

# Abigail Ward

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## Employment

- 2023- Research associate, University of Cambridge.
- 2020-2023 NSF Postdoctoral Fellow and C.L.E. Moore Instructor, Massachusetts Institute of Technology.

## Education

- 2020 PhD in Mathematics, Stanford University. Thesis: “Homological mirror symmetry for elliptic Hopf surfaces.” Advised by Denis Auroux (Harvard) and Ravi Vakil.
- 2015 BA in Mathematics, with special honors, University of Chicago.

## Publications

Daniel Álvarez-Gavela, Tim Large, and Abigail Ward. On arborealization, Maslov data, and lack thereof. arXiv: 2503.09783.

Phillip Engel, François Greer, and Abigail Ward. Periods of elliptic surfaces with  $p_g = q = 1$ . Forum Math. Sigma **12**, Paper No. e111, 2024.

Ailsa Keating and Abigail Ward. A universal mirror to  $(\mathbf{P}^2, \Omega)$  as a birational object. arXiv: 2101.11546.

Abigail Ward. Homological mirror symmetry for elliptic Hopf surfaces. arXiv: 2101.11546.

## Older Publications

Xiadong Cao, Bowei Liu, Ian Pendleton, and Abigail Ward. Differential Harnack estimates for Fisher’s equation. *Pacific Journal of Mathematics*, 290: 272–300, 2017.

Feixue Gong, Olivia Meyerson, Jeremy Meza, Mihai Stoiciu, and Abigail Ward.  
 Explicit bounds for the pseudospectra of various classes of matrices and operators.  
*Involve*, 9(3): 517–540, 2016.

## Honors & awards

- 2017 Diversifying Academia Recruiting Excellence Fellowship. *Stanford*.
- 2015 Enhancing Diversity in Graduate Education (EDGE) Fellowship. *Stanford*.
- 2015 NSF Graduate Research Fellowship.
- 2015 Paul R. Cohen Prize. *The senior mathematics prize at the University of Chicago*.

## Invited talks

- May 2025 EDGE seminar. Edinburgh University. UK.
- Mar. 2025 Geometry and Topology seminar. University College London. UK
- May 2024 Oxford Geometry and Analysis Seminar. Oxford. UK.
- May 2024 London Geometry and Topology Seminar. Imperial College London. UK.
- Feb. 2024 Colloquium, University of Southampton. UK.
- Apr. 2024 Colloquium, University of Durham. UK.
- Oct. 2023 Cambridge Geometry and Topology seminar. Cambridge, UK.
- Sep. 2023 Special three part lecture series. Instituto de Ciencias Matemáticas, Madrid.
- July 2023 Kylerec summer school. Oakhurst, CA.
- May 2023 MIT Geometry and Topology Seminar. Cambridge, MA.
- Dec. 2022 Northeastern Geometry Seminar. Boston, MA.
- Nov. 2022 Simons Collaboration on Homological Mirror Symmetry Annual Meeting. New York, NY.
- Oct. 2022 Lagrangian and Legendrian Submanifolds special session. AMS Sectional, Amherst, MA.
- Jul. 2022 Mirror Symmetry for Looijenga interiors and beyond conference. Istanbul (delivered virtually).
- Jul. 2022 Séminaire de Mathématiques Supérieures 2022: Floer Homotopy Theory workshop. Pacific Institute for the Mathematical Sciences, Vancouver.
- May 2022 3CinG Symplectic Versus Algebraic Geometry conference, online.
- May 2022 Hebrew University Topology and Geometry Seminar. Online.
- Apr. 2022 EDGE seminar. Edinburgh University, online.
- Apr. 2022 Special Session on Quantum Categorical Structures in Mirror Symmetry. Joint Mathematics Meetings 2022, Seattle, WA.
- Mar. 2022 Recent Developments in Lagrangian Floer Theory conference. Simons Center for Geometry and Physics, Stony Brook, NY.
- Feb. 2022 MIT Symplectic Geometry Seminar. Cambridge, MA.
- Jan. 2022 Princeton/IAS Symplectic Geometry Seminar. Princeton, NJ.
- Sept. 2021 South Central Topology Conference. Texas A & M University, College Station, TX.
- Mar. 2021 Free Mathematics Seminar. Online.
- Dec. 2020 Geometry Seminar. Instituto de Ciencias Matemáticas, online.
- Dec. 2020 Current Advances in Mirror Symmetry conference. Simons Collaboration for Ho-

mological Mirror Symmetry, online.

- Apr. 2020 Western Hemisphere Symplectic Geometry Seminar. Online.
- Apr. 2020 **Cancelled:** Texas State Topology Seminar. San Marcos, TX.
- Apr. 2020 **Cancelled:** USC Algebra & Topology Seminar. University of Southern California, Los Angeles, CA.
- Mar. 2020 **Cancelled:** Mirror Symmetry and Enumerative Geometry special session. AMS Sectional, Medford, MA.
- Mar. 2020 **Cancelled:** Recent developments in Lagrangian Floer theory conference. Simons Center for Geometry and Physics, Stony Brook, NY.
- Jan. 2020 Homological Mirror Symmetry and Topological Recursion conference. University of Miami, Miami, FL.
- Jan. 2020 EDGE Seminar. Edinburgh University, Edinburgh.
- Nov. 2019 Princeton/IAS Symplectic Geometry Seminar. Princeton, NJ.
- Nov. 2019 Stanford University Symplectic Geometry Seminar. Stanford, CA.
- Nov. 2019 Valley Geometry Seminar. University of Amherst, Amherst, MA.
- Oct. 2019 Columbia University Symplectic Geometry, Gauge Theory, and Categorification Seminar. New York, NY.
- Oct. 2019 Stony Brook University Symplectic Geometry Seminar. Stony Brook, NY.
- Sep. 2018 Introductory workshop on HMS, Logic, and Sandpiles. CIMS, Miami, FL.

## Teaching

- 2024 Instructor for Symplectic Topology (graduate course), Cambridge.
- 2024 Instructor for Symplectic Topology (Part III course), Cambridge.
- 2023 Instructor for Math 18.904: Undergraduate Seminar in Topology, MIT.
- 2022 TA, Math 18.03: Differential Equations, MIT.
- 2021 TA, Math 18.03: Differential Equations, MIT.
- 2017 CA, Math 215c: Graduate Differential Geometry, Stanford.
- 2017 TA, Math 51: Linear Algebra and Differential Calculus of Several Variables, Stanford.
- 2016 TA, Stanford University Mathematics Camp (SUMaC).
- 2015 TA, University of Chicago Summer REU .

## Organizing

- 2022 Organizer for AMS Special Session on Quantum Categorical Structures in Mirror Symmetry at the Joint Mathematics Meetings, Seattle, WA.
- 2020-2021 Organizer for Outdoor Symplectic Seminar, Cambridge, Massachusetts.

## Service & mentoring

- 2024 Supervisor for summer research project for two entering PhD students through the Martingale Program.

- 2023      Mentor at Kylerec summer school on homological mirror symmetry.
- 2021-2023 Academic advisor for four math majors at MIT.
- 2020-2021 Mentor to two high school students in a student-led research project.
- 2016–2018 Founding organizer of Mathematics Directed Reading Program, Stanford.
- 2016–2018 Wellness Liaison for the Wellness Information Network for Graduate Students, Stanford.
- 2015      REU mentor for four students at the University of Chicago.