Nicholas Ramsey

CONTACT
INFORMATION

Department of Mathematics
University of Notre Dame
255 Hurley Bldg
Notre Dame, IN 46556 USA

+01 (574) 631-7245
sramsey5@nd.edu
Office: Hayes-Healy 122
https://www.nramseymath.com/

RESEARCH
INTERESTS

Model theory, in the sense of mathematical logic, and its applications to algebra and finite and infinitary combinatorics

EMPLOYMENT

University of Notre Dame

Assistant Professor, 2022—

University of California, Los Angeles

Hedrick Visiting Assistant Professor, 2018—2022
(on leave Academic Year 2019-2020)

École Normale Supérieure—Fondation Sciences Mathématiques de Paris

Postdoctoral Fellow, 2019—2020

EDUCATION

University of California, Berkeley

Ph.D. in Logic & the Methodology of Science, May 2018

- Advisor: Thomas Scanlon

Université Paris Diderot - Paris 7

M2 in Mathematical Logic and the Foundations of Computer Science, June 2013

University of Chicago

A.B. in Mathematics, June 2012

PUBLICATIONS AND
PREPRINTS

1. *On model-theoretic tree properties*
with Artem Chernikov, Journal of Mathematical Logic,16 (2), 41p. (2016).

2. *Generic expansion and Skolemization in $NSOP_1$ theories*
with Alex Kruckman, Annals of Pure and Applied Logic 169 (8), 755-774 (2018).

3. *Local character for Kim-independence*
with Itay Kaplan and Saharon Shelah, Proceedings of the American Mathematical Society 147 (4), 1719-1732 (2019).

4. *A note on $NSOP_1$ in one variable*
The Journal of Symbolic Logic 84 (1), 388-392 (2019).

5. *Invariants related to the tree property*
Israel Journal of Mathematics, 240 (1), 275-314, (2020).

6. *On Kim-independence*
with Itay Kaplan, Journal of the European Mathematical Society 22 (5), 1423-1474 (2020).

7. *Transitivity of Kim-independence*
with Itay Kaplan, Advances in Mathematics, 379 (5), (2021).

8. *Criteria for exact saturation and singular compactness*
with Itay Kaplan and Saharon Shelah, Annals of Pure and Applied Logic, 172 (9), (2021).

9. *Independence over arbitrary sets in $NSOP_1$ theories*
with Jan Dobrowolski and Byunghan Kim, Annals of Pure and Applied Logic, 173 (2), (2022)

10. *Transitivity, lowness, and ranks in $NSOP_1$ theories*
with Artem Chernkov and Byunghan Kim, Journal of Symbolic Logic, Volume 88 (3), (2023).

11. *Exact saturation in pseudo-elementary classes for simple and stable theories*
with Itay Kaplan and Saharon Shelah, Journal of Mathematical Logic, 23 (2), (2023).

12. *Invariant measures in simple and in small theories*
with Artem Chernikov, Ehud Hrushovski, Alex Kruckman, Krzysztof Krupinski, Slavko Moconja, Anand Pillay, Journal of Mathematical Logic (02), 2250025 (2023).

13. *Measures on perfect e-free PAC fields*
with Zoé Chatzidakis, Israel Journal of Mathematics 257 (1), 171-191 (2023).

14. *Generic Stability Independence and Treeless Theories*
with Itay Kaplan and Pierre Simon, Forum of Mathematics - Sigma, 12 (e47), (2024).

15. *A New Kim's Lemma*
with Alex Kruckman, Model Theory, 3 (3), 825-860 (2024).

16. *Model-theoretic properties of nilpotent groups and Lie algebras*
with Christian d'Elbée, Isabel Müller, and Daoud Siniora, Journal of Algebra 662, 640-701 (2025).

17. *A two-sorted theory of nilpotent Lie algebras*
with Christian d'Elbée, Isabel Müller, and Daoud Siniora, Journal of Symbolic Logic, accepted.

18. *Some model theory of quadratic geometries*
with Charlotte Kestner, submitted.

19. *Primitive pseudo-finite permutation groups of finite SU-rank*
with Ulla Karhümaki, Transactions of the AMS, accepted.

20. *Measures on bounded perfect PAC fields*
with Zoé Chatzidakis, submitted.

