

NICHOLAS WILLIAMS

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EDUCATION

PhD in Mathematics

University of Leicester

Supervisor: Sibylle Schroll

September 2018 – present

Graduate Diploma in Quantitative Economics

Birkbeck, University of London

Distinction

October 2017 – June 2018

MMathPhil in Mathematics & Philosophy

Worcester College, Oxford

Double First Class Honours

October 2012 – June 2016

PUBLICATIONS

(With Jordan McMahon.) The combinatorics of tensor products of higher Auslander algebras of type A . *Glasgow Mathematical Journal*. To appear.

PREPRINTS

The first higher Stasheff–Tamari orders are quotients of the higher Bruhat orders. [arXiv:2012.10371](#), 2020.

New interpretations of the higher Stasheff–Tamari orders. [arXiv:2007.12664](#), 2020.

PRIZES AND SCHOLARSHIPS

Gibbs prize for Mathematics & Philosophy

University of Oxford

For top performance in Mathematics papers

2016

Gibbs prize for Mathematics & Philosophy

University of Oxford

For top performance in Mathematics papers

2015

Academic scholarship

Worcester College, Oxford

2013

Honorary scholarship

Westminster School

2007

INVITED TALKS

An algebraic interpretation of the higher Stasheff–Tamari orders

International Conference on Representations of Algebras

Selected to give talk by scientific committee based on research snapshot

November 2020

CONTRIBUTED TALKS

- Vertex figures of cubillages of cyclic zonotopes** *November 2020*
London Mathematical Society Graduate Student Meeting
- Nice triangulations of cyclic polytopes** *June 2019*
London Mathematical Society Graduate Student Meeting
- Higher analogues of Grassmannian clusters** *April 2019*
Maurice Auslander Distinguished Lectures and International Conference
- Higher analogues of Grassmannian clusters** *April 2019*
New Connections and Directions in Representation Theory
University of Leeds
- Higher analogues of Grassmannian clusters** *April 2019*
Tropical Geometry meets Representation Theory
University of Leicester

SEMINAR TALKS

- KP solitons** *October 2020*
PhD seminar
University of Leicester
- KP solitons and the higher Stasheff–Tamari orders II** *October 2020*
Working seminar in algebra and geometry
University of Leicester
- KP solitons and the higher Stasheff–Tamari orders I** *September 2020*
Working seminar in algebra and geometry
University of Leicester
- Triangulations of odd-dimensional cyclic polytopes** *June 2020*
PhD seminar
University of Leicester
- Fukaya categories and higher Auslander algebras of type A** *April 2020*
Working seminar in algebra and geometry
University of Leicester
- Cluster categories and crossing conditions** *February 2020*
Working seminar in algebra and geometry
University of Leicester
- An algebraic interpretation of the higher Stasheff–Tamari orders** *November 2019*
Pure mathematics seminar
University of East Anglia
- An algebraic interpretation of the higher Stasheff–Tamari orders** *November 2019*
Working seminar in algebra and geometry
University of Leicester
- Nice triangulations of cyclic polytopes** *October 2019*
PhD seminar
University of Leicester

Higher analogues of Grassmannian clusters*April 2019*

Algebra and number theory seminar

University of Graz

Alternating strand diagrams, plabic graphs, and Grassmannians*January 2019*

PhD seminar

University of Leicester

Grassmannians*October 2018*

Working seminar in algebra and geometry

University of Leicester

POSTERS

New interpretations of the higher Stasheff–Tamari orders*January 2021**Combinatorial algebra meets algebraic combinatorics*

Université du Québec à Montréal (online)

An algebraic interpretation of the higher Stasheff–Tamari orders*November 2020**International Conference on Representations of Algebras*

“Research snapshot”

New interpretations of the higher Stasheff–Tamari orders*September 2020**Virtual Heidelberg Laureate Forum***Representation theory and Grassmannians***March 2019**STEM for Britain*

Poster competition at UK Parliament

GRANTS

London Mathematical Society Scheme 8

April 2020

Postgraduate research conference grants

Categorifications in Representation Theory conference organised with Aran Tattar

GBP 2,500

ORGANISATION

Categorifications in Representation Theory conference*September 2020*

Co-organised with Aran Tattar

Online

Mathematics PhD seminar*September 2019 – August 2020*

University of Leicester

Representation theory and mirror symmetry conference*May 2019*

Local organising committee

University of Leicester

RESEARCH STAYS

University of Graz

April 2019

Visiting: Jordan McMahon

Host: Karin Baur

1 week

REVIEWING

zbMATH

September 2020 – present

REFEREEING

Journal of Algebraic Combinatorics

TEACHING

Calculus & Analysis

October 2020 – December 2020

Class teacher

University of Leicester

Second-year algebra

January 2020 – April 2020

Class teacher

University of Leicester

Calculus & Analysis

October 2019 – April 2020

Class teacher

University of Leicester

Elements of Number Theory

October 2019 – December 2019

Class teacher

University of Leicester

Calculus & Analysis

January 2019 – March 2019

Class teacher

University of Leicester

COMMITTEE ROLES

Mathematics & Philosophy Representative

2015 – 2016

Joint Consultative Committee with Undergraduates

University of Oxford

Undergraduate Representative

2015 – 2016

Joint Committee for Mathematics and Philosophy

University of Oxford

Undergraduate Representative

2015 – 2016

Mathematics Department Art Committee

University of Oxford

OUTREACH

University of Leicester Representative

November 2018, 2019, 2020

Research in the UK afternoon

University of Cambridge

Student Helper

March 2013, 2014, 2015

Oxford and Cambridge Student Conferences

OTHER

London Mathematical Society
Associate member

June 2019 – present

Programming Python, Sage, Maple, node.js
 Git

Languages

	(CEFR levels)
English	Native
German	B1
French	B1
Spanish	A1
Japanese	A1

OTHER EMPLOYMENT

Enders Analysis
Research analyst, Telecoms

November 2016 – August 2018