VITA – Dusa McDuff

BIRTHDATE: October 18, 1945
BIRTHPLACE: London, United Kingdom

DEGREES: B. Sc (Hon), University of Edinburgh, Scotland, 1967
Ph.D., University of Cambridge, England, 1971

PROFESSIONAL EXPERIENCE:
S.R.C. Postdoctoral Fellowship, University of Cambridge, England, 1970-1972
Lecturer, University of York, England, 1972-1976
Lecturer, University of Warwick, England, 1976–1978
Assistant Professor, SUNY at Stony Brook, 1978–1980
Associate Professor, SUNY at Stony Brook, 1980–1984.
Professor, SUNY at Stony Brook, 1984–1998
Distinguished Professor, SUNY at Stony Brook, 1998 –

VISITING POSITIONS:
Assistant Professor, Department of Mathematics, Massachusetts Institute of Technology, 1974-1975
Member, Institute for Advanced Study, Princeton, Spring 1976, Fall 1977
Member, Mathematical Sciences Research Institute, Berkeley, Fall 1988
Professor, Mathematics Department, University of California at Berkeley, Fall 1993 Member, Newton Institute, Cambridge UK, Fall 1994
Visiting Professor, Mathematics Department, Harvard University, Fall 2000
Visiting Professor, Courant Institute, NYU, Feb–March 2001
Member, Institute for Advanced Study, Spring 2002.

HONORS AND GRANTS:
British Council Scholarship to study in Moscow 1969-1970
Co-principal and principal investigator on NSF summer research grants, 1978–
Co-principal investigator on NSF VIGRE grant, 2000-3
Ruth Lyttle Satter Prize, 1991
UUP Excellence Award, 1991
NSF Visiting Professorship for Women, Fall 1993
Fellow of the Royal Society, 1994
Fellow of the American Academy of Arts and Sciences, 1995
Marker Lecturer at Pennsylvania State University, March 1995
Namboodiri Lecturer at the University of Chicago, April 1996
Outstanding Woman Scientist Award (AWIS), 1997
Honorary Fellowship of Girton College, Cambridge, 1997.
D. Sc. (Hon) University of Edinburgh, 1997.
AWM Noether Lecturer, Jan 1998.
Member of National Academy of Sciences, 1999.
London Mathematical Society Hardy Lecturer, 1999.
D. Sc. (Hon) University of York, 2000.
Rademacher Lecturer, University of Pennsylvania, Spring 2001
Andrejewski Lecturer, University of Gottingen, April 2001

Cairns Lecturer at University of Illinois, Champaign-Urbana, Nov 2004

SERVICE TO THE MATHEMATICAL COMMUNITY:
1978–90 reviewer for Zentralblatt fur Mathematik.
Co-organizer of Mathematical Sciences Research Institute workshop on Symplectic Topology, September 1988.
Selection Committee for AMS Centennial Fellowships, 1989-91, Chair 90-91.
Visiting Committee for Mathematics Department, Harvard, 1989-93.
1991-1993 Associate editor Journal of AMS, Journal of Geometric Analysis
Co-organizer of program on Symplectic Topology, Newton Institute, Cambridge, UK, July-December 1994.
Visiting Committee for Mathematics Department, University of California, Berkeley, 1995.
On Scientific Advisory Committee of MSRI, 1990-98, Chair of SAC 1993-96.
Program Committee of AMS, 1991-94.
on Advisory committee to the NSF for a year, and on one or two of their review panels, in mid 1990s
US National Committee on Mathematics, 1991-93.
MSRI Board of Trustees, 1998–2002 (Chair 1998-2001), also 2005–
NRC Commission for Mathematics and Physical Sciences, 1999-2000.
AMS Colloquium Committee 2001–4.
NSF Review Panel in Geometry and Topology, March 2005
Sloan Fellowship Committee for Mathematics, 2005–
NSF Review Panel on Research Training Groups (RTG program), Jan 2006
Selection committee for the Abel Prize, 2006-

