

# ELLIOT KAPLAN

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## EDUCATION

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### University Illinois at Urbana-Champaign

2015-Present

- Doctoral student in mathematics with a focus on model theory
- Advisor: Lou van den Dries
- Advanced to Candidacy in August 2017

### Undergraduate at Ohio University

2011-2015

- Bachelor of Science through the Honors Tutorial College
- Mathematics Major; Philosophy Minor
- Graduated Summa Cum Laude
- Undergraduate thesis: *Initial Embeddings in the Surreal Number Tree*, advised by Philip Ehrlich.

## PUBLICATIONS

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### Generic derivations on o-minimal structures

With Antongiulio Fornasiero.

*Journal of Mathematical Logic*, to appear.

### Pairs of theories satisfying a Mordell-Lang condition

With Alexi Block Gorman and Philipp Hieronymi.

*Fundamenta Mathematicae*, vol. 251, no. 2, 2020.

### Distality for the asymptotic couple of the field of logarithmic transseries

With Allen Gehret.

*Notre Dame Journal of Formal Logic*, vol. 61, no.2, 2020.

### Continuous regular functions

With Alexi Block Gorman, Philipp Hieronymi, Ruoyu Meng, Erik Walsberg, Zihe Wang, Ziqin Xiong, and Hongru Yang.

*Logical Methods in Computer Science*, vol. 16, no.1, 2020.

### Logarithmic hyperseries

With Lou van den Dries and Joris van der Hoeven.

*Transactions of the American Mathematical Society*, vol. 372, no. 7, 2019.

### Number systems with simplicity hierarchies II

With Philip Ehrlich.

*Journal of Symbolic Logic*, vol. 83, no. 2, 2018.

### Resolution depth of positive braids

With David Krcatovich and Patricia O'Brien.

*Journal of Knot Theory and Its Ramifications*, vol. 24, no. 14, 2015.

## PREPRINTS

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### Surreal ordered exponential fields

With Philip Ehrlich.

*Submitted.*

## AWARDS AND ACHIEVEMENTS

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Kuo-Tsai Chen Prize in Mathematics	2019
Waldemar J., Barbara G., and Juliette Alexandra Trjitzinsky Fellowship	2019
List of Teachers Ranked as Excellent by Their Students	2015, 2017, 2018, 2019
Honorable mention, Graduate Research Fellowship Program	2016
Graduate College Conference Travel Award	2016
U.S. Junior Oberwolfach Fellows NSF Grant (DMS-1641185)	2016
Gateway Excellence Scholarship (full tuition)	2011 - 2015
Dean's Scholarship	2012 - 2015
Philosophy Department Student Achievement Award	2013, 2014, 2015
Honorable mention, COMAP Mathematical Contest in Modeling	2013, 2015
Outstanding Presentation Award in the MAA Student Paper Session	MathFest 2014

## INVITED TALKS

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Summer Illinois Mathematics Camp at UIUC A discussion of the basics of knot theory aimed at a high school audience.	July 2018
Mathematical Research Institute of Oberwolfach, Germany Mini-Workshop on Surreal Numbers, Surreal Analysis, Hahn Fields and Derivations.	December 2016
Joint Math Meetings in Seattle, WA Surreal Numbers Special Session.	January 2016

## SEMINAR TALKS

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Topological and Differential Expansions of O-minimal Structures Seminar	February 2021
Manchester Logic Seminar	June 2020
Notre Dame Logic Seminar	June 2020
Lyon-Paris Logic Seminar	May 2020
Caltech-UCLA Logic Seminar	February 2020
Logic Seminar at Ohio State University	November 2019
Graduate Model Theory Seminar at UCLA	January 2018

## CONTRIBUTED TALKS

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Joint Math Meetings in Denver, CO	January 2020
North American meeting of the Association of Symbolic Logic at CUNY	May 2019
XIX Graduate Student Conference in Logic at UW-Madison	April 2018
XVIII Graduate Student Conference in Logic at UIUC	April 2017
North American meeting of the Association of Symbolic Logic at UIUC	March 2015
Young Mathematicians Conference at Ohio State University	August 2014
MathFest in Portland, OR	August 2014

## WORK EXPERIENCE

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### Teaching Assistant

2015-Present

*University of Illinois at Urbana-Champaign*

- Led discussion sections for Calculus II (Fall 2015, Summer 2020), Calculus III (Fall 2016, Spring 2017, Fall 2018, Fall 2019), and Applied Linear Algebra (Spring 2018, Fall 2020).
- Head TA for Elementary Linear Algebra (Fall 2017) and Applied Linear Algebra (Spring 2018, Fall 2020).
- Facilitated group work, helped students prepare for exams, helped write worksheets and exams.

### Workshop Leader

Summer 2019

*University of Illinois at Urbana-Champaign*

- Led a three day workshop on advanced linear algebra topics for graduate students.
- Part of the Program for Interdisciplinary and Industrial Internships at Illinois, an NSF funded research program.

### Summer Intern

Summer 2016

*Wolfram Research*

- Worked to develop a way to talk about theorems and definitions in pure mathematics using the Wolfram language.

### Program for Interdisciplinary and Industrial Internships at Illinois

Summer 2015

*University of Illinois at Urbana-Champaign*

- NSF funded research program.
- Researched random matrix pencils for seven weeks, supervised by a visiting professor.
- Worked as part of a team of four within a program of fourteen students.

### Lead Mathematics Tutor

August 2014 - May 2015

*Ohio University Tutoring Services*

### CRLA Certified Mathematics Tutor

February 2012 - May 2015

*Ohio University Tutoring Services*

### Summer Undergraduate Research Institute in Experimental Mathematics

Summer 2014

*Michigan State University*

## MENTORSHIP AND PROFESSIONAL SERVICE

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### Graduate Student Member

Fall 2019 - Spring 2020

*UIUC Math Department Undergraduate Affairs Committee.*

### Graduate Team Leader

Summer 2019

*Illinois Geometry Lab*

Led a group of three undergraduate students in a project about three-player combinatorial games.

### Graduate Mentor

Spring 2018

*Illinois Geometry Lab*

Helped lead a group of four undergraduate students in a research project studying functions recognizable by Büchi automata.

### Co-organizer

Spring 2017, Spring 2021

*Graduate Student Conference in Logic*