

Brandon Sweeting

Postdoctoral Researcher, Mathematics

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Research Interests

· Harmonic Analysis · Bellman Functions · Singular Integral Operators · Sharp Estimates · BMO
· Dyadic Analysis · Best Constants · Weights · Factorization Theory · Extrapolation Theory

Appointments

Postdoctoral Researcher The University of Alabama	2021 – Present Tuscaloosa, AL
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Education

PhD in Mathematics University of Cincinnati Dissertation Advisor: Leonid Slavin Dissertation: <i>Novel Bellman Estimates for A_p Weights</i>	2014 – 2021 Cincinnati, OH
BA in Mathematics University of South Florida Summa Cum Laude	2011 – 2014 Tampa, FL

Publications

1. Brandon Sweeting *A characterization of a weighted weak-type estimate for the maximal operator* [In Preparation]
2. David Cruz-Uribe, Brandon Sweeting, *Weighted weak-type inequalities for maximal operators and singular integrals*, Arxiv e-prints: arXiv:2311.00828 (2023) [Submitted]
3. Zoe Nieraeth, Cody B. Stockdale, Brandon Sweeting, *Quantitative weighted weak-type estimates for multilinear sparse operators*, Arxiv e-prints: arXiv:2401.15725 (2024) [Submitted]
4. Cody B. Stockdale, Brandon Sweeting, *Weighted weak-type boundedness and compactness in Calderón-Zygmund theory* [In Preparation]
5. Leonid Slavin, Brandon Sweeting, *Sharp dyadic estimates via non-infinitesimal Bellman majorants* [In Preparation]
6. Leonid Slavin, Brandon Sweeting, *The John-Nirenberg Constant for $BMO^p, 0 < p < 1$* [In Preparation]

Conference Talks

- AMS Sectional Meeting, University of Wisconsin-Milwaukee 04/20/24
Special Session on Recent Developments in Harmonic Analysis
(Upcoming) Title to be Determined
Invited Talk, 20 Minutes
- AMS Sectional Meeting, Florida State University 03/23/24
Special Session on Geometric Measure Theory and Partial Differential Equations
(Upcoming) Title to be Determined
Invited Talk, 20 Minutes
- Joint Mathematics Meetings, American Mathematical Society 01/06/24
AMS Special Session on New Faces in Operator Theory and Function Theory
Multiplier Weak-Type Inequalities for Maximal Operators & Singular Integrals
Invited Talk, 20 Minutes
- Workshop in Analysis, Georgia Institute of Technology 12/08/23
Multiplier Weak-Type Inequalities for Maximal Operators & Singular Integrals
Invited Talk, 20 Minutes
- 19th Prairie Analysis Seminar, Kansas State University 11/03/23
Multiplier Weak-Type Inequalities for Maximal Operators & Singular Integrals
Contributed Talk, 20 Minutes
- AMS Sectional Meeting, University of Cincinnati 04/15/23
Special Session on Inequalities in Harmonic Analysis
Multiplier Weak-Type Inequalities for Maximal Operators & Singular Integrals
Invited Talk, 20 Minutes
- 12th Ohio River Analysis Meeting, University of Cincinnati 03/18/23
Multiplier Weak-Type Inequalities for Maximal Operators & Singular Integrals
Contributed Talk, 20 Minutes
- 39th Southeastern Analysis Meeting, Clemson University 03/10/23
Multiplier Weak-Type Inequalities for Maximal Operators & Singular Integrals
Contributed Talk, 20 Minutes
- AMS Sectional Meeting, American Mathematical Society 11/20/21
Special Session on Harmonic Analysis and Spectral Theory
On the John-Nirenberg Constant of BMO^p , $0 < p < 1$
Invited Talk, 20 Minutes (Virtual)
- 17th Prairie Analysis Seminar, Kansas State University 11/06/21
New Estimates for Dyadic Carleson Sequences
Contributed Talk, 20 Minutes (Virtual)
- AMS Sectional Meeting, American Mathematical Society 04/17/21
Special Session on Sharp Estimates in Harmonic Analysis, II
New Estimates for Dyadic Carleson Sequences
Invited Talk, 20 Minutes (Virtual)

