CURRICULUM VITAE

Michael Wolf

Education

	Stanford University, Ph.D., 1986
	Yale University, B.S. (Mathematics, Philosophy), 1981

Areas of Research

	Teichmüller Theory (Classical and Higher Rank), Harmonic Maps, Minimal Surfaces, Global Differential Geometry

Fellowships and Honors

2019-20	Simons Foundation Fellow in Mathematics
2019	Marjorie Corcoran (Rice Univ.) Award for contributions to the advancement of Women and Under-represented Minorities in STEM
2013	Fellow of the American Mathematical Society (Inaugural Class)
2013	George R. Brown Award for Superior Teaching (Rice Campus-wide teaching prize)
1991-95	Alfred P. Sloan Research Fellow
1987-91	NSF Mathematical Sciences Postdoctoral Research Fellow
1985-86	Alfred P. Sloan Doctoral Dissertation Fellow

Professional Appointments

2020-	Milton Brockett Porter Professor in Mathematics
Fall, 2019	Research Professor, MSRI
2017-18	Chair, Department of Mathematics, Rice University
2012-	Founder and Director, Rice Emerging Scholars Program
2006-11	Residential College Magister, Rice University
2005-09	Chair, Department of Mathematics, Rice University
Spring,2015	Member, MSRI
March,2013	Invited Professor, Tsinghua University (Beijing)
Fall, 2007	Member, MSRI
2005	Invited Professor, Université de Tours
1999-	Professor, Rice University
1995	Member, Max Planck Institut
June, 1995	Member, MSRI
1993-4	Research Professor, MSRI
1993-99	Associate Professor, Rice University
1988-93	Assistant Professor, Rice University
1986-88	C.L.E. Moore Instructor, M.I.T.

Editorial Positions

2010-18	Editorial Board (Geometric Analysis), *Proc. Amer. Math. Soc.*
2014-18	—Coordinating Editor, Geometry and Topology
2002-18	Editorial Board, *Bull. Amer. Math. Soc.*
2001-	Associate Editor, *J. Geom. Anal.*
2002-3	Associate Editor, *Walter Rudin Book Series, McGraw-Hill*

Advisory Positions

2019	External Review Committee, Brandeis Math. Dept.
2018	Participant, RTG PIs Meeting
2015	Participant, Nat. Acad. of Sci. Panel: Undergraduate Research
2004-	NSF Panels: 2004, 2006, 2007, 2012, 2013, 2017, 2018 ($\times$ 2)
2007	NSF Workshop: Educating Math. Sci. Workforce in 21st Century
2014-17	Amer. Math. Soc. Committee on National Speakers (for Joint Meetings)

Students

1991	George Stockton, M.A.
1998	Nancy Cunningham, Ph.D.
1999	Lorette Stone, Ph.D.
2003	Robert Huff, Ph.D.
2003	Zheng Huang, Ph.D.
2007	Soomin Kim, Ph.D.
2009	Casey Douglas, Ph.D.
2009	Matthew McClelland, Ph.D.
2012	Evelyn Lamb, Ph.D.
2012	Renee Laverdiere Ph.D.
2014	Qiongling Li Ph.D.
2016	Jorge Acosta Ph.D.
2016	Andrew Huang Ph.D.
2020	Xian Dai Ph.D.
2020	Charles Ouyang Ph.D.
progressing	Parker Evans, Alex Nolte

Professional Activities

2022	Scientific Committee, Labourie Sixtieth, Corsica.
2020	Co-Organizer, Bob Hardt Retirement GMT conference, Rice.
2018	Co-Organizer, Oaxaca conference on Higgs Bundles and Harmonic Maps
2017	Scientific Committee, GEAR Retreat
2014	Scientific Committee, Intensive Period on Teichmüller Theory and 3-Manifolds, Pisa
2012	Co-Organizer, KerckoffFest, Luminy

