

CURRICULUM VITAE

CALLIOPE RYAN-SMITH

Personal details.

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Education.

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| <i>Oct. 2021–Present.</i> | Ph.D , Mathematics (in progress) Supervised by Dr Asaf Karagila, Dr Andrew Brooke-Taylor and Dr Vincenzo Mantova | <i>University of Leeds</i> |
| <i>Oct. 2020–Jun. 2021.</i> | Master of Mathematics , Mathematics | <i>University of Cambridge</i> |
| <i>Oct. 2017–Jun. 2020.</i> | Bachelor of Arts , Mathematics | <i>University of Cambridge</i> |

Funding.

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| <i>2021–Present.</i> | EPSRC Mathematical Sciences Doctoral Training Partnership [EP/W523860/1] | <i>University of Leeds</i> |
| <i>2019.</i> | Summer Research in Maths | <i>University of Cambridge</i> |
| <i>2018.</i> | Summer Research Program | <i>King's College, University of Cambridge</i> |

Research interests.

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| <i>Mathematical logic:</i> | Intersections of model theory and set theory. |
| <i>Set theory:</i> | Cardinal characteristics, the theory of forcing and symmetric extensions, large cardinals, the axiom of choice. |
| <i>Model theory:</i> | Classification theory, abstract elementary classes, the independence property, homogeneous structures, permutation groups. |

Publications.

- *Local reflections of choice*, in press (online-first available), Acta Math. Hung. (2025)
DOI:[10.1007/s10474-025-01533-3](https://doi.org/10.1007/s10474-025-01533-3).
- *The Hartogs–Lindenbaum spectrum of symmetric extensions*, Math. Log. Quart. (2024)
DOI:[10.1002/malq.202300047](https://doi.org/10.1002/malq.202300047).
- *Which pairs of cardinals can be Hartogs and Lindenbaum numbers of a set?* (with A. Karagila), Fund. Math. (2024)
DOI:[10.4064/fm231006-14-8](https://doi.org/10.4064/fm231006-14-8).
- *Stratifiable formulae are not context-free*, in press, Notre Dame J. Form. Log. (2023)
DOI:[10.48550/arXiv.2304.10291](https://doi.org/10.48550/arXiv.2304.10291).

Preprints.

- *Eccentricity, extendable choice and descending distributive forcing*
DOI:[10.48550/arXiv.2506.11607](https://doi.org/10.48550/arXiv.2506.11607)
- *Proper classes of maximal θ -independent families from large cardinals*
DOI:[10.48550/arXiv.2408.10137](https://doi.org/10.48550/arXiv.2408.10137).
- *Upwards homogeneity in iterated symmetric extensions* (with J. Schilhan and Y. Wei)
DOI:[10.48550/arXiv.2405.08639](https://doi.org/10.48550/arXiv.2405.08639).
- *String dimension: VC dimension for infinite shattering*
DOI:[10.48550/arXiv.2402.18250](https://doi.org/10.48550/arXiv.2402.18250).

Review work.

Fundamenta Mathematicae, Pacific Journal of Mathematics.

Seminars and conferences

Invited talks (external).

- *Séminaire Général de Logique*, Sep. 2024, IMJ-PRG, Paris, France
- *Logic Seminar*, Feb. 2025, University of Manchester, Manchester, UK

Invited talks (internal).

- Meeting Group of Model Theorists (Feb. 2022)
- Postgraduate Logic Seminar (eight talks 2022–25)
- Postgraduate Pure Seminar (Oct. 2022, Feb. 2024 and Oct. 2024)
- Sets Seminar (four talks 2024–25)
- Models and Sets Seminar (Oct. 2022 and Nov. 2023)
- Logic Seminar (Feb. 2025)

Select contributed talks.

- *British Logic Colloquium*, 2024, University of Birmingham, UK
- *Winter School in Abstract Analysis*, 2024 and 2025, Hejnice, Czech Republic
- *Generalised Baire Spaces and Large Cardinals Workshop*, 2024, Bristol, UK
- *120 Years of Choice Conference*, 2024, Leeds, UK (poster contribution)
- *Postgraduate Researcher Conference* 2022, 2023 and 2024, University of Leeds, UK
- *Set Theory in the United Kingdom 9 and 12–14*, 2023–24, various universities, UK
- *Set Theory in the United Kingdom 16*, 2025, University of Leeds, UK
- *Postgraduate Researcher Conference* 2025, University of Leeds, UK (upcoming)
- *Logic Colloquium* 2025, TU Wien, Austria (upcoming)

Conference and seminar organisation.

- *ArXiv Café*, main organiser (weekly meeting of logicians, attendees select a paper uploaded to arXiv in the past week and give a brief overview of the work).

- *Inner Model Theory*, joint main organiser (weekly reading group).
- *Postgraduate Research Conference 2022*, organiser (conference for all mathematics Ph.D students at the University of Leeds to speak on their research to a general mathematical audience).
- *British Postgraduate Model Theory Conference 2023*, organiser (international conference for Ph.D students researching model theory to give talks, with additional tutorials by senior researchers).

Teaching experience

All at the University of Leeds. “2022” means “2022–23 academic year”.

Workshop leader.

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- 2021–22 Discrete Mathematics (*Course for 2nd year undergraduates*)
 - 2022 Coding Theory (*2nd year*)
 - 2022–24 Logic (*2nd year*)
 - 2023 Introduction to Geometry (*1st year*)
 - 2023 Sets, Sequences and Series (*1st year*)
 - 2024 Core Mathematics (*1st year*)
 - 2024 Real Analysis (*1st year*)

Marking.

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- 2021–22 Discrete Mathematics (*2nd year*)
 - 2021–22 Combinatorics (*3rd year*)
 - 2022 Elementary Differential Calculus (*Foundation year*)
 - 2022 Coding Theory (*3rd year*)
 - 2022–24 Logic (*2nd year*)
 - 2023 Real Analysis (*2nd year*)
 - 2023 Number Systems (*1st year*)
 - 2023 Introduction to Markov Processes (*2nd year*)
 - 2022, 2024 Core Mathematics (*1st year*)
 - 2024 Real Analysis (*1st year*)
 - 2024 Rings and Polynomials (*2nd year*)