

Matthew Badger

Curriculum Vitae

<https://badger.math.uconn.edu/>

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Employment and Visiting Positions

UNIVERSITY OF CONNECTICUT

- Associate Professor, Department of Mathematics, Fall 2019 – *present*
- Assistant Professor, Department of Mathematics, Fall 2014 – Summer 2019

STONY BROOK UNIVERSITY

- James H. Simons Instructor, Department of Mathematics, Fall 2011 – Spring 2014.

VISITING POSITIONS

- PCMI, Harmonic Analysis, July 2018.
- MSRI, Harmonic Analysis, January – March 2017.
- IPAM, Interactions Between Analysis and Geometry, March – June 2013.

Education

UNIVERSITY OF WASHINGTON

- Ph.D. in Mathematics, August 2011. *Thesis advisor:* Tatiana Toro.
- M.S. in Mathematics, August 2008.

UNIVERSITY OF PITTSBURGH

- B.S. in Mathematics, April 2006.
- B.A. in Political Science, April 2006.

Research Interests

My main research focus is on the **Geometry of Sets and Measures** that appear in various types of classical analysis. I am especially interested in problems from geometric measure theory and in higher-dimensional (3D+) analogues of geometric function theory in the complex plane (2D).

BUZZWORDS

Geometric Measure Theory, Rectifiability, Harmonic Measure, Elliptic PDE in Rough Domains, Lipschitz and Hölder Parameterizations, Modulus of Measures, AND Quasiconformal Maps

Research Grants, Fellowships, Awards

- NSF 2154047, “Rectifiability and Fine Geometry of Sets, Radon Measures, Harmonic Functions, and Temperatures”, 2022–2025, \$278,485
- NSF 1650546, “CAREER: Analysis and Geometry of Measures”, 2017–2022, \$410,000
- NSF 1500382, “Geometry of Sets and Measures”, 2015–2018, \$120,000
- NSF Mathematical Sciences Postdoctoral Research Fellowship, 2012–2015, \$150,000
- RTG Graduate Fellowship, Inverse Problems & PDE, University of Washington, 2009–2010 and 2010–2011.
- VIGRE Graduate Fellowship, University of Washington, 2006–2007.

- M.M. Culver Award, University of Pittsburgh, 2004, 2005 and 2006: prize awarded annually to outstanding undergraduates majoring in mathematics.

Conference Grants

- NSF 2403968, “Conference: Geometry of Measures and Free Boundaries, 2024–2025, \$50,000 (Organization: University of Washington, PI: Bobby Wilson, co-PIs: Matthew Badger, Mariana Smit Vega Garcia, Stefan Steinerberger)
- NSF 1901256, “Collaborative Research: The Northeast Analysis Network”, 2019–2023, \$10,305

Thesis Students

THESIS ADVISOR FOR:

- **Lisa Naples** (supervised 2016–2020), UConn, Ph.D. Summer 2020.
Fall 2020–Spring 2023: Visiting Assistant Professor, Macalester College, St. Paul, MN.
Fall 2023–present: Assistant Professor, Fairfield University, Connecticut.

COMMITTEE MEMBER / EXAMINER FOR:

- **Polina Perstneva**, University of Paris-Saclay, Ph.D. December 2023
- **Marco Carfagnini**, UConn, Ph.D. Summer 2022.
Fall 2022–present: Stefan E. Warschawski Visiting Assistant Professor, UCSD

Graduate Research Assistants Funded

- **Alec Wendland**, UConn, Summer 2024
- **Michael Albert**, UConn, Spring 2024
- **Zackary Boone**, UConn, Summer 2023
- **Christopher Hayes**, UConn, Fall 2021
- **Erik Wendt**, UConn, Fall 2020
- **Lisa Naples**, UConn, Fall 2017, Fall 2018, Fall 2019

Postdoctoral Fellows

- **Alyssa Genschaw**, Visiting Assistant Professor at UConn, 2019–2021. Since Fall 2021, appointed Assistant Professor at Milwaukee School of Engineering.
- **Murat Akman**, Evarist Gine Postdoctoral Fellow at UConn, 2016–2019. Awarded AMS-Simons travel grant in 2018. In Fall 2019, appointed Lecturer at University of Essex, UK. Promoted to Senior Lecturer.
- **Vyron Vellis**, Postdoctoral Fellow at UConn, 2016–2019. Awarded NSF grant as a postdoc at UConn in 2018. In Fall 2019, appointed to Assistant Professor at University of Tennessee. Promoted and tenured as Associate Professor in Fall 2023.

