

## Brett D. Wick

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### Education:

Brown University  
Ph.D. in Mathematics, June 2005  
Sc.M. in Mathematics, May 2003

University of Houston  
B.S. in Mathematics, May 2001  
Minor in Physics, May 2001

### Professional Experience:

- Full Professor of Mathematics, Washington University - St. Louis, Summer 2017 – Present.
- Dean's Fellow on Digital Transformations, College of Arts & Science, Washington University in Saint Louis, Summer 2022 – Present.
- Director of Graduate Studies, Washington University - St. Louis, Summer 2017 – Summer 2022.
- Associate Professor of Mathematics, Washington University - St. Louis, Fall 2015 – Summer 2017.
- Director of Postdoctoral Teaching Effectiveness, School of Mathematics, Georgia Institute of Technology, Fall 2013 – Summer 2015.
- Associate Professor of Mathematics, Georgia Institute of Technology, Fall 2012 – Summer 2016.
- Assistant Professor of Mathematics, Georgia Institute of Technology, Fall 2009 – Summer 2012.
- Palmetto Assistant Professor of Mathematics, University of South Carolina, Fall 2007 – Summer 2009.
- Assistant Professor of Mathematics, Vanderbilt University, Fall 2005 – Summer 2007.

### Visiting Positions:

- Poste Rouge, Université Orleans and Université de Nantes, Spring 2017 (3 months).
- Poste Rouge, Université Bordeaux, Summer 2015 (1 month).
- Oberwolfach Simons Visiting Professor, Universität des Saarlandes, Summer 2014.
- Professeur Invité, Université Paul Sabatier – Toulouse, Summer 2013.

Bucknell Distinguished Visiting Professor, Fall 2009, Fall 2010.

Professeur Invité, Université Paul Verlaine – Metz, Summer 2009.

## Research:

### Awards and Honors:

Fellow of the American Mathematical Society.

NSF CAREER Award, Fall 2010 – Spring 2015.

Alexander von Humboldt Research Fellow, Spring 2010 – Spring 2012.

American Mathematics Society Fan Fund Exchange Fellow, Summer 2013.

Georgia Tech College of Sciences 2014 Faculty Mentor Award.

Georgia Tech Class of 1969 Teaching Scholar, Fall 2012.

Jerrold E. Marsden Postdoctoral Fellow, Fields Institute, Spring 2008.

Wallenberg Postdoctoral Fellow, Swedish Royal Institute of Technology, Fall 2007.

### Grants Awarded:

1. National Science Foundation – DMS # [2230844](#) “Conference: Recent Advances and Past Accomplishments in Harmonic Analysis”, 07/01/2022 – 06/30/2023, \$13,500.
2. National Science Foundation – DMS # [2000510](#) “Singular Integrals with Modulation or Rotational Symmetry”, 09/01/19 – 06/30/24, \$131,614.
3. National Science Foundation – DMS # [2054863](#) “Symmetry Parameter Analysis of Singular Integrals”, 07/01/21 – 06/30/24, \$197,616.
4. Australian Research Council – DP 220100285 “Harmonic analysis of Laplacians in curved spaces,” 01/01/2022 – 12/31/2024, \$375,000 (AUD).
5. Australian Research Council – DP 190100970 “Harmonic analysis: function spaces and partial differential equations,” 01/01/2019 – 12/31/2021, \$390,000 (AUD).
6. National Science Foundation – DMS # [1800057](#) “Applications of Harmonic Analysis to Riesz Transforms and Commutators beyond the Classical Settings”, 07/01/18 – 06/30/23, \$276,758.
7. National Science Foundation – DMS # [1560955](#) “Applications of Harmonic Analysis to Function Theory and Operator Theory”, 08/17/15 – 7/31/2018, \$180,001.
8. National Science Foundation – DMS # [1344199](#) “MCTP: A Postdoctoral Program for Interdisciplinary Mathematics Preparation And Career Training (IMPACT) in the School of Mathematics at the Georgia Institute of Technology”, 09/15/14 – 8/31/2019, \$1,299,994 (Co-Principal Investigator).
9. National Science Foundation – DMS # [1241272](#) “NSF/CBMS Regional Conference in the Mathematical Sciences: Uncertainty Principles in Harmonic Analysis: Gap and Type Problems”, 09/15/12 – 8/31/2013, \$35,050 (Co-Principal Investigator).

