Michael T Lacey

Short Resumé

School of Mathematics
Georgia Institute of Technology
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Education

1981 **B.S**, *University of Texas*, Austin.

1987 **Ph.D.**, *University of Illinios*, Urbana-Champaign.

Position

2001—20XX Full Professor, Georgia Institute of Technology

Honors

2012 American Mathematical Society Fellow

2012 Simons Fellow

2012 Georigia Tech NSF-ADVANCE Mentoring Award

2008 Fulbright Fellowship, Buenos Aires, Argentina

2004 Guggenheim Fellow

1998 45 Minute address, International Congress of Mathematicians, Berlin Germany

1997 Awarded Prix Salem, jointly with Christoph Thiele. Prize is funded jointly by Princeton University and the Institute for Advanced Study.

1990 NSF Postdoctoral Fellow

Selected Publications

[1] Michael T. Lacey, *Two Weight Inequality for the Hilbert Transform: A Real Variable Characterization, II*, Submitted (2013), available at `http://www.arxiv.org/abs/1301.4663`.

[2] Michael T. Lacey, Eric T. Sawyer, Ignacio Uriarte-Tuero, and Chun-Yen Shen, *Two Weight Inequality for the Hilbert Transform: A Real Variable Characterization, I*, Submitted, available at `http://www.arxiv.org/abs/1201.4319`.

[3] Tuomas Hytönen and Michael T. Lacey, *Pointwise convergence of vector-valued Fourier series*, Math Annalen, to appear (2012), available at `http://www.arxiv.org/abs/1205.0261`.

[4] Michael T. Lacey, Stefanie Petermichl, and Maria Carmen Reguera, *Sharp A_2 inequality for Haar shift operators*, Math. Ann. **348** (2010), no. 1, 127–141.

[5] Michael T. Lacey, Eric T. Sawyer, and Ignacio Uriarte-Tuero, *Astala's Conjecture on Distortion of Hausdorff Measures under Quasiconformal Maps in the Plane*, Acta Math. **204** (2010), no. 2, 273-292.

[6] Dmitriy Bilyk, Michael T. Lacey, and Armen Vagharshakyan, *On the small ball inequality in all dimensions*, J. Funct. Anal. **254** (2008), no. 9, 2470–2502.

[7] Dmitriy Bilyk and Michael T. Lacey, *On the small ball inequality in three dimensions*, Duke Math. J. **143** (2008), no. 1, 81–115.

[8] Michael T. Lacey, Stefanie Petermichl, Jill C. Pipher, and Brett D. Wick, *Multiparameter Riesz commutators*, Amer. J. Math. **131** (2009), no. 3, 731–769.

[9] Sarah H. Ferguson and Michael T. Lacey, *A characterization of product BMO by commutators*, Acta Math. **189** (2002), no. 2, 143–160.

[10] Pascal Auscher, Steve Hofmann, Michael T. Lacey, Alan McIntosh, and Ph. Tchamitchian, *The solution of the Kato square root problem for second order elliptic operators on* R^n, Ann. of Math. (2) **156** (2002), no. 2, 633–654.

[11] Steve Hofmann, Michael T. Lacey, and Alan McIntosh, *The solution of the Kato problem for divergence form elliptic operators with Gaussian heat kernel bounds*, Ann. of Math. (2) **156** (2002), no. 2, 623–631.

[12] Michael T. Lacey and Christoph Thiele, *A proof of boundedness of the Carleson operator*, Math. Res. Lett. **7** (2000), no. 4, 361–370.

[13] ———, L^p *estimates on the bilinear Hilbert transform for* $2 < p < \infty$, Ann. of Math. (2) **146** (1997), no. 3, 693–724.

[14] ———, *On Calderón's conjecture for the bilinear Hilbert transform*, Proc. Natl. Acad. Sci. USA **95** (1998), no. 9, 4828–4830 (electronic).

[15] ———, *On Calderón's conjecture*, Ann. of Math. (2) **149** (1999), no. 2, 475–496.

[16] ———, L^p *estimates for the bilinear Hilbert transform*, Proc. Nat. Acad. Sci. U.S.A. **94** (1997), no. 1, 33–35.

[17] Michael T. Lacey, *The bilinear maximal functions map into* L^p *for* $2/3 < p \leq 1$, Ann. of Math. (2) **151** (2000), no. 1, 35–57.

[18] ———, *On the bilinear Hilbert transform*, Proceedings of the International Congress of Mathematicians, Vol. II (Berlin, 1998), 1998, pp. 647–656 (electronic).

[19] ———, *On central limit theorems, modulus of continuity and Diophantine type for irrational rotations*, J. Anal. Math. **61** (1993), 47–59.

