

JOHN B. ETNYRE

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Philadelphia, PA 19104-6395	http://www.math.upenn.edu/~etnyre
Born on April 10, 1968	
Calgary, Alberta, Canada (Citizen of USA)	

Research Interests

Geometric Topology: knot theory, three and four manifold theory
Differential Geometry: symplectic and contact geometry
Dynamical Systems: fluid dynamics, non-holonomic dynamics

Academic Degrees

UNIVERSITY OF TEXAS, AUSTIN, Ph.D., Mathematics	Dec 1996
Advisor: Robert E. Gompf	
UNIVERSITY OF TEXAS, AUSTIN, B.S., with honors	May 1989

Awards, Grants and Honors

NSF CAREER Grant	2003-2008
“Knot Theory and Dynamics in Contact Geometry”	
NSF Focused Research Group Grant	2003-2006
“Holomorphic Curves and Low Dimensional Topology” (Co-PI with Eliashberg, Hsiang, Hutchings, Mrowka, Ozsvath, Stern, Szabo))	
<i>Invited one hour AMS Address,</i> Courant Institute, New York, NY.	April 2003
National Science Foundation Grant	2002-2005
“Knot Theory and Dynamics in Contact Geometry” (replaced with CAREER in 2003)	
National Science Foundation Grant	Fall 2000
for contact geometry workshop (Co-PI with Eliashberg and Ceiliebak)	
American Institute on Mathematics award	Fall 2000
for contact geometry workshop	
National Science Foundation Post-doctoral Fellowship	1997-2001
Regents Endowed Graduate Fellowship	August 1990
Phi Beta Kappa	April 1989

Professional Positions Held

<i>Assistant Professor</i>	2001-
University of Pennsylvania, Philadelphia, Pennsylvania	
<i>Acting Assistant Professor/Visiting Instructor</i>	1997-2001
Stanford University, Stanford, California	
<i>Instructor</i>	Spring 1997
University of Texas, Austin, Texas	
<i>Research Assistant</i>	Spring 1992
Max Plank Institute, Bonn, Germany	
<i>Teaching Assistant and Assistant Instructor</i>	1989-96
University of Texas, Austin, Texas	

Publications

1. *Generic hydrodynamic instability of curl eigenfields*, joint work with Robert Ghrist, To Appear in SIAM J. Appl. Dyn. Syst.
 2. *On Symplectic Fillings*, *Algebr. Geom. Topol* **4** (2004), 73-80.
 3. *On connected sums and Legendrian knots*, joint work with Ko Honda, *Adv. Math* **179** (2003), 59-74.
 4. *Introductory Lectures on Contact Geometry*, *Proc. Sympos. Pure Math* **71** (2003), 81-107.
 5. *Problems in Low Dimensional Contact Topology*, joint work with Lenhard Ng, *Proc. Sympos. Pure Math* **71** (2003), 337-357.
 6. *Tight contact structures and Anosov flows*, joint work with Robert Ghrist, *Topol. and its Appl* **124** (2002), 211-219.
 7. *Invariants of Legendrian Knots and coherent orientations*, joint work with Lenhard Ng and Joshua Sabloff, *J. Sympl. Geom* **1** (2002), no. 2, 321-368.
 8. *Contact topology and hydrodynamics II: solid tori*, joint work with Robert Ghrist, *Ergod. Th. & Dynam. Sys* **22** (2002), 819-833.
 9. *Tight contact structures with no symplectic fillings*, joint work with Ko Honda, *Invent. Math* **148** (2002), no. 3, 609-626.
 10. *On Symplectic Cobordisms*, joint work with Ko Honda, *Math. Annalen* **323** (2002), no. 1, 31-39.
 11. *Knots and contact geometry I: torus knots and the figure eight knot*, joint work with Ko Honda, *J. Sympl. Geom* **1** (2001), no. 1, 63-120.
 12. *An index for closed orbits in Beltrami fields*, joint work with Robert Ghrist, *Phys. D* **159** (2001), no. 3-4, 180-189.
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13. *Erratum to: tight contact structures on lens spaces*, Commun. Contemp. Math **3** (2001), no. 4, 649-652.
14. *On the non-existence of tight contact structures*, joint work with Ko Honda, Ann. of Math. (2) **153** (2001), no. 3, 749-766.
15. *Tight contact structures on lens spaces*, Commun. in Contemp. Math **2** (2000), no. 4, 559-577.
16. *Contact topology and hydrodynamics III: knotted flowlines*, joint work with Robert Ghrist, Trans. Amer. Math. Soc **352** (2000), 5781-5794.
17. *Contact topology and hydrodynamics I: Beltrami fields and the Seifert Conjecture*, joint work with Robert Ghrist, Nonlinearity **13** (2000), 441-458.
18. *Stratified integrals and unknots in invicid flows*, joint work with Robert Ghrist, Contemp. Math **246** (1999), 99-111.
19. *Gradient flows within plane fields*, joint work with Robert Ghrist, Comm. Math. Helvetici **74** (1999), 507-529.
20. *Tight contact structures via dynamics*, joint work with Robert Ghrist, Proceedings of the AMS **127** (1999), 3697-3706.
21. *Transversal torus knots*, Geometry and Topology **3** (1999), 253-268.
22. *Symplectic convexity in low-dimensional topology*, Topol. and its Appl **88** (1998), 3-25.
23. *Smooth structures on collarable ends of 4-manifolds*, joint work with Zarko Bizaka, Topology **37** (1998), 461-467.
24. *Symplectic constructions on 4-manifolds*, Dissertation, University of Texas (December 1996), 1-92.

