

CURRICULUM VITA OF JAMES MICHAEL WILSON

Personal data.

Born: June 20, 1955; Santa Cruz, California.

Current address: Department of Mathematics, University of Vermont, Burlington, Vermont 05405.

Phone number: 802-656-4326.

Website: <http://www.emba.uvm.edu/~wilson>.

Education.

- [1] University of California, Los Angeles; 1977-1981; M.A., 1979; PhD, 1981.
- [2] California Institute of Technology, Pasadena, California; 1973-1977; B. S.

Thesis advisor: John B. Garnett.

Area of specialization: Classical harmonic analysis (AMS Classification: 42).

Employment history.

- [1] Professor of Mathematics; University of Vermont, 1999-present.
- [1] Visiting Associate Professor of Mathematics; Rutgers University (New Brunswick, New Jersey) [on sabbatical from UVM], 1992-1993.
- [2] Associate Professor of Mathematics; University of Vermont, 1991-1999.
- [3] Assistant Professor of Mathematics; University of Vermont, 1986-1991.
- [4] Van Vleck Assistant Professor; University of Wisconsin, Madison, 1983-1986.
- [5] L. E. Dickson Instructor; University of Chicago, 1981-1983.
- [6] Teaching assistant; UCLA, 1978-1981.
- [7] Tutor and summer school teacher; Office of Secondary Schools Relations, California Institute of Technology, 1974-1977.

Invited talks.

- [1] “The intrinsic square function”; August, 2006; Harmonic and Geometric Analysis with Applications to Partial Differential Equations (satellite conference to ICM 2006, Madrid); Sevilla, Spain.

- [1] “Four theorems with almost one proof”; January, 2005; analysis seminar, Universitat Aut3noma de Barcelona.
- [2] “Three lectures on Littlewood-Paley theory”; April, 2005; short course, Universidad de Sevilla.
- [3] “Littlewood-Paley theory and applications”; May, 2005; colloquium; Universidad de Sevilla.
- [4] “The intrinsic square function”; May, 2005; Encounters in Real and Complex Analysis; Cuenca, Spain.
- [5] “Littlewood-Paley theory for non-doubling measures”; May, 2005; analysis seminar; Universidad Aut3noma de Madrid.
- [6] “Partial differential equations, probability, and their connections to Littlewood-Paley theory”; May, 2005; special lecture, Universidad de Sevilla, Sevilla, Spain.
- [7] “Some Littlewood-Paley results”; Conference in Honor of Paul Koosis; October 23-26, 2003; University of Montreal, Montreal, Quebec, Canada.
- [8] “Littlewood-Paley estimates for non-doubling measures”; Sixth New Mexico Analysis Seminar; March 6-8, 2003; University of New Mexico, Albuquerque NM.
- [9] “A Littlewood-Paley estimate for almost-orthogonal sums”; April, 2002; analysis seminar, McGill University.
- [10] “Inequalities for gradients on non-smooth domains”; May, 2002; Special Session on Harmonic Analysis, AMS meeting (Montreal, Quebec, Canada).
- [11] “Weighted estimates for gradients on non-smooth domains”; October, 2001; Special Session on Harmonic Analysis, AMS meeting (Williamstown, Massachusetts).
- [12] “Littlewood-Paley estimates for sums of almost-orthogonal functions”; November, 2000; Michigan State University, analysis seminar.
- [13] —; October, 2000; Brown University, analysis seminar.
- [14] “Inequalities for sums of non-compactly supported wavelets”; June, 2000; Universidad Autonoma de Madrid, analysis seminar.
- [15] “ $L^p - L^q$ weighted norm inequalities for Bergman spaces”; December, 1994; Canadian Mathematical Society winter meeting (Montreal, Quebec, Canada).
- [16] “A two-parameter ‘Bergman space’ inequality”; October, 1994; Auburn Mini-Conference on Harmonic Analysis (Auburn University, Alabama).
- [17] “Littlewood-Paley theory in one and two parameters”; August, 1990; ‘Harmonic Analysis–Sendai, 1990’ (Tohoku University, Sendai, Japan).
- [18] ‘An L^2 weighted norm inequality for the Fourier transform”; ‘Harmonic Analysis–Sendai, 1990’ (Tohoku University, Sendai, Japan).

