

Curriculum Vitae

Julia Marie Millhouse

Current Address: Lerchengasse 12-14/21, Wien 1080, Austria

(+33) 6 50 03 02 36 (FR)

(+1) 415 845 0323 (US)

julia.millhouse@gmail.com

julia.marie.millhouse@univie.ac.at

<https://mat.univie.at.ac/~jmillhouse>

Research Interests

Mathematical logic and set theory: descriptive set theory, recursion theory, forcing, infinitary combinatorics, set theory of the reals; history and philosophy of logic and set theory, foundations of mathematics.

Education

October 2021 - October 2025

University of Vienna, Kurt Gödel Research Center- *Doctorate (PhD) Degree*;

Mathematical Logic. Advisor: Vera Fischer. (Grade: 1; Pass with distinction).

Thesis Title: Definable witnesses.

September 2020 - July 2021

Université de Paris Diderot (Paris VII)- *Masters Degree (M2) ; Histoire et Philosophie des*

Sciences. Advisor: Brice Halimi. (Mention Bien).

Masters Thesis: The notion of naturality in the philosophy of Jean Cavailles.

September 2019 - July 2020

Université Paris Diderot (Paris VII) - *Masters Degree (M1) ; Histoire et Philosophie des Sciences*.

Advisor: Brice Halimi. (Mention Très Bien).

Masters Thesis: The axiom of infinity in Quine's New Foundations.

September 2017 - June 2019

Université de Paris Diderot (Paris VII)- *Masters Degree (M2) ; Logique Mathématique et*

Fondements de l'Informatique. Advisor: Olivier Finkel. (Mention Assez Bien).

Masters Thesis: Topological hierarchies and comparable measure on regular languages of infinite words.

January 2013 - May 2017

University of California, Berkeley - *Bachelors of Arts ; Mathematics*. Advisor: Paul Vojta. (GPA 3.63).

January 2013 - May 2017

University of California, Berkeley - *Bachelor's of Arts ; French*. Advisor: Eglantine Colon. (GPA 3.98).

Awarded a Departmental Certificate of Distinction.

Teaching

2022-2024

University of Vienna, Austria. Teaching Assistant.

Last updated April 2026

- Introduction to Axiomatic Set Theory; Proseminar (Master's level).
- STEOP: Exercises on introduction to mathematical methodology (Bachelor's level).

2014 - 2016

University of California, Berkeley. Teaching Assistant and Tutor.

- Calculus, trigonometry, discrete mathematics (Undergraduate level).

Invited and Contributed Talks

May 2026

European Set Theory Conference.

University of Helsinki, Finland. *(Contributing)*.

Title: Reducing projective complexity of some families of functions.

September 2026

FLINTA* Conference in Set Theory.

Erwin Schroedinger International Institute for Mathematics and Physics, Vienna, Austria.
(Invited).

Title: TBA.

May 2026

Set Theory Seminar.

University of Leeds, Leeds, United Kingdom. *(Invited)*.

Title: TBA.

February 2026

Winter School in Abstract Analysis, Set Theory, and Topology. Hejnice, Czech Republic. *(Contributing)*.

Title: Definable Witnesses.

November 2024

Prague Set Theory Workshop: Compactness and cardinal invariants, II.

Charles University, Prague, Czech Republic. *(Invited)*.

Title: Projective Witnesses of Optimal Complexity.

October 2024

RIMS Set Theory Workshop . Kyoto, Japan. *(Contributing)*.

Title: Optimal Spectra of Projective Definability.

September 2024

European Set Theory Conference. University of Muenster, Germany. *(Contributing)*.

Title: Optimal Projective Spectra.

May 2024

Set Theory in the United Kingdom 13. University of Oxford, UK. *(Invited)*.

Title: Reducing Projective Complexity

December 2023

Logic Seminar at Renyi Institute of Mathematics. Budapest, Hungary. (*Invited*).

Title: A minimal counterexample to a uniform strengthening of Ramsey's theorem.

2021-2024

Research Seminar in Set Theory. University of Vienna, Austria. (*Regular contributions*).

Papers

Functional Projection and Complexity Reduction with Vera Fischer, Yurii Khomskii, and Yipu Li. In preparation. 2026.

Coanalytic Families of Function with Lukas Schembecker. Submitted. February 2026.
Available at: <https://doi.org/10.48550/arXiv.2510.07222>

Strong Projective Spectra with Vera Fischer. Submitted. May 2025.
Available at: <https://doi.org/10.48550/arXiv.2601.08718>

Reducing projective complexity: an overview. J. Millhouse. Proceedings of the RIMS 2024 Conference on Recent Developments in Axiomatic Set Theory. February 2025.

A Minimal Counterexample to a Uniform Strengthening of Ramsey's Theorem with Benjamin Miller. In Progress. 2021.

Work Experiences

January 2026-June 2026

Technical University Vienna. Postdoctoral researcher under the FWF project of Jakob Kellner. Vienna, Austria.

September 2012-June 2012

Iridescent Learning. Intern. San Francisco, California, USA.

A non-profit organization offering middle and high school girls opportunities to foster skills in STEM.

Research Experiences

January 2019, 2020, 2022, 2025, 2026

Winter School in Abstract Analysis, Set Theory, and Topology. Hejnice, Czech Republic.

July 2025

Conference in honor of Saharon Shelah's 80th birthday. Vienna, Austria.

June 2024

Young Set Theory Workshop. Erdős Center; Alfred Renyi Institute of Mathematics, Budapest, Hungary.

October 2023

Conference on Generic Structures. Banach Center and the University of Warsaw,

Last updated April 2026

Poland.

January 2023 - April 2023

Thematic Program on Set Theoretic Methods in Algebra, Dynamics, and Geometry.

- (*Invited Participant*). Fields Institute for Research in Mathematical Sciences.

Organizational Experiences

September 2025

Young Set Theory Workshop 2025. Vienna, Austria. Assistant Organizer.

Winter Semester 2024

Research Seminar in Set Theory. University of Vienna. Assistant Organizer.

July 2022

36th Summer Topology Conference. Vienna, Austria. Local volunteer.

Languages

- English – Native speaker
- French – Fluent
- German – Basic (A2.2)

Computing Skills

- Microsoft Office Package, Latex
- Basic knowledge of Python, Ocaml, Coq

References

Vera Fischer. Associate Professor, Faculty of Mathematics. University of Vienna.

Email: vera.fischer@univie.ac.at

Slawomir Solecki. Professor, Faculty of Mathematics. Cornell University.

Email: ssolecki@cornell.edu

Boban Veličković. Professor, University Paris Cite, IMJ-PRG.

Email: boban.velickovic@imj-prg.fr