Preprints

1. *Planar open book decompositions and contact structures*, Preprint 2004.
2. *Cabling and transverse simplicity*, joint work with Ko Honda, Preprint 2003.
3. *Legendrian and Transversal Knots*, Preprint 2003.
4. *The Contact Homology of Legendrian Submanifolds in \mathbb{R}^{2n+1}* , joint work with Tobias Ekholm and Michael G. Sullivan, Preprint 2003.
5. *Non-isotopic Legendrian Submanifolds in \mathbb{R}^{2n+1}* , joint work with Tobias Ekholm and Michael G. Sullivan, Preprint 2002.

Professional Service

Editor

Algebraic and Geometric Topology

2000-

Panelist

National Science Foundation Grant Panel 2004

Workshop, Co-organizer

four month workshop on Low Dimensional Contact Geometry at Stanford University and the American Mathematical Institute in the Fall of 2000.

Conferences, Co-organizer

Holomorphic Curves in Contact Geometry, AIM Palo Alto Aug. 2003
 Frontiers of PDEs and Dynamical Systems, Rutgers May 2003
 NSF Sections Meeting, NYC: Contact and Symplectic Geometry April 2003
 Symplectic and Contact Geometry, Stanford May 2001
 Low Dimensional Contact Geometry, Stanford December 2000

Seminars, Organizer

Geometry and Topology Seminar 2003-2004
 Graduate Student Geometry Seminar 2001-2003
 Contact Geometry Seminar Fall 2000
 Sheaf Theory Seminar Summer 1994

Seminars, Co-organizer

Symplectic Field Theory Seminar Fall 2000
 Low-dimensional Topology and Geometry Seminar 1999-00
 Foliations, Fibrations and Slitherings Seminar 1998-99
 Seminar on Some Results of Taubes and Kotschick Summer 1995
 Contact Geometry Seminar Fall 1994

Reviewer

Math Reviews, NSF Grant Proposals, Israel Science Foundation Grant Proposals, and Netherlands Organization for Scientific Research Grand Proposals

Referee

Annals of Mathematics, Asian Journal of Mathematics, Commentarii Mathematici Helvtici, Communications in Analysis and Geometry, Differential Geometry and its Application, Geometriae Dedicata, Geometry and Topology, Houston Journal of Mathematics, International Journal of Mathematics and Mathematical Sciences, International Mathematics Research Notes, Journal of Differential Equations, Journal of Differential Geometry, Journal of Mathematical Sciences (the University of Tokyo), Mathematica Japonica, Mathematical Research Letters, Pacific Journal of Mathematics, Proceedings of the AMS, Topology, Topology and its application, and Transactions of the AMS

