

## Tom VandenBoom, Ph.D.

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CONTACT INFORMATION      10 Hillhouse Ave.      651-494-7824  
New Haven, CT 06520-8283      trvandenboom@gmail.com

APPOINTMENTS      **Yale University**, New Haven, CT  
J. Willard Gibbs Assistant Professor in Mathematics      July 2018 - Present

EDUCATION      **Rice University**, Houston, TX  
Ph.D., Mathematics, May 2018  
Thesis: *Isospectral dynamics of reflectionless Jacobi operators*  
Advisor: David Damanik, Ph.D.

**University of Minnesota**, Minneapolis, MN  
B.S., Mathematics and Statistics, May 2013

- PUBLICATIONS
1. Christiansen, J.S., Eichinger, B., and VandenBoom, T. “Finite-gap CMV matrices: Periodic coordinates and a Magic Formula.” *Int. Math. Res. Not.*, rnz213, <https://doi.org/10.1093/imrn/rnz213>, 2020.
  2. Bucaj, V., Damanik, D., Fillman, J., Gerbuz, V., VandenBoom, T., Wang, F., and Zhang, Z. “Positive Lyapunov exponents and a Large Deviation Theorem for continuum Anderson models, briefly.” *J. Func. Anal.*, Vol. 277(9):3179–3186, 2019.
  3. Bucaj, V., Damanik, D., Fillman, J., Gerbuz, V., VandenBoom, T., Wang, F., and Zhang, Z. “Localization for the one-dimensional Anderson model via positivity and large deviations for the Lyapunov exponent.” *Trans. Amer. Math. Soc.*, 372(5):3619–3667, 2019.
  4. Eichinger, B., VandenBoom, T., and Yuditskii, P. “KdV hierarchy via Abelian coverings and operator identities.” *Trans. Amer. Math. Soc. Ser. B*, 6:1–44, 2019.
  5. Fillman, J., Ong, D., and VandenBoom, T. “Spectral approximation for ergodic CMV operators with an application to quantum walks.” *J. Math. Anal. Appl.*, 467(1):132–147, 2018.
  6. VandenBoom, T. “Reflectionless discrete Schrödinger operators are spectrally atypical.” *Comm. Math. Phys.*, 359(2):499-514, 2018.
  7. Binder, I., Damanik, D., Lukic, M., and VandenBoom, T. “Almost-periodicity in time of solutions of the Toda lattice.” *C. R. Math. Rep. Acad. Sci. Canada*, 40(1):1–28, 2018.

- ARTICLES IN PREPARATION
1. Forman, Y. and VandenBoom, T. “Localization and Cantor Spectrum for  $C^2$  quasi-periodic discrete Schrödinger operators.”
  2. Saddler, L., VandenBoom, T., Zeng, T., and Zhou, R. “Bilateral periodicity for finite-gap reflectionless Jacobi operators.”

PRESENTATIONS AND CONFERENCES	Presentations Given	
	• Rice Spectral Theory Seminar, Houston, TX	Oct 2020
	• Auburn DMS Applied Mathematics Seminar, Auburn, AL	Sept 2020
	• Joint Mathematics Meetings Special Session, Denver, CO	Jan 2020
	• Banff International Research Station, Banff, Canada	Sept 2019
	• Mathematical Physics at the Crossings 2019, Blacksburg, VA	June 2019
	• Rice Geometry and Analysis Seminar, Houston, TX	March 2019
	• UC Riverside Ergodic Theory Seminar, Riverside, CA	March 2019
	• Yale Mathematics Seminar, New Haven, CT	Sept 2018
	• Int. Conf. on Orth. Poly's and Holom. Dynamics, Copenhagen, DK	July 2018
	• Western States Meetings 2018	Feb 2018
	• TexAMP 2017, Austin TX	Nov 2017
	• Mini-Workshop on Reflectionless Operators, Oberwolfach, Germany	Oct 2017
	• Great Lakes Mathematical Physics Meeting 2017, Lansing, MI	Jun 2017
	• TexAMP 2016, Houston, TX	Oct 2016
	• Simons Center for Geometry and Physics ( <i>Video Available</i> )	Jun 2016
• University of Missouri	May 2016	
• University of Alabama Birmingham	Mar 2016	
• Western States Meetings 2016	Feb 2016	
• University of Oklahoma	Aug 2015	
• EquaDiff 2015	Jul 2015	

TEACHING EXPERIENCE	Instructor of record	
	Yale University	
	MATH 320/520 - Measure Theory and Integration	Fall 2020
	MATH 115 - Calculus II	Fall 2020
	MATH 222 - Linear Algebra with Applications	Spring 2020
	MATH 115 - Calculus II	Fall 2019
	MATH 222 - Linear Algebra with Applications	Spring 2019
	MATH 112 - Calculus I	Fall 2018
	Rice University	
	MATH 102 - Calculus II	Spring 2016

SERVICE	Mentor, Summer Undergraduate Research at Yale (SUMRY)	Summer 2020
	• Led three undergraduates in researching stationary solutions to the Toda flow on reflectionless Jacobi operators.	
	Co-organizer, Yale Analysis Seminar	Academic Year 2019-2020
	Co-organizer, Special Session of the 2019 OPSFA	Summer 2019
	Graduate Mentor, Rice Geometry Lab	Spring 2017
	• Guided undergraduates in exploration of long-time asymptotics of various Hamiltonian systems.	
	Graduate Student Coordinator, Rice University	Fall 2015 - Spring 2017
	• Assigned and coordinated teaching assistant duties and office spaces for mathematics graduate students.	
	Lecturer, Rice Math Circle	Nov 2014
	• Prepared and presented class discussion and related activities for local youth.	
Master of Ceremonies, Rice Mathematical Lecture Contest	Apr 2014	
• Coordinated event logistics and introduced speakers.		