## Robert Rahm


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**Research Interests** Numerical Inverse Spectral Theory, Harmonic Analysis, PDE, spaces of holomorphic functions

**Positions**

2. Instructional Assistant Professor, Texas A&M. (January 2019 – Present)
1. Visiting Assistant Professor, Texas A&M. (August, 2017- December 2018)

**Education**

2. Ph.D. in Mathematics, Washington University in St. Louis, May 2017:
   - Adviser: Dr. Brett D. Wick.
   - Thesis Title: *Weighted Inequalities for Three Operators from Harmonic Analysis*.
1. B.S., Georgia Institute of Technology, May 2012:
   - Major: Mathematics.
   - GPA: 3.49, High Honor.

**Teaching Experience (Texas A & M)**

9. Math 696 - Communications In Mathematics, Summer 2021.
8. Math 172 Calc II For Science Majors, Fall 2020, Spring 2022.
7. Math 221 Calc III For Science Majors, Spring 2020.
6. Math 308 Differential Equations, Spring 2019, Summer 2020, Spring 2021, Fall 2021.
5. Math 151 Calc I, Fall 2018, Fall 2021.
4. Math 304 Linear Algebra, Summer 2018, Summer 2019, Summer 2020.
3. Math 412 PDE, Summer 2018, Summer 2021.
2. Math 602 Mathematical Methods in PDE, Spring 2018, Fall 2021 (In Distance MS), Spring 2022.
1. Math 251 Calc III, Fall 2017, Fall 2019.

**Teaching Experience (Supplemental Courses at Texas A&M)**

7. Week–In–Review, Math 152, Spring 2022
6. ASCC 201 Basic Math Skills, Spring 2021
5. Week–In–Review, Differential Equations, Spring 2021
4. Reboot Workshop for MLC, Spring 2020
3. Hands on Grades Up for MLC, Spring 2020
2. Week In Review, Math 251, Fall 2019
1. First Year Experience for Undergrads, Fall 2019, Fall 2020.

## Teaching Experience (Not at Texas A&M)

4. Math 1324 Math for Business and Social Sciences, Fall 19, (Blinn).
3. College Algebra, Summer 2017, Washington University in St. Louis.
2. Calculus 1, Summer 2017, (Washington University in St. Louis).
1. Calculus 2, Spring 2014, Georgia Tech.

## Publications

13. R. Rahm *Sampling The Lowest Eigenfunction to Recover the Potential in a One–Dimensional Schrödinger Equation*
preprint: arxiv:2202.08191v1
12. R. Rahm, *Off-Diagonal Two Weight Bumps for Fractional Sparse Operators*
preprint: arxiv:2101.02123v11
11. R. Rahm, *Borderline Weak–Type Estimates for Sparse Bilinear Forms Involving $A_\infty$ Maximal Functions*, accepted to *Journal of Mathematical Analysis and Applications*.
preprint: arxiv:2003.01058v1
10. R. Rahm, *Weyl Asymptotics for Perturbations of Morse Potential and Connections to the Riemann Zeta Function*.
preprint: arxiv:1811.04915v1
9. R. Rahm, E. Sawyer, B. Wick, *Weighted Alpert Wavelets*, Accepted to *Journal of Fourier Analysis And Applications*.
preprint: arxiv:1808.01223v1
8. R. Rahm, S. Spencer *Entropy Bumps and Another Sufficient Condition for the Two–Weight Boundedness of Sparse Operator*, Israel J. Math. 223 (2018), no. 1.
preprint: arxiv:1609.08214v1
7. J. Li, R. Rahm, B. Wick *$A_p$ weights and Quantitative Estimates in the Schrödinger Setting*, Math. Z. 293 (2019), no. 1-2.
preprint: arxiv:1601.04240v1
6. R. Rahm, E. Tchoundja, B. Wick *Weighted Estimates for the Berezin Transform and Bergman Projection on the Unit Ball in $\mathbb{C}^n$*, Math. Z. 286 (2017), no. 3-4.
preprint: arxiv:1601.04240v1
5. I. Holmes, R. Rahm, and S. Spencer *Two-Weight Inequalities for Commutators with Fractional Integral Operators*, 2016, Studia Math., Volume 233, No. 3, 2016.
preprint: arxiv:1510.05331v1
4. R. Rahm and S. Spencer *Some Entropy Bump Conditions for Fractional Maximal and Integral Operators*, 2016, Concrete Operators, Volume 3.
preprint: arxiv:1504.05906v2
3. R. Rahm *The Essential Norm of Operators on $\ell^2$–Valued Bergman–Type Function Spaces*, 2016, Complex Analysis and Operator Theory, Vol. 10 Issue 1.
preprint: arxiv:1411.2270v1
2. R. Rahm and B. Wick, *Essential Norm of Operators on Vector Valued Bergman Space*, 2015, Contemporary Mathematics: Function Spaces in Analysis, vol. 645.
preprint: arXiv:1407.4786
1. Robert S. Rahm, *Compact Operators on Vector-Valued Bergman Space via the Berezin Transform* 2014.
preprint: arXiv:1407.5244

