

Curriculum Vitae

Michael Greenblatt
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Education

Princeton University, department of mathematics, Ph.D., 1998.
Stanford University, department of mathematics, M.S., 1994.
California Institute of Technology, with honors, major in mathematics, B.S., 1992.

Appointments

2015-: Professor, University of Illinois at Chicago.
2010-2015: Associate Professor, University of Illinois at Chicago.
2008-2010: Assistant Professor, University of Illinois at Chicago.
2005-2008: Assistant Professor, SUNY at Buffalo.
2002: Visiting Assistant Professor, University of Wisconsin-Madison.
1998-2001: C.L.E. Moore Instructor, Massachusetts Institute of Technology.

Research Papers

Submitted:

L^p Sobolev regularity for a class of Radon and Radon-like transforms of various codimension,
submitted.

L^p Sobolev regularity of averaging operators over hypersurfaces and the Newton polyhedron,
submitted.

Smooth and singular maximal averages over 2D hypersurfaces and associated Radon transforms,
submitted.

Published:

Fourier transforms of irregular mixed homogeneous hypersurface measures in \mathbb{R}^3 , Math. Nachrichten. (2018) <https://doi.org/10.1002/mana.201700017>

Fourier transforms of powers of well-behaved 2D real analytic functions, Forum. Math. (2017). <https://doi.org/10.1515/forum-2016-0256>

Convolution kernels of 2D Fourier multipliers based on real analytic functions, Journal of Geometric Analysis. (2017) <https://doi.org/10.1007/s12220-017-9842-z>.

Estimates for Fourier transforms of surface measures in \mathbb{R}^3 and PDE applications, Rev. Mat. Iberoam. **32** (2016), no. 2, 419–446.

Applications of an elementary resolution of singularities algorithm to exponential sums and congruences modulo p^n , Israel J. Math. **212** (2016), no. 1, 315-335.

Uniform bounds for Fourier transforms of surface measures in \mathbb{R}^3 with nonsmooth density, Trans. AMS. **368** (2016), no. 9, 6601-6625.

Singular integral operators with kernels associated to reciprocals of real-analytic functions, J Func. Anal. **269** (2015), no. 11, 3663-3687.

Stability of oscillatory integral asymptotics in two dimensions, J. Geom. Anal. **24**, #1 (2014), 417-444.

L^p boundedness of maximal averages over hypersurfaces, Trans. AMS. **365** (2013) 1875-1900.

Maximal averages over hypersurfaces and the Newton polyhedron, J. Funct. Anal. **262** (2012) no.5, 2314-2348.

Resolution of singularities in two dimensions and the stability of integrals, Adv. Math., **226** (2011) no. 2, 1772-1802.

Resolution of singularities, asymptotic expansions of sublevel sets, and applications, J. Analyse Math. **111** (2011), no. 1, 221-245.

Oscillatory integral decay, sublevel set growth, and the Newton polyhedron, Math. Annalen, **345** (2010) no. 4, 857-895.

The asymptotic behavior of degenerate oscillatory integrals in two dimensions, J. Funct. Anal. **257** (2009) 1759-1798.

A Coordinate-dependent local resolution of singularities with applications, J. Funct. Anal. **255** (2008), no. 8, 1957-1994.

Simply nondegenerate multilinear oscillatory integral operators with smooth phase, Math. Res. Lett. **15** (2008), no. 4, 653-660.

A $T(1)$ Theorem for singular Radon transforms, Math. Annalen **339** (2007), no. 3, 599-626.

An analogue to a theorem of Fefferman and Phong for averaging operators along curves with fractional integral kernel, Geometric and Functional Analysis, **17**, no. 4 (2007), 1106-1138.

(with C. Boner, G. Godfrey, and T. Mifflin) *Detecting terrorist activities in the 21st Century: A theory of detection for transactional networks*, in the book 21st Century Enabling Technologies and Policies for Counter-Terrorism, eds. R. Popp and J. Yen, Wiley IEEE (2006), 349-366.

Newton polygons and local integrability of negative powers of smooth functions in the plane, Trans. Amer. Math. Soc. **358** (2006), no. 2, 657–670.

Stability of sublevel set estimates and sharp L^2 estimates for Radon transforms in the plane, Math. Res. Lett. **12** (2005), no. 1, 1-17.

Sharp estimates for one-dimensional oscillatory integral operators with C^∞ phase, American J. Math. **127** (2005), no. 3, 659–695.

A direct resolution of singularities for functions of two variables with applications to analysis, J. d'Analyse Math. **92** (2004), 233–257.

Scalings, metrics, and smoothing of Radon transforms along curves, J. Funct. Anal. **206** no.2, (2004), 307-321.

Boundedness of singular Radon transforms on L^p spaces under a finite-type condition, American J. Math. **123** (2001), 1009-1053.

A method for proving L^p boundedness of singular Radon transforms in codimension one, Duke Math. J. **108** (2001), 363-393.

