Brian Street

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Employment

Professor, University of Wisconsin-Madison	8/2020-
Associate Chair, Department of Mathematics, University of Wisconsin-Madison	8/2022-
Associate Professor, University of Wisconsin-Madison	8/2016-8/2020
Assistant Professor, University of Wisconsin-Madison	8/2011-8/2016
Van Vleck Assistant Professor, University of Wisconsin-Madison	8/2009-8/2011
Coxeter Assistant Professor, University of Toronto	7/2007-7/2009

Awards, Grants, Fellowships

Van Vleck Professorship Research Award	7/2023-6/2027
PI, NSF Standard Grant, DMS 2153069	7/2022-6/2025
PI, NSF Standard Grant, DMS 1764265	6/2018-5/2022
co-PI, NSF RTG Grant, DMS 2037851	8/2021-7/2026
PI, NSF Standard Grant, DMS 1401671	7/2014-6/2018
Philip R. Certain & Gary D. Sandefur Distinguished Faculty Award	2016
PI, NSF Standard Grant, DMS 1201314	6/2013-8/2016
PI, NSF Standard Grant, DMS 1066020	7/2011-6/2014
NSF Mathematics Sciences Research Postdoc, DMS 0802587	7/2008-6/2011
PI, NSF Conference Grant, DMS 2337344	2/2024-1/2025
PI, NSF Conference Grant, DMS 1856473	5/2019-4/2020
co-PI, NSF Conference Grant, DMS 1803146	5/2018-3/2019
co-PI, NSF Conference Grant, DMS 1500302	1/2015-12/2015
UW-Madison Honored Instructor	2011, 2015, 2016, 2017, 2018

Education

Ph.D., Mathematics, Princeton University, Advisor: Elias Stein	2003-2007
B.A., Mathematics, University of Virginia, *With Highest Distinction*	1999-2003

Research Interests

Linear and multilinear singular integrals, sub-Riemannian geometry, subelliptic PDEs, inverse problems, several complex variables

Books

Maximal Subellipticity
De Gruyter Studies in Mathematics, Vol. 93, De Gruyter, Berlin, 2023, 756 pages

Multi-parameter Singular Integrals
Annals of Math. Studies no. 189, Princeton University Press (2014), 411 pages

Preprints

Hypoellipticity and Higher Order Gaussian Bounds
arXiv:2410.14456, 26 pages

Papers

Spaces of Besov-Sobolev type and a problem on nonlinear approximation
w/ Ó. Domínguez, A. Seeger, J. Van Schaftingen, P. Yung, J. Funct. Anal. 284 (2023), no. 4, 109775, 50 pages.

Improving the Regularity of Vector Fields
w/ L. Yao, J. Funct. Anal., 283 (2022), Issue 5, 109537, 75 pages

Sub-Hermitian Geometry and the Quantitative Newlander-Nirenberg Theorem
Adv. Math. 368 (2020), 107137, 87 pages

Sharp Regularity for the Integrability of Elliptic Structures

J. Funct. Anal. 278 (2020), no. 1, 108290, 55 pages

Coordinates Adapted to Vector Fields III: Real Analyticity
Asian Jour. Math., Vol. 24, No. 6 (2020), pp. 1029-1078, 50 pages

Coordinates Adapted to Vector Fields II: Sharp Results
arXiv:1808.04159, to appear in Amer. Jour. Math. 35 pages

Coordinates Adapted to Vector Fields: Canonical Coordinates
w/ B. Stovall, Geom. Funct. Anal. (2018) 28: 1780-1862, 83 pages

Endpoint Lebesgue Estimates For Weighted Averages on Polynomial Curves
w/ M. Christ, S. Dendrinos, B. Stovall, Amer. J. Math., 142 (2020), no. 6, 1661-1731., 71 pages

Singular integrals and a problem on mixing flows
w/ M. Hadžić, A. Seeger, C. Smart, Ann. Inst. H. Poincaré Anal. Non Linéaire 35 (2018), no. 4, 921-943, 23 pages

Multilinear singular integral forms of Christ-Journé type
w/ A. Seeger, C. Smart, Mem. Amer. Math. Soc. 257 (2019), no. 1231, 134 pages

On a trilinear singular integral form with determinantal kernel
w/ P. Gressman, D. He, V. Kovač, C. Thiele, P. Yung, Proc. Amer. Math. Soc., 144(8):3465-3477, 2016, 13 pages

Differential Equations with a Difference Quotient
Electron. J. Differential Equations, Vol. 2017 (2017), No. 227, pp. 1-42, 42 pages

