

**Contact information.**

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**Research interests.**

- Symplectic geometry, contact geometry
- Symplectic field theory, Floer theories, holomorphic curves

## EDUCATION

<b>Ph.D. in Mathematics</b> , Uppsala University	2016–2021
Thesis: <i>Chekanov–Eliashberg dg-algebras and partially wrapped Floer cohomology</i>	
Advisors: Tobias Ekholm, Thomas Kragh	
<b>MSc. in Mathematics</b> , Uppsala University	2014–2016
Thesis: <i>Contact homology of Legendrian knots in five-dimensional circle bundles</i>	
Advisor: Thomas Kragh	
<b>BSc. in Mathematics</b> , Uppsala University	2011–2014
Thesis: <i>Linking and Morse theory</i>	
Advisor: Tobias Ekholm	

## APPOINTMENTS

<b>James H. Simons Instructor</b> , Stony Brook University	2024–2027
Mentor: Mark McLean	
<b>Postdoctoral Research Fellow</b> , Columbia University	2022–2024
Mentor: Mohammed Abouzaid	
<b>Research assistant</b> , Uppsala University	2021
<b>Head teaching assistant</b> , Uppsala University	2014–2016
<b>Teaching assistant</b> , Uppsala University	2013–2014

## SCHOLARSHIPS, GRANTS AND AWARDS

<b>G.S. Magnuson Foundation</b> (\$2,500)	2024
The Royal Swedish Academy of Sciences	
<b>Knut and Alice Wallenberg postdoc scholarship</b> (\$135,000)	2022–2024
KAW 2020.0285	
<b>Liljewalchs travel scholarship</b> (\$1,000)	2020
<b>Stecksén–Norbergs</b>	2016
Norrlands Nation	

## RESEARCH VISITS

<b>Banff International Research Station (Research in Teams)</b> , Banff, Canada	May 2026
<i>Floer homotopy theory and mirror symmetry (26rit051)</i>	
with Kenneth Blakey, Yash Deshmukh, and Noah Porcelli.	
<b>Institute for Advanced Study</b> , Princeton, USA	Mar 2025
Short Term Scholar	
<b>Institute for Advanced Study (Summer Collaborators Program)</b> , Princeton, USA	Jun 2024
<i>Homotopy Theoretic Structures in Floer Theory</i>	
with Yash Deshmukh and Alex Pieloch.	

<b>Institute for Basic Science, Center for Geometry and Physics</b> Pohang, South Korea	Mar 2023
<b>Institut Mittag-Leffler</b> , Stockholm, Sweden Program: Knots, Strings, Symplectic Geometry and Dualities	Fall 2020

## PUBLICATIONS AND PREPRINTS

(10) <b>Homotopy rigidity of nearby Lagrangian cocores</b> with Y. Deshmukh and A. Pieloch [arXiv:2511.09548]	Preprint
(9) <b>Decompositions of augmentation varieties via weaves and rulings</b> with O. Capovilla-Searle, J. Hughes, C. Levenson, W. Li, and A. Wu [arXiv:2508.20226]	Preprint
(8) <b>Persistence of unknottedness of clean Lagrangian intersections</b> with Y. Li <i>J. Topol.</i> , 18(4):Paper No. e70053, 2025. [arXiv:2501.09110]	2025
(7) <b>Spectral equivalence of nearby Lagrangians</b> with Y. Deshmukh and A. Pieloch [arXiv:2411.08841]	Preprint
(6) <b>Singular Legendrian unknot links and relative Ginzburg algebras</b> <i>Algebr. Geom. Topol.</i> , 25(6):3737–3754, 2025. [arXiv:2311.03330]	2025
(5) <b>Lagrangian cobordism of positroid links</b> with Y. Bae, O. Capovilla-Searle, M. Castronovo, C. Levenson, and A. Wu <i>Pacific J. Math.</i> , 332(1):1–21, 2024. [arXiv:2305.16232]	2024
(4) <b>Tangle contact homology</b> <i>Internat. J. Math.</i> , 35(12):Paper No 2450044, 59, 2024. [arXiv:2210.03036]	2024
(3) <b>Simplicial descent for Chekanov–Eliashberg dg-algebras</b> <i>J. Topol.</i> , 16(2):489–541, 2023. [arXiv:2112.01915]	2023
(2) <b>Chekanov–Eliashberg dg-algebras for singular Legendrians</b> with T. Ekholm <i>J. Symplectic Geom.</i> , 20(3):509–559, 2022. [arXiv:2102.04858]	2022
(1) <b>Fiber Floer cohomology and conormal stops</b> <i>J. Symplectic Geom.</i> , 19(4):777–864, 2021. [arXiv:1912.02547]	2021