- [19] ‘Cauchy integrals on terrible curves’; March, 1990; Special Session on Singular Integrals, AMS meeting (Fayetteville, Arkansas).
- [20] ‘Chanillo-Wheeden inequalities for $0 < p \leq 1$ ’; August, 1989; NSF-CBMS Regional Conference–‘Singular Integral Operators’; University of Montana.
- [21] ‘—’; August, 1989; McGill University, analysis seminar.
- [22] ‘—’; July, 1989; NSF-CBMS Regional Conference–‘Harmonic Analysis–Real Function Spaces and Related Areas’; Auburn University.
- [23] ‘An eigenvalue estimate for the two-parameter Schrödinger operator’; May, 1988; McGill University, Québec, Canada.
- [24] ‘Some inequalities for singular integrals and degenerate Schrödinger operators’; October, 1987; Workshop on Weighted Norm Inequalities and Applications; Centre de Recherches Mathématiques, Université de Montréal, Québec, Canada.
- [25] ‘Weighted inequalities for the square function’; May, 1987; McGill University, Québec, Canada.
- [26] ‘Weighted inequalities for the square function’; July, 1985; AMS Joint Summer Research Conference (Arcata, California).
- [27] ‘Good- λ inequalities’; October, 1984; Brock University, Ontario, Canada.
- [28] ‘Weighted inequalities without A_∞ ’; October, 1984; McMaster University, Ontario, Canada.
- [29] ‘Some weighted norm inequalities concerning the Schrödinger operators’ (joint work with S. Y. A. Chang and T. H. Wolff; presented by Wolff); November, 1983; Special Session on Harmonic Analysis, AMS meeting (Northwestern University, Evanston, Illinois).
- [30] ‘Atomic decompositions for Bergman spaces’; October, 1982; Special Session on Harmonic Analysis, AMS meeting (University of Maryland, College Park).
- [31] ‘Approximate identities and $H^1(\mathbf{R})$ ’; August, 1982; Special Session on Harmonic Analysis, AMS meeting (University of Toronto).

Contributed talks.

- [1] ‘Weighted inequalities for the square function’; July, 1987; St. Lawrence University-GTE Conference on Harmonic Analysis; St. Lawrence University, Canton, New York.
- [2] ‘An eigenvalue estimate for the two-parameter Schrödinger operator’; April, 1988; Conference on Harmonic Analysis and Applications; Mathematical Sciences Research Institute, Berkeley, California.
- [3] ‘A counterexample in two-parameter harmonic analysis’; June, 1991; Auburn University Mini-Conference on Harmonic Analysis; Auburn University, Alabama.

- [4] “A maximal function with applications to weighted Bergman spaces”; December, 1993; Auburn University Mini-Conference on Harmonic Analysis; Auburn University, Alabama.
- [5] “A two-parameter ‘Bergman space’ inequality”; October, 1994; Auburn University Mini-Conference on Harmonic Analysis; Auburn University, Alabama.
- [6] “ $L^p - L^q$ weighted norm inequalities for Bergman spaces”; December, 1994; Canadian Mathematical Society winter meeting; Montreal, Quebec, Canada.
- [7] “Weighted two-parameter Bergman space inequalities”; November, 1996; Auburn University Mini-Conference on Harmonic Analysis; Auburn University, Alabama.
- [8] “A semi-discrete Littlewood-Paley inequality”; December, 1997; Auburn University Mini-Conference on Harmonic Analysis; Auburn University, Alabama.
- [9] “Recent progress in two-parameter Littlewood-Paley theory”; December, 1999; Auburn University Mini-Conference on Harmonic Analysis; Auburn University, Alabama.
- [10] “Paraproducts and the exponential square class”; July, 2000; Conference on Harmonic Analysis and Partial Differential Equations; El Escorial, Spain.
- [11] “The intrinsic square function”; Ninth New Mexico Analysis Seminar; April, 2006; Albuquerque, New Mexico.