Publications (ordered by arXiv number / date of first availability)

1. Harmonic polynomials and tangent measures of harmonic measure, *Rev. Mat. Iberoam.* **27** (2011), no. 3, 841–870. arXiv:0910.2591
2. Null sets of harmonic measure on NTA domains: Lipschitz approximation revisited, *Math. Z.* **270** (2012), no. 1–2, 241–262. arXiv:1003.4547

3. Flat points in zero sets of harmonic polynomials and harmonic measure from two sides, *J. London Math. Soc.* **87** (2013), no. 1, 111–137. arXiv:1109.1427
4. (with James T. Gill, Steffen Rohde and Tatiana Toro) Quasisymmetry and rectifiability of quasispheres, *Trans. Amer. Math. Soc.* **366** (2014), no. 3, 1413–1431. arXiv:1201.1581
5. Beurling’s criterion and extremal metrics for Fuglede modulus, *Ann. Acad. Sci. Fenn. Math.* **38** (2013), 677–689. arXiv:1207.5277
6. (with Raanan Schul) Multiscale analysis of 1-rectifiable measures: necessary conditions, *Math. Ann.* **361** (2015), no. 3–4, 1155–1172. arXiv:1307.0804
7. (with Jonas Azzam and Tatiana Toro) Quasiconformal planes with bi-Lipschitz pieces and extensions of almost affine maps, *Adv. Math.* **275** (2015), 195–259. arXiv:1403.2991
8. (with Stephen Lewis) Local set approximation: Mattila-Vuorinen type sets, Reifenberg type sets, and tangent sets, *Forum Math. Sigma* **3** (2015), e24, 63 pp. arXiv:1409.7851
9. (with Raanan Schul) Two sufficient conditions for rectifiable measures, *Proc. Amer. Math. Soc.* **144** (2016), no. 6, 2445–2454. arXiv:1412.8357
10. (with Murat Akman, Steve Hofmann, and José María Martell) Rectifiability and elliptic measures on 1-sided NTA domains with Ahlfors-David regular boundaries. *Trans. Amer. Math. Soc.* **369** (2017), no. 8, 5711–5745. arXiv:1507.02039
11. (with Max Engelstein and Tatiana Toro) Structure of sets which are well approximated by zero sets of harmonic polynomials, *Anal. PDE.* **10** (2017), no. 6, 1455–1495. arXiv:1509.03211
12. (with Raanan Schul) Multiscale analysis of 1-rectifiable measures II: characterizations. *Anal. Geom. Metr. Spaces* **5** (2017), no. 1, 1–39. arXiv:1602.03823
13. (with Vyron Vellis) Geometry of measures in real dimensions via Hölder parameterizations. *J. Geom. Anal.* **29** (2019), no. 2, 1153–1192. arXiv:1706.07846
14. Generalized rectifiability of measures and the identification problem. *Complex Analysis and its Synergies* **5** (2019), 2. doi:10.1007/s40627-019-0027-3 arXiv:1803.10022
15. (with Lisa Naples and Vyron Vellis) Hölder curves and parameterizations in the Analyst’s Traveling Salesman theorem. *Adv. Math.* **349** (2019), 564–647. doi:10.1016/j.aim.2019.04.011 arXiv:1806.01197
16. (with Max Engelstein, Tatiana Toro) Regularity of the singular set in a two-phase problem for harmonic measure with Hölder data. *Rev. Mat. Iberoam.* **36** (2020), no. 5, 1375–1408. doi:10.4171/rmi/1170 arXiv:1807.08002
17. (with Vyron Vellis) Hölder parameterization of iterated function systems and a self-affine phenomenon. *Anal. Geom. Metr. Spaces* **9** (2021), 90–119. doi:10.1515/agms-2020-0125 arXiv:1910.08850
18. (with Sean McCurdy) Subsets of rectifiable curves in Banach spaces I: sharp exponents in traveling salesman theorems. *Illinois J. Math.* **67** (2023), no. 2, 203–274. doi:10.1215/00192082-10592363 arXiv:2002.11878v3
19. (with Lisa Naples) Radon measures and Lipschitz graphs. *Bull. London Math. Soc.* **53** (2021), no. 3, 921–936. doi:10.1112/blms.12473 arXiv:2007.08503
20. (with Sean Li and Scott Zimmerman) Identifying 1-rectifiable measures in Carnot groups. *Anal. Geom. Metr. Spaces.* **11** (2023), Paper no. 20230102, 40 pp. doi:10.1515/agms-2023-0102 arXiv:2109.06753v4
21. (with Sean McCurdy) Subsets of rectifiable curves in Banach spaces II: universal estimates for almost flat arcs. *Illinois J. Math.* **67** (2023), no. 2, 275–331. doi:10.1215/00192082-10592390 arXiv:2208.10288