OTHER WRITING
1. *Paradoxes*
The SAGE Encyclopedia of Theory in Science, Technology, Engineering, and Mathematics, Vol. 2, pp. 639-644 (2023).

2. *$NSOP_1$ as a dividing line*
In: Aiswarya, C., Sen, P.K., Srivastava, S.M. (eds) Logic and Its Applications. ICLA

2025. Lecture Notes in Computer Science, vol 15402. Springer, Cham.

1. *Invariants related to the tree property*
Logic Seminar, University of Illinois at Chicago, April 2015

2. *Model-theoretic tree properties*
Neostability Theory Workshop, Casa Matemática Oaxaca, July 2015

3. *Trees and the global combinatorics of first-order theories*
Logic Seminar, UCLA, November 2015

4. *Local and global tree properties in model theory*
Logic Seminar, Hebrew University of Jerusalem, May 2016

5. *Kim-independence and $NSOP_1$ I, II*
Logic Seminar, Yonsei University, January 2017

6. *$NSOP_1$, Kim-independence, and simplicity at a generic scale*
Séminaire Théorie des Modèles et Groupes, Paris 7, March 2017

7. *$NSOP_1$ theories*
Seminar in Logic, Set Theory, and Topology, Ben Gurion University, April 2017

8. *Definability in the absolute Galois group of a PAC field*
Logic Seminar, Hebrew University of Jerusalem, May 2017

9. *Stationary logic and the local character of Kim-independence*
Set theoretic & Topological Methods in Model Theory, Indian Statistical Institute, Tezpur, September 2017

10. *Around exact saturation*
AMS Special Session on Model Theory, UC Riverside, November 2017

11. *Kim-independence and $NSOP_1$*
Logic Set Theory Seminar, UC Irvine, November 2017

12. *Examples of $NSOP_1$ theories*
Logic Seminar, Notre Dame University, November 2017

13. *Around exact saturation*
Logic Seminar, University of Indiana, November 2017

14. *Simplicity at a generic scale*
Logic Seminar, Rutgers University, November 2017

15. *Keisler measures in simple theories*
Junior seminar, Institut Henri Poincaré, March 2018

16. *Keisler measures in simple theories*
ASL Special Session in Model Theory, Western Illinois University, May 2018

17. *Keisler measures in simple theories*
Logic Seminar, Hebrew University of Jerusalem, June 2018

18. *Classification theory and the construction of PAC fields*
+972 Seminar, Weizmann Institute of Science, July 2018

19. *Classification theory and the construction of PAC fields*
Neostability Theory Workshop, Casa Matemática Oaxaca, October 2018

20. *Kim-independence and $NSOP_1$*
Logic Colloquium, UCLA, November 2018

21. *Keisler measures in simple theories*
Logic Seminar, University of Indiana, April 2019

22. *Exact saturation in pseudo-elementary classes*
Logic Seminar, University of Wisconsin, April 2019

23. *Possibilities for a theory of independence beyond NTP_2 and $NSOP_1$*
Logic Seminar, Hebrew University of Jerusalem, June 2019

24. *The transitivity of Kim-independence*
Séminaire Théorie des Modèles et Groupes, Université de Paris, October 2019

25. *The transitivity of Kim-independence*
Logic Seminar, Université Lyon I, November 2019

26. *An introduction to model theory*
American University of Cairo, November 2019

27. *Cardinal invariants and tree properties*
Model Theory: Groups, Geometries, and Combinatorics, Oberwolfach, January 2020

28. *Classification theory and the construction of PAC fields*
RDMTA, Mons, February 2020

29. *Cardinal invariants and tree Properties*
Logic Seminar, Oxford University, February 2020

30. *Classification theory and the construction of PAC fields*
Logic Seminar, Oxford University, February 2020

31. *Around exact saturation*
Séminaire Général de Logique, Université de Paris, February 2020

32. *Les décompositions paradoxales et les théories simples*
Séminaire Théorie des Modèles et Groupes, Université de Paris, March 2020

33. *Constructing PAC fields*
Séminaire Géométrie et Théorie des Modéles, École Normale Supérieure, March 2020

34. *Kim-independence over arbitrary sets*
Logic Seminar, University of Helsinki, March 2020

35. *Model-theoretic tree properties*
Midwest Model Theory Seminar, UChicago & UIC, August 2020

36. *Groups and measures in simple theories*
DDC: Model Theory Seminar, MSRI, November 2020