External Support

- [1] Received a research grant from the Spanish Ministerio de Educación, Cultura, y Deporte (SAB2003-0003) to spend a sabbatical year in Spain; 24,100 euros.
- [2] Received National Science Foundation grant (#DMS 9501107), 1995-1997; project title: “Bergman space inequalities”; \$43,160.
- [3] Received National Science Foundation grant (#DMS 9401498), 1994-1995; project title: “Bergman space inequalities”; \$20,996.
- [4] Received \$1,500 grant from the American Mathematical Society for travel to the International Conference of Mathematicians in Kyoto, Japan (1990).
- [5] Received grant of 100,000 yen from Tohoku University (Sendai, Japan) for travel to the conference, “Harmonic Analysis–Sendai, 1990.”
- [6] Received National Science Foundation grant (#DMS 8811775), 1988-1990; project title: “Multi-parameter harmonic analysis and Littlewood-Paley inequalities”; \$17,500.
- [7] Vermont EPSCoR grant; 1987-1990.
- [8] Summer Research Fellowship (UCRS); summer, 1987.
- [9] Received postdoctoral support from National Science Foundation grant #MCS 8203319 (1982-1983) under A. P. Calderón.

Professional Service.

- [1] External member of PhD Committee for Kanghui Guo, McGill University, Department of Mathematics; August, 1989.
- [2] Official NSF observer for NSF-CBMS Regional Conference, “ Harmonic Analysis–Real Functions Spaces and Related Areas”; July, 1989.
- [3] Member of PhD Committee for Edgar Velez, University of Vermont, Department of Electrical Engineering; May, 1989.
- [4] Co-organizer (with D. Zwick) for Workshop on Approximation by Harmonic and Subharmonic Functions (held at Stowe); May, 1989.
- [5] Member of PhD Committee for Judith Laurens, University of Vermont, Department of Electrical Engineering; academic year 1991-1992.
- [6] Member of PhD Committee for Jon Marozas, University of Vermont, Department of Electrical Engineering; 1991-1997.
- [7] Member of PhD Committee for Paul Smith, University of Vermont, Department of Electrical Engineering; 1993-1996.
- [8] Reviewer for *Mathematical Reviews*.
- [9] Grant proposal reviewer for NSF.
- [10] Co-organizer (with Roger Cooke) of analysis session of 1995 AMS Mathfest.
- [11] Member of PhD Committee for Alessandro Palau, University of Vermont, Department of Computer Science; 1995-1997.
- [12] Thesis advisor for Robert Poodiack, University of Vermont, Department of Mathematics; 1996-1999.
- [13] PhD thesis examiner for Yan Zhang (advisor: Ivo Klemes), Department of Mathematics, McGill University.
- [14] Extramural reviewer for David Cruz-Uribe (Trinity College; Hartford, Connecticut).

Departmental Service.

- [1] Colloquium committee (chairman; 1988-1995).
- [2] Graduate committee (1986-present).
- [3] Calculus textbook committee (1987-1988).
- [4] Library committee (1986-present).
- [5] Personnel committee (1991-1997, 2000-2001).

[6] Frequent writer/grader of real or complex variables qualifying exams.

College and University Service.

[1] Participation in incoming students reading program, 1991.

[2] Participation in University Seminar, 1999.

[3] EM College Faculty Standards Committee, 1999-2003; chairman, 2002-2003.

[4] University Honors/Individually Designed Majors Committee, 2000-2001.

[5] Foreign Languages and Mathematics Committee.

Book.

[1] *Weighted Littlewood-Paley Theory and Exponential Square Integrability*, submitted to Springer-Verlag (2006); in revision.

Publications and Papers.

[1] “The Calderón reproducing formula converges unconditionally in L^p ,” submitted for publication.

[2] “The intrinsic square function,” to appear in *Revista Matemática Iberoamericana*.

[3] “Four theorems with almost one proof,” (with Carlos Pérez Moreno), in preparation.

[4] “Three lectures on Littlewood-Paley theory,” to appear in the proceedings of the Universidad de Sevilla analysis seminar for the academic year 2004-2005.

[5] “Weighted two-parameter Bergman space inequalities,” *Publicacions Matemàtiques* **47** (2003), 161-193.

[6] “Weighted inequalities for caloric functions on classical domains” (with Caroline Sweezy), *WSEAS Transactions on Mathematics* **3** (2004), 578-583.

[7] “Weighted norm inequalities for parabolic gradients on non-smooth domains” (with Caroline Sweezy), *International Journal of Pure and Applied Mathematics* **24** (2005), 61-109.

[8] “Non-Compact Littlewood-Paley Theory for Non-Doubling Measures,” to appear in *Studia Mathematica*.