PROFESSIONAL SERVICES in Stony Brook:
1982-1984 member Education and Teaching Policy Committee: chaired it during 1983-1984.
1983-1984 chair of departmental Junior Appointments Committee
1983-90 member of Long Island Chapter of Association for Women in Science (sometime secretary, president).
1986-1990 member of departmental Appointments Committee.
1987-89 worked on experimental "Calculus-with-Computers" course, and on SINC site committee
1989-1991 member and then Chair of Honorary Degree Committee, 1994–7
1989-1991 Associate Chair of Mathematics Department
1991-1993 Chair of Mathematics Department
early 1990s on the Undergraduate Project committee chaired by Jim Simons.
in 1990s: on the President's Honorary Degree Committee.
1995-1996 Member of Presidential Coordinating Committee, and on a Task Force for the Five Year Plan.
1994–8 on departmental undergraduate committee with responsibility for Calculus, majors and curriculum
Fall 1998 Mathematics Instructor for Learning Community
1998-2000 Undergraduate Director of the Mathematics Department.
1999-2000 member of the Provost's Mathematics Advisory Committee
1998-9 Member of the Provost's Research Advisory Group
1999-2000 Chair of the President's Task Force on Academic Excellence.

Spring 2000 member of the Provost's committee on the Status of Women
Spring 2000 Chair of the Coordinating Committee for the five year plan
c. 1990–now on WISE Faculty working group,
from Fall 2004: on WISE Board of Friends
2001–now; on Departmental Hiring Committee, Chair's Advisory Committee.
from 2003: on Provost's committee to select Distinguished Teaching Professors.

SELECTED INVITED ADDRESSES:

1969-1970 Moscow: Two talks on II_1-factors, one in Gelfand's seminar and one in Sinai's seminar.

Spring 1974 Meeting of London Mathematical Society at Swansea: "On configuration spaces".

April 1975 Athens, Georgia, conference on Operator Algebras and Topology: "On Configuration spaces" (cf publication #10).

Fall 1977 Topology seminar, I.A.S., Princeton: "Foliations and monoids of embeddings".

April 1978 British Mathematical Colloquium at Lancaster: "On the classifying spaces of discrete monoids".

June/July 1979 Warwick, England: Invited speaker at symposium, on foliations and diffeomorphisms, and gave two talks.

October 1979 Ontario Topology Meeting Hamilton: "The group of diffeomorphisms of $\mathbf{R}^n$, invited address.

Summer 1981 Talks in Orsay (Paris), Lausanne (Switzerland) and Warwick (England): "Foliations and groups of diffeomorphisms".

March 1983 Moscow: Gelfand's Seminar: "Cohomology of groups of volume preserving diffeomorphisms".

June 1983 Talk at Arbeitstagung, Bonn: "The Arnold Conjecture on Symplectic Fixed Points".

January 1984 Northwestern University: "Symplectic diffeomorphisms and the flux homomorphism".

January 1984, University of Illinois at Chicago Circle, "The Arnold conjecture".

April 1984 University of Pennsylvania, "Non-Kähler symplectic manifolds".

October 1986 MIT: "Examples of symplectic structures".

November 1986 Columbia Colloquium: "Recent advances in symplectic geometry".

January 1988 AMS Invited Address: "Symplectic Structures on Manifolds", AMS Winter Meeting, Atlanta, Georgia.

November 1988 USC, Los Angeles "Symplectic Structures on Manifolds".

November 1988 University of California at Berkeley: "Blowing up and Symplectic 4-manifolds".

July 1989 University of Durham, United Kingdom: "Rational and Ruled Symplectic 4-manifolds".

August 1989 Progress in Mathematics Lecture, AMS summer meeting at Boulder: "Elliptic methods in Symplectic Geometry".

December 1989 Midwestern Topology Conference, Ohio State University: "Blowing up and Symplectic 4-manifolds".