## INVITED TALKS

<b>AMS 2026 Spring Eastern Sectional Meeting</b> , Boston College	Mar 2026
<b>Rutgers symplectic seminar</b> , Rutgers University	Jan 2026
<b>Symplectic geometry seminar</b> , Institute for Advanced Study	Oct 2025
<b>Symplectic Geometry, Gauge Theory, and Categorification Seminar</b> Columbia University	Oct 2025
<b>Homotopy Theory and Floer Homology</b> , Institut Mittag-Leffler	Jun 2025
<b>Symplectic seminar</b> , MIT	May 2025
<b>Symplectic geometry, gauge theory, and low-dimensional topology seminar</b> Stony Brook University	Apr 2025
<b>Geometry/Physics Seminar</b> , Northwestern University	Mar 2024
<b>Symplectic geometry, gauge theory, and low-dimensional topology seminar</b> Stony Brook University	Feb 2024
<b>Paris algebra seminar (online)</b> Institut de Mathématiques de Jussieu-Paris Rive Gauche	Jan 2024
<b>Geometry &amp; Topology Seminar</b> , Uppsala University	Dec 2023
<b>CGP Seminar</b> , Institute for Basic Science	Mar 2023
<b>Princeton/IAS Symplectic Geometry seminar</b> , Princeton University	Oct 2022
<b>Symplectic seminar</b> , MIT	Sep 2022

<b>Symplectic geometry, gauge theory and low-dimensional topology seminar</b> Stony Brook University	Sep 2022
<b>Recent developments in Lagrangian Floer theory</b> Simons Center for Geometry and Physics	Mar 2022
<b>Symplectic Zoominar (online)</b> , CRM-Montréal, Princeton/IAS, Tel Aviv, and Paris	Dec 2021
<b>Nantes–Orsay Seminar on Symplectic and Contact Topology</b> Université Paris-Saclay	Nov 2021
<b>Geometry &amp; Topology Seminar</b> , Uppsala University	Nov 2021
<b>Freemath Seminar (online)</b> University of Lancaster, University of Cambridge, and Imperial College London	Jun 2021
<b>Symplectix Seminar (online)</b> Institut Henri Poincaré, Université de Nantes, and Université Paris-Sud	Apr 2021
<b>Geometry &amp; Topology Seminar</b> , Uppsala University	Feb 2021
<b>Symplectic Geometry Seminar (online)</b> , Humboldt-Universität zu Berlin	Jan 2021
<b>Knots, Strings, Symplectic Geometry and Dualities</b> , Institut Mittag-Leffler	Oct 2020
<b>Topology Seminar (online)</b> , Korea Institute for Advanced Study	Jun 2020

## EXPOSITORY TALKS

<b>Unknotting Lagrangians via Floer homotopy theory</b> <i>Symplectic Topology Student Seminar</i> , Stony Brook University	Oct 2025
<b>Spectral equivalence of nearby Lagrangians</b> <i>Symplectic Topology Student Seminar</i> , Stony Brook University	Dec 2024
<b>Spectra and orientations</b> <i>Symplectic Topology Student Seminar</i> , Stony Brook University	Nov 2024
<b>Flow categories</b> <i>Symplectic Topology Student Seminar</i> , Stony Brook University	Nov 2024
<b>The Cohen–Jones–Segal construction</b> <i>Symplectic geometry and gauge theory learning seminar</i> , Stony Brook University	Nov 2024
<b>Spectra and orientations</b> <i>Symplectic geometry and gauge theory learning seminar</i> , Stony Brook University	Oct 2024
<b>Legendrian knot theory</b> <i>Stony Brook University Math Club</i> , Stony Brook University	Oct 2024
<b>Flow categories</b> <i>Symplectic geometry and gauge theory learning seminar</i> , Stony Brook University	Oct 2024
<b>Legendrian knots and complex Grassmannians</b> <i>Postdoc Seminar Series</i> , Columbia University	Nov 2023
<b>Legendrian knot theory</b> <i>Columbia Undergraduate Math Society</i> , Columbia University	Oct 2023
<b>The Ozsváth–Szabó contact invariant</b> <i>Reading seminar on applications and computations of Floer homology</i> , Columbia University	Apr 2023
<b>Legendrian knot theory and the Chekanov–Eliashberg dg-algebra</b> <i>Michael Zhao Student Colloquium</i> , Columbia University	Nov 2022
<b>Legendrian knots and constructible sheaves</b> <i>Reading seminar on microlocal sheaf theory</i> , Columbia University	Oct 2022
<b>The Chekanov–Eliashberg dg-algebra</b> <i>Columbia Undergraduate Math Society</i> , Columbia University	Feb 2022
<b>Functoriality of Legendrian contact homology</b> <i>Reading seminar on Lagrangian fillings</i> , Columbia University	Oct 2021
<b>Introduction to homological mirror symmetry and the Fukaya category</b> <i>Uppsala Ph.D. Mathematics Conference</i> , Uppsala University	Mar 2020