22. (with Alyssa Genschaw) Lower bounds on Bourgain’s constant for harmonic measure. *Canad. J. Math.* First View, 1–20. doi:10.4153/S0008414X2300069X arXiv:2205.15101v2
23. (with Max Engelstein and Tatiana Toro) Slowly vanishing mean oscillations: non-uniqueness of blow-ups in a two-phase free boundary problem. *Vietnam J. Math.* Online first. 11 pp. doi:10.1007/s10013-023-00668-6 arXiv:2210.17531
24. A practical guide to writing an NSF grant proposal, *Notices Amer. Math. Soc.* **70** (2023), no. 7, 1089–1093. doi:10.1090/noti2729

ACCEPTED FOR PUBLICATION

25. (with Alyssa Genschaw) Hausdorff dimension of caloric measure. To appear in *Amer. J. Math.* Accepted July 2023. arXiv:2108.12340

PREPRINTS

26. (with Raanan Schul) Square packings and rectifiable doubling measures. Preprint. arXiv:2309.01283
27. (with Cole Jeznach) On the number of nodal domains of homogeneous caloric polynomials. Preprint. arXiv:2401.07268

Plenary Talks

- “Open Problems about Curves, Sets, and Measures”. 8th Ohio River Analysis Meeting. Lexington, Kentucky. March 2018.

Other Invited Research Talks (*reverse chronological order*), 75 invitations

- AMS Special Session. Interactions between Analysis, Geometric Measure Theory, and Probability in Non-smooth Spaces. Howard University. Washington, DC. April 2024.
- Colloquium. University of Tennessee. Knoxville, TN. February 2024.
- Analysis seminar. University of Tennessee. Knoxville, TN. February 2024.
- Harmonic analysis seminar. University of Paris-Saclay. Orsay, **France**. December 2023.
- PDE Seminar. University of Minnesota. Minneapolis, MN. October 2023.
- Calderón-Zygmund Seminar. University of Chicago. Chicago, Illinois. January 2023.
- Math Seminar. Montana State University. Bozeman, Montana. October 2022.
- AMS special session on Nonsmooth Analysis and Geometry. Eastern section. Amherst, Massachusetts. October 2022.
- Analysis and Probability Seminar. UConn. Storrs, Connecticut. September 2022.
- Conference. Geometry and Analysis on Nonsmooth Spaces. Texas A&M. August 2022.
- CBMS conference: Analysis, Geometry, and PDEs in a Lower-Dimensional World. FSU. Tallahassee, Florida. May 2022 (Originally August 2020, Delayed due to Covid-19)
- Harmonic analysis and PDE conference. Yonsei University. Seoul, South Korea. May 2022. (Originally scheduled May 2020. Delayed due to Covid-19. Declined invitation.)
- AMS Special Session on Geometric Measure Theory. J. Math. Meet. Online. April 2022. (Originally scheduled January 2022. Delayed due to Covid-19. Declined invitation.)
- Calderón-Zygmund Seminar. University of Chicago. Virtual. May 2021.
- AMS Special Session on Nonsmooth Analysis and Geometry. Virtual Central Sectional Meeting. April 2021.
- Elliptic PDEs and Geometric Variational Problems. 13th AIMS conference on Dyn. Sys., Diff. Eqs. and Appl. Atlanta, Georgia. June 2020. (Cancelled due to Covid-19)