10. National Science Foundation – DMS # **1200994** “The Corona Problem: Connections Between Operator Theory, Function Theory and Geometry”, 11/01/11 – 10/31/2012, \$18,000.
11. National Science Foundation – DMS # **1001098** “Function Theory and Operator Theory via Harmonic Analysis on the Polydisc”, 06/01/10 – 05/31/13, \$53,003.
12. National Science Foundation – DMS # **0955432** “CAREER: An Integrated Proposal Based on the Corona Problem”, 08/01/10 – 07/31/15, \$449,439.
13. National Science Foundation – DMS # **0969431** “SEAM XXVI Georgia Institute of Technology Spring 2010”, 01/01/10 – 12/31/10, \$24,300.
14. National Science Foundation – DMS # **0555896** “Investigations on the Corona Problem and a Study of Multi-Parameter Harmonic Analysis”, 08/16/06 – 07/31/09, \$80,867.

### Publications:

#### Highlights:

117 Publications; 104 appearing on Mathscinet

788 Citations by 446 authors

Editor of 2 books

Author of 1 book

#### Selected Publications:

1. Bingyang Hu, Songxiao Li, Yecheng Shi and Brett D. Wick, Sparse Domination of Weighted Composition Operators on Weighted Bergman Spaces, *J. Funct. Anal.* **280** (2021), no. 6, 108897.
2. Robert Rahm, Eric Sawyer and Brett D. Wick, Weighted Alpert Wavelets. *J. Fourier Anal. Appl.* **27** (2021), no. 1, Paper No. 1.
3. Zhenghui Huo and Brett D. Wick, Weighted estimates for the Bergman projection on the Hartogs triangle. *J. Funct. Anal.* **279** (2020), no. 9, 108727.
4. Guangfu Cao, Ji Li, Minking Shen, Brett D. Wick and Lixin Yan, A Boundedness Criterion for Singular Integral Operators of Convolution type on the Fock Space, *Adv. Math.* **363** (2020) 107001, 33 pp.
5. Yongsheng Han, Ming-Yi Lee, Ji Li and Brett D. Wick, Characterizations of flag Hardy space via Riesz transforms, maximal functions and Littlewood-Paley theory, *Mem. Amer. Math. Soc. to appear*.
6. Cody Stockdale and Brett D. Wick, An Endpoint Weak-Type Estimate for Multilinear Calderón-Zygmund Operators, *J. Fourier Anal. Appl.*, **25** (5), 2635–2652.
7. Xuan Thinh Duong, Ji Li, Yumeng Ou, Jill Pipher and Brett D. Wick, Commutators of multi-parameter flag singular integrals and applications, *Anal. PDE* **12** (2019), no. 5, 1325–1355.

