ERIC ZASLOW

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Research Area: Mathematical Physics; Mirror Symmetry.

Education

Harvard University, Ph.D., Physics, 1995.
Harvard University, M.A. (*en route*), Physics, 1990.
Dartmouth College, A.M., Physics, 1989.
Dartmouth College, A.B., Mathematics and Physics double major, 1989.

Appointments

Board of Lady Managers of the Columbian Exposition Chair, **Northwestern University**, 2015—
Visiting Faculty, **California Institute of Technology**, 2013
Research Professor, **MSRI**, 2/2013
Charles Deering McCormick Professor of Teaching Excellence, **Northwestern University**, 2012–2015
Visiting Member, **Max Planck Institute for Mathematics**, Bonn, 2012
Professor of Mathematics, **Northwestern** University, 2006—
PIMS Visiting Distinguished Professor, **PIMS-UBC**, 7-12/2008
Associate Professor of Mathematics, **Northwestern** University, 2002–2006.
Visiting Member, **The Fields Institute**, 11/2004, 5–7/2005.
Assistant Professor (math), **Northwestern** University, 1998–2002.
Postdoctoral Fellow (math), **Harvard** University, 1995-1998.
Visiting Assistant Professor of Physics, **Dartmouth** College, 1995.

Advisors and Advisees

Graduate Advisor: Cumrun Vafa (Harvard, physics)
Postdoctoral Advisor: Shing-Tung Yau (Harvard, math)
Student Advisees: Marco Aldi (Ph.D., 2007), Bohan Fang (Ph.D., 2010), Nicolò Sibilla (Ph.D., 2012);
Honghao Gao, Matthew Mahowald, Peng Zhou (current)
Postdoctoral Advisees: Sema Salur, Jiun-Cheng Chen, Cheol-Hyun Cho, Sergiy Koshkin, Gabriel Kerr,
David Treumann, Linhui Shen, Xin Jin, Dahisy Lima

Honors and Awards

Research—
• AIM SQuaRE award, "Legendrian Knots and Constructible Sheaves," 2014—
• P.I. for NSF-DMS-1406024, "Knots, Sheaves and Mirrors," $267,000, 2014–
• Co-P.I. for NSF-DMS-1342112, "Representation Theory, Integrable Systems and Quantum Fields,"
$57,000, 2014.
• Simons Fellow, $82,000, 2012–2013
• MPIM Research Grant, $7,500, 2012
• P.I. for NSF-DMS-1104779, "Homological Mirror Symmetry for Calabi-Yau Hypersurfaces," $247,000,
2011–2014
• Co-P.I. (with E. Getzler and B. Tsygan) for NSF-DMS-0636646, "EMSW21-RTG Geometry and
Physics," $1,300,000, 2007–2013
• P.I. for NSF-DMS-0707064, "Microlocalization and Mirror Symmetry," $186,000, 2007–2010
• Clay Senior Scholar, $20,000 award, 2004–2005.
• P.I. for NSF Grant DMS-0405859, "Geometry of Mirror Symmetry," $116,000, 2004–2007.
• Co-P.I. for NSF-DMS-0401953, "Geometry and Topology of Mirror Symmetry," $30,000, 2004.

- Alfred P. Sloan Foundation Fellowship, $40,000, 2000–2004
- P.I. for NSF-DMS-0072504, "Unifying Mirror Symmetry," $85,000, 2000–2004
- Hertz Foundation Graduate Fellowship, 1989-1995.

Teaching—
- Alumnae Board Northwestern University Curriculum Development Award, 2015
- National Association of Math Circles grant, $2,000, 2013—
- Charles Deering McCormick Professor of Teaching Excellence, 2012
- ISP Faculty Service Award (Northwestern), 2010
- Faculty Honor Roll (Northwestern), 2003.
- Weinberg College (Northwestern) Distinguished Teaching Award, 2001.

Service

As <u>Director of Graduate Studies</u> (2007–2010, 2013–2015) at Northwestern, I initiated major changes in the graduate program, including changes to the requirements and curricular changes of the core courses. I also organized quarterly panel discussions for graduate students on entering a career of mathematics (job applications, paper writing, etc.), and separate, regular panel discussions on the research interests of faculty.

<u>Organized</u> conferences and workshops: "Representation Theory, Integrable Systems and Quantum Fields" (with Xinwen Zhu and Kevin Costello), Northwestern, 2014; "Quantization and Mathematics: An Undergraduate Conference," Northwestern, 2012; "Discrete and Continuous Geometries: An Undergraduate Conference," Northwestern, 2010 (with Ezra Getzler); "The Geometry and Topology of String Theory" (with Ezra Getzler), Emphasis Year scientific program and conference at Northwestern, 2004–2005; Geometry of Lagrangian Submanifolds (IPAM, 2003); and "The Duality Workshop," at the Kavli Institute for Theoretical Physics (with R. Donagi, A. Klemm, and B. Ovrut), 2001.