[9] “Paraproducts and the exponential square class,” *Journal of Mathematical Analysis and Applications* **271** (2002), 374-382.

[10] “Weighted estimates for gradients on Lipschitz domains,” submitted for publication.

[11] “Note on a Littlewood-Paley inequality,” *Proc. Amer. Math. Soc.* **128** (2000), 3609-3612.

- [12] “Global orthogonality implies local almost-orthogonality,” *Revista Matemática Iberoamericana* **16** (2000), 29-48.
- [13] “A semi-discrete Littlewood-Paley inequality,” *Studia Mathematica* **153** (2002), 207-233.
- [14] “A two-parameter ‘Bergman space’ inequality,” *Proc. Amer. Math. Soc.* **125** (1997), 755-762.
- [15] “Weighted norm estimates for gradients of half-space extensions” Richard L. Wheeden and J. Michael Wilson, *Indiana University Math. Journal* **44** (1995), 917-969.
- [16] “Weighted L^q estimates for derivatives of weighted H^p functions,” Richard L. Wheeden and J. Michael Wilson, *Journal of Fourier Analysis and Applications* **4** (1998), 595-628.
- [17] “A counterexample in two-parameter harmonic analysis,” *Bulletin of the London Math. Soc.* **23** (1991), 580-582.
- [18] “Eigenvalue estimates for degenerate partial differential operators,” *Rocky Mountain Journal of Math.* **25** (1995), 1171-1187.
- [19] “Some two-weight norm inequalities for the Fourier transform,” in the proceedings of ‘Harmonic Analysis–Sendai, 1990,’ edited by S. Igari (Springer Lecture Notes in Mathematics; 1991), 207-210.
- [20] “Littlewood-Paley theory in one and two parameters,” in the proceedings of ‘Harmonic Analysis–Sendai, 1990,’ edited by S. Igari (Springer Lecture Notes in Mathematics; 1991), 201-206.
- [21] “Cauchy integrals on terrible curves,” preprint (1990).
- [22] “Some two-parameter square function inequalities,” *Indiana University Math. Journal* **40** (1991), 419-442.
- [23] “A counterexample in the theory of best approximation,” *Journal of Approximation Theory* **63** (1990), 384-386.
- [24] J. Michael Wilson, Daniel Zwick, “Best approximation by subharmonic functions,” *Proc. Amer. Math. Soc.* **114** (1992), 897-903.
- [25] “Chanillo-Wheeden inequalities for $0 < p \leq 1$,” *Journal of the London Math. Soc.* **41** (1990), 283-294.
- [26] “Weighted inequalities for the square function,” in *Commutative Harmonic Analysis: Proceedings of a SLU-GTE Conference held July 27-29, 1987* (see Contributed Talks above), pp. 299-305; American Mathematical Society Contemporary Mathematics Series, Volume 91 (1989).
- [27] “ L^p weighted norm inequalities for the square function, $0 < p < 2$,” *Illinois Journal of Math.* **33** (1989), 361-366.
- [28] “A sharp inequality for the square function,” *Duke Math. Journal* **55** (1987), 879-888.

- [29] “Weighted norm inequalities for the continuous square function,” *Trans. Amer. Math. Soc.* **314** (1989), 661-692.
- [30] “Green’s theorem and balayage,” *Michigan Math. Journal* **35** (1988), 21-27.
- [31] “A note on the g-function,” *Proc. Amer. Math. Soc.* **102** (1988), 381-382.
- [32] “Weighted inequalities for the dyadic square function without dyadic A_∞ ,” *Duke Math. Journal* **55** (1987), 19-49.
- [33] S. Y. A. Chang, J. Michael Wilson, Thomas H. Wolff, “Some weighted norm inequalities concerning the Schrödinger operators,” *Comm. Math. Helv.* **60** (1985), 217-246.
- [34] “On the atomic decomposition for Hardy spaces,” *Pacific J. of Math.* **116** (1985), 201-207.
- [35] Akihito Uchiyama, J. Michael Wilson, “Approximate identities and $H^1(\mathbf{R})$,” *Proc. Amer. Math. Soc.* **88** (1983), 53-58.
- [36] “A simple proof of the atomic decomposition for $H^p(\mathbf{R}^n)$, $0 < p \leq 1$,” *Studia Math.* **74** (1982), 25-33.