January 1990 MSRI, Berkeley in Workshop on Applications of Algebraic Topology: "Rational and Ruled Symplectic 4-manifolds".

February 1990 In "Geometry and Dynamics Day" at Princeton University: "Rational and Ruled Symplectic 4-manifolds".

April 1990 Topology Seminar of the Five Colleges at Smith College, Mass.: "Recent developments in Symplectic Geometry".

April 1990 Mathematics Association of America, Princeton University: "Recent developments in Symplectic Geometry".

July 1990 Invited to Workshop on Symplectic Geometry, Warwick University, U.K.: Gave series of 4 talks.

August 1990 Invited Address at International Congress of Mathematics, Kyoto, Japan: "Symplectic 4-manifolds".

October 1990 Montreal University, Columbia University and Princeton University, "Symplectic 4-manifolds".

November 1990 New York University, SUNY Buffalo and Stanford University: "Symplectic 4-manifolds"

February 1991 Warwick University, UK and Rice University: "The Symplectic Camel Problem".

April 1991 University of California at Los Angeles, "The Symplectic Camel Problem".

May 1991 Geometry/Top Conference, Lehigh University.

July 1991: Conference in IRMA, Strasbourg, France, to honor Godbillon-Martinet: "Immersed spheres in symplectic 4-manifolds".

October 1991 University of Texas at Austin, "Symplectic 4-manifolds".

November 1991 Stanford Univ: "Immersed spheres in symplectic 4-manifolds".

December 1991 Luminy, France, "Recent developments in the symplectic topology of 4-manifolds.

January 1992 Baltimore (AMS Sectional Meeting): "Symplectic ruled 4-manifolds".

March 1992 Warwick, United Kingdom: "Symplectic ruled 4-manifolds".

April 1992 Arkansas Topology Conference: "Symplectic sphere packing"

April 1992 Geometry Conference, NYU: "Symplectic 4-manifolds".

Sept, 1993 Berkeley Colloquium: "Geometry of Symplectic Energy"

Oct. 1993 Bay Area Symplectic Topology Symp., Stanford University: "Geometry of Symplectic Energy"

Dec. 1993 International Conference, Tel Aviv, Israel: "Geometry of Symplectic Energy"

March 1994 Celebration of Women in Math, M.I.T.: "Geometry of Symplectic Energy"

April 1994 Symplectic Topology Seminar, Princeton University: "Geometry of Symplectic Energy"

May 1994 Park City Workshop, IAS Princeton: "Geometry of Symplectic Energy"

July 1994 Newton Institute, Cambridge: Four lectures on Symplectic 4-manifolds

Fall 1994 Talks in Cambridge, York, Edinburgh: "Geometry of Symplectic Energy"

March 1995 Marker Lectures at Pennsylvania State University, State College

May 1995 Symplectic 4-manifolds, Gokova, Turkey

March 1996 Conference to celebrate 250th Anniversary of the founding of Princeton: "Symplectic Topology and Capacities"

April 1996 Namboodiri Lectures at the University of Chicago, 3 lectures on "Symplectic 4-manifolds"

May 1996 "From Symplectic deformation to isotopy", Oberwolfach, Germany.

June 1996 "From Symplectic deformation to isotopy", Zurich, Switzerland.

June 1996 Plenary address at European Congress, Budapest: "Recent developments in Symplectic Topology".

Oct 1996 "The group of symplectomorphisms", Pacific topology Seminar, Oregon. Broadcast on the M-bone and then streaming video.

July 1997 "Introduction to Symplectic Topology', 5 lectures at IAS/Park City Summer School

Fall 1997 "Topological Rigidity of Hamiltonian Loops and Quantum Homology", AMS meetings; Montreal (Sept), Milwaukee (Oct).

Jan 1998 AWM Noether Lecture at AMS winter meeting, Baltimore "Symplectic Structures - a new approach to geometry".

Mar 1998 "The Topology of the group of Symplectomorphisms", Warwick and Stanford Univ.