<u>Authored</u> "Mirror Symmetry" and "Calabi-Yau Manifolds" for *The Princeton Companion to Mathematics,* Princeton University Press, 2008.

<u>Editor</u>, Forum of Mathematics, Pi, 2013 —, Forum of Mathematics, Sigma, 2013—, Communications in Number Theory and Physics, 2007—, SIGMA 2013, 2015—.

<u>Served</u> on <u>University Committees</u>: Tenure Committee, Curricular Policy Committee, Ad Hoc Promotion and Tenure Committee, Goldwater Scholarship Committee, ISP Committee, search committees in physics and school of education.
<u>Departmental Committees</u>: Graduate Committee (Chair, 2007–2010, 2013–2015), Senior Hiring Committee (current), Teaching-Track Hiring (current), Budget Committee, Ad Hoc Promotion Committees, Undergraduate Committee, others.

<u>Outreach</u>:

- Created and run the Evanston Math Circle (2012–), in collaboration with Evanston Township High School

- Created and ran the Math Club, Washington Elementary School (Evanston, IL), 2010–2012.

- Developed the Northwestern Bridge Program mathematics curriculum, helping to enrich the mathematical development of aspiring students in STEM fields most in need, and taught the pre-calc mathematics course to high school seniors selected for the program. 2011—

Other

I am active in the sport of ultimate. I have served on the Board of the Ultimate Players Association. I have written *Ultimate: Tactics and Techniques* (Human Kinetics). As a player I have won nine world or national championships in open, masters and grandmaster divisions.

Publications

1. V. Shende, D. Treumann, H. Williams, and E. Zaslow, "Cluster Varieties from Legendrian Knots," arXiv:1512.08942.

2. L. Ng, D. Rutherford, V. Shende, S. Sivek, and E. Zaslow, "Augmentations are Sheaves," arXiv:1502.04939, submitted.

3. V. Shende, D. Treumann and E. Zaslow, "Legendrian Knots and Constructible Sheaves," arXiv:1402:0490, submitted.

4. H. Ruddat, N. Sibilla, D. Treumann and E. Zaslow, "Skeleta of Affine Hypersurfaces," Geometry & Topology **18** (2014) 1343–1395.

5. D. Treumann and E. Zaslow, "Polytopes and Skeleta," arXiv:1109.4430.

6. N. Sibilla, D. Treumann, and E. Zaslow, "Ribbon Graphs and Mirror Symmetry," arXiv:1103.2462, Sel. Math. Ner Ser. **20** (2014) 979–1002.

7. B. Fang, C.-C. Liu, D. Treumann and E. Zaslow, "The Coherent-Constructible Correspondence and Fourier-Mukai Transforms," Acta Math. Sin. (Engl. Ser.) **27** (2011) 275–308.

8. B. Fang, C.-C. Liu, D. Treumann and E. Zaslow, "A Categorification of Morelli's Theorem," Invent. Math. **186** (2011) 79–114.

9. B. Fang, C.-C. Liu, D. Treumann and E. Zaslow, "The Coherent-Constructible Correspondence for Toric Deligne-Mumford Stacks," IMRN (2012).

10. B. Fang, C.-C. Liu, D. Treumann and E. Zaslow, "T-Duality and Homological Mirror Symmetry for Toric Varieties," Adv. Math. **229** (2012) 1873–1911.

11. B. Fang, C.-C. Liu, D. Treumann and E. Zaslow, "The Coherent-Constructible Correspondence and Homological Mirror Symmetry for Toric Varieties," *Geometry and Analysis Vol. 2,* Adv. Lect. Math (ALM) **18**, Higher Education Press, 2010.

12. A. Abrams, S. Ganzell, H. Landau, Z. Landau, J. Pommersheim, and E. Zaslow, "Optimal Estimators for Threshold-Based Quality Measures," Journal of Probability and Statistics, Vol. 2010, Article ID 752750, 15 pages.

13. D. Nadler and E. Zaslow, "Constructible Sheaves and the Fukaya Category," J. Amer. Math. Soc. **22** (2009) 233–286.

14. E. Zaslow "Mirror Symmetry," in *Princeton Companion to Mathematics,* T. Gowers, ed., Princeton University Press, Princeton, 2008.

15. E. Zaslow "Calabi-Yau Manifolds," in *Princeton Companion to Mathematics,* T. Gowers, ed., Princeton University Press, Princeton, 2008.

