

Coen del Valle

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Areas of interest

Finite group theory and combinatorics, with an emphasis on the interactions between these two fields.

Academic positions held

2025–2028 *Postdoctoral research assistant*, School of Mathematics and Statistics, The Open University, United Kingdom.

DEPARTMENTAL ROLES

2026– *Postdoctoral representative*, Athena SWAN committee, School of Mathematics and Statistics, The Open University, United Kingdom.

Education

2025 PHD Mathematics, University of St Andrews, United Kingdom.
2022 MAST Pure Mathematics, University of Cambridge, United Kingdom.
2021 BSc Mathematics Honours, University of Victoria, Canada.

Awards, fellowships, and recognitions

2026 *Cheryl E. Praeger Visiting Fellowship*, University of Western Australia.
2026 *Robert Bartnik Fellowship*, Monash University.
2023–2026 *Postgraduate Scholarship – Doctoral*, Natural Sciences and Engineering Research Council of Canada (NSERC).
2022–2025 *School of Mathematics and Statistics Scholarship*, University of St Andrews.
2021 *First prize*, University of Victoria (UVic) Science Honoursfest.
2021 *Exceptional TA recognition*, Department of Mathematics and Statistics, UVic.
2020 *Undergraduate Student Research Award*, NSERC.
2019–2021 *Mathematics and Statistics Scholarship*, UVic.
2019–2020 *Alumni Association Undergraduate Scholarship*, UVic.
2019 *Faculty of Science Undergraduate Research Award*, UVic.
2018–2019 *Betty and Gilbert Kennedy Scholarship in Mathematics*, UVic.
2017–2019 *Angus & Annie MacKay Scholarship*, UVic.
2017–2021 *President's Scholarship*, UVic.
2016–2021 *Dean's List*, Faculty of Science, UVic.

Papers

PUBLISHED ARTICLES

- P.J. Cameron, C. del Valle, C.M. Roney-Dougal, *Regular bipartite multigraphs have many (but not too many) symmetries*, Discrete Anal. Paper No. 22 (2025).
- S. Brenner, C. del Valle, C.M. Roney-Dougal, *Irredundant bases for soluble groups*. Bull. Lond. Math. Soc. **57**(10) (2025).
- C. del Valle, *Another character theoretic formula for base size*. Arch. Math. (Basel), **125**(5) (2025).
- C. del Valle, *A character theoretic formula for the base size*. Arch. Math. (Basel) **124**(5) (2025).
- C. del Valle, *Greedy base sizes for sporadic simple groups*. J. Group Theory **28**(5) (2025).
- C. del Valle, C.M. Roney-Dougal, *The base size of the symmetric group acting on subsets*. Algebr. Comb. **7**(4) (2024).
- C. del Valle, P.J. Dukes, *Balancing permuted copies of multigraphs and integer matrices*. J. Combin. Theory Ser. A, **198** (2023).
- M. Bailey, C. del Valle, P.J. Dukes, *A lower bound on HMOLS with equal sized holes*. Finite Fields Appl. **74** (2021).
- C. del Valle, P.J. Dukes, K. Garaschuk, *On the cone of weighted graphs generated by triangles*. J. Combin. Math. Combin. Comput. **116** (2020).
- C. del Valle, P.J. Dukes, *Some new block designs of dimension three*. Bull. Inst. Combin. Appl. **87** (2019).

SUBMITTED ARTICLES

- C. del Valle, N. Gill, P. Spiga, *On the maximum relational complexity of affine groups*. arXiv pre-print: [arXiv:2610.20077](https://arxiv.org/abs/2610.20077).
- C. del Valle, N. Gill, *The binary actions of sporadic groups*. arXiv pre-print: [arXiv:2609.02508](https://arxiv.org/abs/2609.02508).
- C. del Valle, C.E. Praeger, *Constructing linear codes from digraphs and groups*. arXiv pre-print: [arXiv:2607.28016](https://arxiv.org/abs/2607.28016).
- D.A. Craven, C. del Valle, C.W. Parker, *The Gill–Guillot commuting graph for sporadic and related groups*. arXiv pre-print: [arXiv:2602.02032](https://arxiv.org/abs/2602.02032).
- C. del Valle, C.M. Roney-Dougal, *On Cameron’s Greedy Conjecture*. arXiv pre-print: [arXiv:2503.23964](https://arxiv.org/abs/2503.23964).

