

Marina Anagnostopoulou-Merkouri

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<https://marinaanagno.github.io>

EDUCATION

PhD in Mathematics

2023 - Present

University of Bristol

Supervisor: Prof. Tim Burness

Master in Pure Mathematics (First Class)

2019 - 2023

University of St Andrews

Final year project on the O’Nan-Scott theorem and base sizes of permutation groups supervised by Prof. Colva Roney-Dougal.

PUBLICATIONS

[5] **On the regularity number of a finite group and other base-related invariants**

joint with Timothy C. Burness

52 pages, submitted.

[4] **Computing finite index congruences of finitely presented semigroups and monoids**

joint with Reinis Cirpons, James D. Mitchell, and Maria Tsalakou

50 pages, submitted.

[3] **Pre-primitive permutation groups**

joint with Peter J. Cameron and Enoch Suleiman

Journal of Algebra 636 (Dec. 2023), pp. 695–715.

[2] **Association Schemes with given stratum dimensions: on a paper of Peter M. Neumann**

joint with Peter J. Cameron

Algebraic Combinatorics Volume 6 (2023) no. 5, pp. 1189-1210.

[1] **Properties of congruence lattices of graph inverse semigroups**

joint with Zachary Mesyan and James D. Mitchell

International Journal of Algebra and Computation Vol. 34, No. 03, pp. 371-396 (2024)

SOFTWARE

Digraphs GAP package

-Improved efficiency for methods used for canonical labelling and graph isomorphism.

-Implemented graph theory algorithms such as the almost linear Tarjan and Lengauer algorithm for computing dominators, and algorithms for reachability.

Semigroups GAP package

-Constructed new algorithms for graph inverse semigroup congruences and congruence lattices and implemented them.

TALKS

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|---|----------------------|
| [7] Bristol Junior Geometry Seminar (BRIJGES)
<i>The regularity number of a finite group</i>
University of Bristol | <i>February 2024</i> |
| [6] Bristol postgraduate seminar
<i>Permutation groups and Galois' confusion</i>
University of Bristol | <i>November 2023</i> |
| [5] Seminars on groups and graphs, SUSTech
<i>New properties of permutation groups</i>
Southern University of Science and Technology (SUSTech), Shenzhen, China (Online) | <i>October 2023</i> |
| [4] York semigroups seminar
<i>Congruence lattices of graph inverse semigroups</i>
University of York | <i>March 2023</i> |
| [3] Tomorrow's Mathematicians Today
<i>Pre-primitive permutation groups</i>
University of Greenwich (Online) | <i>March 2023</i> |
| [2] St Andrews Maths Society
<i>Strongly regular graphs with given stratum dimensions</i>
University of St Andrews | <i>November 2022</i> |
| [1] Tomorrow's Mathematicians Today
<i>Congruence lattices of finite graph inverse semigroups</i>
University of Greenwich (Online) | <i>February 2022</i> |

TEACHING

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|--|---|
| University of Bristol
-Linear algebra tutor
-Perspectives in Mathematics demonstrator | <i>September 2023 - Present</i>
<i>September 2023 - May 2024</i>
<i>December 2023</i> |
| Private tutoring
-Prepared notes and delivered tutorials for GCSE, A-level students, and IB students. | <i>November 2022 - April 2023</i> |
| MyTutor
-Prepared notes and delivered tutorials for GCSE and A-level students. | <i>December 2020 - September 2022</i> |
| Coronavirus Tutoring Initiative
-Prepared notes and delivered tutorials for GCSE and A-level students. | <i>April 2020 - October 2020</i> |

FUNDING AWARDED

St Andrews Research Internship Scheme

- Funding granted for doing research on permutation group theory. 2022

University of St Andrews Careers Centre Employability Bursary

- Funding granted to extend my summer research internship and undertake a second project on group theory. 2022

LMS Undergraduate Research Bursary

- Funding granted for a summer research project on association schemes. 2022

St Andrews Research Internship Scheme

- Funding granted for completing a research project on computational semigroup theory. 2022

LANGUAGES

Greek (Native), English (C2), French (C2), German (B2).

OTHER**Maths Base Helper**

September 2020 - May 2023

- Helping first and second year St Andrews students with questions.

School of Mathematics and Statistics Ambassador

October 2021 - April 2023

-Helping at the school of mathematics and statistics visiting day talks, attended by prospective students.

Zero Gravity mentor

July 2022 - May 2023

-Mentoring a final year school pupil from a low-income background that wants to study mathematics in university.

University of St Andrews Karate Club

- Captain (04/2021 - 04/2023), Covid Officer (09/2020 - 03/22), Wellbeing Officer (04/2020 - 10/2021, 04/2022 - Present), Safety and Fundraising Officer (04/2020 - 04/2021).

University of St Andrews Mathematics Society

- Social Representative. *April 2021 - March 2022*