Professional Activities, continued

2008-15	Co-I, Rice VIGRE Program
2005-9	PI, Rice VIGRE Program
2010	Co-Organizer, WolpertFest, Univ. Maryland
2008-11	Chair, Organizing Board, Ahlfors-Bers Colloquium
2001-8	Organizing Board, Ahlfors-Bers Colloquium
2007-09	Sigma Xi National Distinguished Lecturer
'90, '96, '97, '00, '15, '18	Co-Organizer, Texas Geometry and Topology Conference, Houston, TX
2005	Co-Organizer, Harvey-Polking Fest, Rice University
2005	Co-Organizer, AIM Conference on Global Theory of Minimal Surfaces
2004	Co-Organizer, IId IberoAmerican Congress on Geometry, Salamanca, Spain
2004	Co-Organizer, AMS Special Session on Geometric Variational Problems, Houston, TX,
2002	Co-Organizer, AMS Special Session on Flat Structures, Moduli Spaces and Minimal Surfaces, Portland Oregon
2001	Co-Organizer, Clay Mathematics Institute Summer School on the Global Theory of Minimal Surfaces, Berkeley, CA
2001	Co-Organizer, IInd Iberoamerican Congress on Geometry, Guanajuato, Mexico,
1996	Co-Organizer, Undergraduate Conference on the Calculus of Variations, Houston, TX,
1992	Co-Organizer, Regional Geometry Institute Summer School and Research Program in Geometry and Nonlinear PDE, Park City, UT
1991	Invited Participant, National Academy of Sciences' Symposium on Frontiers of Science

Some Significant University Service

2012-	co-Founder and co-Director, Rice Emerging Scholars Program
2006-11	Residential College Magister, Will Rice College
2009-10	First Residential College Magister, McMurtry College
2009-10	Faculty Committee on the Rice Merger with Baylor College of Medicine
2017	Writing Group on the Access, Diversity and Inclusion Plank of University Strategic Plan
2013-16, '17-19, '20-	Member, Faculty Senate (Parliamentarian, 2017-19, 2020-)
2020	Faculty Senate Working Group on General Education
2018	*ad hoc* Appeals Committee, Member
2020	*ad hoc* Grievance Committee, Chair
2014-15	Chair, (Two) Faculty Senate Working Groups on the Academic Calendar (To align Spring Break with local Schools' Calendar)