8. Xuan Thinh Duong, Hong-quan Li, Ji Li and Brett D. Wick, Lower bound of Riesz transform kernels and Commutator Theorems on stratified nilpotent Lie groups, *J. Math. Pures Appl.* (9) **124** (2019), 273–299.
9. Michael Hartz and Brett D. Wick, Ideal membership in  $H^\infty$ : a Hilbert space approach, *Integral Equations Operator Theory* **90** (2018), no. 6, 16 pp.
10. Irina Holmes, Stefanie Petermichl and Brett D. Wick, Weighted little bmo and two-weight inequalities for Journé commutators, *Anal. PDE* **11** (2018), no. 7, 1693–1740.
11. Irina Holmes, Michael T. Lacey and Brett D. Wick, Commutators in the Two-Weight Setting, *Math. Ann.* **367** (2017), no. 1-2, 51-80.
12. Alexander Volberg and Brett D. Wick, Bergman-type Singular Operators and the Characterization of Carleson Measures for Besov–Sobolev Spaces on the Complex Ball, *Amer. J. Math.*, **134** (2012), no. 4, 949–992.
13. Șerban Costea, Eric Sawyer and Brett D. Wick, The Corona Theorem for the Drury-Arveson Hardy space and other holomorphic Besov-Sobolev spaces on the unit ball in  $\mathbb{C}^n$ , *Anal. PDE*, **4** (2011), no. 4, 499–550.
14. Șerban Costea, Eric Sawyer and Brett D. Wick, BMO Estimates for the  $H^\infty(\mathbb{B}_n)$  Corona Problem, *J. Funct. Anal.* **258** (2010), no. 11, 3818–3840.
15. Nicola Arcozzi, Richard Rochberg and Eric Sawyer, Bilinear Forms on the Dirichlet Space, *Anal. PDE* **3** (2010), no. 1, 21–47.
16. Brett D. Wick, Stabilization in  $H^\infty_{\mathbb{R}}(\mathbb{D})$ , *Publ. Mat.* **54** (2010), no. 1, 25–52.
17. Sergei Treil and Brett D. Wick, Analytic Projections, Corona Problem and Geometry of Holomorphic Vector Bundles, *J. Amer. Math. Soc.* **22** (2009), no. 1, 55–76.
18. Raymond Mortini and Brett D. Wick, The Bass and Topological Stable Ranks of  $H^\infty_{\mathbb{R}}(\mathbb{D})$  and  $A_{\mathbb{R}}(\mathbb{D})$ , *J. Reine Angew. Math.* **636** (2009), 175–191.
19. Michael Lacey, Stefanie Petermichl, Jill Pipher and Brett D. Wick, Multi-Parameter Riesz Commutators, *Amer. J. Math.* **131** (2009), no. 3, 731–769.
20. Sergei Treil and Brett D. Wick, The Matrix-Valued  $H^p$  Corona Problem for the Disk and Polydisk, *J. Funct. Anal.* **226** (2005), no. 1, 138–172.

#### Books Written:

1. Nicola Arcozzi, Richard Rochberg, Eric Sawyer and Brett D. Wick, *The Dirichlet Space and Related Function Spaces*, Mathematical Surveys and Monographs, **239**, American Mathematical Society (2019).

#### Talks, Conferences, and Workshops:

##### Highlights:

Colloquia: 29

Seminar Talks: 79

Workshops or Conferences Talks: 79

Number of times a Plenary Speaker: 32

Conferences Organized: 8

**Selected Invited Talks:**

Harmonic Analysis and Related Topics, Centre de Recerca Matemática, Barcelona, Spain, TBA 2022, upcoming.

Operators, Functions, Systems: Classical and Modern, Bedlewo, Poland, TBA June 2022, upcoming.

The Corona Problem, The Fields Institute, Toronto, Canada, November 8-12, 2021.

Analysis and Control, Bordeaux 2020, University of Bordeaux, Bordeaux, France, July 5-9, 2021.

Fifth Operator Theory Workshop, University of Reading, Reading, United Kingdom, October 21–23 2020.

Harmonic Analysis and Dispersive PDEs: Problems and Progress, MATRIX Institute, University of Melbourne, Melbourne, Australia, February 3-7 2020.

MW-SCV-19: Midwest Several Complex Variables Conference, University of Michigan - Dearborn, October 11-13, 2019.

Analysis Mathematica International Conference, Budapest, Hungary, August 12-17 2019.

Summer Symposium in Real Analysis XLIII, Trinity University, June 24-29 2019.

Southeastern Analysis Meeting (SEAM) XXXIV, Georgia Institute of Technology, March 23-25 2018.

