

Joshua Wrigley

Curriculum Vitae

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Via Valleggio 11, Como 22100 (CO), Italy

Research interests

Topos theory, model theory, logic, type theory, category theory.

Education

- 2020 – 2024 **Università degli Studi dell’Insubria** – Como, Italy
Dottorato di ricerca in informatica e matematica del calcolo (PhD),
Thesis: *Doctrinal and Groupoidal Representations of Classifying Topoi*,
Supervisor: [Prof. Olivia Caramello](#).
- 2019 – 2020 **Lincoln College, University of Oxford** – Oxford, UK
Masters in Mathematics (MMath), Classification: First class,
Dissertation: *Aspects of Stone Duality for Boolean Algebras*,
Supervisor: [Prof. Hilary Priestley](#).
- 2016 – 2019 **Lincoln College, University of Oxford** – Oxford, UK
Bachelor of Mathematics (BA), Classification: First class.

Preprints

- 2023 **On Topological Groupoids that Represent Theories**, [arXiv:2306.16331](https://arxiv.org/abs/2306.16331).
- 2023 **The Representing Localic Groupoid for a Geometric Theory**, with Graham Manuell, [arXiv:2305.15209](https://arxiv.org/abs/2305.15209).
- 2023 **The Geometric Completion of a Doctrine**, [arXiv:2304.07539](https://arxiv.org/abs/2304.07539).
- 2023 **Some Properties of Internal Locale Morphisms Externalised**, [arXiv:2301.00961](https://arxiv.org/abs/2301.00961).

Teaching experience

- 2023 – 2024 **Graduate tutor** (Università degli Studi dell’Insubria)
Topics in category theory – 36 hrs (course lecturer: [Prof. Olivia Caramello](#)).

2022 – 2023 **Graduate tutor** (Università degli Studi dell’Insubria)
Topos theory – 36 hrs (course lecturer: [Prof. Olivia Caramello](#)).

2021 – 2022 **Undergraduate tutor** (Università degli Studi dell’Insubria)

- *Algebra 1* – 12 hrs (course lecturer: [Prof. Valerio Monti](#)),
- *Algebra 2* – 12 hrs (course lecturer: [Prof. Valerio Monti](#)),
- *Geometria 1* – 12 hrs (course lecturer: [Prof. Olivia Caramello](#)).

Honours and scholarships

2020 Insubria-Huawei scholarship,
A studentship for research into Grothendieck toposes for Information and Computation, with the aim to further the development of the theory of topos-theoretic ‘bridges’ in connection with relevant topics in classical model theory, duality and non-classical logics;

2020 L.H. Martin Prize;

2019 [Lord Crewe Scholarship](#);

2018 [Lincoln College Scholarship](#);

2017 [Stewart Exhibition](#).

Research experience

2019 **Summer Research Project**, Mathematical Institute, University of Oxford,
Algebraic and relational models for certain non-classical propositional logics,
Supervisor: [Prof. Hilary Priestley](#),
Awarded an Undergraduate Research Bursary by the Mathematical Institute.

2018 **Summer Research Project**, Mathematical Institute, University of Oxford,
Integration in finite terms,
Supervisor: [Prof. Kevin McGerty](#),
Awarded an Undergraduate Research Bursary by the [London Mathematical Society](#).

Presentations

Dec. 18, 2023 **A cylindrical Diaconescu’s equivalence.** ([Abstract](#)),
4th ItaCa Workshop, Università degli Studi di Torino, Turin, Italy.

Sept. 28, 2023 **Topological groupoids for classifying toposes.** ([Abstract](#)),
ItaCa Fest 2023, (online),
Recording available [here](#).

- July 4, 2023 **When are there enough model isomorphisms? Representing groupoids for classifying toposes.** ([Abstract](#)),
Category Theory 2023, Université catholique de Louvain, Louvain-la-Neuve, Belgium,
Recording available [here](#).
- May 30, 2023 **Eliminating imaginaries and adding structure: how does the geometric completion fit in?** ([Abstract](#)),
Workshop on Doctrines and Fibrations, Università degli Studi di Padova, Padua, Italy,
Recording available [here](#).
- Apr. 21, 2023 **The Geometric and Sub-Geometric Completions of Doctrines,**
11th Symposium on Compositional Structures, École Polytechnique, Palaiseau, France,
Recording available [here](#).
- Nov. 24, 2022 **Dynamical Objects: Categorical and Topos-Theoretic Techniques for Deep Neural Networks** ([Abstract](#)),
Matematica per l'Intelligenza Artificiale e il Machine Learning - Giovani ricercatori,
Politecnico di Torino, Turin, Italy.
- Sept. 23, 2022 **The Geometric Completion of a Doctrine** ([Abstract](#)),
Categories and Companions Symposium, (online),
Recording available [here](#).
- July 18, 2022 **Notions of 'Point' in Point-Free Topology,**
Domoschool - International Alpine School of Mathematics and Physics, Association
ARS.UNIVCO, Domodossola, Italy.
- Dec. 20, 2021 **A Topos-Theoretic Perspective on Properly Discontinuous Actions** ([Abstract](#)),
2nd ItaCa Workshop, Università degli Studi di Genova, Genoa, Italy,
Recording available [here](#).
- June 29, 2021 **The Logic and Geometry of Localic Morphisms,**
Toposes Online, Università degli Studi dell'Insubria and l'IHES, (online),
Recording available [here](#).
- June 9, 2021 **From Lindenbaum-Tarski Algebras to Classifying Toposes** ([Abstract](#)),
Categories and Companions Symposium, (online),
Recording available [here](#).

Service

- Sept. 8-9, 2022 **Local Organiser**
9th Symposium on Compositional Structures, Como, Italy.

Languages

English (fluent), Italian (advanced, B2/C1).

References

Prof. Olivia Caramello,
Università degli Studi dell'Insubria,
E-mail: olivia.caramello@uninsubria.it.

Prof. Maria Emilia Maietti,
Università degli Studi di Padova,
Tel: +39 334 856 6814,
E-mail: maietti@math.unipd.it.