

DANNY NACKAN

Curriculum Vitae (last updated October 5, 2024)

CONTACT INFORMATION

Department of Mathematics
Yale University
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EDUCATION

Yale University
Ph.D. candidate in Mathematics 2019–present
(expected graduation May 2025)
◦ Advisor: Andrew Neitzke

University of Toronto
M.Sc. in Mathematics 2018–19
◦ Advisor: Boris Khesin

Honours B.Sc. in Mathematics 2014–18
◦ Specialist in Mathematics with Computer Science Minor

RESEARCH INTERESTS

Differential, complex, and symplectic geometry
◦ moduli of Higgs bundles and flat connections
◦ spectral networks and abelianization
◦ Stokes phenomena
◦ integrable systems

PAPERS

Preprints

2. *Interpreting the Ooguri-Vafa symplectic form à la Atiyah-Bott*
[arXiv:2409.19789](https://arxiv.org/abs/2409.19789).

Publications

1. *Continuous limits of generalized pentagram maps*
With Romain Speciel. *J. Geom. Phys.* **167** (2021), 104292. [arXiv:2010.00723](https://arxiv.org/abs/2010.00723)

SELECTED AWARDS AND SCHOLARSHIPS

At Yale

2021–22 Nathan Hale Associates Scholar
2020–21 Robert Willets Carle Scholarship
2019–21 Lang Fellowship

At the University of Toronto

2018–19 University Of Toronto Graduate Fellowship
2017 Norman Stuart Robertson Scholarship in Mathematics
2017 Coxeter Scholarship in Mathematics
2016 University of Toronto Scholar
2014–17 J.S. McLean Scholarship

RESEARCH AWARDS

At the University of Toronto

- Summer 2018 NSERC Undergraduate Student Research Award
◦ Advisor: Yael Karshon
- Summer 2016 NSERC Undergraduate Student Research Award
◦ Advisor: Joel Kamnitzer

INVITED TALKS

- Nov 2024 **University of Maryland**, Geometry-Topology Seminar
Interpreting the Ooguri-Vafa symplectic form à la Atiyah-Bott
- Nov 2020 **University of Toronto**, Hamiltonian Systems Seminar
Continuous limits of generalized pentagram maps

TEACHING EXPERIENCE

- Instructor**, Yale University 2021–present
- Spring 2025 MATH 111: Introduction to Functions and Calculus II (*scheduled*)
- Fall 2024 MATH 120: Calculus of Functions of Several Variables
- Fall 2023 MATH 120: Calculus of Functions of Several Variables
- Fall 2022 MATH 115: Calculus of Functions of One Variable II
- Fall 2021 MATH 115: Calculus of Functions of One Variable II
- Teaching Assistant**, Yale University 2019–20
- Fall 2020 MATH 230: Vector Calculus and Linear Algebra I
- Fall 2019 MATH 115: Calculus of Functions of One Variable II
◦ coach (i.e. group tutor)
- Teaching Assistant**, University of Toronto 2016–19
- 2018–19 MAT137: Calculus
- 2017–18 MAT137: Calculus
- 2016–17 MAT137: Calculus

ADDITIONAL PEDAGOGICAL TRAINING

- May 2025 (expected) Certificate of College Mathematics Teaching Preparation
Program offered jointly by the Yale Math Department and the Poorvu Center for Teaching and Learning

MENTORSHIP

Directed Reading Program (Yale)

- Fall 2024 Project topic: *Knot invariants*
- Fall 2022 Project topic: *Knots and physics*

RECENT CONFERENCES & WORKSHOPS

- May 2024 *Geometric, Algebraic, and Physical structures around the moduli of Meromorphic Quadratic Differentials*
Simons Center for Geometry and Physics
- June 2023 *Complex Lagrangians, Integrable Systems, and Quantization*
University of Oxford
- May 2023 *Higgs bundles, character varieties and higher Teichmüller spaces*
ICMAT (at Miraflores de la Sierra, Madrid)
- June 2022 *Geometric Structures (re)United*
University of Illinois at Chicago
- May 2022 *On the crossroads of algebra, geometry and physics*
Yale University

SERVICE

- 2023–present Co-organizer of the Directed Reading Program (Yale)
Matched undergraduates to reading projects with graduate student mentors
- Fall 2020 Co-organizer of the Graduate Student Seminar (Yale)