

Elise LePage

Junior Fellow, Simons Society of Fellows

Postdoctoral Research Scientist, Department of Mathematics, Columbia University

EDUCATION

University of California, Berkeley, Berkeley, CA

Ph.D. in Physics, 2019-2025

Supervisor: Mina Aganagic

Perimeter Institute, University of Waterloo, Waterloo, ON, Canada

M.Sc. in Theoretical Physics, 2018-2019

Hamilton College, Clinton, NY

B.A. in Physics and Mathematics, 2014-2018

RESEARCH INTERESTS

Mathematical aspects of mirror symmetry, Fukaya categories and their applications to (categorical) representation theory and knot homology

RESEARCH EXPERIENCE

Publications

- “Aganagic’s invariant in Khovanov homology,” with Shende, [arXiv:2505.00327](https://arxiv.org/abs/2505.00327).
- “Homological Link Invariants from Floer Theory,” with Aganagic and Rapcak, invited contribution to *From Representation Theory to Mathematical Physics and Back Conference Proceedings*, [arXiv:2305.13480](https://arxiv.org/abs/2305.13480).
- “Link Homology from Homological Mirror Symmetry,” invited contribution to *String Math 2022 Proceedings*, [arXiv:2307.07034](https://arxiv.org/abs/2307.07034).
- “Rational Cherednik algebras of $G(\ell, p, n)$ from the Coulomb perspective” with Webster, *Adv. Math.* **433** (2023), [arXiv:1912.00046](https://arxiv.org/abs/1912.00046).
- “Quantum corrections to finite radius holography and holographic entanglement entropy” with Donnelly, Li, Pereira, and Shyam, *JHEP* **05** (2020) 006, [arXiv:1909.11402](https://arxiv.org/abs/1909.11402).

Other

- “Homological Link Invariants from Lagrangian Floer Theory,” Ph.D. thesis, supervised by Mina Aganagic.
- “Cherednik Algebras, Principal Galois Orders, and Coulomb Branches,” master’s thesis, supervised by Ben Webster.
- “On the Quantization of Plane Gravitational Waves in Loop Quantum Gravity,” undergraduate senior thesis, supervised by Seth Major.

TALKS

Invited

- Workshop on Wrapped Fukaya categories and Khovanov homology, Uppsala University (Dec. 2025)
- Symplectic New York Meeting, Columbia University (Dec. 2025)
- Gauge Theory and Topology Seminar, Harvard University (Nov. 2025)
- Topology Seminar, Princeton University (Oct. 2025)
- Mathematical Physics Seminar, Columbia University (Sep. 2025, 3 lecture mini-course)
- String-Math Seminar, UC Berkeley (May 2025)
- Special Session on Geometric and Topological Aspects of Mathematical Physics and Representation Theory, AWM Research Symposium (May 2025)

- Special Session on Recent Progress on Categorification and Quantum Groups, AMS Spring Eastern Sectional Meeting (Apr. 2025)
- The Compass Lectures, UC Berkeley (Nov. 2024)
- Quantum Mathematics Research Seminar, University of Southern Denmark (Sept. 2024)
- Quantum Field Theory Seminar, University of Oxford (June 2024)
- Quantum Topology and Categorification Seminar, University of Hamburg (June 2024)
- Physics Colloquium, Hamilton College (Feb. 2024)
- Summer School in Geometric Representation Theory, MIT (June 2023)
- Mathematical Physics Seminar, Perimeter Institute (May 2023)
- Math Student Research Seminar, UC Davis (Jan. 2023)
- Special Session on Heegaard-Floer Homology in Topology, Algebra, and Physics, AMS Fall Western Sectional Meeting (Oct. 2022)

Contributed

- Berkeley Futures in Physics Conference (March 2025)
- New Structures in Low-Dimensional Topology Conference (July 2024)
- String Math 2024 (June 2024)
- String Math 2022 (July 2022)

MENTORING AND SERVICE

- Coordinator, POWER-Bay Area, a mentoring program for community college students in the physical sciences (Aug. 2021-Aug. 2025)
- Physics Fellow, Berkeley Connect, a mentoring program for first-year and transfer physics students (Aug. 2023-May 2024)
- Mentor, POWER-Bay Area (Aug. 2020-May 2021)
- Course Instructor, Splash at Berkeley, an instruction program for high school students (Feb. 2020)
- President, Women in Physics Club, Hamilton College (Aug. 2017-May 2018)
- Co-founder and President, Association for Women in Mathematics, Hamilton College Chapter (Aug. 2017-May 2018)
- Senior Class Representative, Society of Physics Students, Hamilton College Chapter (Aug. 2017-May 2018)

TEACHING EXPERIENCE

- Graduate Student Instructor, UC Berkeley:
 - Mathematical Physics (Fall 2022)
 - Physics and Music (Spring 2022)
 - Computational Techniques in Physics (Fall 2020, Fall 2021)
 - Quantum Mechanics II (Spring 2021)
 - Introductory Physics II (Fall 2019, Spring 2020)
- Physics and Math Head Tutor, Quantitative and Symbolic Reasoning Center, Hamilton College (Aug. 2015-Dec. 2017)

HONORS AND AWARDS

- Simons Junior Fellowship Award (2025-2028)
- NSF Mathematical Sciences Postdoctoral Research Fellowship (2024, Declined)
- Berkeley Connect Fellowship Award (2022-2023)
- Perimeter Scholars International Award (2018-2019)
- Finalist for LeRoy Apker Award, American Physical Society (2018)
- Elihu Root Fellowship, Hamilton College (2018)
- Southworth Prize in Physics, Hamilton College (2018)