

## Education

- 2015 – 2019 **PhD in Mathematics**, *University of Vienna*, passed with distinction  
Thesis Refined counting of alternating sign arrays  
Adviser Ilse Fischer
- 2014 – 2015 **MsC in Mathematics**, *University of Vienna*, passed with distinction  
Thesis Height functions and the ring of adeles over a global field  
Adviser Joachim Schwermer
- 2010 – 2014 **BsC in Mathematics**, *University of Vienna*, passed with distinction  
Thesis 1 Algebraic Stars, Adviser: Herwig Hauser  
Thesis 2 Clifford Algebren, Adviser: Joachim Schwermer
- 2010 – 2014 **Studies in Physics**, *University of Vienna*
- 2010 **Matura**, *Oberstufen Realgymnasium der Diözese Linz, Austria*

## Academic Employment

- 2021 – **PostDoc Position**, *University of Vienna, Austria*  
2020 **External lecturer**, *McGill University, Canada*  
2020 **External lecturer**, *Université du Québec à Montréal, Canada*
- 2019 – 2021 **PostDoc Position**, *Université du Québec à Montréal, Canada*
- 2015 – 2019 **PhD Position**, *University of Vienna, Austria*
- 2015 – 2017 **External lecturer**, *University of Vienna, Austria*
- 2012 – 2014 **Teaching assistant**, *University of Vienna, Austria*

## Research interests

Algebraic, enumerative and bijective combinatorics and its relation to algebra, representation theory, probability theory, geometry and physics.

## Research Grants

- 2023 – 2027 **Principal Investigator of the Stand-Alone project**, P 36863, *Symmetric polynomials and (arrowed) monotone triangles*, Austrian Science Fund (FWF), €638.641

2019 – 2022 **Principal Investigator of the Erwin Schrödinger Fellowship**, J 4387, *Symmetric functions and alternating sign matrices*, Austrian Science Fund (FWF), €164.330

2021 **Principal Investigator of a Mitacs Globalink Research Internship**, *Missing bijections for alternating sign matrices and related combinatorial objects*, Funding for two international students within a summer research project

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## Awards

2019 **Award of Excellence - Austrian State Prize for exceptional dissertation**, *Staatspreis für die besten Dissertationen*

2015 **Honorary prize - Austrian State Prize for exceptional graduation**, *Würdigungspreis-Staatspreis für die besten Diplom- und Masterabschlüsse*

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## Publications (peer-reviewed)

- [1] F. Aigner. Fully packed loop configurations: polynomiality and nested arches. *Elect. J. Combin.*, 25(1):P1.27, 23pp., 2018.
- [2] F. Aigner. Refined enumerations of alternating sign triangles. *Adv. Appl. Math.*, 111:101921, 28, 2019.
- [3] F. Aigner. A new determinant for the  $Q$ -enumeration of alternating sign matrices. *J. Combin. Theory Ser. A*, 180:105412, 2021.
- [4] F. Aigner and G. Frieden.  $qRSt$ : A probabilistic Robinson–Schensted correspondence for Macdonald polynomials. *Int. Math. Res. Not. IMRN*, 2022(17):13505–13568, 2022.
- [5] S. P. Albion, I. Fischer, H. Höngesberg, and F. Schreier-Aigner. Skew symplectic and orthogonal characters through lattice paths. *arXiv:2305.11730*, accepted in *European J. Combin.*, 2024+.
- [6] I. Fischer and F. Schreier-Aigner. The relation between alternating sign matrices and descending plane partitions:  $n+3$  pairs of equivalent statistics. *Adv. Math.*, 413:108831, 2023.
- [7] I. Fischer and F. Schreier-Aigner.  $(-1)$ -Enumeration of arrowed Gelfand–Tsetlin patterns. *arXiv:2302.04164*, accepted in *European J. Combin.*, 2024+.
- [8] F. Schreier-Aigner. Fully complementary higher dimensional partitions. *Ann. Comb.*, 2024.

