

# CECELIA HIGGINS

University of California, Los Angeles

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## RESEARCH INTERESTS

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I am primarily interested in descriptive set theory and its connections with combinatorics and theoretical computer science.

## EDUCATION

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### University of California, Los Angeles (UCLA)

- Ph.D., Mathematics (expected June 2025)  
Thesis advisor: Dr. Andrew Marks
- M.A., Mathematics (2022)

### Rutgers University, New Brunswick

- B.S., Mathematics, *summa cum laude* (2019)

## PUBLICATIONS AND PREPRINTS

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1. **Measurable Brooks's Theorem for Directed Graphs.** *Preprint.* <https://www.math.ucla.edu/ceceliahiggins/MeasurableDiBrooks.pdf>

## TALKS

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- Contributed talks
  1. *Directed Graph Combinatorics from the Perspectives of Descriptive Set Theory and Distributed Computing.* WiMSoCal, Pomona College, 2/24/24.
- Seminar talks
  1. *Definable Solutions to Combinatorial Problems.* Women in Math Research Night, UCLA, 5/22/23.
  2. *Connecting Laver Tables with Set Theory.* Participating Seminar in Logic, UCLA, 1/26/23.
  3. *Borel Determinacy and Definable Combinatorics.* Participating Seminar in Logic, UCLA, 5/16/22.
  4. *Universal Minimal Flows for Topological Groups.* Participating Seminar in Logic, UCLA, 3/11/22.
  5. *The Weird and Wonderful World of Large Cardinals.* Graduate Student Outreach Seminar, UCLA, 11/5/20.

## CONFERENCES

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- As a speaker
  1. *Symposium for Women and Gender Minorities in Mathematics in Southern California.* Hosted by the Claremont Colleges. Claremont, CA, 2/24/24.
- As a participant
  1. *Workshop on Borel and Measurable Combinatorics in Algebra and Dynamics.* Hosted by the Fields Institute. Toronto, Canada, 3/20/23 – 3/24/23.
  2. *Very Informal Gathering of Logicians.* Hosted by the UCLA Logic Center. Los Angeles, CA, 2/10/23 – 2/12/23.

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<sup>1</sup>Updated February 17, 2024

3. *European Set Theory Conference*. Hosted by the European Set Theory Society. Turin, Italy, 8/29/22 – 9/2/2022.
4. *Topics in Geometric Analysis*. Hosted by the Program for Women and Mathematics at the Institute for Advanced Study. Princeton, NJ, 5/18/19 – 5/24/19.

## TEACHING EXPERIENCE

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### University of California, Los Angeles

- Teaching Assistant Consultant
  - Math 495: Teaching College Mathematics (Fall 2023)
- Teaching Assistant
  - Math 3B: Calculus for Life Sciences Students (Winter 2024)
  - Math 31A: Differential and Integral Calculus (Fall 2020, Winter 2021, Summer 2021, Winter 2022)
  - Math 31B: Integration and Infinite Series (Fall 2020, Winter 2021)
  - Math 33A: Linear Algebra and Applications (Fall 2021)
  - Math 61: Introduction to Discrete Structures (Spring 2021, Spring 2022)
  - Math 131A: Analysis (Spring 2021, Fall 2021, Winter 2022, Winter 2024)
  - Math 177: Theory of Interest and Applications (Spring 2022)

### Rutgers University, New Brunswick

- Learning Assistant
  - MATH 300: Introduction to Mathematical Reasoning (Spring 2018, Fall 2018, Spring 2019)
- Grader
  - MATH 300: Introduction to Mathematical Reasoning (Spring 2018, Fall 2018)
  - MATH 356: Theory of Numbers (Fall 2017)
  - MATH 361: Set Theory (Spring 2019)

## SERVICE AND OUTREACH

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### UCLA Women in Mathematics

- *Co-organizer* (Fall 2020 – present)
- *Co-organizer*, UCLA Women in Mathematics Mentorship Program (Fall 2021 – present)
- *Mentor*, UCLA Women in Mathematics Mentorship Program (Fall 2021 – present)
- *Co-organizer*, UCLA Distinguished Women in Mathematics Lecture Series (Fall 2023 – present)

### UCLA Mathematics Directed Reading Program (DRP)

- *Co-organizer* (Fall 2021 – present)
- *Mentor* (Fall 2022 – Spring 2023)

### UCLA Mathematics Teaching Committee

- *Graduate student representative* (Fall 2022 – Spring 2023)

### Bridge to Enter Advanced Mathematics (BEAM)

- *Junior Faculty*, BEAM Summer Away (Summer 2022, Summer 2023)

## HONORS AND AWARDS

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- UCLA, Liggett Teaching Fellow Award (2022)
- UCLA, Cota-Robles Fellowship (2019)
- Rutgers, Highest Honors in Mathematics (2019)
- Rutgers, Lawrence P. Corwin Memorial Prize (2019)
- Rutgers, Alan Marc Schreiber Memorial Scholarship (2018)

## MISCELLANEOUS

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- Programming languages: C++, Java, R, MATLAB
- Natural languages: English, Dutch, French (reading only)