Principal Talks

2020	Chern Center, Nankai Univ. (Tianjin); Fudan Univ. (Shanghai), Korea IAS Conference on Teichmuller theory
2019	Simons Center Wkshp on Holomorphic Diffs.; Stonybrook; Boston College; Texas State; Pavia Conf on Geometric Structures; Heidelberg-Stuttgart-Freiberg Seminar; Conf on Analytic Aspects of Moduli Spaces (Hannover); MSRI Intro Conf (3-lecture Minicourse); Simons Annual MPS Conference (Plenary); Stanford
2018	Uni-Luxembourg, University of Virginia, Bolivian Congreso de Math.
2017	South. Calif Geom. Anal. Sem. (UCSD), Caltech, Oberwolfach, Maryland Atelier on Geom. Anal., USC, Tata Inst. Conf. on Geom. Structures, Bangalore (3 talks)
2016	Conf. on Holomorphic Differentials, African Inst. of Math. Sci. (Cape Town), Pavia (Italy), IWH conference on Higgs bundles (Heidelberg), NUS-IMS Conference on Geom. Structures (Singapore)
2015	UCDavis, UCBerkeley, UCSanta Cruz, Pavia (Italy), Newton Institute (Cambridge, England), Conference on Higher Teichmüller theory (Heidelberg)
2014	Paris-Sud (Orsay), GEAR Retreat (Maryland), Northwestern, Tsinghua-Sanya Group Action Forum
2013	Maryland, Tsinghua University (Beijing) [mini-course], Beijing University, Yale, Conference on Variational Problems and PDE (Granada), Park City Math. Institute, Conference on Higher Teichmuller theory (Aarhus), ICERM Conference on Geometric Structures
2012	AMS Special Session, Boston, MA; Univ. Chicago, Symposium on Minimal Surfaces, New York, NY; CUNY; Stanford; CRM conference on Higher Teichmüller-Thurston theory (Montreal)
2011	Oberwolfach, Rutgers, UTPan-American
2010	Univ. of Houston; Conference on Geometry, Topology and Dynamics of Character Varieties, Singapore; Univ. of Ill., Chicago; Conference on Geometric Structures in Dimensions 2 and 3, Autrans, France
2009	CBMS Conference on Weil-Petersson Geometry, CCSU (Connecticut), 2009; Tulane University; Murray State University (Sigma Xi)
2008	Southeast Geometry Seminar, Georgia Tech.; Pacific Northwest Geometry Seminar, Stanford ; Portland State Univ
2007	KIAS conference on Geometric Analysis, Seoul; Brown; Introductory Workshop on Teichmuller Theory, Ann Arbor
2006	Canaryfest, Ann Arbor MI; Notre Dame; Chinese Acad. of Sci. School of Math. Sci ; Intl. Conf. on Discrete Groups, Beijing; Intl. Conference on Teichmüller Theory and Vector Bundles, Allahabad, India
2005	University of Georgia; AIM Conference on Moduli Spaces of Minimal Surfaces; Université de Tours (3 talks), France; Princeton; Wesleyan University (CT)
2004	Summer School on Minimal Surfaces, Paris; (3 lectures); Pacific Northwest Geometry Seminar, Salt Lake City, Utah
2003	Miniconference on Teichmuller Theory, Chicago; University of Oklahoma Karcher Colloquium, Oklahoma; Newton Institute (Klein. Gps. Wkshp.), Cambridge, England; AMS-RSME Special Session, Seville, Spain; Granada, Spain; AMS Special Session, Indiana; Southern California Geometric Analysis Seminar, UCSD
2002	Invited Address, AMS Western Sectional Meeting, Portland; California Institute of Technology; XII Escola de Geometria Diferencial, Goainia, Brazil; AMS Special Session, Ann Arbor,

Principal Talks, cont.

2001	Clay Institute Summer School on Minimal Surfaces (3 talks); University of Chicago; SUNY-Stonybrook; Rutgers; IInd Iberoamerican Congress on Geometry, Guanajuato, Mexico
2000	Texas A&M University; University of Minnesota; Universität Bonn; Amherst College; Valley Geometry Seminar, UMass
1999	Midrasha Mathematics, Hebrew University, Jerusalem; Bar-Ilan University, Tel Aviv; Indiana University
1998	MSRI-Stanford; Purdue University; University of Michigan; Chinese University of Hong Kong; University of Chicago; University of Illinois (Chicago); Washington University of St. Louis (Roever Colloquium); University of Houston
1997	SMM Special Session on Complex and Functional Analysis, (Panoramic Talk) Oaxaca; Ahlfors Celebration, Stanford
1996	Texas A&M; University of Massachusetts; University of Chicago
1995	Conference on Complex Analytic Aspects of Teichmüller Spaces, Northhampton, MA; Conference on the Calculus of Variations, Tegernsee Germany; Universität Bonn; University of Illinois (Chicago); University of Chicago; MSRI, Hyperbolic 3-Manifolds and Conformal Dynamics Conference
1994	Cornell; CUNY; MSRI, Harmonic Maps Conference
1993	University of California, Davis; Nevanlinna Colloquium, University of Michigan
1992	University of Washington; Oberwolfach Conference on Teichmüller Theory; Conference on Low-Dimensional Topology, Knoxville, TN; RGI conference on Differential Geometry and Nonlinear PDE, Park City, UT; Pacific Northwest Geometry Seminar, University of Utah
1991	MIT; University of Maryland; AMS Special Session on Low Dimensional Geometry, Philadelphia, PA
1990	Special Session on Moduli Spaces, Albuquerque; AMS Summer Institute on Differential Geometry, UCLA
1989	Texas Geom. & Top. Conf., Austin; AMS Institute on Riemann Surfaces, Arcata; AMS Special Session on Moduli Spaces, Boulder
1988	Princeton; Harvard; Cal. Inst. of Tech.; MSRI Harmonic Maps Conf.;University of Maryland
1987	University of Maryland; University of Conn. (Storrs); Ruhr-Universität, Bochum; CUNY Grad. Center
1986	UC San Diego; University of Maryland

