

Araminta Amabel

CONTACT INFORMATION	Department of Mathematics Northwestern University 2033 Sheridan Road Evanston, IL 60208, USA	araminta@northwestern.edu http://amabel3.github.io/ Citizenship: <i>United States</i>
RESEARCH INTERESTS	Factorization algebras and their relationships with quantum field theory, elliptic genera, operads, and deformation quantization.	
EMPLOYMENT	Northwestern University Boas Assistant Professor and NSF Postdoctoral Fellow, September 2023-ongoing Sponsor: John Francis University of Texas at Austin NSF Postdoctoral Fellow, 2022-2023 Sponsor: David Ben-Zvi	
EDUCATION	Massachusetts Institute of Technology Ph.D. in Mathematics, May 2022 Advisor: Michael Hopkins Northwestern University B.A. in Mathematics, June 2017 Advisor: John Francis	
PUBLICATIONS AND PREPRINTS	<i>Genera from an algebraic index theorem for supermanifolds.</i> Preprint available at arXiv:2204.05920 , April. 2022. <i>Deformation quantization for supermanifolds via Gelfand-Kazhdan descent.</i> Preprint available at arXiv:2110.01007 , Oct. 2021. (Submitted.) <i>Differential cohomology: categories, characteristic classes, and connections.</i> With Arun Debray and Peter Haine. Preprint available at arXiv:2109.12250 , Sep. 2021.(Submitted.) <i>Poincaré/Koszul duality for general operads.</i> In Homology, Homotopy, and Applications. Preprint available at arXiv:1910.09076 , Oct. 2019. <i>Lectures on factorization homology, ∞-categories, and topological field theories.</i> Contributor with Artem Kalmykov, and Lukas Müller. Authored by Hiro Lee Tanaka. In SpringBriefs in Mathematical Physics. ISBN: 978-3-030-61163-7. DOI: 10.1007/978-3-030-61163-7	
RESEARCH FUNDING	National Science Foundation Mathematical Sciences Postdoctoral Research Fellowship. 2022-ongoing.	

National Science Foundation Graduate Research Fellowship. 2017-2022.

Akamai Presidential Fellowship. 2017-2018.

INVITED TALKS

Tbd. Midwest Topology Seminar at UIUC. (September 30-October 1, 2023)

Factorization Algebras. Global Categorical Symmetries Postdoc and Graduate Student colloquium. (May 22, 2023)

Factorization Algebras. Course at the Atlantic TQFT Spring School in Nova Scotia. (May 1-5, 2023)

A Factorization Homology Approach to Line Operators. Topology Seminar at Notre Dame. (March 28, 2023)

Incorporating Koszul Duality Features into Field Theory. Geometry and Physics Seminar at Boston University. (December 7, 2022)

Incorporating Koszul Duality Features into Field Theory. Mathematical Physics Seminar at Perimeter Institute. (December 2, 2022)

Genera from Supersymmetric Mechanics. Geometry Seminar at UT Austin. (April 21, 2022)

Genera from Supersymmetric Mechanics. Topics in Algebraic and Geometric Topology at the AMS Sectional Meeting at Purdue University. (March 27, 2022)

Quantum Field Theories and Manifolds. Colloquium at West Virginia University (March 1, 2022)

Deformation theory and supersymmetric quantum mechanics. Algebra and Topology Seminar of the University of Copenhagen. (December 3, 2021)

Towards a Construction of L-Theory via Supersymmetric Mechanics. Representation Theory Seminar at UMass Amherst. (November 8, 2021)

Deformation theory and supersymmetric quantum mechanics. Topology Seminar at UChicago-Northwestern. (October 26, 2021)

Deformation theory and supersymmetric quantum mechanics. Algebraic Topology Seminar at UCLA. (October 22, 2021)

Deformation theory and supersymmetric quantum mechanics. Topology Seminar at UC San Diego. (October 19, 2021)

CONTRIBUTED TALKS

Obstructions to quantizing equivariantly. MIT Juvitop Seminar. (November 2021)

Factorization Algebras, Symmetries, and Quantization. MIT Juvitop Seminar. (September 2021)

CM classes exhaust symplectic K-theory. MIT Juvitop Seminar. (March 2021 - Online)

Introduction to the Cobordism Hypothesis after Hopkins-Lurie. MIT Juvitop Seminar. (September 2020 - Online)

Cobordism Categories. MIT Pre-Talbot Seminar. (March 2021)

Deligne Cup Product and Differential Fiber Integration. MIT Juvitop Seminar. (November 2019)

Examples of Differential Cohomology Theories. MIT Juvitop Seminar. (October 2019)

Proof of Poincaré/Koszul Duality. Miniature Seminar on Factorization Homology. (March 2019)

The Cardinality Filtration and the Ran Space. Miniature Seminar on Factorization Homology. (March 2019)

How and why to use factorization homology. Miniature Seminar on Factorization Homology. (March 2019)

TEACHING

Fall	2023	Series and Multiple Integrals
Fall	2023	Multivariable Differential Calculus for Engineering
Winter	2021	Mathematics Lecture Series, TA
Fall	2020	Calculus, TA

ADVISING

Spring 2023	Mentor , STEM Muse <i>Mentored undergraduate math major on academic and career advise</i>
Fall 2020 - Spring 2022	Mentor , Grad-Undergrad Math Mentoring Initiative <i>Mentored four undergraduates applying to math grad school</i>
Fall 2020	Assistant mentor , MIT Undergraduate Research Opportunities Program <i>Mentored an undergraduate on a research project about Betti numbers of configuration spaces with Haynes Miller</i>
Summer 2020	Mentor , MIT SPUR+, Summer Program in Undergraduate Research Plus <i>Mentored an undergraduate on configuration spaces</i>
Winter 2020	Mentor , MIT Directed Reading Program <i>Mentored two undergraduates in a reading course on K-Theory</i>
Summer 2017	Mentor , UChicago Mathematics REU <i>Mentored two undergraduates on knots and Chern-Weil theory.</i>

ORGANIZATION AND OUTREACH

Spring 2023-	Committee Member , AMS Committee on Committees
Spring 2023	Volunteer , Texas Women in Math Symposium
Fall 2022	Organizer , UT Austin Geometry Seminar
Fall 2021	Co-organizer , MIT Juvitop Seminar: Factorization Algebras and the Quantum Noether Theorem
Spring 2021	Co-organizer , MIT Juvitop Seminar: The Galois Action on Symplectic K-Theory
Fall 2020 -	Co-founder and co-organizer , MIT Grad-Undergrad Math Mentoring Initiative (GUMMI) <i>Established a one-on-one mentoring program, designed a website with advice and information, organized many events including panels and social gatherings.</i>
Fall 2020	Co-organizer , MIT Juvitop Seminar: The Cobordism Hypothesis <i>Ran concurrent discussion sections and wrote problem sets.</i>
Spring 2020	Co-organizer , Juvitop Pre-Talbot Seminar: Chromatic Homotopy Theory
Fall 2019	Organizer , MIT Topology Seminar
Fall 2019	Co-organizer , MIT Juvitop Seminar: Differential Cohomology
Spring 2019	Co-organizer , Juvitop Pre-Talbot Seminar: Moduli Spaces of Manifolds
Winter 2019	Co-organizer , A Miniature Course on Factorization homology
Fall 2015	Founder , Northwestern University AWM Chapter