- BIRS Workshop. Analysis and Geometry of Metric Spaces - a Bridge between Smooth and Fractal Views. Banff, Canada. April 2020. (Cancelled due to Covid-19)
- AMS special session on Harmonic Analysis. Southeastern Sectional Meeting. Charlottesville, Virginia. March 2020. (Cancelled due to Covid-19)
- Special Session on Interfaces between PDEs and Geometric Measure Theory. Joint Mathematics Meetings. Denver, Colorado. January 2020.
- Colloquium. Kansas State University. Manhattan, Kansas. November 2019.
- Function theory seminar. Kansas State University, Manhattan, Kansas. November 2019.
- Geometry and analysis in function and mapping theory on Euclidean and metric measure spaces. Banach Center. **Poland**. October 2019.
- AMS special session on Analysis and Probability on Metric Spaces and Fractals. Central Sectional Meeting. Madison, Wisconsin. September 2019.
- Rainwater seminar. University of Washington. Seattle, Washington. February 2019.
- AMS special session on Harmonic Analysis, Partial Differential Equations, and Applications. Joint Mathematics Meeting. Baltimore, Maryland. January 2019.
- AMS special session on Harmonic Analysis and PDE. Southeastern Sectional Meeting. Fayetteville, Arkansas. November 2018.
- Research program seminar. PCMI Harmonic Analysis. Park City, Utah. July 2018.
- Rainwater seminar. University of Washington, Seattle, Washington. May 2018.
- AMS special session on Analysis and Geometry in Non-smooth Spaces. Eastern Sectional Meeting. Boston, Massachusetts. April 2018.
- AMS special session on Regularity of PDEs in Rough Domains. Eastern Sectional Meeting. Boston, Massachusetts. April 2018.
- AMS special session on Analysis at the Intersection of Geometric Measure Theory and Partial Differential Equations. Western Sectional Meeting. Portland, Oregon. April 2018.
- Analysis and PDE seminar. University of Kentucky. Lexington, Kentucky. March 2018.
- 3rd Northeast Analysis Network Meeting. Syracuse, New York. September 2017.
- Geometric Measure Theory conference. Warwick, **United Kingdom**. July 2017.
- Harmonic analysis seminar. MSRI. Berkeley, California. March 2017.
- Conference on “Analysis on Metric Spaces.” University of Pittsburgh. March 2017.
- Analysis seminar. Brown University. Providence, RI. October 2016.
- Analysis and PDE seminar. University of Cincinnati. Cincinnati, Ohio. April 2016.
- Rainwater seminar. University of Washington. Seattle, Washington. March 2016.
- Analysis and probability seminar. University of Connecticut. Storrs. March 2016.
- AMS Special Session on Analysis and Geometry in Nonsmooth Metric Measure Spaces. Joint Mathematics Meetings. Seattle, Washington. January 2016.
- Minisymposium, “New Trends in Elliptic and Parabolic PDEs” SIAM conference—Analysis of PDE. Scottsdale, Arizona. December 2015.
- Rainwater seminar. University of Washington. Seattle, Washington. May 2015.
- Analysis seminar. Brown University. Providence, Rhode Island. April 2015.
- Analysis seminar. University of Missouri. Columbia, Missouri. April 2015.
- Colloquium. Worcester Polytechnic Institute. Worcester, Massachusetts. March 2015.
- Geometry seminar. University of Jyväskylä. Jyväskylä, **Finland**. February 2015.
- Geometric analysis seminar. University of Helsinki. Helsinki, **Finland**. February 2015.
- Analysis seminar. Fordham University. Bronx, New York. November 2014.
- Ahlfors-Bers Colloquium VI. Yale University. New Haven, Connecticut. October 2014.