Teaching Experience

UIC:

Spring 2018	Math 537	Introduction to Harmonic Analysis I
Fall 2017	Math 417	Complex Analysis with Applications
Fall 2017	Math 220	Introduction to Differential Equations
Spring 2017	Math 220	Introduction to Differential Equations
Fall 2016	Math 210	Calculus III
Fall 2016	Math 533	Real Analysis I
Spring 2016	Math 313	Analysis I
Fall 2015	Math 535	Complex Analysis I
Fall 2015	Math 210	Calculus III
Spring 2015	Math 310	Applied Linear Algebra
Spring 2015	Math 535	Complex Analysis I
Fall 2014	Math 533	Real Analysis I
Spring 2014	Math 535	Complex Analysis I
Fall 2013	Math 210	Calculus III
Fall 2013	Math 313	Analysis I
Spring 2013	Math 414	Analysis II
Spring 2013	Math 537	Introduction to Harmonic Analysis I
Fall 2012	Math 313	Analysis I
Spring 2012	Math 180	Calculus I
Spring 2012	Math 535	Complex Analysis I
Fall 2011	Math 220	Introduction to Differential Equations
Spring 2011	Math 537	Introduction to Harmonic Analysis I
Fall 2010	Math 180	Calculus I
Fall 2010	Math 220	Introduction to Differential Equations
Spring 2010	Math 410	Advanced Calculus I
Fall 2009	Math 417	Complex Analysis with Applications
Spring 2009	Math 414	Analysis II

Fall 2008

Math 313

Analysis I

SUNY Buffalo: 2005-2007. Instructor for calculus, differential equations, and graduate-level real analysis.

University of Wisconsin-Madison: 2002. Instructor, undergraduate courses.

MIT: 1998-2001. Course Instructor for undergraduate complex analysis and recitation instructor for undergraduate mathematics courses, including multivariable calculus and differential equations.

Princeton University: 1996. Calculus instructor.

Independent Study Courses

Fall 2012: Math 596: Graduate independent study in singular integrals (Landon Kavlie)

Spring 2014: Math 496: Undergraduate independent study on metric spaces (Michael Perlman)

Fall 2014: Math 596: Graduate independent study in real analysis (Amit Shah)

Grants and Awards

1992-1995: NSF Graduate Fellow

2000-2002: co-PI for NSF Grant DMS 9988798

2007-2012: PI for NSF Grant DMS 0654073 (transferred to DMS 0919713)

2010-2015: PI for NSF Grant DMS 1001070

UIC Service

2008-2010, 2014- Admissions, Fellowships, and Assistantships Committee

2010-2011: Student Awards Committee

2010-: Pure Math Masters Exam Coordinator

2011-2012, 2014-: Visitors Committee, Chair starting 2015.

2012, 2014-: Prelim Examiner

2012-2013: Calculus Committee

2012-: Faculty Mentor

2012: PhD thesis committee member, Danko Adrovic.

2013-2014: Undergraduate Advising Committee

2014-2016, 2017-: Research Assistant Professor Search Committee.

SUNY Buffalo: Analysis group committee and colloquium committee, math dept.

Refereeing

American Journal of Mathematics, Annals of Statistics, Indiana University Mathematics Journal, Journal d'Analyse Mathematique, Journal of the European Mathematical Society, Journal of Fourier Analysis and Applications, Journal of Geometric Analysis, Journal of Mathematical Analysis and Applications, Mathematische Annalen, Nagoya Math. Journal, the Journal of the Mathematical Society of Japan, Math. Zeitschrift, Revista Matematica Iberoamericana, Transactions of the AMS.

Invited Talks and Colloquia

October 1998: Analysis Seminar, MIT
September 1999: Analysis Seminar, Princeton
November 1999: Analysis Seminar, MIT
April 2000: Analysis Seminar, University of Wisconsin
February 2002: Colloquium, McMaster University
April 2002 (2 talks): Analysis Seminar, University of Wisconsin
August 2003: Analysis and Resolution of Singularities Workshop, Universite de Montreal
February 2004: Colloquium, University of California, Santa Cruz
February 2004: Metron Inc.
December 2004: Colloquium, Simon Fraser University
January 2005: National AMS meeting, Atlanta
February 2005: Colloquium, SUNY at Buffalo
February 2005: Colloquium, Ohio State University
March 2005: Colloquium, University of New Mexico
April 2005: Colloquium, University of Central Florida
October 2006: Analysis Seminar, University of Rochester
December 2006: CMS Annual Meeting, Toronto
January 2008: Colloquium, University of Illinois at Chicago
January 2008: Colloquium, University of California at Irvine
January 2008: Colloquium, University of Colorado, Boulder
February 2008: Colloquium, University of British Columbia
February 2008: Analysis Seminar, University of British Columbia
October 2008: AMS Western Fall Sectional Meeting
February 2010: Analysis Seminar, University of Wisconsin at Madison
April 2010: Analysis Seminar, Ohio State University
October 2010: AMS Eastern Fall Sectional Meeting
June 2011: Conference on Oscillatory Integrals in Harmonic Analysis, Edinburgh.
October 2011: Colloquium, University of Cincinnati
October 2012: Analysis Seminar, University of Wisconsin, Madison.
November 2012: Analysis Seminar, University of Rochester.
March 2013: Algebraic Geometry Seminar, University of Illinois at Chicago.
November 2014: Analysis Seminar, University of Wisconsin at Madison
March 2015: AMS Central Spring Sectional Meeting
July 2016: AIMS Conference on Dynamical Systems, Differential Equations and Applications,

Orlando FL

October 2017, Analysis Seminar, University of Wisconsin, Madison.

October 2017, Analysis Seminar, Georgia Tech

April 2018, Harmonic Analysis and PDE Seminar, University of Illinois at Urbana-Champaign

Other Conferences Attended

March 2006: Conference on Complex Analysis, University of Wisconsin at Madison

Spring 2008: Harmonic Analysis semester, Fields Institute, Toronto

March 2009: AMS Spring Central Sectional Meeting

June 2011: Conference in honor of Elias Stein's 80th birthday, Princeton

August 2013: SIAM conference on applied algebraic geometry, Colorado State University.

April 2014: Conference on multiparameter analysis and geometry, University of Arkansas.