37. *Groups and measures in simple theories*
Logic seminar, Imperial/QMUL, November 2020

38. *Measures in model theory*
Department colloquium, Notre Dame University, January 2021

39. *Measures in model theory*
Logic Colloquium, UC Berkeley, March 2021

40. *Exact saturation in pseudo-elementary classes*
Boise Extravaganza in Set Theory, Boise State University, June 2021

41. *Kim-independence*
University of Waterloo, Colloquium, November 2021

42. *Binarity, Treelessness, and Generic Stability*
Lancashire Yorkshire Model Theory Seminar, January 2022

43. *Independence and Classification in Model Theory*
Department colloquium, Notre Dame University, January 2022

44. *Independence and Classification in Model Theory*
Department colloquium, Missouri State University, January 2022

45. *Binarity, Treelessness, and Generic Stability*
Model Theory and Applications, Cetraro, Italy, June 2022

46. *Binarity, Treelessness, and Generic Stability*
UIC Logic Seminar, November 2022

47. *Binarity, Treelessness, and Generic Stability*
University of Maryland Logic Seminar, November 2022

48. *Treelessness, Independence, and Generically Stable Partial Types*
Model Theory Conference, Będlewo, Poland, December 2022

49. *Treelessness, Independence, and Generically Stable Partial Types*
Model Theory: Combinatorics, Groups, Valued Fields and Neostability, Oberwolfach,
January 2023

50. *Measures in Simple Structures*
VIG Conference, UCLA, February 2023

51. *What is Kim-independence?*
Neostability Conference, Banff, Canada, February 2023

52. *Model-theoretic Tree Properties: Prospects and Developments*
Plenary Address, Annual ASL Meeting, UC Irvine, March 2023

53. *Model Theory and the Lazard Correspondence*
Logic Seminar, Ohio State University, April 2023

54. *Model Theory and the Lazard Correspondence*
Antalya Algebra Days, Nesin Mathematics Village, Turkey, May 2023

55. *Measures on bounded PAC fields*
Logic Seminar, University of Wroclaw, Poland, October 2023

56. *Measures on bounded PAC fields*
Logic Seminar, Imperial University, London, UK, November 2023

57. *Higher amalgamation in PAC fields*
GEOMOD Conference, Freiburg, Germany, November 2023

58. *Model Theory and the Lazard Correspondence*
Online Logic Seminar, SIU, November 2023

59. *Higher amalgamation in PAC fields*
AMS Special Session on Model Theory, Milwaukee, April 2024

60. *Higher amalgamation in PAC fields*
Peking University Logic Seminar, Online, June 2024

61. *Measures on bounded PAC fields*
Beijing Model Theory Conference, Beijing, China, July 2024

62. *Model theory of quadratic forms*
Special session in model theory, AMS-UMI International Joint Meeting, Palermo, Italy, July 2024

63. *Measures on bounded PAC fields*
Purdue Logic Seminar, September 2024

64. *Measures on bounded PAC fields*
University of Helsinki Logic Seminar, Online, September 2024

65. *A Borovik-Cherlin bound for primitive pseudo-finite permutation groups*
Model Theory and Applications to Groups and Combinatorics (in honor of Frank Wagner's 60th birthday), September 2024

66. *Measures on bounded PAC fields*
Iowa State University Logic Seminar, October 2024

67. *$NSOP_1$ as a dividing line*
Keynote talk, Indian Conference on Logic and its Applications, Kolkata, India, February 2025

68. *The structure of pseudo-finite permutation groups*
University of Chicago Logic Seminar, March 2025

69. *A Borovik-Cherlin bound for primitive pseudo-finite permutation groups*
University of Illinois Logic Seminar, April 2025

70. *A Borovik-Cherlin bound for primitive pseudo-finite permutation groups*
AMS Special Session, San Luis Obispo, May 2025

71. *The classification of finite simple groups and the structure of pseudo-finite permutation groups*
Logic Colloquium, UC Berkeley, September 2025

72. *The interpretability order*
Logic Seminar, Université Claude-Bernard-Lyon-I, October 2025

73. *The structure of pseudo-finite permutation groups in finite rank*
Logic Colloquium, UCLA, November 2025