June 1998 "The Virtual moduli cycle", Zurich

June 1998 "Hamiltonian Fibrations", Schloss Ringberg, Germany

Aug 1998 "Fibrations in Symplectic Topology", Plenary address ICM Berlin.

May–June 1999 Hardy lectures at Cambridge, Bath, Nottingham Trent, Belfast, Bangor, Edinburgh, Manchester and London, on various aspects of symplectic geometry. Also two talks on Women in Mathematics, in Edinburgh and London.

July 1999 Plenary Address at the Brazilean Mathematical Congress, Rio de Janiero: "Symplectic Topology Today"

October 1999 "The topology of the group of symplectomorphisms of $S^2 \times S^2$", NYU.

Dec 1999 Symplectic Topology Today, CRM 30th anniversary conference, Montreal

Dec 1999 "The topology of the group of symplectomorphisms of $S^2 \times S^2$," ETH, Zurich.

Oct 2000 "Symplectomorphism groups of rational surfaces", Taubes' seminar, Harvard. Nov 2000 "Measurements in Symplectic Topology", Basic Notions seminar, Harvard.

Nov 2000 "The topology of symplectomorphism groups", MIT colloquium

Jan-Feb 2001 Four lectures on the Hofer norm, Courant Institute, NYU

March 2001 Three lectures on Symplectomorphism groups, UC Irvine.

April 2001 "Variants of the Hofer norm and nonsqueezing", at CRM workshop Montreal and at the Geometry Festival, Northeastern

April 2001 "The nonsqueezing theorem," lecture ETH, Zurich

June 2001 "Variants of the Hofer norm", conference in Szechuan, China.

July 2001: Lectures on symplectomorphism groups, a course at Summer school in Jussieu, Paris.

March 2002: Lie subgroups of symplectomorphism groups, IAS, Princeton

April 2002: The topology of symplectomorphism groups, Princeton Univ

June 2002: The topology of symplectomorphism groups, Oxford, UK

July 2002: The topology of symplectomorphism groups, ETH, Zurich, Switzerland

Sept 2002: J-holomorphic curves and dynamics, NYU

Dec 2002: The topology of symplectomorphism groups (2 lectures), Madison, Wisconsin

Jan 2003: Lectures on symplectomorphism groups, a course at Winter school in Srni, Czech Republic.

Jan 2003, May 2003 two lectures at ETH, Zurich

April 2003; AMS sectional meeting in NYC: circle actions on toric manifolds

Nov 2003: gave a Leonardo da Vinci lecture in Milan on "Recent developments in Symplectic topology", also a seminar at the university of Torino.

March 2004: talked on "Homotopy properties of symplectomorphism groups" at Stanford; then "Extending the Flux homomorphism" at MSRI, Berkeley; then "Symplectomorphism groups of Toric manifolds" at Tulane University.

April 2004: gave Grosswalt lectures (series of three) on symplectic topology at Temple University.

April 2004: Geometry Festival in NYU: Applications of J-holomorphic curves (in honor of Gromov.)

July 2004; attended conference at Stare Jablonki, Poland, and gave a talk on "Extending the Flux homomorphism".

July 2004; attended joint Canadian Math Society and French Math Society meeting in Toulouse, France, and talked on "Symplectomorphism groups of Toric manifolds"

July 2004 Hodge Centennial conference, Maxwell Institute, Edinburgh: "Comparing symplectic and Kähler manifolds".

Sept 2004: NYU/SB joint seminar, NYU "Ono's proof of the Fluc conjecture"

Nov 2004: two lectures in Montreal; "Enlarging the Hamiltonian group", "Topological properties of symplectomorphism groups"

Nov 2004 Cairns Lectures, three lectures on the topology of symplectomorphism groups, University of Illinois, Champaign–Urbana.

Jan 2005; AMS Winter meeting, Atlanta "Recent Developments in Floer theory", Current Events seminar.

