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Curriculum Vitae

(updated Nov 15, 2009)

Employment:

- '07– Professor of Mathematics, MIT
- '03–'07 Professor of Mathematics, University of Chicago
- '02–'03 Professor of Mathematics, Imperial College, London
- '01–'02 Member, Institute for Advanced Study, Princeton
- '99–'01 CNRS Research fellow (chargé de recherche),
Ecole Polytechnique, Paris.
In 2000-01 additionally: lecturer (maitre de conférence)
- '98–'99 Visitor, Max Planck Institut, Bonn
- '97–'98 Member, Institute for Advanced Study, Princeton

Visiting appointments:

- '06–'07 Visiting Professor, MIT
- Spring '03 Visiting Professor, ETH Zürich

Education:

- '94–'97 Graduate student, Oxford University
(D. Phil. obtained in '98, advisor: S. Donaldson)
- '90–'94 Undergraduate, Heidelberg University;
(Diploma in Mathematics obtained in '94, advisor: A. Dold)

Distinctions:

- Junior Faculty Mentoring Award (for graduate student mentoring),
University of Chicago (2006)
- Invited speaker, Differential Geometry section,
International Congress of Mathematics, Beijing (2002)
- European Mathematical Society Prize,
Awarded at the European Congress of Mathematics, Barcelona (2000)

Recent teaching experience: (graduate courses are marked with a *)

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|--------------------------------|---|
| MIT (2006-) | Riemann surfaces* |
| | Project laboratory in Mathematics |
| | Symplectic homology* |
| | Differential geometry |
| | Riemann surfaces* |
| University of Chicago (2003-6) | Honors Calculus |
| | Differential geometry* |
| | Fukaya categories* |
| | Symplectic geometry of algebraic varieties* |

PhD students:

| Name | Year | School | Postdoctoral position (or other) |
|-------------------|---------|---------|----------------------------------|
| Joseph Jones | 2006 | Chicago | New York University |
| Masuo Yanagisawa | 2007 | Chicago | financial industry |
| Mohammed Abouzaid | 2007 | Chicago | Clay Research Fellowship |
| Gabriel Kerr | 2007 | Chicago | Northwestern University |
| Emma Smith | 2009 | Chicago | Wentworth Inst. Tech. |
| Alexander Ritter | 2009 | MIT | Cambridge University |
| Nick Sheridan | current | | |

Recent conference talks and named lectures:

- 2009
 - Georgia topology conference, Atlanta
 - Symplectic field theory IV, München (5 two-hour lectures)
 - Atiyah-fest, Edinburgh
- 2008
 - Symplectic geometry, Stanford
 - Real algebraic geometry and symplectic geometry, Paris (4 lectures)
 - Geometry of derived categories, IAS
- 2007
 - Workshop on mirror symmetry, Coventry, UK
 - Eliashberg-fest, Stanford
 - William Spencer lecture, Kansas State U
 - Workshop on moduli spaces, Stanford
- 2006
 - Special Session on Knot Homology, CMS Meeting, Toronto
 - Current developments in Mathematics, Harvard (2 talks)
 - Walter Feit Memorial Lecture, Yale
 - Homological Mirror Symmetry, ESI Vienna
- 2005
 - Recent developments in symplectic topology, Banff
 - Texas geometry and topology conference, Austin
 - AMS algebraic geometry conference, Seattle (series of 3 lectures)

Activities as conference organizer:

- November 2009 (with M. Abouzaid, K. Fukaya, E. Ionel)
Algebraic structures in SFT,
MSRI
- November 2009 (with M. Abouzaid, K. Fukaya, E. Ionel)
Cyclic homology and symplectic topology,
AIM
- 2009/10 (with J. Etnyre, Ya. Eliashberg, E. Ionel, D. McDuff)
Special Year in symplectic and contact geometry
MSRI
- June 2009 (with D. Auroux and L. Katzarkov) Mirror symmetry,
MIT
- March 2009 (with S. Ganatra and J. Francis) Talbot workshop,
South Carolina
- January 2009 (with D. Auroux and L. Katzarkov) Mirror symmetry,
Miami
- May 2008 (with D. Auroux and L. Katzarkov) Mirror symmetry,
Cambridge
- January 2008 (with D. Auroux and L. Katzarkov) Mirror symmetry,
Miami
- July 2005 (with B. Leeb and G. Tian) Global differential geometry conference,
Oberwolfach
- March 2002 (with K. Fukaya) Workshop on A_∞ -structures and mirror
symmetry, Oberwolfach
- August 2000 (with D. Auroux and C. Viterbo) Workshop on symplectic
four-manifolds, Paris

Editorial activities:

- 2007- (with Pavel Etingof and David Kazhdan) Editor-in-Chief, *Selecta Mathematica*
- 2006- Associate editor, *Journal of Symplectic Geometry*
- 2008- Associate editor, *Duke Mathematics Journal*
- 2004-8 Associate editor, *Geometriae Dedicata*
- 2006-8 Editorial board member, ERA of the American Math. Soc.

