

The New York City Category Theory Seminar

List of Speakers

Spring 2009

1. February 9, 2009. Noson S. Yanofsky, On the algorithmic informational content of categories
2. February 23, 2009. Alex Hoffnung, A categorification of Hecke algebras
3. March 2, 2009. Dustin Mulcahey Spectral sequences for a working category theorist.
4. March 16, 2009. Louis Thrall, Applications of Braided Tensor Categories (Part 1)
5. March 23, 2009. Florian Lengyel, The Curry-Howard-Lambek isomorphism for CCCs with LP structure
6. March 30, 2009. Louis Thrall, Applications of Braided Tensor Categories (Part 2)
7. May 11, 2009. Andre Rodin, Categories without Structures

Fall 2009

8. October 19, 2009. Fred E.J. Linton, Something Old, Something New, Something Borrowed, ...
9. October 26, 2009. Louis Thrall, Category theory, Combinatorial Homotopy Theory and Coverings of "Spaces" Part I.
10. November 2, 2009. Louis Thrall, Category theory, Combinatorial Homotopy Theory and Coverings of "Spaces" Part II.
11. November 23, 2009. Alex Hoffnung, The categorified Hecke algebra and the Zamolodchikov tetrahedron equation
12. December 7, 2009. Dustin Mulcahey, Towards a Change of Comonads Theorem
13. December 14, 2009. Rick Jardine, Cocycle categories

Spring 2010

14. February 22, 2010. Noson S. Yanofsky, Galois Theory of Algorithms.
15. March 1, 2010. Joseph Hirsh, Operads and Homotopy Theory for Algebraic Structures (Part I).
16. March 8, 2010. Joseph Hirsh, Operads and Homotopy Theory for Algebraic Structures (Part II).
17. March 15, 2010. Joseph Hirsh, Operads and Homotopy Theory for Algebraic Structures (Part III).
18. May 17, 2010. Emily Riehl, Natural weak factorization systems in model structures

Fall 2010

19. November 3, 2010. Dustin Mulcahey, More Homological Algebra for Coalgebras over Comonads
20. October 13, 2010. Andre Rodin, Objects are maps

Spring 2011

21. April 13, 2011. Thomas M. Fiore, Euler Characteristics of Categories and Homotopy Colimits

Fall 2011

22. September 27th, 2011. Olivia Caramello, The Unification of Mathematics via Topos Theory
23. November 9, 2011. Andrei Rodin, Why Category Theory Is “Unreasonably Effective”?

Spring 2012

24. April 19th, 2012. Jean-Pierre Marquis, Categorical Foundations for Mathematics or how to provide foundations for abstract mathematics.

Fall 2013

25. November 7, 2013. Dustin Mulcahey, An Introduction to Homotopy Theory Part I.
26. November 21, 2013. Dustin Mulcahey, An Introduction to Homotopy Theory Part II.

Spring 2014

27. April 3, 2014. Jean-Pierre Marquis, Homotopy type theory as a foundational framework: some philosophical remarks.

Fall 2015

28. November 11, 2015. Larry Moss, Thirty Years of Coalgebra: What Have we Learned?

Spring 2016

29. January 13, 2016. David Ellerman, The Joy of Hets: Heteromorphisms and Category Theory
30. January 27, 2016. Jonathan Funk, Isotropy theory.

Fall 2016

31. December 7, 2016. Pieter Hofstra, Topos-theoretic invariants of algebraic theories.

Spring 2017

32. January 18, 2017. David Ellerman, From Abstract Objects in Mathematics to Indefinite "Blobs" in Quantum Mechanics.
33. March 29, 2017. Mikael Vejdemo-Johansson, Persistent homology and the persistence topos.
34. May 10, 2017. Noson Yanofsky, Theoretical Computer Science for the Working Category Theorist.
35. May 17, 2017. Emily Riehl, Towards a synthetic theory of $(\infty,1)$ -categories.

Fall 2017

Spring 2018

36. January 17, 2018. David Ellerman, New Foundations for Information Theory: The logical theory of information.
37. March 12, 2018. Stéphane Dugowson, From connectivity spaces to a general interactivity theory : a categorical exploration.
38. April 18, 2018. Sam van Gool, Duality, sheaves, and semigroups.