Sobolev spaces associated to singular and fractional Radon transforms
Rev. Mat. Iberoam. 33 (2017), no. 2, 633–748, 116 pages

Multi-parameter singular Radon transforms
w/ E. Stein, Math. Res. Lett., vol. 18 (2011), no. 2, p. 257-277, 21 pages

Multi-parameter singular Radon transforms I: the L^2 theory
J. Anal. Math. 116 (2012), 83-162, 80 pages

Multi-parameter singular Radon transforms II: the L^p theory
w/ E. Stein, Adv. Math. 248 (2013), 736-783, 48 pages

Multi-parameter singular Radon transforms III: real analytic curves
w/ E. Stein, Adv. Math. 229 (2012), no. 4, 2210-2238, 29 pages

Multi-parameter Carnot-Carathéodory balls and the theorem of Frobenius
Rev. Math. Iberoamericana, Vol 27, No. 2 (2011) 645-732, 88 pages

Reconstruction in the Calderón Problem with Partial Data
w/ A. Nachman, Comm. PDE, 35 (2010), no. 2, 375-390, 16 pages

A parametrix for Kohn's operator
Forum Math., 22 (2010), no. 4, 767-810, 44 pages

The $\square_b$ heat equation and multipliers via the wave equation
Math. Z. 263 (2009), no. 4, 861-886, 26 pages

An algebra containing the two-sided convolution operators
Adv. Math. 219 (2008), no. 1, 251-315, 65 pages

L^p regularity for Kohn's operator
Math. Res. Lett., 13 (2006), no. 5, 703-711, 9 pages

On weakly mixing and doubly ergodic nonsingular actions
w/ S. Iams, B. Katz, C. Silva, K. Wickelgren, Colloq. Math., 103 (2005), no. 2, 247-264, 18 pages

Sampling on the Sierpinski gasket
w/ R. Oberlin, R. Strichartz, Experiment. Math., 12 (2003), no. 4, 403-418, 16 pages

EXPOSITORY	**What else about...hypoellipticity?** Notices Amer. Math. Soc. 65 (2018), no. 4, 424-425, 2 pages	
	Multiparameter Singular Radon Transforms a contribution to *Analysis and applications: The mathematical work of Elias Stein* by C. Fefferman, A. Ionescu, T. Tao, and S. Wainger, Bull. Amer. Math. Soc.	

EDITORIAL	**Recent Developments in Harmonic Analysis and Applications** w/ Shaoming Guo, Zane Kun Li, Contemp. Math., 792, American Mathematical Society, Providence, RI, 2024, 2024. vii+170 pp.	

GRADUATE TRAINING	Expository article "What ELSE about hypoellipticity?" in the Notices of the AMS	4/2018
	Series of 24 one hour lectures at Beijing Normal University	6/2012
	External examiner for a masters thesis at Chinese University of Hong Kong	2018

UNDERGRADUATE TRAINING	Calculus Coordinator	Spring 2020
	Undergraduate Honors Coordinator	Fall 2018-Spring 2022
	Undergraduate Honors Coordinator	Fall 2014-Spring 2017
	REU co-organized and led a group of three undergraduates	Summer 2014
	Faculty Advisor for the undergraduate math club	2012-2014

ADVISING ACTIVITIES	Tenure Track Mentoring: Shaoming Guo (UW-Madison)	2019-2022
	Ph.D. Students: Bingyang Hu, PhD (UW-Madison)	2015-2020
	Liding Yao, PhD (UW-Madison)	2018-2022
	Lingxiao Zhang, PhD (UW-Madison)	2018-2023
	Amelia Stokolosa (UW-Madison)	2021-
	Gautam Neelakantan (UW-Madison)	2021-
	Christopher Breeden (UW-Madison), now at Epic	2013-2015
	Graduate Students (first year academic advsior): Liding Yao (UW-Madison)	2018
	Jinsu Kim (UW-Madison)	2012
	Yu Li (UW-Madison)	2012
	Christian Noack (UW-Madison)	2012
	Angelica Resendiz Mora (UW-Madison)	2012
	Ethan McCarthy (UW-Madison)	2012
	John Lynch (UW-Madison)	2012
	Undergraduate Students: Enkhzaya Enkhtaivan, REU at UW-Madison	2014
	Ian Campbell, REU at UW-Madison	2014
	Sam Owen, REU at UW-Madison	2014

