

VERONICA KELSEY

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EDUCATION

PhD Mathematics - University of St Andrews - 2018 - Present

Supervised by Prof Colva M. Roney-Dougall and Dr Martyn Quick.

My research is on characterising when a maximal subgroup of a finite simple group is a maximal co-clique in the group's generating graph. Currently focusing on the case of alternating groups.

MMath Mathematics - The University of Manchester - 2014 - 2018

Average - 98%

Dissertation - Mathieu groups and Chamber Graphs - Grade 98% - Supervised by Prof Peter Rowley

Third Year Project - Representations of Quivers - Grade 89% - Supervised by Prof Mike Prest

PUBLICATIONS

M₂₄ Orbits of Octad Triples (with P.J. Rowley)

Graphs and Combinatorics, Volume 34, (2018) Issue 6, pp 1429 - 1443

Chamber Graphs of some Geometries that are Almost Buildings (with P.J. Rowley)

Innovations in Incidence Geometry, 17 (2019), no. 3, 189200.

A Note on Involution Centralizers in Black Box Groups (with P.J. Rowley)

Journal of Group Theory, to appear

Chamber Graphs of Minimal Parabolic Sporadic Geometries (with P.J. Rowley)

Submitted

RESEARCH EXPERIENCE

London Mathematical Society Undergraduate Researcher 2017

An LMS funded summer research project with Prof Peter J Rowley. We looked at certain finite simple groups and the combinatorial objects they act upon. This work resulted in two published papers.

AWARDS AND SCHOLARSHIPS

Outstanding Academic Achievement Award 2018 - Presented to 0.5% of the Manchester student population

Institute of Mathematics and its Applications (IMA) Prize 2018 - Final year outstanding project

President's Doctoral Scholar Award (Manchester) 2018/19 - As part of a PhD offer (declined)

Nominated for The Distinguished Achievement Award 2018 - Undergraduate of the Year

Fourth Year Scholarship 2017 - Tuition fee waiver

LMS Undergraduate Research Bursary 2017 - Funding for a summer research project

BP achievement award 2016 - For an essay on Big Data

Dalton scholarship 2016 - Academic achievement in 2nd year

Dalton scholarship 2015 - Academic achievement in 1st year

Manchester Bursary 2014 - Academic achievement at A-level

TALKS

Maximal Cocliques in The Generating Graph of S_n

Post Graduate Group Theory Conference, Birmingham, 2019

Octad Triples

Edinburgh Mathematical Society Postgraduate Meeting, The Burn House, 2019

The Generating Graph and Maximal Cocliques

Algebra and Combinatorics Seminar, University of St Andrews, 2019

Maximal Subgroups and Maximal Cocliques

Postgraduate Interdisciplinary Mathematics Symposium, The Burn House, 2019

A Brief Introduction to M_{12}

Pure Postgraduate Seminar, St Andrews, 2018

The Kitten, The MINIMOG and M_{12}

Pure Postgraduate Seminar, Manchester, 2018

Mathieu Groups and Chamber Graphs

Masters thesis talk, The University of Manchester, 2018

Imprimitive Wreath Products

Finite Groups Study Group, The University of Manchester, 2017

TEACHING

I have attended a Mental Health Training Day which provides staff with practical information on how to deal with student situations involving mental ill health.

Linear Maths tutor, St Andrews - 2019

Combinatorics and Probability tutor, St Andrews - 2019

Abstract Algebra tutor, St Andrews - 2019

Linear Algebra tutor, Manchester - 2018

Foundations of pure mathematics tutor, Manchester -2017

Linear Algebra PASS leader, Manchester, 2016

Sequences and Series PASS leader, Manchester, 2016

Introduction to Statistics, PASS leader PASS leader, Manchester, 2016

Probability 1 PASS leader, Manchester, 2015

Sets, Numbers and Functions PASS leader, Manchester, 2015

PASS is a University of Manchester scheme where students organise and lead twice weekly tutorials for first years.

CONFERENCES ATTENDED

Post Graduate Group Theory Conference Birmingham, 2019

EWM-EMS Summer School Institut Mittag-Leffler, June 2019

Edinburgh Mathematical Society Postgraduate Meeting The Burn House, May 2019

North British Geometric Group Theory Seminar St Andrews, May 2019

Groups, Generalisations and Applications St Andrews, May 2019

Workshop on Groups, Generalisations and Applications Aberdeen, January 2019

The Functor Categories for Groups on Graphs and groups Lancaster, December 2018

The Manchester-Birmingham-London-Bristol “Triangle” on Finite Groups Manchester, May 2018

LMS Prospects in Mathematics Workshop - Reading, September 2017

OTHER ACTIVITIES

Postgraduate Intradisciplinary Mathematics Symposium Organiser - 2019/20

Pure Postgraduate Seminar convener - 2019/20

Topical Secretary for MathSoc - 2017/18

I organised and ran talks on interesting topics in maths for undergraduates and staff. This encouraged students' engagement with maths outside their studies. Talks were well attended with approximately 50 people at each talk and there was positive feedback from all participants.

REFERENCES

Prof Mike Prest - Project Supervisor
mike.prest@manchester.ac.uk

Prof Alexandre Borovik - Dissertation Marker
alexandre.borovik@manchester.ac.uk