[20] Michael T. Lacey and Walter Philipp, *A note on the almost sure central limit theorem*, Statist. Probab. Lett. **9** (1990), no. 3, 201–205.

Selected Grants

2012—13 Simons Foundation, $130,000

1995—12 NSF individual grants

2009 Conference Grant for CRM program in Barcelona, Spain, $32,000

2008—13 NSF MCTP (Undergraduate Program) $730,000

2008 Conference Grant, for Program at Fields Institute, $50,000

2005—08 NSF FRG $350,000, with U. Georgia, hens, and U. Missouri Columbia

2001—06 NSF $2,100,000 VIGRE award, for the School of Mathematics

Selected Colloquia

2013 CIAM Distinguished Lecturer Series, University of South Australia, Adelaide

2012 Colloquium, Yale University

Plenary, MCQMC 2012 (Monte Carlo Quasi Monte Carlo), Sydney Australia

Plenary, SEAM (SouthEastern Analysis Meeting), Tuscaloosa Alabama

Weighted inequalities (4 lectures), Beijing Normal University

Colloquium, Center for Advanced Study, Oslo Norway

2011 Two Weight Inequalities, Paesky Summer School, (5 lectures) Czech Republic

2011 Colloquium, Convergence of Fourier Series, Universidad Seville

2010 Campus wide lecture, Georgia Southern University, February 2010

2010 Plenary, Conference in honor of Richard Wheeden, Seville Spain, June
2010 Plenary, Józef Marcinkiewicz Centenary Conference, June
2010 Two Weight Inequalities, 10 lectures University of Helsinki, October
2009 Small Ball Inequalities (4 lectures) Yerevan, Armenia, February 2009.
2009 Kato Square Root Theorem (5 lectures) U Autonoma Barcelona, March 2009
2009 Small Ball Inequalities (5 lectures) Arkansas Spring Lectures, April 2009.
2008 Plenary, Southeastern Analysis Meeting, Nashville TN, April.
2008 Fulbright Lectures, 15 lectures, Universidad de Buenos Aires
2008 Plenary, 2 lectures, Auburn Mini-Conference
2007 Trijinsky Lectures, 3 lectures, UIUC Oct
2007 Plenary, Discrepancy, Varenna Italy, June
2006 Pichorides Lectures, 6 Seminars, University of Crete, July
2006 Plenary, Analysis in Barcelona, ICM Satalite Meeting, September
2005 E. Schrodinger Institute, Vienna, Seminar May
2005 Plenary, Harmonic Analysis in Japan (Two Lectures) August
2005 Plenary, Harmonic Analysis and Approximation in Armenia September
2004 Colloquium, Simon Fraser University, Vancouver
2004 Special Trimester, Centro Di Georgi, Pisa, Italy (May)
2003 E. Schrodinger Institute, 6 lectures, Vienna Austria
2003 Keynote, Southeastern Analysis Meeting, Knoxville TN
2003 Colloquium, University of British Columbia
2002 Conference, Fabes-Riviere Symposium, University of Minnesota
2002 Colloquium, Universite Francoise Rabelais, Tours France
2000 Colloquium, Australian National University, Canbera
1998 Plenary Address, AMS Southeastern Meeting, Atlanta GA
1998 45 Min. Address ICM, Berlin Germany

Mentoring

Undergraduates

2001— A frequent mentor to undergraduates about Graduate School. About 40% of the undergraduates attend a STEM graduate graduate program.

2012 From a note of thanks from a NSF Graduate Research Fellowship: "... I would like to thank you for the help, guidance, and motivation you've given me, and for the recommendations you have written on my behalf. I have much to be thankful for, and I could not have gotten this award without you."

Historical information on the placement of majors into STEM graduate programs.

Year	'02	'03	'04	'05	'06	'07	'08	'09	'10	'11
Majors Placed	8	6	8	7	9	12	8	5	9	11
Women	2	3		4	3	1		2	3	5
Minority	1		1	1		1	1		1	1
Degrees Awarded					26	29	18	27	24	43
% in Grad School					34	41	44	18	64	25

Graduate Students

2010 Armen Varshagyan, PhD, postdoc at Brown

2011 Maria Carmen Reguera PhD (2011), postdocs at Lund and Universidad Autonoma Barcelona, currently at U Birmingham, England.