Jan 2005; Geometry Seminar and talk to Undergraduates at Duke University, "Symplectic Geometry and Polytopes", "Symplectomorphism groups of Toric manifolds".

April 2005; invited address, British Mathematical Colloquium, Liverpool UK, "Remarks on groups of symplectomorphisms"

May 05: U Penn, workshop for women in Math and Physics, Symplectic Geometry: a meeting ground.

May 05: Max Planck Inst, Leipzig " Groupoids and Branched manifolds", talk at workshop

June 05: IAS. Princeton "Groupoids and Branched manifolds", talk at NSF FRG workshop (also Oct 05, same title, place)

September 2005: Hamilton Bicentennial conference, Royal Irish Academy, Dublin, Ireland "Symplectic Topology today".

October 2005: talk at University of York, UK "Symplectic Topology today".

October 05: IAS, Princeton "Groupoids and Branched manifolds", workshop talk.

November 2005: Invited address at MAA meeting, Northeastern Section. "Symplectic Topology today".

January 2006: AMS Invited address at Winter Meeting: "Homotopy properties of Hamiltonian group actions."

March 2006: University of Toronto: seminar on "Homotopy properties of groups of symplectomorphisms"

March 2006: Lisbon Polytechnic Institute, Portugal: seminar on "Homotopy properties of groups of symplectomorphisms"

March 31 2006: Indiana University, Bloomington. Seminar on "Homotopy properties of groups of symplectomorphisms".

April 1 2006: Indiana University, Bloomington. keynote address to a conference of graduate students on "Symplectic Topology today"

April 16 Columbia University: seminar on "Topological properties of groups of symplecto-morphisms."

April 27 2006: University of Chicago: Colloquium talk arranged by Association of Women in Mathematics on "Questions in Symplectic geometry". Also an informal seminar talk on "Homotopy properties of groups of symplectomorphisms".

May 4 2006: University of Columbia conference for John Morgan: "Homotopy properties of groups of symplectomorphisms".

May 24, 2006: MSRI Berkeley Workshop: "Homotopy properties of groups of symplecto-morphisms".

July, 2006 Oberwolfach: "Symplectomorphism groups – an introduction"

Aug 2006, GESTA conference, Getafe, Spain: "Symplectic Characteristic classes".

Sept 2006, Univ. Minnesota: IT Distinguished Woman Speaker, Department colloquium: "What is Symplectic Topology?" and talk at the Yamabe conference "Symplectomorphism groups – an introduction"

THESIS STUDENTS:
Ira Moskowitz (1983); Alan Horwitz (1988); Eleonora Ciriza (1989); Brian Kasper (1990); Lisa Traynor (1992); Alan McRae (1994); Gang Liu and Simon Richard (1995); Wladyslaw Lorek (1996); Jennifer Slimowitz (1998); Leonor Godinho, Haydee Herrara–Guzman, Luisa Stelling (1999); Silvia Anjos (2000); Olga Buse (2002); Mark Barsamian (2002); Eduardo Gonzalez (2005)