Mini-Course Instructor, Spring School of the French GDR Network Harmonic and Functional Analysis, Probability and Applications, June 4-6 2015.

Plenary Speaker, Conference on Harmonic Analysis, Operator Theory and Applications, Université de Bordeaux, Bordeaux, France, June 1-4 2015.

Multivariate Operator Theory, Banff International Research Station, Banff, Alberta, Canada, April 5-10 2015.

Southeastern Analysis Meeting (SEAM) XXXI, University of Georgia, March 8-9 2015.

Fields Institute 20th Anniversary “Back to Fields Colloquium”, Summer 2012.

24th International Conference on Operator Theory, Timisoara, Romania, July 2-7 2012.

The Corona Problem: Connections between Operator Theory, Function Theory and Geometry, Fields Institute, June 18-22 2012.

Great Plains Operator Theory Symposium, University of Houston, May 29 - June 3, 2012.

Invited Address, American Mathematical Society Southeast Sectional Meeting, Georgia Southern University, March 12-13, 2011.

## **Professional Service:**

### **Scholarly Service:**

### **Referee and Review Service:**

Member of the NSF Division of Mathematical Sciences Panel (3).

Member of the NSF Division of Mathematical Sciences CAREER Panel (2).

Member of the NSF Division of Mathematical Sciences Postdoctoral Research Fellowship Panel.

Reviewer for Israel Science Foundation Grant Proposals.

Reviewer for The Royal Society of New Zealand Marsden Fund Grant Proposals.

Reviewer for Natural Sciences and Engineering Research Council of Canada (NSERC) Proposals (5).

Reviewer for National Science Centre of Poland (2).

Reviewer for The Croatian Science Foundation.

Reviewer for The Czech Science Foundation.

Reviewer for Republic of Georgia's Shota Rustaveli National Science Foundation.

Reviewer for NSF Grant Proposals (3).

Reviewer for European Research Council.

External Reviewer for PhD Theses: University of Helsinki, University of Toulouse, University of Barcelona, University of Manitoba.

Reviewer for the Bulletin of the American Mathematical Society

Reviewer for Math Reviews (85).

Reviewer for Zentralblatt Math (88).

Referee for: Acta. Math. (2), Acta Math. Sci. Ser. B Engl. Ed., Adv. Math. (6), Adv. Pure Appl. Math., Amer. J. Math. (2), Amer. Math. Monthly (2), Anal. Math (2), Anal. Math. Phys., Anal PDE, Ann. Acad. Sci. Fenn. Math., Ann. Inst. Fourier (3), Ann. Math. Phys., Ann. Mat. Pura Appl., Ann. Sc. Norm. Super. Pisa Cl. Sci., Appl. Comput. Harmon. Anal., Ark. Math., Bull. Korean Math. Soc., Bull. Sci. Math. (2), Canad. J. Math. (7), Canad. Math. Bull. (2), Collect. Math. (2), Commun. Contemp. Math., Commun. Pure Appl. Anal., Complex Anal. Oper. Theory (9), Complex Var. Elliptic Equ. (2), Comput. Methods Funct. Theory, Concr. Oper., CRM Monograph Series, Demonstr. Math., Discrete