10th Ohio River Analysis Meeting, University of Kentucky 03/20/21
The John-Nirenberg Constant of BMO^p , $0 < p < 1$
Contributed Talk, 20 Minutes (Virtual)

37th Southeastern Analysis Meeting, University of Florida 03/13/21
New Estimates for Dyadic Carleson Sequences
Contributed Talk, 20 Minutes (Virtual)

Seminar Talks

Analysis Seminar, University of Alabama 10/04/23
Multiplier Weak-Type Inequalities for Maximal Operators & Singular Integrals

Analysis Seminar, Washington University in St. Louis 09/18/23
Multiplier Weak-Type Inequalities for Maximal Operators & Singular Integrals

Analysis Seminar, University of Alabama 09/21/22
Mixed Weak-Type Estimates for Classical Operators

Analysis Seminar, Clemson University 09/24/21
On the John-Nirenberg Constant of BMO^p , $0 < p < 1$

Analysis Seminar, University of Alabama 01/29/21
Novel Bellman Estimates for A_p Weights

Conferences and Workshops Attended

Extremal Problems in Harmonic Analysis 11/28/22 - 12/02/22
ICERM at Brown University

Workshop on Harmonic Analysis and Related Topics 07/13/22 - 07/17/22
Centre de Recerca Matemàtica

11th International Conference on Harmonic Analysis & PDE 07/06/22 - 07/10/22
Universidad Autónoma de Madrid

CBMS 2020 Conference 06/23/22 - 06/27/22
Florida State University

Teaching Experience

The University of Alabama

- Discrete Mathematics Spring 2024
- Discrete Mathematics Fall 2023
- Introduction to Complex Variables Spring 2023
- Applied Differential Equations I Fall 2022
- Introduction to Linear Algebra Spring 2022

- Discrete Mathematics Fall 2021

University of Cincinnati

- Introduction to Mathematical Reasoning Summer 2021
- Introduction to Mathematical Reasoning Spring 2021
- Foundations of Quantitative Reasoning Fall 2020
- Mathematics of Social Choice Summer 2020
- Mathematics of Management Science Spring 2020
- Mathematics of Social Choice Fall 2019
- Mathematics of Social Choice Summer 2019
- Mathematics of Management Science Spring 2019
- Mathematics of Social Choice Fall 2018
- Mathematics of Management Science Spring 2018
- Applied Calculus I Fall 2017
- Mathematics of Social Choice Spring 2017
- Mathematics of Management Science Fall 2016
- Applied Calculus II Summer 2016

University of Cincinnati (TA)

- Calculus II, 3 sections Spring 2016
- Calculus I, 2 sections Fall 2015
- Calculus I, 3 sections Spring 2015
- Calculus II, 3 sections Fall 2014

Honors and Awards

- Maita Levine Award for Outstanding GA Spring 2020
- Albert C. Yates Fellow 2014 – 2021
- King O’Neal Scholar Spring 2014

Graduate Coursework

- Real Analysis · Complex Analysis · Functional Analysis · Linear Algebra · Topology · Probability
- Ordinary Differential Equations · Partial Differential Equations · Stochastic Differential Equations
- Geometric Function Theory · Geometric Analysis · Harmonic Analysis · Numerical Analysis

Relevant Skills

- *Languages:* English, French
- *Programming Languages:* Python, Java, Swift, Mathematica
- *Programming Libraries/APIs:* TensorFlow, Keras, Scikit-Learn, PyCUDA, Scipy, Numpy

Professional Activities

- Communications Committee: *UA Black Faculty and Staff Association*
- Journal Referee: *Collectanea Mathematica*

Professional Affiliations

- Black Faculty and Staff Association (UA) 2023 – present
- The American Mathematical Society (AMS) 2014 – present
- Pi Mu Epsilon, Florida Epsilon Chapter (USF) 2013 – present