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## Preprints (non-peer-reviewed)

- [9] F. Aigner and I. Fischer. Alternating sign matrices and totally symmetric plane partitions. *arXiv:2201.13142*, 2022.
- [10] B. Dequêne, G. Frieden, A. Iraci, F. Schreier-Aigner, H. Thomas, and N. Williams. Charmed roots and the Kroweras complement. *arXiv:2212.14831*, 2022.

- [11] G. Frieden and F. Schreier-Aigner. A probabilistic dual RSK correspondence for Macdonald polynomials. *arXiv:2403.16243*, 2024.
- [12] F. Schreier-Aigner. Growth diagram proofs for Littlewood type identities. *arXiv:2404.04014*, 2024.

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## Conference proceedings (peer-reviewed)

- [13] F. Aigner. Fully packed loop configurations: polynomiality and nested arches (extended abstract). *DMTCS proc. BC*, pages 1–12, 2016. FPSAC 2016.
- [14] F. Aigner. Refind enumerations of alternating sign triangles (extended abstract). *Sém. Lothar. Combin.*, 78B:Art. 60, 12pp., 2017. FPSAC 2017.
- [15] F. Aigner, I. Fischer, M. Konvalinka, P. Nadeau, and V. Tewari. Alternating sign matrices and totally symmetric plane partitions (extended abstract). *Sém. Lothar. Combin.*, 84B:Art. 77, 2020. FPSAC 2020.
- [16] F. Aigner and G. Frieden. qRSt: a probabilistic Robinson-Schensted correspondence for Macdonald polynomials (extended abstract). *Sém. Lothar. Combin.*, 85B:Art. 79, 12pp., 2021 FPSAC 2021.
- [17] B. Dequêne, G. Frieden, A. Iraci, F. Schreier-Aigner, H. Thomas, and N. Williams. Charmed roots and the Kroweras complement (extended abstract). *to appear in Sém. Lothar. Combin.*, 2024 FPSAC 2024.
- [18] I. Fischer, H. Höngesberg, and F. Schreier-Aigner. Alternating sign matrices and descending plane partitions: a linear number of equivalent statistics (extended abstract). *Sém. Lothar. Combin.*, 89B:Art. 69, 12pp., 2023 FPSAC 2023.
- [19] G. Frieden and F. Schreier-Aigner. A probabilistic dual RSK correspondence for Macdonald polynomials (extended abstract). *to appear in Sém. Lothar. Combin.*, 2024 FPSAC 2024.

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## Software

- 2022 **sym**: A Mathematica package for working with symmetric polynomials and functions, <https://homepage.univie.ac.at/florian.schreier-aigner/software.html>.

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## Student Supervision

### PhD Students

- 2024 – Julia Hörmayer.

### Master Students

- 2024 – Christian Theiner.

### Bachelor Students

- 2023 – 2024 Theresa Sauer, “*Kombinatorische Spiele - Nim*”.
- Miljana Stanojlovic, “*Robinson Schensted Knuth Algorithmus*”.

- 2023 Marlena Felicitas Dietersdorfer, *“Eine Analyse des Robinson Schensted (Knuth) Algorithmus sowie des Schützenberger Algorithmus”*.  
 Mathias Maireder, *“The hook length formula”*.
- 2022 Christian Theiner, *“Boxformel für Planare Partitionen”*.

### Summer Research Internships

- Summer 2021 Farzan Byramji, Xinyu Gao (Mitacs Globalink Research Internship)  
*Missing bijections for alternating sign matrices and related combinatorial objects.*