- Analysis and probability seminar. University of Connecticut. Storrs. September 2014.
- Dynamical systems seminar. Stony Brook University and the Institute for Mathematical Sciences. Stony Brook, New York. May 2014.
- Colloquium. University of Connecticut. Storrs, Connecticut. January 2014.
- Rainwater seminar. University of Washington. Seattle, Washington. January 2014.
- Analysis seminar. University of Illinois, Urbana-Champaign. November 2013.
- Analysis seminar. Syracuse University. Syracuse, New York. October 2013.
- AMS Special Session on Harmonic Analysis and Partial Differential Equations. Louisville, Kentucky. October 2013.
- AMS Special Session on Analysis, Dynamics and Geometry in and around Teichmüller spaces. Ames, Iowa. April 2013.
- Analysis seminar. Temple University. Philadelphia, Pennsylvania. February 2013.
- Complex analysis seminar. University of Washington. Seattle. January 2013.
- Perspectives in HA, GMT, and PDE, and their applications to SCV. Temple University. Philadelphia, Pennsylvania. September 2012.
- Simons Postdoctoral Fellows Meeting. Simons Center for Geometry and Physics. Stony Brook, New York. April 2012.
- Complex analysis seminar. University of Washington. Seattle. January 2012.
- Dynamical systems seminar. Stony Brook University and the Institute for Mathematical Sciences. Stony Brook, New York. September 2011.
- AMS Special Session on Geometric Aspects of Analysis and Measure Theory. Eastern Sectional Meeting. Ithaca, New York. September 2011.
- AMS Special Session on Harmonic Analysis and PDE. Joint Mathematics Meetings. New Orleans, Louisiana. January 2011.
- Analysis seminar. Brown University. Providence, RI. December 2010.
- Harmonic analysis seminar. Université Paris-Sud XI. Orsay, **France**. April 2010.
- Rainwater seminar. University of Washington. Seattle, Washington. February 2010.
- Harmonic analysis conference. Centre de Recerca Matemàtica (CRM). Bellaterra, **Spain**. June 2009.
- Rainwater seminar. University of Washington. Seattle, Washington. May 2009.

UPCOMING INVITED TALKS

- Conference. University of Arkansas Spring Lecture Series. Fayetteville, AR. May 2024.
- Conference. “PDE in Moab”. Utah. June 2024.
- International Conference on Special Functions, Analytic Functions, Metrics and Quasiconformality. Indore, **India**. December 2024.
- Quasiweekend III—twenty years on. Helsinki, **Finland**. June 2025. This is the third edition of a conference series in metric geometry and quasiconformal analysis, which takes place once every ten years.

Invited Mini Courses

- *Introduction to Harmonic and Caloric Measure*, 3 lectures, $2\frac{1}{2}$ hours. Geometry of Measures and Free Boundaries. University of Washington. July 2024.
- *Introduction to Geometry of Sets and Measures*, 3 lectures, $4\frac{1}{2}$ hours. Progress in Harmonic Analysis and Geometric Measure Theory. Temple University. April 2014.