Book:

Fukaya categories and Picard-Lefschetz theory. *ETH Lecture Notes Series* vol. 8, European Math. Soc., 2008.

Papers:

- [25] Homological mirror symmetry for the genus two curve. *J. Algebraic Geom.*, to appear.
- [24] (with M. Abouzaid) An open string analogue of Viterbo functoriality. *Geometry and Topology*, to appear.
- [23] Suspending Lefschetz fibrations, with an application to Local Mirror Symmetry. *Commun. Math. Physics*, to appear.
- [22] (with Kenji Fukaya and Ivan Smith) The symplectic geometry of cotangent bundles from a categorical viewpoint. In: *Homological Mirror Symmetry: New Developments and Perspectives*, Springer Lect. Notes in Physics vol. 757, 2008, p. 1–26.
- [21] A_∞ -subalgebras and natural transformations. *Homotopy Homology Appl.* 10 (2008), p. 83–114.
- [20] (with Kenji Fukaya and Ivan Smith) Exact Lagrangian submanifolds in simply-connected cotangent bundles. *Invent. Math.* 172 (2008), p. 1–27.
- [19] A biased view of symplectic cohomology. In: *Current Developments in Mathematics 2006*. International Press, 2008, p. 211–253.
- [18] Symplectic homology as Hochschild homology. In: *Algebraic Geometry: Seattle 2005*. Amer. Math. Soc., 2008, part 1, p. 415–434.
- [17] (with Ivan Smith) A link invariant from the symplectic geometry of nilpotent slices. *Duke Math. J.* 134 (2006), p. 453–514.
- [16] (with Ivan Smith) The symplectic topology of Ramanujam’s surface. *Comment. Math. Helv.* 80 (2005), p. 859–881.
- [15] Exact Lagrangian submanifolds in T^*S^n and the graded Kronecker quiver. In: *Different faces of geometry*, Kluwer, 2004, p. 349–364.
- [14] Lectures on four-dimensional Dehn twists. In: *Symplectic four-manifolds and algebraic surfaces*, Cetraro (2004), Lecture Notes in Mathematics vol. 1938, Springer, 2008, p. 231–268.
- [13] Fukaya categories and deformations. In: *Proceedings of the ICM (Beijing)*, Higher Ed. Press, 2002, p. 351–360.
- [12] A long exact sequence for symplectic Floer cohomology. *Topology* 42 (2003), p. 1003–1063.
- [11] Braids and symplectic four-manifolds with abelian fundamental group. *Turkish J. Math.* 26 (2002), p. 93–100.

- [10] Symplectic Floer homology and the mapping class group. *Pacific Math. J.* 206 (2002), p. 219–229.
- [9] More about vanishing cycles and mutation. In: *Symplectic Geometry and Mirror Symmetry*, World Scientific, 2001, p. 429–465.
- [8] Vanishing cycles and mutation. In: *European Congress of Mathematics (Barcelona)*, Birkhäuser, 2002, p. 65–85.
- [7] (with Mikhail Khovanov) Quivers, Floer cohomology, and braid group actions. *J. Amer. Math. Soc.* 15 (2002), p. 203–271.
- [6] (with Richard Thomas) Braid group actions on derived categories of coherent sheaves. *Duke Math. J.* 108 (2001), p. 37–108.
- [5] Graded Lagrangian submanifolds. *Bull. Soc. Math. France* 128 (2000), p. 103–146.
- [4] Lagrangian two-spheres can be symplectically knotted. *J. Differential Geom.* 52 (1999), p. 145–171.
- [3] On the symplectic automorphism groups of $\mathbb{C}P^m \times \mathbb{C}P^n$. In: *Northern California Symplectic Geometry Seminar*, Amer. Math. Society, 1999, p. 237–250.
- [2] π_1 of symplectic automorphism groups and invertibles in quantum homology rings. *Geom. Funct. Anal.* 7 (1997), p. 1046–1095.
- [1] The symplectic Floer homology of a Dehn twist. *Math. Research Lett.* 3 (1996), p. 829–834.

Preprints (available on the arXiv):

- [1] (with M. Maydanskiy) Lefschetz fibrations and exotic symplectic structures on cotangent bundles of spheres (2009).
- [2] Homological mirror symmetry for the quartic surface (2003).