Fall 2018

39. September 5, 2018. Christoph Dorn, Associative n-categories.
40. October 24, 2018. Phillip Bressie, On Tautological Globular Operads.
41. October 26, 2018. André Joyal, Homotopy type theory: a new bridge between logic, category theory and topology.
42. October 31, 2018. Ieke Moerdijk, The topos of dendroidal sets.
43. November 14, 2018. John Connor, Intuitionistic Epistemic Logic and Propositional Truncation in the Type Theory.
44. November 28, 2018. Micah Miller, Primer on Homotopy Limits.
45. December 5, 2018. Alex Martsinkovsky, Stabilization of additive functors.

Spring 2019

46. March 20, 2019. Noson S. Yanofsky, Quantum Algorithms.
47. April 3, 2019. Eoin Moore, The Arithmetical Completeness and Soundness of the Logic of Proofs.
48. April 17, 2019. Tibor Beke, Schanuel functors and the Grothendieck (semi)ring of some theories.
49. April 24, 2019. Andrei Rodin, Directed Homotopy Type Theory and the (In)vertibility of Mathematics.
50. May 8, 2019. Jonathan Funk, Isotropy theory meets Galois theory.
51. May 15, 2019. Sergei Artemov, On the Provability of Consistency.

Fall 2019

52. October 10, 2019. Jonathan Weinberger, Modalities and fibrations for synthetic $(\infty,1)$ -categories.
53. October 23, 2019. Alex Martsinkovsky, Stabilization of additive functors II.
54. November 6, 2019. Dan Shiebler, Incremental Monoidal Categories for Speech.
55. November 20, 2019. Raymond Puzio Posets, Lifting properties, and Completions.
56. December 4, 2019. Philipp Rothmaler, Martsinkovsky-Russell torsion done definably.
57. January 13, 2019. David Ellerman, Four New Partition-related Theories.

Spring 2020

58. February 19, 2020. Todd Trimble, The Universal Property of the Bar Construction.
59. March 4, 2020. Noah Chrein, Hierarchy and Anisotropy in Categorical Ontology.
60. April 22, 2020. Nicholas Meadows, Higher Homotopy Operations in $(\infty, 1)$ -categories.

Fall 2020

61. September 16, 2020. Rick Jardine, Posets, metric spaces, and topological data analysis.
62. September 30, 2020. David Ellerman, The Logical Theory of Canonical Maps: The Elements & Distinctions Analysis of the Morphisms, Duality, Canonicity, and Universal Constructions in Sets.
63. October 14, 2020. Jonathon Funk, Pseudogroup Torsors.
64. October 21, 2020. Andrei V. Rodin, Vladimir Voevodsky's Unachieved Project.
65. October 28, 2020. Larry Moss, Coalgebra in Continuous Mathematics.
66. November 4, 2020. Luis Scoccola, Locally persistent categories and approximate homotopy theory.
67. November 11, 2020. Noah Chrein, Yoneda ontologies.
68. November 18, 2020. Enrico Ghiorzi, Internal enriched categories.

69. December 2, 2020. Andrew Winkler, Functors as homomorphisms of quivered algebras.
70. December 9, 2020. Dan Shiebler, Functorial Manifold Learning and Overlapping Clustering.
71. December 16, 2020. Arthur Parzygnat, A functorial characterization of classical and quantum entropies.

Spring 2021

72. February 3, 2021. Jason Parker, Isotropy Groups of Quasi-Equational Theories.
73. February 10, 2021. Peter Hines, Shuffling cards as an operad.
74. February 17, 2021. Richard Blute, Finiteness Spaces, Generalized Polynomial Rings and Topological Groupoids.
75. March 3, 2021. Joshua Sussan, Categorification and quantum topology.
76. March 17, 2021. Paolo Perrone, Categorical probability, Markov categories, and the de Finetti theorem.
77. March 24, 2021. Tobias Fritz, Categorical Probability and the de Finetti Theorem.
78. April 14, 2021. Ross Street, Absolute colimits for differential graded categories.
79. May 5, 2021. Juan Orendain, How long does it take to frame a bicategory?

Fall 2021

80. October 6, 2021. Gemma De las Cuevas, From simplicity to universality and undecidability.
81. October 20, 2021. Dan Shiebler, Out of Sample Generalization with Kan Extensions.
82. November 3, 2021. Dusko Pavlovic, Geometry of computation and string-diagram programming in a monoidal computer.
83. November 17, 2021. Marco Schorlemmer, A Uniform Model of Computational Conceptual Blending.
84. December 1, 2021. Robert Geroch, An Alien's Perspective on Mathematics (and Physics).
85. December 8, 2021. Jens Hemelaer, Toposes of presheaves on a monoid and their points.
86. December 15, 2021. Samantha Jarvis, Language as an Enriched Category.
87. December 22, 2021. Todd Trimble, Categorifying negatives: roadblocks and detours.