Professional Activities

- Co-organizer (with Ryan Alvarado and Lisa Naples): AMS Special Session in Nonsmooth Analysis and Geometry. Fall Eastern Section Meeting. SUNY Albany. October 2024.
- Co-organizer of the 2024 Northeast Analysis Network Conference at Syracuse University. September 2024. *This regional conference series is a joint venture with SUNY Albany, Syracuse University, and University of Rochester.*
- Organizer: Geometry of Measures and Free Boundaries. A conference in honor of Tatiana Toro. Seattle, Washington. July 22–26, 2024. With four Introductory Mini-Courses held before the conference July 20–21, 2024. Co-organized with Mariana Smit Vega Garcia, Stefan Steinerberger, Bobby Wilson.
- Co-organizer of the 2023 Northeast Analysis Network Conference at University of Rochester. September 2023. *This regional conference series is a joint venture with SUNY Albany, Syracuse University, and University of Rochester.*
- Co-organizer of the 2022 Northeast Analysis Network Conference at SUNY Albany. September 2022. *This regional conference series is a joint venture with SUNY Albany, Syracuse University, and University of Rochester.*
- Co-organizer (with Guy C. David and Lisa Naples): AMS Special Session in Geometry of Measures and Metric Spaces. Spring Central Section Meeting. Online. March 2022. (Originally at Purdue University, Covid-19 impacted)
- Co-organizer and Local Organizer of the 2019 Northeast Analysis Network Conference at UConn Storrs Campus. September 2019. *This regional conference series is a joint venture with SUNY Albany, Syracuse University, and University of Rochester.*
- Local organizer for AMS Eastern Sectional Meeting. Hartford, Connecticut. April 2019. *As the Local Organizer, I ensured smooth logistics at the UConn Hartford conference site, securing space for 20+ parallel sessions and plenary talks, 400+ participants, catering, and facilitating communication and coordination of staff from UConn and the American Mathematical Society. Planning started over 18 months in advance of the event.*
- Organizer of “Geometric and Harmonic Analysis: a Conference for Graduate Students”. University of Connecticut. March 2019. Co-organized with Murat Akman, Vyron Vellis. Website at: <https://gaha2019.math.uconn.edu/>
- Organizer of “Nonsmooth Analysis: a Workshop for Postdocs”. University of Connecticut. November 2017. Website at: <https://nonsmooth2017.math.uconn.edu/>
- Co-organizer (with Vasileios Chousionis): AMS Special Session in Geometric Aspects of Harmonic Analysis. Fall Eastern Sectional Meeting. Brunswick, Maine. September 2016.
- Co-organizer (with Chris Bishop and Raanan Schul): AMS Special Session in Geometric Measure Theory and Its Applications. Spring Eastern Sectional Meeting. Stony Brook, New York. March 2016.
- Chair of organizing committee for the UConn Special Semester in Nonsmooth Analysis. University of Connecticut. Department of Mathematics. Fall 2015. Co-organized with Vasileios Chousionis, Masha Gordina, Luke Rogers, and Sasha Teplyaev.
- Co-organizer (with Jim Gill and Joan Lind): AMS Special Session in Complex Analysis, Probability and Metric Geometry. Spring Southeastern Sectional Meeting. Knoxville, Tennessee. March 2014.
- Co-organizer (with Theresa Anderson, Nathan Pennington, Eric Stachura): AMS Special Session in Harmonic Analysis, PDE, and Geometric Measure Theory. Joint Mathematics Meetings. San Diego. January 2013.
- TA for Summer Graduate Courses in Geometric Measure Theory. MSRI. July 2011.

- Organized a series of “Professional Development Sessions” for the mathematics graduate students at University of Washington, 2010 – 2011.
- Served on 5 NSF Review Panels and as an ad-hoc reviewer.
- Ad-hoc reviewer for European Research Council.
- Reviewed book manuscripts for Springer.
- Refereed papers for multiple research journals, including
 - ▷ Adv. Math. ▷ Amer. J. Math. ▷ Amer. Math. Monthly ▷ Ann. Acad. Sci. Fenn. Math.
 - ▷ Ann. Func. Anal. ▷ **Annals of Mathematics** ▷ Anal. PDE
 - ▷ Ann. Sci. Éc. Norm. Supér. ▷ Arch. Math. (Basel) ▷ Chaos Solitons & Fractals
 - ▷ Duke Math. J. ▷ Geom. Func. Anal. ▷ Forum Math. Sigma
 - ▷ Int. Math. Res. Not. IMRN ▷ **Invent. Math.** ▷ Israel J. Math. ▷ **J. Amer. Math. Soc.**
 - ▷ J. Anal. Math. ▷ **J. Eur. Math. Soc. (JEMS)** ▷ J. Fourier Anal. Appl. ▷ J. Func. Anal.
 - ▷ J. Geom. Anal. ▷ J. London Math. Soc. ▷ Mathematika ▷ Math. Ann.
 - ▷ Michigan Math. J. ▷ Memoirs Amer. Math. Soc. ▷ Nonlinear Anal.
 - ▷ Proc. Amer. Math. Soc. ▷ Proc. London Math. Soc. ▷ Rev. Mat. Iberoam.
 - ▷ Trans. Amer. Math. Soc. ▷ Vietnam J. Math.
- Reviewer for *Mathematical Reviews*, 27 reviews, 2012–2017.