16. M. Aldi and E. Zaslow, "Seidel's Mirror Map for Abelian Varieties," Adv. Theor. Math. Phys. **10** (2006) 591–602.

17. E. Zaslow, "Seidel's Mirror Map for the Torus," Adv. Theor. Math. Phys **9** (2005) 999–1006.

18. E. Zaslow, "Physmatics," published on the Website of the Clay Mathematics Institute, claymath.org; physics/0506153.

19. M. Aldi and E. Zaslow, "Coisotropic Branes, Noncommutativity, and the Mirror Correspondence," JHEP **2005**, no. 6, 019–032.

20. J. Loftin, S.-T. Yau, and E. Zaslow, "Affine Manifolds, SYZ Geometry, and the 'Y' Vertex," J. Differential Geom. **71** (2005) 129–158.

21. A. Abrams, H. Landau, Z. Landau, J. Pommersheim, and E. Zaslow, "Random Multiplication Approaches Uniform Measure in Finite Groups," Journal of Theoretical Probability **20** (2007) 107–118.

22. S. Gukov, S.-T. Yau, and E. Zaslow, "Duality and Fibrations of G_2 Manifolds," Turkish Journal of Mathematics **27** (2003) 61-97.

23. T. Graber and E. Zaslow, "Open-String Gromov-Witten Invariants: Calculations and a Mirror 'Theorem'," in *Orbifolds in Mathematics and Physics* (Madison, WI, 2001), 107–121, Contemp. Math. **310**, AMS, Providence, RI, 2002.

24. *Mirror Symmetry.* Clay Mathematics Monographs, Vol. **1**, Cumrun Vafa and Eric Zaslow, eds., AMS-CMI, Providence, 2003. (This book received a featured review in Math Reviews.)

25. N.-C. Leung, S.-T. Yau, and E. Zaslow, "From Special Lagrangian to Hermitian-Yang-Mills via Real Fourier-Mukai Transform," math.DG/0005118; in *Winter School on Mirror Symmetry, Vector Bundles and Lagrangian Submanifolds,* C. Vafa and S.-T. Yau, eds., AMS and International Press, Boston, 2001.

26. A. Abrams, H. Landau, Z. Landau, J. Pommersheim, and E. Zaslow, "An Iterated Random Function with Lipschitz Number One," Theory Probab. Appl. **47** (2), 190–201.

27. A. Klemm and E. Zaslow, "Local Mirror Symmetry at Higher Genus," hep-th/9906046; in *Winter School on Mirror Symmetry, Vector Bundles and Lagrangian Submanifolds,* C. Vafa and S.-T. Yau, eds., AMS and International Press, Boston, 2001.

28. A. Abrams, H. Landau, Z. Landau, J. Pommersheim, and E. Zaslow, "Evasive Random Walks and the Clairvoyant Demon," Random Structures & Algorithms **20** (2002) 239-248.

29. T.-M. Chiang, A. Klemm, S.-T. Yau, and E. Zaslow, "Local Mirror Symmetry: Calculations and Interpretations," hep-th/9903053; Advances in Theoretical and Mathematical Physics **3** (1999).

30. A. Polishchuk and E. Zaslow, "Categorical Mirror Symmetry: The Elliptic Curve," Advances in Theoretical and Mathematical Physics **2** (1998) 443-470; math.AG/9801119.

31. A. Strominger, S.-T. Yau, and E. Zaslow, "Mirror Symmetry is T-Duality," Nuclear Physics **B479** (1996) 243-259; hep-th/9606040.

32. Shing-Tung Yau and Eric Zaslow, "BPS States as Symplectic Invariants from String Theory," in *Geometry and Physics,* Proceedings of the Special Session on Geometry and Physics, Aarhus, Denmark, 1996.

33. Shing-Tung Yau and Eric Zaslow, "BPS States, String Duality, and Nodal Curves on K3," Nuclear Physics **B471** (1996), hep-th/9512121.

34. S. Sethi, M. Stern, and E. Zaslow, "Monopole and Dyon Bound States in N=2 Supersymmetric Yang-Mills Theories," Nuclear Physics **B457** (1995) 484.

35. E. Zaslow, "Solitons and Helices: The Search for a Math-Physics Bridge," Communications in Mathematical Physics **175** (1996) 337.

36. E. Zaslow, "Dynkin Diagrams of $\mathbf{CP}^1$ Orbifolds," Nuclear Physics **B415** (1994) 155.

37. E. Zaslow, "Topological Orbifold Models and Quantum Cohomology Rings," Communications in Mathematical Physics **156** (1993) 301.

38. L. Balents, R. D. Kamien, P. Le Doussal, and E. Zaslow, "On the Isotropic-Nematic Transition for Polymers in Liquid Crystals," Journal de Physique **2** (1992) 263.