Spring 2022

88. February 2, 2022. Ralph Wojtowicz, On Logic-Based Artificial Intelligence and Categorical Logic.
89. February 16, 2022. Emilio Minichiello, Category Theory \cap Differential Geometry.
90. February 23, 2022. David Roberts, Do you have what it takes to use the diagonal argument?
91. March 16, 2022. Jin-Cheng Guu, Topological Quantum Field Theories from Monoidal Categories.
92. March 23, 2022. Joseph Dimos, Introduction to Fusion Categories and Some Applications.
93. March 30, 2022. Morgan Rogers, Toposes of Topological Monoid Actions.
94. April 6, 2022. Jason Parker, Enriched structure-semantics adjunctions and monad-theory equivalences for subcategories of arities.
95. April 13, 2022. Alex Martsinkovsky, A Reflector in Search of a Category.
96. April 27, 2022. Alex Sorokin, The defect of a profunctor.
97. May 4, 2022. Gershom Bazerman, Classes of Closed Monoidal Functors which Admit Infinite Traversals.

Fall 2022

98. September 7, 2022. Sergei Burkin, Segal conditions and twisted arrow categories of operads.
99. September 14, 2022. Prakash Panangaden, Quantitative Equational Logic.
100. October 19, 2022. David Ellerman, To Interpret Quantum Mechanics: "Follow the Math": The math of QM as the linearization of the math of partitions.
101. October 26, 2022. Ross Street, The core groupoid can suffice.
102. November 2, 2022. Astra Kolomatskaia, The Objective Metatheory of Simply Typed Lambda Calculus.
103. November 9, 2022. Andrei Rodin, Kolmogorov's Calculus of Problems and Homotopy Type theory.
104. November 23, 2022. Saeed Salehi, Self-Reference and Diagonalization: their difference and a short history.
105. December 7, 2022. Robert Pare, The horizontal/vertical synergy of double categories.

Spring 2023

106. February 1, 2023. Igor Baković, Enhanced 2-adjunctions.
107. February 8, 2023. Mikhail Khovanov, Universal construction and its applications.
108. February 15, 2023. Mee Seong Im, Automata and topological theories.
109. February 22, 2023. Joshua Sussan, Non-semisimple Hermitian TQFTs.
110. March 15, 2023. Jens Hemelaer, EILC toposes.
111. March 29, 2023. Jim Otto, P Time, A Bounded Numeric Arrow Category, and Entailments.
112. April 19, 2023. Walter Tholen, What does "smallness" mean in categories of topological spaces?
113. April 26, 2023. Dusko Pavlovic, Program-closed categories.
114. May 3, 2023. Tomáš Gonda, A framework for universality across disciplines.
115. May 17, 2023. Arthur Parzygnat, Inferring the past and using category theory to define retrodiction.

Fall 2023

116. September 27, 2023. Tomáš Gonda, A Framework for Universality in Physics, Computer Science, and Beyond.
117. October 11, 2023. Thiago Alexandre, Internal homotopy theories.
118. October 18, 2023. Michael Shulman, The derivator of setoids.
119. October 25, 2023. Emilio Minichiello, A Mathematical Model of Package Management Systems.
120. November 8, 2023. Larry Moss, On Kripke, Vietoris, and Hausdorff Polynomial Functors.
121. November 29, 2023. Charlotte Aten, A categorical semantics for neural networks.

Spring 2024

122. February 7, 2024. Saeed Salehi, On Chaitin's two HP's: (1) Heuristic Principle and (2) Halting Probability.
123. February 28, 2024. Astra Kolomatskaia, Displayed Type Theory and Semi-Simplicial Types.
124. March 6, 2024. Jean-Pierre Marquis, Hom sweet Hom: a sketch of the history of duality in category theory.
125. March 20, 2024. Sina Hazratpour, Fibred Categories in Lean.

- 126. April 10, 2024. Ellis D. Cooper, Pulse Diagrams and Category Theory.
- 127. May 8, 2024. Juan Orendain, Canonical squares in fully faithful and absolutely dense equipments.
- 128. May 15, 2024. Raymond Puzio, Uniqueness of Classical Retrodiction.
- 129. May 22, 2024. Emilio Minichiello, Presenting Profunctors.
- 130. May 29, 2024. Samuel Mimram, Coherence in cartesian theories using rewriting.