Selected Service

UNIVERSITY OF CONNECTICUT

- CCC+ / General Education Oversight Committee, Subcommittee on Q (Quantitative) Courses, Fall 2021 – *present*
- Working Group on Quantitative Competency Standards, Fall 2023 – Spring 2024
- Reviewer for OVPR Research Excellence Program, Spring 2024

UCONN DEPARTMENT OF MATHEMATICS

- Analysis Learning Seminar, Founder and Organizer, multiple semesters
- Analysis & Probability Seminar, Organizer, multiple semesters
- Initial advisor for incoming Ph.D. students, multiple years
- Math department representative at college and university recruitment events for perspective and incoming undergraduate students, Fall 2023, Spring 2024
- Graduate Admissions Committee, Spring 2017, Spring 2020, Spring 2023
- Graduate Admissions Co-Chair, Fall 2017 – Spring 2018
- Graduate Program Committee, Fall 2015 – Spring 2018
- VAP Search Committee, Spring 2015

Teaching Experience

UNIVERSITY OF CONNECTICUT

Graduate Courses

- | | | | |
|---|-----------|----------------------------------------------|--------------------|
| • | Math 5440 | Partial Differential Equations | Fall 2023 |
| • | Math 5140 | Fourier Analysis | Fall 2022 |
| • | Math 5120 | Complex Analysis | Spring 2020 |
| • | Math 5010 | Topics in Analysis: Geometric Measure Theory | Fall 2018 |
| • | Math 5111 | Measure Theory & Integration | Spring 2018 |
| • | Math 5120 | Complex Analysis | Spring 2016 |
| • | Math 5110 | Introduction to Modern Analysis | Fall 2015 |

- Math 5110 Introduction to Modern Analysis **Fall 2014**

Undergraduate Courses – Math Majors

- Math 3151 Analysis II **Spring 2024**
- Math 3151 Analysis II **Spring 2022**
- Math 3370 Differential Geometry **Fall 2021**
- Math 3150 Analysis I **Fall 2021**
- Math 3210 Abstract Linear Algebra **Spring 2021**
- Math 2710W Transitions to Advanced Mathematics **Spring 2019**
- Math 3151 Analysis II **Spring 2019**
- Math 3150 Analysis I **Fall 2017**
- Math 3150 Analysis I **Fall 2016**
- Math 4110 Introduction to Modern Analysis **Fall 2015**
- Math 4110 Introduction to Modern Analysis **Fall 2014**

Undergraduate Courses – Service Courses

- Math 2210Q Applied Linear Algebra (2 sections) **Fall 2024**
- Math 2210Q Applied Linear Algebra **Fall 2023**
- Math 2210Q Applied Linear Algebra (2 sections) **Spring 2023**
- Math 2210Q Applied Linear Algebra (Honors) **Spring 2021**
- Math 2210Q Applied Linear Algebra (2 sections) **Fall 2019**
- Math 2410Q Elementary Differential Equations **Fall 2016**
- Math 2410Q Elementary Differential Equations **Spring 2016**
- Math 1131Q Calculus I **Summer 2015**

STONY BROOK UNIVERSITY

Graduate Courses

- Math 550 Real Analysis II **Spring 2014**
- Math 638 Topics in Real Analysis: Brownian Motion and Harmonic Measure **Fall 2013**

Undergraduate Courses – Math Majors

- Math 322 Analysis in Several Dimensions **Spring 2012**

Undergraduate Courses — Service Courses

- Math 211 Introduction to Linear Algebra **Fall 2012**
- Math 125 Calculus A (Differential Calculus) **Fall 2011**
- Math 126 Calculus B (Integral Calculus) **Fall 2011**

In Fall 2012, I also directed two independent studies by undergraduate math majors on

▷ Harmonic Function Theory ▷ Analysis on Manifolds.

UNIVERSITY OF WASHINGTON

Undergraduate Courses — Service Courses

- Math 309 Linear Analysis **Fall 2010**
- Math 308 Matrix Algebra with Applications **Winter 2010**
- Math 308 Matrix Algebra with Applications **Summer 2008**