<b>Legendrian approximation or how to parallel park a car</b> <i>Ph.D. Seminar</i> , Uppsala University	Sep 2019
<b>Associativity in topology</b> <i>Ph.D. Seminar</i> , Uppsala University	Nov 2018
<b>LCH and the art of counting pseudoholomorphic disks</b> <i>Ph.D. Seminar</i> , Uppsala University	Apr 2018
<b>Flexibility of Legendrian immersions</b> <i>Geometry &amp; Topology Seminar</i> , Uppsala University	Sep 2017
<b>Morse flow trees and their relation to LCH in 1-jet spaces</b> <i>Legendrian Contact Homology and a variety of augmentations</i> , Krusenberg Herrgård, Uppsala	Aug 2017

## SERVICE AND ORGANIZATION

<b>Symplectic geometry, gauge theory, and low-dimensional topology seminar</b> Stony Brook University (co-organizer)	2024–
<b>Symplectic geometry and gauge theory seminar</b> Columbia University (co-organizer)	Fall 2023
<b>Symplectic geometry, gauge theory and categorification seminar</b> Columbia University (co-organizer)	2022
<b>Reading seminar on microlocal sheaf theory in symplectic geometry</b> Columbia University (co-organizer)	Fall 2022
<b>Student Symplectic Seminar</b> , Uppsala University (co-organizer)	2017–2020

## CONFERENCES AND WORKSHOPS ATTENDED

<b>Rutgers Symplectic Summer School 2025</b> , Rutgers University, New Jersey	Aug 2025
<b>Homotopy Theory and Floer Homology</b> , Institut Mittag-Leffler, Stockholm	Jun 2025
<b>Recent developments in higher genus curve counting</b> Simons Center for Geometry and Physics, Stony Brook	Feb 2025
<b>2024 Simons Math Summer Workshop</b> Simons Center for Geometry and Physics, Stony Brook	Jul 2024
<b>From Hamiltonian Dynamics to Symplectic Topology and Beyond</b> Institut Henri Poincaré, Paris	Jun 2024
<b>Birational Geometry and Quantum Invariants</b> Simons Center for Geometry and Physics, Stony Brook	Oct 2023
<b>Symplectic Geometry, Low Dimensional Topology, and Quantum Fields</b> Clay Mathematics Institute, Oxford	Sep 2023
<b>Symplectic Field Theory 10</b> , Humboldt-Universität zu Berlin, Berlin	Aug 2023
<b>2023 Simons Math Summer Workshop</b> Simons Center for Geometry and Physics, Stony Brook	Aug 2023
<b>GTiNY (Geometric Topology in New York)</b> , Columbia University, New York	Jun 2023
<b>Concluding Conference of Simons Collaboration on Homological Mirror Symmetry</b> Simons Center for Geometry and Physics, Stony Brook	Apr 2023
<b>AIM Workshop: Cluster algebras and braid varieties</b> American Institute of Mathematics, San Jose	Jan 2023
<b>Simons Collaboration on Homological Mirror Symmetry Annual Meeting</b> Ingrid Daubechies Auditorium, New York	Nov 2022
<b>Symplectic and contact topology early career workshop</b> , UC Davis, Davis	Aug 2022
<b>Convexity in contact and symplectic topology</b> , Institut Henri Poincaré, Paris	Jul 2022
<b>Frontiers of Quantitative Symplectic and Contact Geometry</b> Institut Mittag-Leffler, Stockholm	Jun 2022
<b>Reflections on Geometry: 3-manifolds, groups and singularities</b> Columbia University, New York	Jun 2022

