (2004) 523–572, math.AP/0210141.

16. T.H. Colding and W.P. Minicozzi II, The space of embedded minimal surfaces of fixed genus in a 3-manifold IV; Locally simply connected, *Annals of Math.*, 160 (2004) 573–615, math.AP/0210119.

17. T.H. Colding and W.P. Minicozzi II, Complete properly embedded minimal surfaces in $\mathbf{R}^3$ *Duke Math. Jour.* vol. 107, no. 2 (2001) 421–426.

18. T.H. Colding and W.P. Minicozzi II, Estimates for parametric elliptic integrands *Int. Math. Res. Not.* n. 6 (2002) 291–297.

19. T.H. Colding and W.P. Minicozzi II, Embedded minimal surfaces without area bounds in 3-manifolds, *Geometry and Topology: Aarhus* v. 258 Contemporary Mathematics (AMS), 107–120.

20. T.H. Colding and W.P. Minicozzi II, Examples of embedded minimal tori without area bounds, *Int. Math. Res. Not.* vol. 99, no. 20 (1999) 1097–1100.

21. T.H. Colding and W.P. Minicozzi II, Removable singularities for minimal limit laminations, *C.R. Acad. Sci. Paris* t. 331, Série I, (2000) 465-468.

22. T.H. Colding and W.P. Minicozzi II, Volumes for eigensections, *Geom. Ded.*, vol. 102 (2003) 19–24.

23. T.H. Colding and W.P. Minicozzi II, Multi-valued minimal graphs and properness of disks, *Int. Math. Res. Not.*, no. 21 (2002) 1111–1127.

24. T.H. Colding and W.P. Minicozzi II, Minimal annuli with and without slits, *Jour. Symp. Geom.* vol. 1, issue 1 (2001) 47–62.

25. T.H. Colding and W.P. Minicozzi II, On the structure of embedded minimal annuli, *Int. Math. Res. Not.*, no. 29 (2002) 1539–1552.

26. T.H. Colding and W.P. Minicozzi II, Embedded minimal disks, Minimal surfaces (MSRI, 2001), ed. D. Hoffman, Clay Mathematics Proceedings, AMS, Providence (2004), 405–438, math.DG/0206146.

27. T.H. Colding and W.P. Minicozzi II, Disks that are double spiral staircases, *Notices of the AMS*, Vol. 50, no. 3, March (2003) 327–339.

28. T.H. Colding and W.P. Minicozzi II, Embedded minimal disks: Proper versus nonproper - global versus local, *Transactions of the AMS*, 356 (2004) 283-289, math.DG/0210328.

29. T.H. Colding and W.P. Minicozzi II, Estimates for the extinction time for the Ricci flow on certain 3–manifolds and a question of Perelman, *JAMS*, 18 (2005), no. 3, 561–569, math.AP/0308090.

30. T.H. Colding and W.P. Minicozzi II, Sharp estimates for mean curvature flow of graphs, J. Reine Angew. Math. 574 (2004), 187–195, math.AP/0305099.

31. T.H. Colding and W.P. Minicozzi II, An excursion into geometric analysis, *Surv. Differ. Geom.*, IX, Int. Press, Somerville, MA, (2004), 83–146, math.DG/0309021.

32. T.H. Colding and W.P. Minicozzi II, The Calabi–Yau conjectures for embedded surfaces, *Annals of Math.*, 167 (2008), 281–313, math.DG/0404197.

33. T.H. Colding and W.P. Minicozzi II, The space of embedded minimal surfaces of fixed genus in a 3-manifold V; Fixed genus, math.DG/0509647.

34. T.H. Colding and W.P. Minicozzi II, Minimal submanifolds, *Bulletin of the London Math. Soc.*, 38 (2006), no. 3, 353–395, math.DG/0504158.

35. T.H. Colding and W.P. Minicozzi II, Minimal submanifolds: Encyclopedia Entry, *Encyclopedia of Math. Phys.*, math.DG/0511469.

36. T.H. Colding and W.P. Minicozzi II, Shapes of embedded minimal surfaces, *Proc. Nat. Acad. Sciences*, July 25, 2006, vol. 103, no. 30, 11106-11111, math.DG/0511740.

37. W.P. Minicozzi II, Embedded minimal surfaces, *Proceedings of the International Congress of Mathematicians, Madrid 2006*, vol. 2, 853–877, math.DG/0601176.

38. T.H. Colding, C. De Lellis, and W.P. Minicozzi II, A three circles theorem for Schrödinger operators on manifolds with cylindrical ends and applications, *CPAM*, to appear, math.DG/0701302.

39. T.H. Colding and W.P. Minicozzi II, Width and mean curvature flow, preprint, lanl.arxiv.org/abs/0705.3827.

40. T.H. Colding and W.P. Minicozzi II, Width and finite extinction time of Ricci flow, preprint, lanl.arxiv.org/abs/0707.0108.