

# Nathan R.T. Lesnevich

## PERSONAL INFORMATION

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## EDUCATION

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MAY 2024 Ph.D in Mathematics, **Washington University in St. Louis (WUSTL)**, St. Louis MO  
Thesis: Splines on Cayley Graphs of the Symmetric Group.  
| Advisors: Assoc. Prof. Martha Precup  
| Prof. John Shareshian

MAY 2021 A.M. in Mathematics, **Washington University in St. Louis (WUSTL)**, St. Louis MO

MAY 2019 B.S. In Mathematics (*magna cum laude*), **Bucknell University**, Lewisburg PA  
Pure Mathematics concentration, additional fulfillment of B.A. in Computer Science.  
Thesis: Positivity Among  $P$ -Partition Generating Functions  
| Advisor: Prof. Peter McNamara

## PUBLICATIONS

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3. Lesnevich, N.R.T, *Splines on Cayley Graphs of the Symmetric Group*. 2024. (submitted)  
[arxiv:2401.14380]
2. Lesnevich, N.R.T. *Hook-shape immanant characters from Stanley-Stembridge characters*.  
Algebraic Combinatorics, Volume 7 (2024) no. 1, pp. 137-157. [arXiv:2304.05285].
1. Lesnevich, N.R.T., McNamara, P.R.W., *Positivity Among  $P$ -partition Generating Functions*.  
Annals of Combinatorics. 26, 171-204 (2022). [arxiv:2006.10087]

## GRANTS

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2022-3 | Prepared and received NSF conference grant DMS-2245927 (PI: Martha Precup)  
*Graduate Student Combinatorics Conference 2023*  
Co-written with small group of other graduate students

## CONFERENCES AND SEMINARS

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### Organization

Spring 2025 | Special Session on Combinatorics and Lie Theory  
AMS Spring Central Sectional Meeting  
University of Kansas

Spring 2023 | Co-Organizer Graduate Student Combinatorics Conference 2023  
*Grant Proposal Writing, Administrative Duties, etc.*  
Co-wrote and received NSF conference grant DMS-2245927.

2022-2023 | Co-Organizer, WUSTL Combinatorics Seminar  
*Bi-weekly seminar.*

### Speaking

Spring 2024 | Poster, Enumerative and Algebraic Combinatorics (at UFL)  
*Splines on Cayley Graphs of the Symmetric Group,*

Fall 2023 | KU Combinatorics Seminar  
*Splines on Cayley Graphs of the Symmetric Group, Nov 3*

Summer 2023 | Short Talk, Schubert Conference (at UIUC)  
*Splines on Cayley Graphs of the Symmetric Group, June 20*

Spring 2023 | Poster, AlGeCom-XXIII

- | *Splines on Cayley Graphs of the Symmetric Group*, Apr 15
- Spring 2023* | Graduate Online Combinatorics Colloquium  
*Splines on Cayley Graphs of the Symmetric Group*, Mar 8
- Spring 2023* | Dartmouth Combinatorics Seminar  
*Splines on Cayley Graphs of the Symmetric Group*, Feb 21
- Spring 2023* | WUSTL Combinatorics Seminar  
*Splines on Cayley Graphs of the Symmetric Group*, Feb 20
- Fall 2022* | AMS Fall Eastern Sectional, Special Session on Geometric Aspects of Algebraic Combinatorics.  
*A Proof of an Immanant Conjecture for Hook Partitions*
- Spring 2022* | Short Talk, Graduate Student Combinatorics Conference 2022  
*Hook-Partition Immanant Characters from Stanley-Stembridge Characters*

## Recent Conference Attendance

- Spring 2024* | BIRS Workshop: Homological Perspectives on Splines, at UBC Kelowna
- Summer 2023* | FPSAC 2023, at UC Davis
- Summer 2023* | Schubert Calculus Summer School, at UIUC
- Spring 2023* | 8th Lake Michigan Workshop on Combinatorics and Graph Theory, at the University of Notre Dame
- Fall 2022* | ALGeCom-XXII, at UIUC.
- Fall 2022* | BIRS: Interactions between Hessenberg Varieties, Chromatic Functions, and LLT Polynomials (Virtual Participant)
- Spring 2022* | ISM Discovery School: Geometry and Combinatorics of Hessenberg Varieties, at UQAM.

## TEACHING

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- FALL 2024 | Instructor, Oklahoma State University Dept. of Mathematics  
*Differential Equations*
- FALL 2023 | Instructor, Graduate Reading Program, WUSTL Dept. of Mathematics  
*Representation Theory*
- 2020-2023 | Graduate Teaching Assistant, WUSTL Dept. of Mathematics  
*Discussion Section Leading, Grading*  
Calculus III (FL20,SP23) and II (SP21), and Differential Equations (FL21-FL22).
- SUMMER 2022 | Finite Math (Math 220), WUSTL Dept. of Mathematics  
*Sole instructor of record.*
- SPRING 2022 | Co-Instructor, Graduate Reading Program, WUSTL Dept. of Mathematics  
*Lie Algebras*
- FALL 2021 | Co-Instructor, Graduate Reading Program, WUSTL Dept. of Mathematics  
*The Art of Counting Lattice Points: Introduction to Ehrhart Theory*
- SPRING 2021 | Co-Instructor, Graduate Reading Program, WUSTL Dept. of Mathematics  
*Young Tableaux*
- AUG-MAY 2016-19 | Help Session Leader, Bucknell Dept. of Mathematics  
*Group Tutoring, Calculus 1-3*

## OUTREACH

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SUMMER 2024	Research advisor, Freiwald Scholars Summer Research Program, WUSTL Department of Mathematics <i>Co-advised several undergraduate research projects</i>
APR 2024	Graduate Student Assistant, Sonia Kovalevsky Day at Washington University in St. Louis <i>Cryptography Activity Organizer</i>
AUG 2021-MAY 2024	Organizer, Graduate Reading Program, WUSTL Dept. of Mathematics <i>Recruitment, Organizational, and Administrative Duties</i>
SEPT 24 2023	Washington University Math Circle Speaker, "Cryptography: The math of making and breaking codes"

## SCHOLARSHIPS AND CERTIFICATES

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AC. YEAR 2022-2023	Robert H. McDowell Teaching Award. <i>Department graduate teaching award, 1 annual awardee.</i>
AC. YEAR 2021-2022	Brian Blank Teaching Award for 3rd Year Graduate Student. <i>Department graduate award, 1-2 annual awardees.</i>
FALL-SPRING 2020-21	David B. Emmes Endowed Scholarship.
FALL-SPRING 2015-19	John C. Hoover Scholarship for Students in Mathematics
FALL-SPRING 2015-19	Bucknell Presidential Fellowship <i>4 year half-tuition merit scholarship with research mentorship.</i>
FALL-SPRING 2015-19	Bucknell University's Deans List
SUMMER 2018	John C. Hoover Summer Research Funding Recipient
SPRING 2017	Pi Mu Epsilon Mathematics Honors Society Member
SUMMER 2017	Bucknell Program for Undergraduate Research Award Recipient