PROGRAMS ORGANIZED	Madison Lectures in Harmonic Analysis, UW Madison	5/2024
	Special Section in Harmonic Analysis, AMS Sectional Meeting, Purdue University	3/2022
	Madison Lectures in Fourier Analysis, UW Madison	5/2019
	Semester program in Harmonic Analysis, MSRI (including two weeklong workshops)	Spring 2017
	The interplay between Harmonic Analysis and Geometry, Cortona, Italy	6/2018
	Conference on Complex Analysis and Geometry, UW Madison	3/2015
	Lectures in Honor of Alex Nagel, UW Madison	4/2013

SEMINARS ORGANIZED	Analysis Seminar (UW-Madison)	2018-2020
	Reading group at the Harmonic Analysis Program at PCMI	2018
	Colloquium (UW-Madison)	2011-2014
	Analysis Graduate Student Seminar (UW-Madison)	2013-2014

TEACHING

University of Wisconsin-Madison

Math 725: Graduate Real Analysis II	Spring 2024
Semigroup minicourse	Spring 2023
Math 827: Topics in Fourier Analysis	Fall 2022
Math 828: Advanced topics in Harmonic Analysis	Spring 2022
Math 234: Calculus III with active learning (REACH, two sections)	Fall 2021
Math 221: Calculus I with active learning (REACH)	Fall 2020
Math 221: Calculus I with active learning (REACH)	Spring 2020
Math 825: Topics in Functional Analysis	Fall 2019
Math 825: Topics is Functional Analysis	Spring 2019
Math 221: Calculus I with active learning (REACH, two sections)	Fall 2018
Math 221: Calculus I with active learning (REACH, two sections)	Fall 2016
Math 826: Advanced Topics in Functional Analysis	Spring 2016
Math 234: Calculus III: Functions of several variables (two sections)	Fall 2015
Math 376: Topics in Multi-variable Calculus and Differential Equations	Spring 2015
Math 629: Measure Theory and Integration	Spring 2015
Math 275: Honors Calculus	Fall 2014
Math 627: Fourier Analysis	Spring 2014
Math 721: Graduate Real Analysis	Fall 2013
Math 629: Measure Theory and Integration	Spring 2013
Math 722: Complex Analysis	Spring 2013
Math 551: Topology	Fall 2012
Math 827: Topics in Fourier Analysis	Fall 2012
Math 828: Advanced topics in Harmonic Analysis	Spring 2012
Math 234: Calculus III: Functions of several variables (two sections)	Fall 2011
Math 376: Topics in Multi-variable Calculus and Differential Equations	Spring 2011
Math 375: Topics in Linear Algebra and Multi-variable Calculus	Fall 2010
Math 376: Topics in Multi-variable Calculus and Differential Equations	Spring 2010
Math 375: Topics in Linear Algebra and Multi-variable Calculus	Fall 2009

University of Toronto

Calculus for Engineers	Spring 2008
Complex Analysis	Fall 2007
Calculus for Engineers	Fall 2007

Princeton University

Logic, TA	Spring 2007
Calculus I, Instructor	Fall 2006
Linear Algebra, TA	Spring 2006
Complex Analysis, TA	Fall 2005
Logic, TA	Fall 2005
Calculus I, TA	Spring 2005
Calculus I, TA	Fall 2004

DEPARTMENT COMMITTEES

2024-2025: Associate Chair, Academic Staff Affairs (chair), Undergrad Program-Advanced, Undergrad Program-Early, Bylaws (co-chair)

2023-2024: Associate Chair, Academic Staff Affairs (chair), Undergrad Program-Advanced, Undergrad Program-Early

2022-2023: Undergraduate Honors (chair), Academic Staff Affairs (chair), Associate Chair, Under-

grad Program-Advanced, Undergrad Program-Early, Math Learning Center Committee

2021-2022: Honors Committee (Chair), Analysis Caucus contact, Undergraduate Program Committee 1, Undergraduate Program Committee 2, Awards (fall only)

2020-2021: Honors Committee (Chair), Analysis Caucus contact, Undergraduate Program Committee 1, Undergraduate Program Committee 2, Math/Education Liaison Committee

2019-2020: Honors Committee (Chair), Awards Committee, Analysis Caucus contact, Undergraduate Advising, Analysis Qualifying Exam Committee, Undergraduate Program Committee 1

2018-2019: Honors Committee (Chair), Awards Committee, Hiring Committee, Undergraduate Advising, Undergraduate Program Committee 1, Analysis Caucus contact, Analysis Qualifying Exam Committee, ad hoc committee on the mathematics major (option 2)

2016-2017: Honors Committee (Chair), Undergraduate Advising, Undergraduate Program Committee 2, Colloquium Organizer