PUBLICATIONS
1. A countable infinity of II_1-factors, *Ann. Math.*, 90 (1969), 361-371.
2. Uncountably many II_1-factors, *Ann. Math.*, 90 (1969), 372-377.
3. Central Sequences and the hyperfinite factor, *Proc. L.M.S.*(3) 21 (1970), 443-461.
4. On the structure of II_1 factors, *Uspekhi Math Nauk* 25 (1970), 29-51 (in Russian).
5. (with E. Hewitt), Certain pathological maximal ideals in algebras of operators, *Math Sbornik,* (NS) 83 (125) (1970), 527-546 (in Russian).
6. On residual sequences in a II_1 factors, *J. London M.S.* (2) 3 (1971), 273-280.
7. Configuration spaces of positive and negative particles, *Topology* 14 (1975), 91-107.
8. (with G. Segal), Homology fibrations and the "Group-Completion" theorem, *Invent. Math.,* 31 (1976),279-284.
9. Configuration spaces, in K-theory and operator algebras, Athens, Georgia (1975), ed. Morrel and Singer, Springer Lecture Notes 575 (1977).
10. On the lattice of normal subgroups of the group of automorphisms of an open manifold, *Journal of the London Math. Soc.,* (2) 18 (1978), 353-364.
11. Foliations and monoids of embeddings, in *Geometric Topology*, ed. J. Cantrell, Academic Press (1979), 429-444.
12. On the classifying spaces of discrete monoids, *Topology* 18 (1979), 313-320.
13. The homology of some groups of diffeomorphisms, *Comm. Math. Helv.,* 55 (1980), 97-129.
14. On the group of volume preserving diffeomorphisms of $\mathbf{R}^n$, *Trans. Amer. Math. Soc.,* 261 (1980), 103-113.
15. C^1-minimal subsets of the circle, *Ann. Inst. Fourier* (1981), 177-193.
16. On groups of volume-preserving diffeomorphisms and foliations with transverse volume form, *Proc. London Math. Soc.* (3) 43 (1981), 295-320.

17. On tangle complexes and volume preserving diffeomorphisms of open 3-manifolds, *Proc. London Math. Soc.*, (3) 43 (1981) 321-333.

18. Some canonical cohomology classes of groups of volume preserving diffeomorphisms, *Trans. Amer. Math. Soc.,* 275 (1983) 345-356.

19. Local homology of groups of volume-preserving diffeomorphisms, I, *Ann. Ec. Norm. Sup.,* 15 (1982) 609-648.

20. Local homology of groups of volume-perserving diffeomorphisms, II,*Comm. Math. Helv.,* 58 (1983), 135-165.

21. Local homology of groups of volume-perserving diffeomorphisms, III, *Ann. Ec. Norm. Sup.,* 16 (1983), 529-540.

22. (with P. de la Harpe), Acyclic groups of automorphisms, *Comm. Math. Helv.*, 58 (1983), 48-71.

23. Symplectic diffeomorphisms and the flux homomorphism,*Inventiones Math.,* 77 (1984), 353-366.

24. Examples of simply-connected symplectic non-Kählerian manifolds, *Journal of Diff. Geom*, 20 (1984), 267-277.

25. Remarks on the homotopy type of groups of symplectic diffeomorphisms, *Proc. Amer. Math. Soc.,* 94 (1985), 348-352.

26. Applications of convex integration to symplectic and contact geometry, *Ann. Math. Inst. Fourier* 37 (1987) 107-133.

27. Examples of symplectic structures, *Invent. Math.,* 89 (1987), 13-36.

28. Symplectic structures on $\mathbf{R}^n$, in *Seminaire Sud-Rhodanien de Geometrie, Lyon (1986),* Travaux en Cours, Hermann Paris (1987).

29. The symplectic structures of Kähler manifolds of non-positive curvature, *J. Diff. Geom.* 28 (1988), 467-475.

30. The moment map for circle actions on symplectic manifolds, *Journal of Geometry and Physics* 5, (1988), 149-160.

31. Rational and Ruled Symplectic 4-manifolds, in *Proceedings of conference in Durham*, England, ed. Donaldson and Thomas, CUP, Cambridge, (1990).

32. The Structure of Rational and Ruled Symplectic 4-manifolds, *Journal A.M.S.* 3 (1990), 679-712. Erratum *Journ AMS* 5 (1992), 987-988.