Publications

1. The Teichmüller Theory of Harmonic Maps, *J. Differential Geom.* **29** (1989), 449–479.

2. Infinite Energy Harmonic Maps and Degeneration of Hyperbolic Surfaces in Moduli Space, *J. Differential Geom.* **33** (1991), 487–539.

3. High Energy Degeneration of Harmonic Maps Between Surfaces and Rays in Teichmüller Space, *Topology* **30** (1991), 517–540.

4. (with S. Wolpert) Real Analytic Structures on the Moduli Space of Curves, *Amer. J. Math.* **114** (1992), 1079–1102.

5. (with B. Zwiebach) The Plumbing of Minimal Area Surfaces, *J. Geom & Physics*, **15** (1994), 23–56.

6. Harmonic Maps from Surfaces to $\mathbb{R}$-Trees, *Math Zeit.*, **218** (1995), 577–593.

7. Harmonic Maps from a Surface and Degeneration in Teichmüller Space, in Proceedings of "Low Dimensional Topology", Knoxville, 1992, International Press Co. Ltd, Cambridge, MA, 1994, p. 217-239.

8. Review of "Teichmüller Theory in Riemannian Geometry" by A.J. Tromba, *Bull. Amer. Math Soc.* **29** (2) (1993), 285–290.

9. Review of "Teichmüller Theory in Riemannian Geometry" by A.J. Tromba, *Bull. London Math Soc.*, **26** (1994), 315–316.

10. (with H. Masur) Teichmüller space is not Gromov Hyperbolic, *Ann. Acad. Sci. Fenn.*, **20** (1995), 259–267.

11. On the Existence of Jenkins-Strebel Differentials Using Harmonic Maps from Surfaces to Graphs, *Ann. Acad. Sci. Fenn.*, **20** (1995), 269–278.

12. Irregular Homotopies of Harmonic Maps of Surfaces. (abstract appears in *Vorlesungsreihe, Analysis-Seminar SS1994- WS 1995/6*, Universität Bonn, 1997, 89–91).

13. On Realizing Measured Foliations Via Quadratic Differentials of Harmonic Maps to $\mathbb{R}$-trees, J. D'Analyse Math., **68** (1996), 107–120.

14. (edited with R. Hardt) Nonlinear Partial Differential Equations and Differential Geometry, Inst. Adv. Stud./Amer. Math. Society, Providence, RI, 1996.

15. (with R. Hardt) Harmonic Extensions of Quasiconformal Maps to Hyperbolic Space, *Indiana J. Math*, **46** (1997), 155–163.

Publications, cont.

16. Measured Foliations and Harmonic Maps of Surfaces, *J. Differential Geom.*, **49**(1998), 437-467.

17.(with M. Weber) Minimal Surfaces of Least Total Curvature and Moduli Spaces of Plane Polygonal Arcs, Geomånd Funct. Anal., **8**(1998),1129-1170.

18.(with R. Hardt) Harmonic Extensions of Quasi-Conformal Maps to Hyperbolic Space, in "Harmonic Morphisms, Harmonic Maps, and Related Topics" (C.K. Anand et al, ed.), Chapman and Hall, Boca Raton, 1999, p. 147-152.

19. (with B. Farb) Harmonic Splittings of Surfaces, *Topology*, **40** (2001), 1395-1414.

20. (with M. Weber) Teichmüller Theory and Handle Addition for Minimal Surfaces, *Annals of Math.*, **156** (2002), 713–795.

21.(with K. Scannell) The Grafting Map of Teichmüller Space, *Jour. Amer. Math. Soc.* **15** (2002), 893-927.

22.(with H. Masur) The Weil-Petersson Isometry Group, *Geom. Ded.*, **93** (2002), 177–190.