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### Talks

- Jul 2024 36th Formal Power Series and Algebraic Combinatorics, Bochum, Germany.
- Apr 2024 Seminar on Combinatorics, Lie Theory, and Topology, Pisa, Italy.
- Jan 2024 Seminar “Algebra and Number Theory”, University of Vienna, Austria.
- Sep 2023 Mathematical and Physical Sciences Research Seminar, Ahmedabad University, India.
- Sep 2023 90th Séminaire Lotharingien de Combinatoire, Bad Boll, Germany.
- May 2023 Arbeitsgemeinschaft Diskrete Mathematik, Technical University Vienna, Austria.
- Sep 2022 88th Séminaire Lotharingien de Combinatoire, Strobl, Austria.
- Jun 2022 Algorithmic and Enumerative Combinatorics, Technical University Vienna, Austria.
- Apr 2022 87th Séminaire Lotharingien de Combinatoire, Saint-Paul-en-Jarez, France.
- Mar 2022 Combinatorial Coworkspace 2022, Kleinwalsertal, Austria.
- Mar 2022 Arbeitsgemeinschaft Diskrete Mathematik, Technical University Vienna, Austria.
- Nov 2020 Arbeitsgemeinschaft Diskrete Mathematik, Technical University Vienna, Austria.
- Oct 2020 Algebraic Combinatorics Seminar, University of Waterloo, Canada.
- Oct 2020 Dartmouth Combinatorics Seminar, Dartmouth College, USA.
- Mar 2020 Applied Algebra Seminar, York University, Canada.
- Oct 2019 Séminaire de combinatoire du LaCIM, Université du Québec à Montréal, Canada.
- Nov 2018 PhD Colloquium, University of Vienna, Austria.
- Oct 2018 Séminaire Combi du Plateau de Saclay, École polytechnique, France.
- Jul 2018 4th Algorithmic and Enumerative Combinatorics Summer School, Research Institute for Symbolic Computation, Austria.
- Mar 2018 Vienna Doctoral School Student Retreat, Zwettl, Austria.
- May 2017 SFB-Colloquium, Johannes Kepler University Linz, Austria.
- Apr 2017 Vienna Doctoral School Student Retreat, Strobl, Austria.
- Sep 2016 77th Séminaire Lotharingien de Combinatoire, Strobl, Austria.

Apr 2016 Arbeitsgemeinschaft Diskrete Mathematik, Technical University Vienna, Austria.

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## Poster presentations

- Jul 2023 35th Formal Power Series and Algebraic Combinatorics, UC Davis, USA.
- Jun 2021 Lattice Paths, Combinatorics and Interactions, Online / CIRM, France.
- Jul 2020 32th Formal Power Series and Algebraic Combinatorics, Online.
- Sep 2017 Interscience - First interdisciplinary symposium of the Vienna Doctoral Schools, University of Vienna, Austria.
- Jul 2017 29th Formal Power Series and Algebraic Combinatorics, Queen Mary University of London, United Kingdom.
- Jan 2017 Introductory school at CIRM, Centre International de Rencontres Mathématiques, France.
- Jul 2016 28th Formal Power Series and Algebraic Combinatorics, Simon Fraser University, Canada.

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## Teaching

### Université du Québec à Montréal

2020 Séminaire de combinatoire: Plane Partitions

### McGill University

2020 Math133: Linear Algebra and Geometry

### University of Vienna

- 2024 Exercise Class for “Diskrete Mathematik und Theoretische Informatik”
- 2017 Exercise Class for “Mathematics teaching studies - elementary geometry and vector algebra”
- 2016 Exercise Class for “Graph theory and discrete optimization”
- 2015 Exercise Class for “Number Theory”

### Austrian Mathematical Olympiad

2022 – Lecturer at the national training camp.

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## Administrative activities

- 2022 – Member of the Faculty Conference (faculty internal advisory board), University of Vienna.
- 2021 Organiser, 18th Combinatorial Algebra meets Algebraic Combinatorics, Online.
- 2019 – 2021 Organiser, Séminaire de combinatoire du LaCIM, Université du Québec à Montréal, Montréal.
- 2018 – 2019 Organiser, Combinatorics Working Seminar, University of Vienna.
- 2017 – 2018 Student speaker of the Vienna Doctoral School Mathematics.
- 2017 Organiser, Interdisciplinary symposium Interscience (200 participants), University of Vienna.

## Peer review activities

- Advances in Applied Mathematics
- Annales de la Faculte des Sciences de Toulouse
- Annals of Combinatorics
- Combinatorial Theory
- Discrete Mathematics
- Electronic Journal of Combinatorics
- Formal Power Series and Algebraic Combinatorics
- Journal of Integer Sequences
- Mathematical Reviews