NICHOLAS WILLIAMS

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EDUCATION

PhD in Mathematics
University of Leicester   *September 2018 – present*
University of Cologne   *April 2021 – present*
Supervisor: Sibylle Schroll

Graduate Diploma in Quantitative Economics   *October 2017 – June 2018*
Birkbeck, University of London
Distinction

MMathPhil in Mathematics & Philosophy   *October 2012 – June 2016*
Worcester College, Oxford
Double First Class Honours

EMPLOYMENT

University of Tokyo   *January 2022 – January 2023*
JSPS London Short Term Predoctoral Research Fellow
Host: Professor Osamu Iyama

King's College London   *September 2021 – December 2021*
Graduate Teaching Assistant

London School of Economics   *September 2021 – December 2021*
Guest Teacher

University of Leicester   *January 2019 – December 2020*
Guest Teacher

PUBLICATIONS

The combinatorics of tensor products of higher Auslander algebras of type A.   *2021*
(With Jordan McMahon.)
Glasgow Mathematical Journal, 63(3), pp. 526–546.

PREPRINTS

The two higher Stasheff–Tamari orders are equal.   *June 2021*
`arXiv:2106.01050`

The first higher Stasheff–Tamari orders are quotients of the higher Bruhat orders.   *December 2020*
`arXiv:2012.10371`

New interpretations of the higher Stasheff–Tamari orders.   *July 2020*
`arXiv:2007.12664`

PRIZES AND SCHOLARSHIPS

Gibbs prize for Mathematics & Philosophy   *2016*
University of Oxford
For top performance in Mathematics papers

Gibbs prize for Mathematics & Philosophy   *2015*
University of Oxford
For top performance in Mathematics papers

Academic scholarship   *2013*
Worcester College, Oxford

Honorary scholarship   *2007*
Westminster School

INVITED TALKS

An algebraic interpretation of the higher Stasheff–Tamari orders   *November 2020*
International Conference on Representations of Algebras
Selected to give talk by scientific committee based on research snapshot
Via BigBlueButton

CONTRIBUTED TALKS

The higher Stasheff–Tamari orders on triangulations of cyclic polytopes   *June 2021*
London Mathematical Society Graduate Student Meeting
Via Zoom

Vertex figures of cubillages of cyclic zonotopes   *November 2020*
London Mathematical Society Graduate Student Meeting
Via Zoom

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 two higher Stasheff–Tamari are equal   *May 2021*
Working seminar in algebra and geometry
University of Cologne
Via Zoom

The higher Stasheff–Tamari orders in representation theory *April 2021*
Paris algebra seminar
Institut de Mathématiques de Jussieu-Paris Rive Gauche
Via Zoom

New interpretations of the higher Stasheff–Tamari orders *March 2021*
Diskrete Mathematik / Geometrie Forschungsseminar
TU Berlin
Via Zoom

The Tamari lattice in representation theory *March 2021*
Junior Algebra Colloquium
University of Bristol
Via Zoom

KP solitons *October 2020*
PhD seminar
University of Leicester
Via Microsoft Teams

KP solitons and the higher Stasheff–Tamari orders II *October 2020*
Working seminar in algebra and geometry
University of Leicester
Via Zoom

KP solitons and the higher Stasheff–Tamari orders I *September 2020*
Working seminar in algebra and geometry
University of Leicester
Via Zoom

Triangulations of odd-dimensional cyclic polytopes *June 2020*
PhD seminar
University of Leicester
Via Blackboard Collaborate

Fukaya categories and higher Auslander algebras of type A *April 2020*
Working seminar in algebra and geometry
University of Leicester
Via Zoom

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

An algebraic interpretation of the higher Stasheff–Tamari orders *June 2021*
Young Researchers in Mathematics
Online
Winner of 1$^{\text{st}}$ prize in poster competition

An algebraic interpretation of the higher Stasheff–Tamari orders *May 2021*
Advances in Representation Theory of Algebras
Online

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"
Online

New interpretations of the higher Stasheff–Tamari orders *September 2020*
Virtual Heidelberg Laureate Forum
Online

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

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

Real analysis   *September 2021 – December 2021*
Class teacher (online)
King's College London

MA107: Quantitative methods   *September 2021 – December 2021*
Class teacher
London School of Economics

Calculus & Analysis   *October 2020 – December 2020*
Class teacher (online)
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 *June 2019 – present*
Associate member

Programming   Python, Sage, Maple, node.js
Git

Languages

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

OTHER EMPLOYMENT

Enders Analysis *November 2016 – August 2018*
Research analyst, Telecoms