

Daniel Wallick

PERSONAL DATA

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EDUCATION

Current **The Ohio State University**
2020-PRESENT Theoretical Math PhD Student (expected graduation: 2026)
Advisor: David Penneys

2016-2020 **Swarthmore College** Class of 2020
Bachelor of Arts
Honors major: Mathematics; Honors minor: Physics
High Honors

HONORS AND AWARDS

FALL 2023 Ohio State University **Special Graduate Assignment**

SPRING 2022 Ohio State University **Tibor Radó Research Semester**

FALL 2020-SUMMER 2021 Ohio State University **Distinguished University Fellowship**

2020 **Phi Beta Kappa**

2020 Swarthmore College **Lang Award**
“Given to a graduating senior in recognition of outstanding academic accomplishment.”

2020 Swarthmore College **Heinrich W. Brinkmann Mathematics Prize**
“An award given to a small set of graduating seniors who have demonstrated outstanding performance in the field and exemplary service to the Department of Mathematics and Statistics.”

2017 **Morris Monsky Prize in Mathematics** for the academic year 2016-2017
“Awarded to a first year student who has demonstrated outstanding mathematical promise and enthusiasm.”

PEER REVIEWED JOURNAL ARTICLES

2023 An algebraic quantum field theoretic approach to toric code with gapped boundary, *Journal of Mathematical Physics* 64, 102301
DOI: [10.1063/5.0149891](https://doi.org/10.1063/5.0149891), preprint available at [arXiv:2212.01952](https://arxiv.org/abs/2212.01952)

PREPRINTS

- 2023 Boundary algebras of the Kitaev Quantum Double model (with Mario Tomba, Shuqi Wei, Brett Hungar, Kyle Kawagoe, Chian Yeong Chuah, and David Penneys)
Available at [arXiv:2309.13440](https://arxiv.org/abs/2309.13440)
- 2023 Local topological order and boundary algebras (with Corey Jones, Pieter Naaijken, and David Penneys)
Available at [arXiv:2307.12552](https://arxiv.org/abs/2307.12552)

INVITED PRESENTATIONS

- MARCH 2024 Michigan State University Mathematical Physics and Operator Algebras Seminar
Talk titled “Boundary Algebras and Kitaev’s Quantum Double Model”
- OCTOBER 2023 East Coast Operator Algebras Symposium
Talk titled “Boundary Algebras and Kitaev’s Quantum Double Model”
- MAY 2023 Noncommutative Geometry and Operator Algebras (at Vanderbilt University)
Talk titled “Local Topological Order and Boundary Algebras.”
- MAY 2023 University of Arizona Mathematical Physics and Probability Seminar
Talk titled “An Algebraic Quantum Field Theoretic Approach to Toric Code with Gapped Boundary.”
- MARCH 2023 Carleton University Analysis Seminar
Talk titled “An Algebraic Quantum Field Theoretic Approach to Toric Code with Gapped Boundary.”
- FEBRUARY 2023 ASUERAU C^* -Seminar
Talk titled “An Algebraic Quantum Field Theoretic Approach to Toric Code with Gapped Boundary.”
- JANUARY 2023 Purdue Operator Algebras Seminar
Talk titled “An Algebraic Quantum Field Theoretic Approach to Toric Code with Gapped Boundary.”
- JANUARY 2023 JMM Spectra Special Session on Research by LGBTQ+ Mathematicians
Talk titled “An Algebraic Quantum Field Theoretic Approach to Toric Code with Boundary.”
- DECEMBER 2022 University of Illinois Urbana-Champaign Operator Algebras Learning Seminar
Talk titled “An Algebraic Quantum Field Theoretic Approach to Toric Code with Gapped Boundary.”

ACADEMIC SERVICE

- SUMMER 2024 Co-organizer of the **Spectra Survey of Mathematics Conference 2024**
With Kacey Aurum, Tyler Beauregard, Caleb Dilsavor, Katherine Goldman, and Brett Hungar
- FALL 2023-PRESENT Member of the **Spectra Profession Committee**
- FALL 2022-PRESENT Co-organizer of the **Groundwork in Operator Algebras Lecture Series Student Seminar**
With Aldo Garcia Guinto for FALL 2022-SPRING 2023, with Vincent Villalobos for FALL 2023-PRESENT
- SPRING 2022-PRESENT President of the **Ohio State University LGBTQ+ in Math Alliance**
Spectra chapter at the Ohio State University starting in FALL 2023
- SPRING 2023 Co-organizer of the **Great Plains Operator Theory Symposium 2023**
With Ovidiu Costin, Rodica Costin, Jan Lang, and David Penneys

MENTORING

- SPRING 2024 Mentor for the **Directed Reading Program** at the Ohio State University
- SUMMER 2023 & 2021 Mentor for **Research Opportunities in Mathematics for Underrepresented Students** at the Ohio State University
Mentored undergraduate students under the supervision of David Penneys.
- FALL 2021-SPRING 2022 Mentor for **Cycle Mentoring Class** at the Ohio State University

TEACHING

- SPRING 2024 Teaching Associate for **Mathematical Topics for Engineers (MATH 2177)** at the Ohio State University
- SPRING 2023 Teaching Associate for **Calculus II (MATH 1152)** at the Ohio State University
- FALL 2021 Teaching Associate for **Calculus I (MATH 1151)** at the Ohio State University