23. Flat Structures, Teichmüller theory, and Handle Addition for Minimal Surfaces, Proceedings of the Clay Institute 2001 Summer School on the Global Theory of Minimal Surfaces, (Hoffman et al, editors), Amer. Math. Soc., 2005.

24. Minimal Surfaces, Flat Cone Spheres, and Moduli Spaces of Staircases, in *Six Themes on Variation*, (R. Hardt, ed.), Student Mathematical Library, vol. 26, Amer. Math. Soc, Providence, RI, 2004.

25. (with M. Weber and D. Hoffman) An Embedded Genus-One Helicoid, *Annals of Math*, **169**(2009) no. 2, 347-448.

26. (with M. Weber and D. Hoffman) An Embedded Genus-One Helicoid, Proc. Nat. Acad. Sci., **102**(2005),16566-16568.

27. (with W.H. Meeks III) Minimal Surfaces with the Area Growth of Two Planes; the case of Infinite Symmetry, *Jour. Amer. Math. Soc.*, **20**(2007), 441-465.

28. Minimal Graphs in $\mathbb{H}^2 \times \mathbb{R}$ and their projections, *Pure & Appl. Math Quarterly J.*, **3**(2007), 881-896.

29. (with D. Dumas) Projective Structures, Grafting and Measured Laminations, *Geometry & Topology*, **12**(2008).

Publications, cont.

30. (Edited with Mario Bonk, Jane Gilman, Howard Masur, and Yair Minsky) In the tradition of Ahlfors-Bers. V. Papers from the 4th Ahlfors-Bers Colloquium held at Rutgers University, Newark, NJ, May, 2008.*Contemporary Mathematics*, **510**. American Mathematical Society, Providence, RI, 2010. xii+329 pp.

31. (with Petra Bonfert-Taylor, Richard D. Canary, Gaven Martin, and Edward C. Taylor), Ambient Quasiconformal Homogeneity of Planar Domains, *Ann. Acad. Sci. Fenn.*, **35**(2010), no. 1, 275-283.

32. The Weil-Petersson Hessian of Length on Teichmüller Space, *J. Differential Geom.*, **91**(2012), 129-169.

33. (with Matthias Weber) Handle Addition for Doubly-Periodic Scherk Surfaces, *J. Reine Angew. Math.*, **670** (2012), 173-216.

34. (Edited with Alan Reid, Ursula Hämenstadt, Rubí Rodríguez, Steffen Rohde) In the tradition of Ahlfors-Bers. VI. Papers from the 5th Ahlfors-Bers Colloquium held at Rice University, Houston, TX March, 2011.*Contemporary Mathematics*, American Mathematical Society, Providence, RI, 2013.

35. (with Jon Chaika and Howard Masur) Limits in $\mathcal{PMF}$ of Teichmüller Geodesics, *J. Reine Angew. Math.*, **747** (2019), 1–44.

36. (with David Dumas) Polynomial Cubic Differentials and Convex Polygons in the Projective Plane, *Geom. & Funct. Anal.*, **6** (2015), 1734-1798.

37. (with Yunhui Wu) Uniform Bounds for Weil-Petersson Curvatures, *Proc. Lond. Math. Soc. (3)*, **117** (2018), no. 5, 1041-1076.

38. (with Subhojoy Gupta) Quadratic Differentials, half-plane structures, and harmonic maps to graphs, *Comment. Math. Helv.*, **91** (2016), 317-356.

39. (with Richard Wentworth) Surface group representations to $SL(2, \mathbb{C})$ and Higgs bundles with smooth spectral data, *Geometry & Topology*, **20**(5), (2016), 3019-3032

40. (with Subhojoy Gupta) Meromorphic quadratic differentials with complex residues and spiralling foliations, *In the tradition of Ahlfors-Bers VII*, Contemp. Math., **696**, Amer. Math. Soc., Providence, RI, 2017, 153-181.

