

# Araminta Amabel

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CONTACT INFORMATION	Department of Mathematics The University of Texas at Austin 2515 Speedway Austin, TX 78712, USA	<a href="mailto:araminta.wilson@math.utexas.edu">araminta.wilson@math.utexas.edu</a> <a href="http://amabel3.github.io/">http://amabel3.github.io/</a>  Citizenship: <i>United States</i>
RESEARCH INTERESTS	Factorization algebras and their relationships with quantum field theory, elliptic genera, operads, and deformation quantization.	
EMPLOYMENT	<b>University of Texas at Austin</b> NSF Postdoctoral Fellow, September 2022-ongoing Sponsor: David Ben-Zvi	
EDUCATION	<b>Massachusetts Institute of Technology</b> Ph.D. in Mathematics, May 2022 Advisor: Michael Hopkins  <b>Northwestern University</b> 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 <a href="https://arxiv.org/abs/2204.05920">arXiv:2204.05920</a> , April. 2022.  <i>Deformation quantization for supermanifolds via Gelfand-Kazhdan descent.</i> Preprint available at <a href="https://arxiv.org/abs/2110.01007">arXiv:2110.01007</a> , Oct. 2021.  <i>Differential cohomology: categories, characteristic classes, and connections.</i> With Arun Debray and Peter Haine. Preprint available at <a href="https://arxiv.org/abs/2109.12250">arXiv:2109.12250</a> , Sep. 2021.  <i>Poincaré/Koszul duality for general operads.</i> To appear in Homology, Homotopy, and Applications. Preprint available at <a href="https://arxiv.org/abs/1910.09076">arXiv:1910.09076</a> , Oct. 2019.  <i>Lectures on factorization homology, <math>\infty</math>-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.* Topology Seminar at UIUC. (April 4, 2023)

*Tbd.* 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)

Generalised Lie algebras in Derived Geometry conference in Utrecht. (June 2020 - postponed due to the pandemic)

Homotopy Theory Seminar at Ohio State University. (April 23, 2020 - postponed due to the pandemic)

## 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

Winter	2021	Mathematics Lecture Series, 18.095, TA
Fall	2020	Calculus, 18.01, TA

#### ADVISING

Fall 2020 -	<b>Mentor</b> , Grad-Undergrad Math Mentoring Initiative <i>Mentored four undergraduates applying to math grad school</i>
Fall 2020	<b>Assistant mentor</b> , 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	<b>Mentor</b> , MIT SPUR+, Summer Program in Undergraduate Research Plus <i>Mentored an undergraduate on configuration spaces</i>
Winter 2020	<b>Mentor</b> , MIT Directed Reading Program <i>Mentored two undergraduates in a reading course on K-Theory</i>
Summer 2017	<b>Mentor</b> , UChicago Mathematics REU <i>Mentored two undergraduates on knots and Chern-Weil theory.</i>

#### ORGANIZATION AND OUTREACH

Fall 2022	<b>Organizer</b> , UT Austin Geometry Seminar
Fall 2021	<b>Co-organizer</b> , MIT Juvitop Seminar: Factorization Algebras and the Quantum Noether Theorem
Spring 2021	<b>Co-organizer</b> , MIT Juvitop Seminar: The Galois Action on Symplectic K-Theory
Fall 2020 -	<b>Co-founder and co-organizer</b> , 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	<b>Co-organizer</b> , MIT Juvitop Seminar: The Cobordism Hypothesis <i>Ran concurrent discussion sections and wrote problem sets.</i>
Spring 2020	<b>Co-organizer</b> , Juvitop Pre-Talbot Seminar: Chromatic Homotopy Theory
Fall 2019	<b>Organizer</b> , MIT Topology Seminar
Fall 2019	<b>Co-organizer</b> , MIT Juvitop Seminar: Differential Cohomology
Spring 2019	<b>Co-organizer</b> , Juvitop Pre-Talbot Seminar: Moduli Spaces of Manifolds
Winter 2019	<b>Co-organizer</b> , A Miniature Course on Factorization homology
Fall 2015	<b>Founder</b> , Northwestern University AWM Chapter