<b>Deformations of Geometric Structures in Current Mathematics</b> Columbia University, New York	May 2022
<b>Homological Mirror Symmetry</b> , University of Miami, Miami	Apr 2022
<b>Recent developments in Lagrangian Floer theory</b> Simons Center for Geometry and Physics, Stony Brook	Mar 2022
<b>Uppsala–Nantes Workshop on Lagrangian cobordisms and Floer theory</b> Haga Slott, Enköping	Oct 2021
<b>Braids, mutations and twists in algebra and geometry (online)</b> Uppsala University, Uppsala	Jun 2021
<b>Advances in Symplectic topology (online)</b> , Institut Henri Poincaré, Paris	May 2021
<b>From Hamiltonian Dynamics to Symplectic Topology (online)</b> , CIRM, Marseille	Apr 2021
<b>Spring School on Symplectic and Contact Topology (online)</b> , CIRM, Marseille	Apr 2021
<b>CAST 2020</b> , University of Antwerp, Antwerp	Feb 2020
<b>International Conference on Symplectic Topology</b> , IMPA, Rio de Janeiro	Aug 2019
<b>School of Symplectic Topology</b> , IMPA, Rio de Janeiro	Aug 2019
<b>String Math 2019</b> , Uppsala University, Uppsala	Jul 2019
<b>Mathematics and Physics of Knots</b> , Institut Mittag-Leffler, Stockholm	Jun 2019
<b>CAST 2018</b> , Uppsala University, Uppsala	Jan 2018
<b>Legendrian Contact Homology and a variety of augmentations</b> Krusenberg Herrgård, Uppsala	Aug 2017
<b>Holomorphic Curves and Symplectic Topology</b> , Institut Mittag-Leffler, Stockholm	Aug 2017
<b>Symplectic Field Theory VIII</b> , Humboldt-Universität zu Berlin, Berlin	Aug 2016
<b>QGM Summer School</b> , Centre for Quantum Geometry and Moduli Spaces, Aarhus	Aug 2016

## TEACHING EXPERIENCE

**Stony Brook University:**

MAT 203 <b>Calculus III with Applications</b> , Instructor	Spring 2026
MAT 203 <b>Calculus III with Applications</b> , Instructor	Fall 2025
MAT 487 <b>Independent Study in Special Topics</b> , Advisor	Spring 2025
Student reading first 10 chapters of Lickorish, <i>An Introduction to Knot Theory</i> .	
MAT 310 <b>Linear Algebra</b> , Instructor	Spring 2025
MAT 127 <b>Calculus C</b> , Instructor and coordinator	Fall 2024
MAT 127 <b>Calculus C</b> , Instructor and coordinator	Spring 2024
MAT 322 <b>Analysis in Several Dimensions</b> , Instructor	Spring 2024

**Uppsala University:**

1MA024 <b>Linear Algebra II</b> , TA (recitations)	Fall 2021
1MA179 <b>Basic Topology</b> , Instructor	Spring 2021
1MA004 <b>Algebra I</b> , TA (recitations)	Fall 2020
1MA010 <b>Basic Course in Mathematics</b> , TA (recitations)	Fall 2020
1MA179 <b>Basic Topology</b> , Instructor	Spring 2020
1MA025 <b>Linear Algebra and Geometry I</b> , TA (recitations)	Fall 2019
1MA010 <b>Basic Course in Mathematics</b> , TA (recitations)	Fall 2019
1MA004 <b>Algebra I</b> , TA (recitations)	Fall 2018
1MA008 <b>Algebra and Vector Geometry</b> , TA (recitations)	Fall 2018
1MA013 <b>Single Variable Calculus</b> , TA (recitations)	Spring 2018
1MA004 <b>Algebra I</b> , TA (recitations)	Fall 2017
1MA010 <b>Basic Course in Mathematics</b> , TA (recitations)	Fall 2017
1MA013 <b>Single Variable Calculus</b> , TA (recitations)	Fall 2016–Spring 2017
1MA010 <b>Basic Course in Mathematics</b> , TA (recitations)	Fall 2016
1MA013 <b>Single Variable Calculus M</b> , TA (recitations)	Fall 2015
1MA013 <b>Single Variable Calculus</b> , Instructor	Summer 2015

1MA025 <b>Linear Algebra and Geometry I</b> , TA (recitations)	Spring 2015
1MA024 <b>Linear Algebra II</b> , TA (recitations)	Fall 2014
1MA013 <b>Single Variable Calculus</b> , Instructor	Summer 2014
1MA010 <b>Basic Course in Mathematics</b> , TA (recitations)	Fall 2013
1MA013 <b>Single Variable Calculus</b> , Instructor	Summer 2013
1MA013 <b>Single Variable Calculus</b> , TA (recitations)	Fall 2012