TEACHING
EXPERIENCE

At Berkeley

Fall	2013	GSI (Teaching Assistant) Calculus II (Math 1B)
Spring	2014	GSI (Teaching Assistant), Multivariable Calculus (Math 53)
Summer	2014	GSI (Lecturer) Multivariable Calculus (Math 53)
Fall	2014	GSI (Teaching Assistant) Multivariable Calculus (Math 53)
Spring	2015	GSI (Teaching Assistant), Linear Algebra and Differential Equations (Math 54)
Fall	2015	GSI (Teaching Assistant) Calculus II (Math 1B)
Spring	2016	GSI (Teaching Assistant) Discrete Math (Math 55)
Summer	2016	GSI (Lecturer) Complex Analysis (Math 185)
Fall	2016	GSI (Teaching Assistant) Discrete Math (Math 55)
Summer	2017	GSI (Lecturer), Complex Analysis (Math 185)

At UCLA

Fall	2018	Calculus II (Math 31B)
Fall	2018	Discrete Structures (Math 61)
Winter	2019	Analysis I (Math 131A)
Fall	2020	Discrete Structures (Math 61)
Fall	2020	Topics in Model Theory (Math 223M)
Fall	2021	Calculus (Math 31A)
Fall	2021	Discrete Structures (Math 61)
Winter	2022	Research Seminar: Ramsey Theory (Math 191)

At the Nesin Mathematics Village

Summer	2019	Homogeneous Structures
Summer	2021	Ultrafilters and Ramsey Theory
Summer	2024	The Classical Groups

At Fudan University

Fall	2020	Mini-course on Kim-independence and NSOP$_1$ theories

At Notre Dame

Fall	2022	Calculus III
Spring	2023	Calculus III
Spring	2023	Undergraduate Topics in Logic
Spring	2024	Calculus III
Spring	2024	Graduate Model Theory
Fall	2024	Model-theoretic Tree Properties
Spring	2025	Financial Mathematics
Fall	2025	Basic Logic I (Graduate)

ADVISING

1. PhD advisor for Gabriel Day (Philosophy/Joint Program), Katie Ellman-Aspnes, and Cheng Liao

2. MSIM advisor for Yuanshan Li

AWARDS AND HONORS	2016	Outstanding Graduate Student Instructor Award
	2017	Teaching Effectiveness Award
	2018	Herb Alexander Prize for outstanding dissertation in pure mathematics
	2019	CNRS-Imperial "Abraham de Moivre" lab STEG Grant (with Charlotte Kestner)
	2021	AMS Simons Travel Grant
	2023	IHP Research in Paris (with Christian d'Elbée, Isabel Müller, and Daoud Siniora)
	2023	"Young Leader" visitor for STRUCTURES Thematic Semester in Model Theory, Wroclaw, Poland
	2023	London Mathematical Society Research in Pairs Grant (with Charlotte Kestner)
	2025	NSF CAREER Award
SERVICE	2014–2016	Coordinator, UC Berkeley Directed Reading Program
	2017–	Referee: Advances in Mathematics, Annales de l'Institut Fourier, Annals of Pure and Applied Logic, Bollettino dell'Unione Matematica Italiana, Fundamenta Mathematicae, Israel Journal of Mathematics, Journal of Mathematical Logic, Journal of Symbolic Logic, Mathematical Logic Quarterly, Notre Dame Journal of Formal Logic, Selecta Mathematica
	2019–2022	Reviewer for Mathematical Reviews, zbMATH
	2021	Organizer, AMS Special Session on Model-theoretic Classification
	2021–2022	Member, UCLA Math Department Teaching Committee
	2022–	Participant, Graduate Admissions, Notre Dame Mathematics Department
	2023	Organizer on Scientific Committee, Model Theory Conference, STRUCTURES Thematic Semester, Poland
	2023	Organizer on Scientific Committee, Model Theory Conference in Seoul, South Korea
	2023–	Member, Graduate Committee, Notre Dame Mathematics Department
	2024–	Member, Editorial Board, Reviews Section of the Bulletin of Symbolic Logic
	2024–2025	Organizer, ASL Special Session on Model Theory
	2025	Member, Program Committee, Model Theory in Istanbul Conference
	2025	Co-organizer, Model Theory at Notre Dame (in honor of Zoé Chatzidakis)
	2026	Organizer, New Forking Festival
	2026	Co-organizer (with d'Elbée, Müller, and Siniora), Egyptian Undergraduate Summer School in Logic, American University of Cairo