41. (with Subhojoy Gupta) Meromorphic quadratic differentials and measured foliations on a Riemann surface, *Math. Annalen.*, **373** (2019) 73-118.

Publications, cont.

42. (with Yunhui Wu) Non-Existence of geometric minimal foliations in hyperbolic three-manifolds, *Comment. Math. Helv.*, **95** (2020), 167182.

43. (with Andrea Tamburelli) Planar minimal surfaces with polynomial growth in the $\mathsf{Sp}(4,\mathbb{R})$-symmetric space, submitted.

44. (with Andreas Ott, Jan Swoboda, and Richard Wentworth) Higgs bundles, harmonic maps and pleated surfaces, submitted.

45. (with François Labourie and Jérémy Thoulisse) Plateau problems for maximal surfaces in pseudo-hyperbolic spaces, submitted.

Publications on Education

1. (with Megan McSpedon, Ann Saterbak) Summer Bridge Program Structured to Cover Most Demanding STEM Topics. *Proceedings ASEE Annual Conference* (New Orleans LA) (June 26, 2016), p.25964-25977. (Won $250 prize for best paper in division.)

2. Beier, M. E., McSpedon, M. R., MW, Saterbak, A. E.; Selection process of students for a novel STEM summer bridge program, *Proceedings ASEE Annual Conference*, Columbus, OH, June 2017.

3. Bradford, B. C., Beier, M. E., Saterbak, A., McSpedon, M., MW, Kincaid, K.; Examining first-year chemistry outcomes of underprepared STEM students who completed a STEM summer academic bridge program. *Proceedings of the American Society of Engineering Education Annual Meeting*, Columbus, OH, June 2018

4. Bradford, B. C., Beier, M. E., Wolf, M., McSpedon, M., Saterbak, A.; Development and validation of the STEM Study Strategies Questionnaire for STEM college students. *Proceedings of the American Society of Engineering Education Annual Meeting*, Tampa, FL, June 2019(in press).

5. Bradford, B. C., Beier, M. E., Wolf, M., McSpedon, M., Taylor, M.; STEM bridge program participation predicts first and second semester math performance. *Proceedings of the American Society of Engineering Education Annual Meeting*, Tampa, FL, June 2019 (in press).

External Support (Mathematics Research, Training and Conferences)

1987	NSF Math. Sci Postdoctoral Fellowship
1990	NSF-DMS (part of larger grant to R. Harvey)
1991	Alfred P. Sloan Research Fellowship $30,000
1993	NSF-DMS Individual Investigator Award $60,000
1997	NSF-DMS Scientific Equipment $40,557
1996	NSF-DMS Individual Investigator Award $60,000
1999	NSF-DMS Individual Investigator Award $241,407
2002	NSF-DMS Individual Investigator Award (FRG) $401,497
2003	NSF-DMS VIGRE (training) award (co-I, PI) $3,821,780
2005	NSF-DMS Individual Investigator Award $563,040
2005	NSF-DMS Conference Grant $19,970
2008	NSF-DMS VIGRE (training) award $4,957,233
2010	NSF-DMS Individual Investigator Award $462,156
2011	NSF-DMS Conference Grant $49,825
2012	NSF-DMS RTG (training) award (co-I) $1,786,993
2013	NSF-DMS Individual Investigator Award Supplement $46,560
2015	NSF-DMS Individual Investigator Award (FRG) $410,860
2018	NSF-DMS RTG (training) award (co-I) $2,465,980
2019	Simons Fellowship in Mathematics, $132,000
2020	NSF-DMS Conference Grant $30,000
2020	NSF-DMS Individual Investigator Award $540,740

External Support for Rice Emerging Scholars Program, principal grants, with partners(!))

2012-	Chao Foundation (about $1,450,000 to date)
2014	Hearst Foundations $150,000
2016	NSF-DUE $999,990
2017	Doris Duke Charitable Foundation $40,000
2018	Hearst Foundations $215,000
2018	Doris Duke Charitable Foundation $40,000
2019	Alkek Foundation $124,000
2020	NSF-DUE $199,995 (Supplement)