

Veronica Kelsey \diamond CV

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Work and Education

- 2021 - 2027 **Heilbronn Research Fellow** The University of Manchester
My time is divided equally between university research and Heilbronn work
- 2018 - 2021 **PhD Mathematics** University of St Andrews
Supervisors: Prof Colva M. Roney-Dougall and Dr Martyn Quick
Thesis title: Base size and generating graphs of primitive permutation groups
- 2014 - 2018 **MMath Mathematics** The University of Manchester
Average: 98%
Dissertation: Mathieu groups and Chamber Graphs

Publications

- [1] **The relational complexity of linear groups acting on subspaces**
with S. Freedman and C.M. Roney-Dougall \diamond J. Group Theory (to appear)
- [2] **Root cycles in Coxeter groups**
with S. Hart and P. Rowley \diamond J. Group Theory (to appear)
- [3] **A note on rank 5 polytopes of M_{24}**
with R. Nicolaides and P.J. Rowley \diamond Innov. Incidence Geom (to appear)
- [4] **On the rank 5 polytopes of the Higman-Sims simple group**
with R. Nicolaides and P.J. Rowley \diamond Innov. Incidence Geom. 19 (2022), no. 4, 153–164.
- [5] **On relational complexity and base size of finite primitive groups**
with C.M. Roney-Dougall \diamond Pacific J. Math. 318 (2022), no. 1, 89–108.
- [6] **Maximal cocliques in the generating graphs of alternating and symmetric groups**
with C.M. Roney-Dougall \diamond Comb. Theory 2 (2022), no. 1, Paper No. 7, 21 pp.
- [7] **Generating finite Coxeter groups with elements of the same order**
with S.B. Hart and P.J. Rowley \diamond Turkish J. Math. 45 (2021), no. 6, 2623–2645.
- [8] **Chamber graphs of minimal parabolic sporadic geometries**
with P.J. Rowley \diamond Innov. Incidence Geom. 18 (2020), no. 1, 25–37.
- [9] **A note on involution centralizers in black box groups**
with P.J. Rowley \diamond J. Group Theory 23 (2020), no. 2, 287–297.
- [10] **Chamber graphs of some geometries that are almost buildings**
with P.J. Rowley \diamond Innov. Incidence Geom. 17 (2019), no. 3, 189–200.
- [11] **M_{24} orbits of octad triples**
with P.J. Rowley \diamond Graphs Combin. 34 (2018), no. 6, 1429–1443.
- [12] **A note on the rank 5 polytopes of M_{24}**
with R. Nicolaides and P.J. Rowley \diamond Innov. Incidence Geom. (to appear)
- [13] **The relational complexity of linear groups acting on subspaces**
with S.D. Freedman and C.M. Roney Dougall \diamond submitted
- [14] **Root cycles in Coxeter groups**
with S.B. Hart and P.J. Rowley \diamond submitted

Invited visits

- 2023 **CMI-HIMR Summer School in Probabilistic Group Theory** Teaching assistant
- 2022 **Young Group theorists workshop** Invited speaker and funded participant
- 2022 **MFO Research Visitor** Funded research visit at Oberwolfach
- 2022 **INI Research Visitor** Funded research visit at the Newton Institute, Cambridge
- 2020 **Research in “Pairs”** Funded research visit at Oberwolfach
- 2020 **INI Research Visitor** Funded research visit at the Newton Institute, Cambridge

Awards and Funding

- 2023 **HIMR small research grant** Funding to host a collaborator
- 2023 **MIMS funding** Funding to host a collaborator
- 2022 **LMS Research Reboot grant** Funding to host a collaborator
- 2018 **St Andrews PhD scholarship** Fees and stipend for 3 years of study
- 2018 **Outstanding Academic Achievement Award** Presented to 0.5% of Manchester students
- 2018 **IMA Prize 2018** Final year outstanding project award
- 2018 **Manchester President's Doctoral Scholar Award** As part of a PhD offer
- 2018 **Nominated for The Distinguished Achievement Award** Undergraduate of the Year
- 2017 **Fourth Year Scholarship** Tuition fee waiver
- 2017 **LMS Undergraduate Research Bursary** Funding for a summer research project
- 2016 **BP achievement award 2016** An essay competition on Big Data
- 2016 **Dalton scholarship** Academic achievement in second year
- 2015 **Dalton scholarship** Academic achievement in first year
- 2014 **Manchester Bursary** Academic achievement at A-level

Recent talks

- 2023 **Matroids and IBIS groups** Manchester Semigroups Seminar
- 2023 **Generating Groups** Birmingham Algebra Seminar
- 2023 **Relational complexity of projective linear groups** Warwick Algebra Seminar
- 2023 **Calculating relational complexity** London Algebra Colloquium
- 2022 **Generating graphs and feeling good enough** Piscopia Society PiWorks seminar
- 2022 **A survey of base size** Young Group Theorists Workshop
- 2022 **Relational complexity** St Andrews Pure Colloquium
- 2021 **Group statistics** Bristol Junior Algebra Colloquium
- 2021 **Maximal irredundant base size of linear groups** Birmingham Algebra Seminar
- 2021 **Group statistics of groups which are not large-base** Manchester Algebra Seminar
- 2021 **Relational complexity of primitive permutation groups** Functor Categories for Groups meeting
- 2020 **Base size of permutation groups** North British Semigroups Network
- 2020 **M_{24} and octad triples** Junior London Algebra Colloquium
- 2020 **Maximal subgroups and maximal cocliques** York Algebra Seminar
- 2020 **Chamber graphs of the sporadic groups** Postgraduate Interdisciplinary Symposium

Teaching

- 2023 **University of Manchester** Leading a reading group of the O'Nan-Scott Theorem
- 2018 - 2021 **University of St Andrews** Probability and Combinatorics, Abstract Algebra, Linear Maths
- 2015 - 2018 **University of Manchester** Linear Algebra, Foundations of Pure Mathematics, Sequences and Series, Statistics, Probability 1, Sets, Numbers and Functions

Outreach

- 2023 - present **LMS Levelling Up** Tutoring students from under-represented backgrounds
- 2023 **Women in Maths Day** Interactive workshops for local school
- 2018 - present **Mentor in Peer Mentoring scheme** Mentoring undergraduate students

Other Activities

2023 - present	British Sign Language level 1 course
Jan 2022	Emergency first aid at work training
May 2019	Mental Health Training Day
2017 - 2018	MathSoc Seminar Convener and Topical Secretary

References

Prof Colva M. Roney-Dougal PhD Supervisor	colva.roney-dougal@st-andrews.ac.uk
Prof Alexandre Borovik MMath Dissertation Marker	alexandre@borovik.net