IN PREPARATION

- C. del Valle, N. Gill, M.W. Liebeck, *The binary actions of low rank groups of Lie type*

Talks & Presentations

INVITED TALKS

- 2026 *On the binary actions of finite simple groups*, Modern Flavours of Finite Groups, University of Warwick, UK.
- 2026 *The binary actions of sporadic groups*, Groups and Combinatorics Seminar, University of Western Australia, Australia.
- 2026 *The binary actions of sporadic groups*, Discrete Mathematics Seminar, Monash University, Australia.
- 2026 *Bases in unexpected places*, Heilbronn Algebra Seminar, University of Manchester, UK.
- 2026 *Bases in unexpected places*, Mathematics Seminar, Royal Holloway University of London, UK.
- 2025 *Base sizes and representation theory*, London Algebra Colloquium, Imperial College London, UK.
- 2025 *The binary actions of sporadic groups*, **Orbit** – meetings on groups and representations, University of Birmingham, UK.

- 2025 *The binary actions of sporadic groups*, Combinatorics Seminar, University of Bristol, UK.
- 2025 *Bases in unexpected places*, Mathematics Colloquium, The Open University, UK.
- 2025 *Cameron's Greedy Conjecture*, Conference on Theoretical and Computational Algebra 2025, University of Évora, Portugal.
- 2025 *Greedy bases for primitive groups*, Finite Groups, Fusion Systems and Applications, Mathematisches Forschungsinstitut Oberwolfach, Germany.
- 2025 *It's (probably) okay to be greedy*, Algebra Seminar, University of Warwick, UK.
- 2024 *The base size of the symmetric group and an unexpected connection*, Junior London Algebra Colloquium, Imperial College London, UK.
- 2024 *The base size of the symmetric group*, Seminars on Groups and Graphs, Southern University of Science and Technology, China.
- 2020 *Block designs of dimension three*, 2020 Canadian Mathematical Society Winter Meeting, Combinatorial Designs session, Canada.

CONTRIBUTED TALKS

- 2025 *A character theoretic formula for base size*, Algebra and Combinatorics Seminar, University of St Andrews, UK.
- 2024 *Greedy bases for sporadic simple groups*, Centre for Interdisciplinary Research in Computational Algebra (CIRCA) Seminar, University of St Andrews, UK.
- 2024 *Greedy bases for primitive groups*, Topics in Group Theory – on the occasion of Andrea Lucchini's 60th(+) birthday, University of Padova, Italy.
- 2024 *It's not always bad to be greedy*, CIRCA Seminar, University of St Andrews, UK.
- 2023 *The base size of primitive actions of the symmetric group*, CIRCA Seminar, University of St Andrews, UK.
- 2021 *A complete existence theory for signed graph designs*, Discrete Math Seminar, UVic, Canada.

PANEL DISCUSSIONS

- 2020 *How to make an irritating Sudoku puzzle*, Ideafest, UVic, Canada.

Teaching

- 2023–2024 Tutor (tutorials), MT2505 *Abstract Algebra*, University of St Andrews, UK.
- 2022–2024 Tutor (tutorials and examples classes), MT2504 *Combinatorics and Probability*, University of St Andrews, UK.
- 2020–2021 Indigenous student support tutor, Mathematics and Statistics Assistance Centre, UVic, Canada.
- 2021 Tutor (tutorials), Math 100 *Calculus I*, UVic, Canada.
- 2020 Tutor (tutorials), Math 211 *Linear Algebra*, UVic, Canada.