## Service to the Department

13. Academic Professional Track Committee; Spring 2022 – present.
12. Promotion Mentor for Patrick Orchard; Summer 2021.
11. Committee L&I; Spring 2021 – present.
10. Undergraduate Studies Committee; Fall 2020 – present.
9. Academic Adivsor (this is my "soft duty" as an APT faculty member) (Fall 2020 – Present).
8. MS Committee for Caitlin Ireland; Spring 2022 – present.
7. MS Committee (Co–Chair) for Juliana Orcasitas; Spring 2022 – present.
6. MS Committee for Janelle Stelle; Fall 2021 – present.
5. MS Committee for Matthew Enderle; Fall 2021 – present.
4. MS Committee for Taylor Boylan; Summer 2021 – present.
3. MS Committee for Deanna Hodges; Summer 2021 – Fall 2021; Defended Fall 2021.
2. Member of Graduate Faculty; Summer 2021 – present.
1. Taught First Year Experience for Undergrads in Fall of 2019 and 2020.

## Service to the Profession

6. Referee for *Analysis Mathematica*.
5. Preliminary Reviewer for *Journal of the London Mathematical Society*.
4. Referee for *Journal of Geometric Analysis*.
3. Referee for *Advances in Operator Theory*.
2. Referee for *Mathematische Nachrichten*.
1. Referee for *Journal of Mathematical Analysis and Applications*.

## Talks (Past and Future)

14. SUNY Albany Analysis Seminar, (November 2020)
13. Texas A&M Mathematical Physics Seminar
12. AMS Sectional Meeting, Bloomington, Indiana (April, 2017).
11. *Fractional Integral Operators Associated to Schrödinger Operators*, North East Analysis Meeting, Brockport, NY (October 2016).
10. *Fractional Integral Operators Associated to Schrödinger Operators*, University of Virginia Analysis Seminar, Charlottesville, VA (October 2016).
9. *Fractional Integral Operators Associated to Schrödinger Operators*, University of Alabama Analysis Seminar, Tuscaloosa, AL (September 2016).
8. *Weighted Inequalities for the Bergman Projection*, Prairie Analysis Seminar, Lawrence, KS (September 2016).
7. *Weighted Inequalities for the Bergman Projection*, IWOTA Special Section in Harmonic Analysis, St. Louis, MO (July 2016).
6. *Weighted Inequalities for the Fractional Integral Operator*, Kansas State Analysis Seminar, Manhattan, KS (April 2016).
5. *Weighted Inequalities for the Bergman Projection*, AMS Sectional Meetings, Special Harmonic Analysis Section, Athens, GA (March 2016).
4. *Entropy Bump Conditions for Fractional Integral Operators*, Mizzou Analysis Seminar, Columbia, MO (March 2016).
3. *Entropy Bump Conditions For Fractional Integral Operators*, $15^{th}$ New Mexico Analysis Seminar, Albuquerque, NM (February 2016).

2. *Entropy Bump Conditions for Fractional Integral Operators* Clemson University Analysis Seminar, Clemson, SC (April 2015).
1. *Toeplitz Operators on Vector Valued Bergman Space*, $30^{th}$ Southeast Analysis Meeting, Clemson SC (March 2014).

## Conferences and Workshops Attended (Past and Future)

18. AMS Sectional Meeting, Bloomington, Indiana (April 2017).
17. MSRI Program, Berkeley, CA (January 2017).
16. Joint Meetings, Atlanta, GA (January 2017).
15. North East Analysis Seminar, Brockport, NY (October 2016).
14. VOTCAM, Richmond, VA (October 2016).
13. Prairie Analysis Seminar, Lawrence, KS (September 2016).
12. IWOTA, St. Louis, MO (July 2016).
11. MSRI Program in Harmonic Analysis, Berkeley, CA (June 2016).
10. AMS Sectional Meetings, Athens, GA (March 2016).
9. $15^{th}$ New Mexico Analysis Seminar, Albuquerque, NM (February 2016).
8. Internet Analysis Seminar: Harmonic Analysis Associated to Elliptic Operators, Atlanta, GA (August 2015).
7. International Conference on Harmonic Analysis and Applications, NY, NY (June 2015).
6. Southest Analysis Meeting, Athens, GA (February 2015).
5. Internet Analysis Seminar: From Singular Integral Operators to Geometric Measure Theory, Atlanta, GA (August 2014).
4. Summer School in Complex and Harmonic Analysis and Related Topics, University of Eastern Finland, Mekrijärvi, Finland (June, 2014).
3. Southeast Analysis Meeting, Clemson, SC (August 2014).
2. CBMS Regional Conference in the Mathematical Sciences, Clemson, SC (August 2013).
1. Internet Analysis Seminar, Clemson, SC (August 2013).

## Honors and Awards

3. 2022 Outstanding Service Award (Department level).
2. 2014 Best S-STEM Fellow Award.
1. 2014 Bob Price Travel Award ($2250).
0. 2012–2014 S-STEM Fellowship Georgia Institute of Technology School of Mathematics.