Anal., Discrete Contin. Dyn. Syst. Ser. B, Duke Math. J., European J. Math., Forum Math., Glasg. Math. J. (2), Houston J. Math. (2), Illinois J. of Math. (2), Indiana Math. J. (3), Integral Equations Operator Theory (7), Int. Math. Res. Not. (4), Inventiones, Israel J. Math. (4), J. Amer. Math. Soc., J. Aust. Math. Soc., J. Anal. Math. (2), J. Differential Equations, J. Eur. Math. Soc. (2), J. Fourier Anal. Appl. (4), J. Franklin Inst., J. Funct. Anal. (22), J. Funct. Spaces Appl., J. Geo. Anal. (6), J. London Math. Soc. (6), J. Math. Anal. Appl. (4), J. Math. Soc. Japan, J. Reine Angew. Math. (2), Math. Control Signals Systems, Math. Nachr. (3), Math. Res. Lett., Mem. Amer. Math. Soc. (3), Michigan Math. J., Monatsh. Math., Nonlinear Anal. (2), Oper. Matrices, Pacific J. Math. (2), Potential Anal. (5), Proc. Amer. Math. Soc. (16), Proc. Edinb. Math. Soc. (2), Proc. Roy. Soc. Edinburgh Sect. A (3), Pub. Mat. (4), Rev. R. Acad. Cienc. Exactas Fís. Nat. Ser. A Mat. RACSAM, Rev. Mat. Complut., Rev. Mat. Iberoam. (6), Selecta Math., Studia Math. (5), Trans. Amer. Math. Soc. (7), Misc. Conference Proceedings (5).

### Editorial Service:

Editor for [Complex Analysis and Operator Theory](#), Spring 2022 – Present.

Editor for [Bulletin and Journal of the London Mathematics Society](#), Spring 2022 – Present.

Editor for [Collectanea Mathematica](#), Spring 2020 – Present.

Editor for [Journal of Mathematical Analysis and its Applications](#), Fall 2019 – Present.

Editor for [Analysis Mathematica](#), Spring 2017 – Present.

Editor for [New York Journal of Mathematics](#), Spring 2015 – Present.

Associate Editor for [Complex Analysis and its Synergies](#), Spring 2013 – Present.

Editor for [IMHOTEP: African Journal of Pure and Applied Mathematics](#), Spring 2012 – Present.

### Departmental Service:

#### Washington University – St. Louis:

University Working Group for Graduate and Professional Education, Spring 2021 - Fall 2021.

College of Arts & Sciences Co-Leader of Working Group for Graduate and Professional Education, Spring 2021 - Fall 2021.

Chair of Department of Mathematics Hiring Committee, Fall 2018 - Spring 2019, Fall 2019 - Spring 2020.

Department of Mathematics Thesis Committee: Meredith Sargent (Spring 2018), Mark Mancuso (Spring 2020), Alberto Dayan (Spring 2021), Chris Felder (Spring 2022), Jeet Sampat (Spring 2022).

Department of Mathematics Graduate Committee, Fall 2015 - Spring 2016, Fall 2017 - Spring 2022.

Department of Mathematics Executive Committee, Fall 2016 - Spring 2022.

Department of Mathematics Hiring Committee, Fall 2016 - Spring 2017, Fall 2018 - Spring 2019, Fall 2019 - Spring 2020.

Department of Mathematics Building Committee, Fall 2021.

Department of Mathematics Data Science Committee, Fall 2022.

**Georgia Institute of Technology:**

School of Mathematics Postdoc Committee, Fall 2013 - Spring 2014.

School of Mathematics Junior P&T Committee, Fall 2013 - Spring 2015.

School of Mathematics Graduate Committee, Spring 2012 - Spring 2014.

**University Service:**

**Washington University – St. Louis:**

Dean’s Advisory Committee, College of Arts & Sciences, Fall 2022 - Spring 2024.

University Working Group for Graduate and Professional Education, Spring 2021 - Fall 2021.

Graduate School of Arts & Science, Policies and Services Committee, Fall 2019 - Spring 2020, Fall 2020 - Spring 2021.

Graduate School of Arts & Science, Graduate Education Task Force, Spring 2019.

Graduate School of Arts & Science, Chancellor Fellowship Selection Committee, Spring 2019, Spring 2020, Spring 2021, Spring 2022.

NSF - Graduate Research Fellowship Mentor, Mathematics and Physics Fall 2018.

Graduate School, Teaching and Professional Development Committee Fall 2017 - Spring 2018.

**Mentoring Activities:**

**Postdoctoral Fellows Mentored:**

**Walton Green**, Washington University – St. Louis, Fall 2020 – Present.  
NSF Postdoctoral Research Fellowship 2022-2025.