2014 Gagik Amirkhanyan PhD (May 2014), has accepted at position at Amazon.

2014 Scott Spencer, PhD May 2017, expected.

Postdocs

2014 Henri Martikainen, supported by Academy of Sciences, Finland.

2012 Antti Vähäkangas moved to postdoctoral position, Helsinki U.

2010—12 Manwah (Lilian) Wong moved to a position in finance

2011 Yen Do moved to a postdoctoral position at Yale

2010 Kevin P. Costello moved to a NSF Postdoc at Georgia Tech

2007—09 Sergie Borodachov moved to a tenure track position at Towson U

2008 Ioannis Parissis moved to postdoctoral positions at Fields & KTH

2006-08 Dmitriy Bilyk moved to IAS, then University of South Carolina

2006 Julia Garibaldi moved to Emory.

2003—05 Jason Metcalfe VIGRE Postdoc, moved to NSF Postdoc at Berkeley

2002 Erin Terwilleger VIGRE Postdoc, moved to tenure track, U. Conn.

Service

Georgia Institute of Technology

2014-15 Faculty advisor to the American Mathematical Society Student Chapter

2014-15 College of Science Diversity Committee

2014-15 School of Mathematics Hiring Committee

2014 Organizer in charge of mentoring for program in High-dimensional Approximation, ICERM, Brown University.

2013-14 Chair School of Mathematics Hiring Committee

2008-12 PI on the NSF-MCTP grant, supporting the undergraduate program at Georgia Tech. During the term of this grant, the number of majors rose from 140 to 200; about 40% attend graduate school.

2001-07 VIGRE Director. From the third year review: "It is apparent that PI Michael Lacey plays an extensive and pivotal role in the mentoring of undergraduates, graduate students, and postdocs. Many highly favorable reports about the School's VIGRE activities from trainees were phrased in terms such as 'A professor suggested ...' and in almost every case that professor was Dr. Lacey."

2012 Member of the Hiring Committee

2009 Organizer of a Mathematical Research Community event at Snowbird Utah, with C. Thiele, and D. Demeter

2009-11 Member of the Junior Promotion and Tenure Committee

2005-7 Appointed to Hiring Committee

2003 Elected member of the Salary and Awards Committee, GT.

2002, 2003 Member of the Postdoc Selection Committee, GT.

2002, 2003 Organized the Research Experience for Undergraduates, a summer program for 10 students. Several of these have produced publications, or gone onto graduate school.

2001-2007 PI on the DMS-0135290 VIGRE award. A quote from the report on the site visit for the third year review of this program: "It is apparent that PI Michael Lacey plays an extensive and pivotal role in the mentoring of undergraduates, graduate students, and postdocs. Many highly favorable reports about the School's VIGRE activities from trainees were phrased in terms such as 'A professor suggested...' and in almost every case that professor was Dr. Lacey."

2001 Member of Faculty Advisory Committee, representing faculty interests in matters concerning governance of the School of Mathematics.

2001-2003 With Richard Duke, Interim Chair, wrote a successful NSF VIGRE Award, to train undergraduates, graduate students and postdoctorates in the School of Mathematics. Award amount is to be $2,100,000 over a five year period.

2001 Director of Undergraduate Education, with oversight of the entire undergraduate program in mathematics, the Georgia Institute of Technology. Different initiatives here lead to a dramatic improvement in placement of the undergraduates into graduate programs.

2000 Member of Executive Committee, council to the Chair on performance evaluations and awards to faculty members.

1998 Chair of Undergraduate Committee. Oversaw the selection of new Calculus texts to implement an "early linear algebra" approach to Calculus.

1998—2000 Hiring Committee.

Editorial Positions

2005—2011 Harmonic Analysis editor for the Proceedings of the American Mathematical Society. 80 papers/year submitted; acceptance rate is 25%.

2006— Journal of Geometric Analysis.

Profession

- 2014

Organizer of a semester program at ICERM/Brown, in High Dimensional Approximation 2012 Scientific Com

2009–2012 Editorial Nominations Board, American Mathematical Society.

2009 Organizer at the CRM-Barcelona, with oversight of funds supporting the participation by US based researchers in the program there.

2008 Organizer of the Small Ball Inequality and Related Topics Workshop, AIM Palo Alto CA

2008 Organizer for the Thematic Program in Harmonic Analysis at the Fields Insitute. PI on NSF grant to support US based Participants in the program.

2008 Organized the Operator Theory Workshop at the Fields Insitute.

Frequent referee, and reader for science foundation of countries world-wide.

1998, 1999, 2001, 2003, 2006, 2009	Served on the NSF Harmonic Analysis Panel in Over 3 days, approximately 70-40 proposals are ranked, setting priorities for funding.
2005, 2010	Served on the 2005 NSF Graduate Fellowship Committee,
2005	NSF CAREER Fellowship Committee