33. Elliptic Methods in Symplectic Geometry, *Bull. A.M.S.* 23, (1990), 311-358.

34. Blow ups and symplectic embeddings in dimension 4, *Topology,* 30 (1991), 409-421.

35. The Local Behavior of Holomorphic curves in almost complex 4-manifolds, *Journ. Diff. Geo.*, 34 (1991), 143-164.

36. Symplectic manifolds with Contact-Type boundaries, *Inventiones Math,* 103 (1991) 651-671.

37. Symplectic 4-manifolds, in *Proceedings of ICM*, Kyoto, 1990, Springer Verlag (1991).

38. Immersed spheres in symplectic 4-manifolds, *l'Annales de L'Inst Fourier*, 42 (1991), 369-392.

39. Singularities of J-holomorphic curves in almost complex 4-manifolds, *Journ. Geom. Analysis* 3 (1992), 249-266.

40. Remarks on the uniqueness of symplectic blowing up, in *Symplectic Geometry* ed. Salamon, LMS Lecture Notes #192, Cambridge Univ. Press (1993), 157-168.

41. (with L. Traynor) The 4-dimensional symplectic camel and related results, in *Symplectic Geometry* ed. Salamon, LMS Lecture Notes #192, Cambridge Univ. Press (1993), 169-182.

42. Notes on Ruled symplectic 4-manifolds, *Trans. Amer. Math. Soc.* 345 (1994), 623-639.

43. Singularities and positivity of intersections of J-holomorphic curves, in *Holomorphic Curves in Symplectic Geometry* ed. Audin and Lafontaine, Progress in Math 117, Birkhäuser (1994), 191-216.

44. (with L. Polterovich) Symplectic Packings and Algebraic Geometry, *Invent Math* 115 (1994) 405-429.

45. An Irrational ruled symplectic 4-manifold, in *Floer Memorial volume*, ed. Hofer et. al., Birkhäuser (1995) 545-554.

46. (with F. Lalonde) The Geometry of Symplectic Energy, *Annals of Math.* 141 (1995), 349-371.

47. (with F. Lalonde) Hofer's L^∞-geometry: energy and stability of Hamiltonian flows I, *Invent. Math.* 122, (1995), 1-33.

48. (with F. Lalonde) Hofer's L^∞-geometry: energy and stability of Hamiltonian flows II, *Invent. Math.* 122, (1995), 35-69.

49. (with F. Lalonde) Local Non-Squeezing theorems and stability, *Geometric and Functional Analysis,* 5 (1995), 364-386.

50. (with F. Lalonde) The classification of ruled symplectic 4-manifolds, *Math. Res. Letters* 3 (1996) 769-778.

51. (with F. Lalonde) J-curves and the classification of rational and ruled symplectic 4-manifolds, in *Contact and Symplectic Geometry*, Publications of the Newton Institute, ed. Thomas, Camb. Univ. Press (1996) 3-42.

52. (with M. Symington) Associativity properties of the symplectic Sum, *Math. Research Letters* 3 (1996) 591-608.

53. (with D. Salamon) A survey of symplectic manifolds with $b^+ = 1$, *Turkish Journal of Mathematics,* 20 (1996) 47-60.

54. (with F. Lalonde) Positive paths in the linear symplectic group, Arnold–Gelfand Seminar, *Geometry and Singularity Theory*, Birkhäuser (1997) 361-388.

55. Lectures on Gromov invariants for symplectic 4-manifolds, in *Gauge Theory and Symplectic Geometry* ed Hurtubise and Lalonde, NATO–ASI Series, Kluwer, Dordrecht/Boston (1997).

56. From Symplectic deformation to isotopy, in *Proceedings of Irvine Conference 1996*, ed Stern. International Press. (1998)

57. (with Lalonde and Polterovich) On the Flux conjectures, *CRM Proceedings and Lecture Notes*, vol 15 (1998), 69-85.

58. (with Lalonde and Polterovich) Topological Rigidity of Hamiltonian loops and quantum homology, *Inventiones Math.* **135**, 369–385 (1999)

59. Symplectic Structures - a new approach to geometry, Notices A.M.S. 45 (1998), 952–960.

60. Recent Developments in Symplectic topology, in *Progress in Mathematics vol 169, Proceedings of European Congress, Budapest 1996*, 28–42, Birkhäuser Verlag. (1998).