**Tyler Bongers**, Washington University – St. Louis, Fall 2018 – Spring 2020.  
First Employment: Lecturer at Harvard University.

**Michael Hartz**, Washington University – St. Louis, Fall 2016 – Spring 2018.  
Alexander von Humboldt Foundation Feodor Lynen Research Fellow  
First Employment: FernUniversität in Hagen

**Zhenghui Huo**, Washington University – St. Louis, Fall 2016–2018.  
First Employment: University of Toledo.

**Irina Holmes**, Washington University – St. Louis, Fall 2014 – Spring 2017.  
National Science Foundation Mathematical Sciences Postdoctoral Research Fellow  
First Employment: Texas A&M University



**Kelly Bickel**, Georgia Institute of Technology, Fall 2013 – Spring 2014.  
First Employment: Bucknell University

**Mishko Mitkovski**, Georgia Institute of Technology, Fall 2010 – Spring 2012.  
First Employment: Clemson University

### PhD Students Advised:

**Ana Colovic**, Washington University – St. Louis, Spring 2022 – Present.

**Jeremy Cummings**, Washington University – St. Louis, Fall 2021 – Present.

**Anastasios Fragkos**, Washington University – St. Louis, Spring 2022 – Present.

**Weiyang (Claire) Huang**, Washington University – St. Louis, Fall 2019 – Present.

**Nathan Wagner**, Washington University – St. Louis, Fall 2018 – Present.

NSF Graduate Research Fellow 2019-2022

NSF Postdoctoral Research Fellowship 2022-2025

First Position: Tamarkin Assistant Professor, Brown University

Best PhD Thesis in the Department of Mathematics Academic Year 2021– 2022

**Tyler Williams**, Washington University – St. Louis, Fall 2018 – Fall 2021.

**Thesis Title:** A Continuous Wavelet Representation for Single and Bi-Parameter Calderón-Zygmund Operators

**Manasa Vempati**, Washington University – St. Louis, Fall 2017 – Spring 2021.

**Thesis Title:** Two Weight Inequalities for Calderón-Zygmund Operators and Commutator Operators and Sparse Domination Principles on Spaces of Homogeneous Type

First Position: Postdoctoral Fellow at Georgia Institute of Technology

Best PhD Thesis in the Department of Mathematics Academic Year 2020 – 2021

**Cody Stockdale**, Washington University – St. Louis, Fall 2016 – Spring 2020.

**Thesis Title:** A Different Approach to Endpoint Weak-type Estimates for Calderón-Zygmund Operators

First Position: Postdoctoral Fellow at Clemson University

**Marie-Jose Kuffner**, Washington University – St. Louis, Spring 2016 – Spring 2019.

**Thesis Title:** Commutators and Weak Factorization

First Position: Postdoctoral Fellow at Johns Hopkins University

**Darío Mena Arias**, Georgia Institute of Technology, Fall 2014 – Spring 2018.

**Thesis Title:** Characterization of BMO by Commutators and Sparse Domination of Operators

First Position: University of Costa Rica

**Ishwari Kunwar**, Georgia Institute of Technology, Fall 2014 – Summer 2017.

**Thesis Title:** Multilinear Dyadic Operators and Their Commutators

First Position: Fort Valley State University

**Philip Benge**, Washington University – St. Louis, Fall 2013 – Spring 2017.

**Thesis Title:** Paraproducts and Well Localized Operators

First Position: Mississippi School for Mathematics and Science

**Robert Rahm**, Washington University – St. Louis, Fall 2013 – Spring 2017.

**Thesis Title:** Weighted Inequalities for Three Operators

First Position: Postdoctoral Fellow at Texas A&M University

**James Scurry**, Georgia Institute of Technology, Fall 2008 – Spring 2013.

**Thesis Title:** One and Two Weight Theory in Harmonic Analysis

Best PhD Thesis in the School of Mathematics Academic Year 2012 – 2013