2015-2016: Honors Committee (Chair), Undergraduate Advising

2014-2015: Honors Committee, Undergraduate Program Committee 1, Undergraduate Advising

2013-2014: Honors Committee, Colloquium Organizer, Undergraduate Program Committee, Faculty Advisor for Undergraduate Math Club

2012-2013: Colloquium Organizer, Undergraduate Program Committee, Faculty Advisor for Undergraduate Math Club

2011-2012: Colloquium Organizer, Analysis Qualifying Exam

PH.D. THESIS COMMITTEES	Chandan Biswas, Keith Rush, Evangelos Dimou, Aaron Peterson, Jason Murcko, Laura Cladek, Soledad Benguria, Xianghong Chen, Bingyang Hu, Ziming Shi, Chun Gan, Liding Yao, Lingxiao Zhang

INVITED PRESENTATIONS		
	AMS Special Session - Florida State University	3/2024
	Johns Hopkins University - Analysis Seminar	2/2024
	Elias M. Stein Memorial Conference - Princeton University	6/2023
	Göttingen Mathematical Society - Colloquium	11/2022
	OSU - Colloquium	9/2022
	Microlocal Analysis, Harmonic Analysis, and Inverse Problems - Univ Rochester	7/2022
	Fourier Analysis @200 - University of Edinburgh	7/2022
	University of Michigan-Dearborn REU Seminar - University of Michigan-Dearborn	5/2022
	AMS Sectional Meeting, one of three invited lecturers - Purdue University	3/2022
	Corona Seminar: Inequalities on Function Spaces of Smooth Functions	12/2021
	Geometric and functional inequalities and applications seminar	3/2021
	Virtual East-West Complex Analysis Seminar	1/2021
	University of Connecticut - Analysis Seminar	10/2019
	MWSCV conference - University of Michigan-Dearborn	10/2019
	Hausdorff Institute of Mathematics - Workshop	5/2019
	University of Wisconsin-Madison - Analysis Seminar	4/2019
	University of Wisconsin-Madison - Analysis Seminar	9/2017
	Wrocław, Poland - Conference on Analysis and Applications	9/2017
	MSRI - Harmonic Analysis seminar	4/2017
	TSIMF - Workshop on Fourier Analysis and Applications	5/2016
	The Chinese University of Hong Kong - Harmonic Analysis Workshop	5/2016
	LSU - Colloquium	2/2016
	UCLA - Analysis Seminar	11/2015
	Oaxaca, Mexico - Harmonic Analysis, d-bar, and CR Geometry conference	10/2015
	Cornell University - Analysis Seminar	2/2015
	Georgia Tech - Analysis Seminar	11/2014
	Chosun University, Gwangju, Korea, ICM 2014 Satellite Conference in Harmonic Analysis	8/2014
	Hausdorff Institute trimester in Harmonic Analysis and PDE	8/2014
	Oberwolfach - Conference on Real Analysis, Harmonic Analysis and Applications	7/2014
	University of Arkansas - Invited talk at the Spring Lecture Series	4/2014

Florida State University - Colloquium	11/2013
University of Pennsylvania - Analysis seminar	4/2013
Two week lecture series at Beijing Normal University (24 1 hour lectures in total)	6/2012
Princeton Univesity Analysis seminar	4/2012
AMS Fall Western Section Meeting	10/2011
Oberwolfach - Conference on Real Analysis, Harmonic Analysis and Applications	7/2011
ICMS - Conference on Oscillatory integrals in harmonic analysis	6/2011
The Ohio State University - Colloquium	1/2011
University of Wisconsin-Madison - Colloquium	12/2010
UIUC - HADES seminar	10/2010
UCLA - Analysis Seminar	5/2010
Scuola Normale Superiore - Euclidean Harmonic Analysis conference	3/2010
University of Wisconsin-Madison - Analysis Seminar	1/2010
Cornell University - Analysis Seminar	11/2009
Purdue University - Midwest Several Complex Variables Meeting	11/2009
The Ohio State University - Analysis Seminar	5/2009
University of Arkansas - Colloquium	3/2009
University of Rochester - Analysis Seminar	12/2008
York University - Analysis Seminar	12/2008
University of Wisconsin - Analysis Seminar	11/2008
Princeton University - Analysis Seminar	10/2008
University of Toronto - Analysis Seminar	10/2008
Oberwolfach - Conference on real analysis, harmonic analysis and applications	7/2008
Conference in honor of Joe Kohn, Prague	6/2008
University of Wisconsin - Analysis Seminar	2/2007
University of Toronto - Analysis Seminar	1/2007
The Ohio State University - Analysis Seminar	11/2006