61. Introduction to Symplectic Topology, in *IAS/Park City Math. Series,* vol. 7 ed Eliashberg, AMS (1998).

62. Fibrations in Symplectic Topology, *Documenta Mathematica*, Extra Volume ICM 1998, Vol I, 339–357.

63. Symplectic topology and Capacities, in *Prospects in Mathematics* ed Rossi, Americal Mathematical Society (1999)

64. The virtual moduli cycle, *Amer. Math. Soc. Transl.* (2) **196** (1999), 73 – 102.

65. Almost complex structures on $S^2 \times S^2$, SG/9808008, *Duke Math. Journal*,**101** (2000), 135–177.

66. Quantum homology of Fibrations over S^2, SG/9905092 *International Journal of Mathematics*, **11**, (2000), 665–721.

67. (with M. Abreu) Topology of symplectomorphism groups of rational ruled surfaces, SG/9910057, *Journ. of Amer. Math. Soc.* **13**, (2000) 971–1009.

68. Symplectomorphism Groups and Almost Complex Structures, preprint (2000), SG/0010274, *Enseignement Math.*, **38** (2001), 1–30.

69 (with F. Lalonde) Cohomological properties of ruled symplectic structures, SG/0010277, *Mirror symmetry and string geometry*, ed Hoker, Phong, Yau, CRM Proceedings and Lecture Notes, Amer Math Soc. (2001)

70. (with J. Slimowitz) Hofer–Zehnder capacity and length minimizing Hamiltonian paths, SG/0101085, *Geom. Topol.* **5** (2001), 799–830.

71. Geometric variants of the Hofer norm, SG/0103089, *Journal of Symplectic Geometry*, **1** (2002), 197–252.

72. (with F. Lalonde) Symplectic structures on fiber bundles, SG/0010275, *Topology* **42** (2003), 309–347. Erratum *Topology* **44** (2005), 1301-1303.

73. Lectures on groups of symplectomorphisms, SG/0201032, *Rendiconti di Circolo di Mat, Palermo* Serie II Suppl. **72** (2004), 43–78.

74. A survey of topological properties of groups of symplectomorphisms, to appear in *Topology, Geometry and Quantum Field Theory*, Proceedings of 2002 Symposium in honor of G.B. Segal, ed U.L. Tillmann, LMS Lecture Notes 308, Cambridge Univ. Press (2004), 173–193.

75. (with S. Tolman) Topological properties of Hamiltonian circle actions, SG/0404338, *International Mathematical Research Papers* Volume 2006 (2006). article ID 72826, 77 pages

76. (with J. Kedra) Homotopy properties of Hamiltonian group actions, SG/0404539, *Geometry and Topology* **9** (2005), 121–162

77. Symplectomorphism groups and quantum cohomology, survey article, in *The Unity of Mathematics: in honor of the 90th birthday of I.M. Gelfand*, Birkhäuser, Boston (2005).

78. (with Sue Tolman) On nearly semifree circle actions, SG/0503467.

79. Enlarging the Hamiltonian group, SG/0503268, *Journal of Symplectic Geometry* **3** (2005), 481-530.

80. Floer Theory and Low dimensional Topology, *Bull. Amer. Math. Soc.* **43** (2006), 25-42.

81. Branched manifolds, groupoids, and multisections, SG/0509664.

82: The symplectomorphism group of a blow up, SG/0610142.

BOOKS

1. (with D. Salamon) "J-holomorphic curves and Quantum Cohomology", University Lecture Series, Amer. Math. Soc. (1994).

2. (with D. Salamon) "Introduction to Symplectic Topology", Oxford Univ. Press, (1995), 2nd edition (1998).

3. (with D. Salamon) *J*-holomorphic curves and Symplectic Topology, Colloq. Publications AMS, (2004)

BOOK REVIEW *Partial Differential Relations* by M. Gromov, *Bull. of Amer. Math. Soc.* 18 (1988), 214-220.