# CURRICULUM VITAE

## CALLIOPE RYAN-SMITH

## Personal details.

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## Education.

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| *Oct. 2021–Present.* | **Ph.D**, Mathematics (in progress) <br> Supervised by Dr Asaf Karagila, Dr Andrew Brooke-Taylor and Dr Vincenzo Mantova <br> *Expected submission date 1st July 2025.* | *University of Leeds* |
| *Oct. 2020–Jun. 2021.* | **Master of Mathematics**, Mathematics | *University of Cambridge* |
| *Oct. 2017–Jun. 2020.* | **Bachelor of Arts**, Mathematics | *University of Cambridge* |

## Funding.

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

## Research interests.

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| *Mathematical logic:* | Intersections of model theory and set theory. |
| *Set theory:* | Cardinal characteristics, the theory of forcing and symmetric extensions, large cardinals, the axiom of choice. |
| *Model theory:* | 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:10.48550/arXiv.10.1007/s10474-025-01533-3.

- *The Hartogs–Lindenbaum spectrum of symmetric extensions*, Math. Log. Quart. (2024)
  DOI: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.

- *Stratifiable formulae are not context-free*, in press, Notre Dame J. Form. Log. (2023)
  DOI:10.48550/arXiv.2304.10291.

## Preprints.

- *Eccentricity, extendable choice and descending distributive forcing*
  DOI:10.48550/arXiv.2506.11607

- *Proper classes of maximal θ-independent families from large cardinals*
  DOI:10.48550/arXiv.2408.10137.

- *Upwards homogeneity in iterated symmetric extensions* (with J. Schilhan and Y. Wei)
  DOI:10.48550/arXiv.2405.08639.

- *String dimension: VC dimension for infinite shattering*
  DOI: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.

- 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.

- 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)*