

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

The combinatorics of tensor products of higher Auslander algebras of type A .

(With Jordan McMahon.)

Glasgow Mathematical Journal. To appear.

July 2020

PREPRINTS

The two higher Stasheff–Tamari orders are equal.

arXiv:2106.01050

June 2021

The first higher Stasheff–Tamari orders are quotients of the higher Bruhat orders.

arXiv:2012.10371

December 2020

New interpretations of the higher Stasheff–Tamari orders.

arXiv:2007.12664

July 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

- The higher Stasheff–Tamari orders in representation theory** *April 2021*
Paris algebra seminar
Institut de Mathématiques de Jussieu-Paris Rive Gauche
- New interpretations of the higher Stasheff–Tamari orders** *March 2021*
Diskrete Mathematik / Geometrie Forschungsseminar
TU Berlin
- The Tamari lattice in representation theory** *March 2021*
Junior Algebra Colloquium
University of Bristol
- 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 Pure mathematics seminar University of East Anglia	<i>November 2019</i>
An algebraic interpretation of the higher Stasheff–Tamari orders Working seminar in algebra and geometry University of Leicester	<i>November 2019</i>
Nice triangulations of cyclic polytopes PhD seminar University of Leicester	<i>October 2019</i>
Higher analogues of Grassmannian clusters Algebra and number theory seminar University of Graz	<i>April 2019</i>
Alternating strand diagrams, plabic graphs, and Grassmannians PhD seminar University of Leicester	<i>January 2019</i>
Grassmannians Working seminar in algebra and geometry University of Leicester	<i>October 2018</i>

POSTERS

An algebraic interpretation of the higher Stasheff–Tamari orders <i>Advances in Representation Theory of Algebras</i> Online	<i>May 2021</i>
New interpretations of the higher Stasheff–Tamari orders <i>Combinatorial algebra meets algebraic combinatorics</i> Université du Québec à Montréal (online)	<i>January 2021</i>
An algebraic interpretation of the higher Stasheff–Tamari orders <i>International Conference on Representations of Algebras</i> “Research snapshot”	<i>November 2020</i>
New interpretations of the higher Stasheff–Tamari orders <i>Virtual Heidelberg Laureate Forum</i>	<i>September 2020</i>
Representation theory and Grassmannians <i>STEM for Britain</i> Poster competition at UK Parliament	<i>March 2019</i>

GRANTS

London Mathematical Society Scheme 8 Postgraduate research conference grants <i>Categorifications in Representation Theory</i> conference organised with Aran Tattar GBP 2,500	<i>April 2020</i>
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ORGANISATION

Köln Algebra and Representation Theory seminar

April 2020 – present

Co-organiser

Online

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 Joint Consultative Committee with Undergraduates University of Oxford	<i>2015 – 2016</i>
Undergraduate Representative Joint Committee for Mathematics and Philosophy University of Oxford	<i>2015 – 2016</i>
Undergraduate Representative Mathematics Department Art Committee University of Oxford	<i>2015 – 2016</i>

OUTREACH

University of Leicester Representative Research in the UK afternoon University of Cambridge	<i>November 2018, 2019, 2020</i>
Student Helper Oxford and Cambridge Student Conferences	<i>March 2013, 2014, 2015</i>

OTHER

London Mathematical Society Associate member	<i>June 2019 – present</i>
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	<i>November 2016 – August 2018</i>
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