Fall 2024

- 131. September 18, 2024. Jake Araujo-Simon, Categorifying the Volterra series: towards a compositional theory of nonlinear signal processing.
- 132. September 25, 2024. Noah Chrein, A formal category theory for oo-T-multicategories.
- 133. October 9, 2024. Sam McCrosson, Exodromy.
- 134. October 30, 2024. Bruno Gavranović, Categorical Deep Learning: An Algebraic Theory of Architectures.
- 135. November 6, 2024. David Jaz Myers, Contextads: Para and Kleisli constructions as wreath products.
- 136. November 13, 2024. Emilio Minichiello, Decision Problems on Graphs with Sheaves.
- 137. November 20, 2024. Arnon Avron, What is the Structure of the Natural numbers?
- 138. November 27, 2024. Tim Hosgood, Loose simplicial objects.
- 139. December 4, 2024. Charlotte Aten, Invariants of structures.
- 140. December 11, 2024. Matthew Cushman, Recollements: gluing and fracture for categories.

Spring 2025

- 141. February 5, 2025. Raymond Puzio. Gentle Introduction to Synthetic Differential Geometry - Part 1.
- 142. February 19, 2025. Jacob S. Zelko, An Introduction to Compositional Public Health.
- 143. February 26, 2025. Thiago Alexandre, Topological Derivators.
- 144. March 5, 2025. Grigorios Giotopoulos, Thickened smooth sets as a natural setting for Lagrangian field theory.
- 145. March 12, 2025. Jonathon Funk, Toposes and rings.
- 146. March 19, 2025. Sophie d'Espalungue, Building All of Mathematics Without Axioms: An n-Categorical Manifesto.
- 147. March 26, 2025. Hannah Aizenman, Topologically Equivalent Artist Model.
- 148. April 9, 2025. Emilio Minichiello, Structured Decomposition Categories.
- 149. April 23, 2025. Andrei Rodin, The concept of mathematical structure according to Voevodsky.
- 150. May 7, 2025. Sergei Artemov, Consistency of PA is a serial property, and it is provable in PA.
- 151. May 14, 2025. Raymond Puzio, Gentle Introduction to Synthetic Differential Geometry --- Part two.
- 152. May 28, 2025. Thiago Alexandre, Topological Derivators --- Part two.

Fall 2025

- 153. October 22, 2025. Amartya Shekhar Dubey, Unital k-restricted Infinity Operads.
- 154. October 29, 2025. Jonathon Funk, More Toposes and C*-algebras.
- 155. November 5, 2025. Florian Lengyel, Combinatorics of Algebraic n-Hypergroupoids.
- 156. November 12, 2025. Emilio Minichiello, Model Structures for Simplicial Complexes and Graphs.

157. December 3, 2025. Evan Misshula, From Outer Measures to Adjunctions: A Category-Theoretic Recasting of Caratheodory's Extension Theorem.

Spring 2026

158. February 4, 2026. Sergei Artemov, Non-compact proofs.

159. February 11, 2026. David Ellerman, A Fundamental Duality in the Exact Sciences: An Introduction to Mathematical Metaphysics.

160. February 18, 2026. Ellis Cooper, Algebraic String Diagrams and a Manifest Covariance Theorem.

161. March 4, 2026. James Austin Myer, The Bloch Material: a Simplicial Set Whose Homology is the Higher Chow Groups of Spencer Bloch.

162. March 11, 2026. Kristaps John Balodis, A geometric introduction to the local Langlands correspondence.

163. March 25, 2026. Morgan Rogers, Ultrarings. A categorical approach to unifying boolean and algebraic descriptive complexity.

164. April 15, 2026. Michael Lesnick, Limit Computation Over Posets via Minimal Initial Functors.

165. April 22, 2026. Gabriel Goren-Roig, Arboreal Adjunctions from Shapes.

166. April 29, 2026. Kristaps John Balodis, A geometric introduction to the local Langlands correspondence, Part II.

167. May 6, 2026. Cheyne Glass, Homotopy theoretic least squares models.

168. May 20, 2026. Joseph Dorfer, NP-completeness of finding shortest combinatorial paths in the Associahedron.

169. June 3, 2026. Joseph Helfer, Set-theoretic universes and paradoxes in elementary 2-topoi.