Committees

TA Training 2001-
 Math Major Advising 2001-
 Graduate Admissions 2002-03
 Graduate Advising 2001-02
 Masters Advising 2003-

Graduate Students

Adviser	
Stephan Schönenberger (PhD)	Current
James Tripp (PhD)	Current
Supervising Committee	
Thomas Vogel (PhD, University of Munich)	Spring 2004
Madeeha Khalid (PhD)	May 2003
Joseph Lucas (Masters)	Apr. 2002
Oral Exam Committee	
Corey Hoelscher	Apr. 2004
Stephan Schönenberger	Mar. 2003
James Tripp	Mar. 2003

Courses Taught

Graduate: *Contact Geometry I*, *Contact Geometry II*, *Reading course* (with James Tripp — Confoliations), *3-manifold topology I*, *3-manifold topology II*, *Reading course* (with Stephan Schönenberger — Holomorphic Curves I and II), *Reading course* (with Sang Seon Kim — Symplectic topology), *Geometry of Curves and Surfaces*, and *Topology*

Undergraduate: *Calculus IV*, *Linear Algebra*, *Differential Equations*, *Multi-Variable Calculus*, *Calculus*, *Elementary Mathematics Education Course*, and *Pre-Calculus*

Invited Lecture Series/Mini Courses

<i>Open Books and Contact Geometry</i> , Alfred Renyi Institute of Mathematics, Budapest, Hungary.	June, 2004
<i>Legendrian Knots</i> , University of Munich, Munich, Germany.	Feb, 2003
<i>Introduction To Contact Geometry</i> , Rutgers University, New Brunswick NJ.	Sep to Dec, 2002

Invited Conference Talks

Geometry and Topology of Manifolds McMaster University, Hamilton, Canada.	May, 2004
Cornell Topology Festival(also Colloquium) Cornell University, Ithaca, NY.	May, 2004
Topology in and around dimension three BIRS, Banff Canada.	Sep, 2003
Georgia Topology Conference University of Georgia, Athens GA.	June, 2003

Contact Topology in Montreal Montreal, Canada.	Apr, 2003
AMS Invited Address Courant Institute, NYC NY.	Apr, 2003
XVIIIth Annual Geometry Festival: in Honor of P. Griffiths Duke University, Durham NC.	Mar, 2003
Asymptotic Topology, Foliations, and Dynamical Systems Conference University of Munich, Munich, Germany.	Jul, 2002
AMS Regional Meeting Special Session Georgia Institute of Technology, Atlanta GA.	Mar, 2002
Oberwolfach 4-manifolds Conference Oberwolfach, Germany.	Jul, 2001
Georgia International Topology Conference University of Georgia, Athens GA.	May, 2001
Bay Area Joint Symplectic Geometry Seminar Stanford University, Stanford CA.	Mar, 2001
Bay Area Joint Symplectic Geometry Seminar Stanford University, Stanford CA.	Dec, 2000
Georgia Topology Conference University of Georgia, Athens GA.	Jul, 2000
AMS Regional Meeting Special Session University of California, Santa Barbara CA.	Mar, 2000
Bay Area Topology Seminar University of California, Berkeley CA.	Feb, 2000
West Coast Topology Conference Stanford University, Stanford CA.	Apr, 1999
AMS/MAA Joint National Meeting San Antonio TX.	Jan, 1999
AMS Regional Meeting Special Session Kansas State University, Manhattan KS.	Mar, 1998
Bay Area Joint Symplectic Geometry Seminar University of California, Berkeley CA.	Dec, 1997
AMS Regional Meeting Special Session Georgia Institute of Technology, Atlanta GA.	Oct, 1997
Dehn Surgery Conference University of Arkansas, Fayetteville AR.	Mar, 1997
4-Manifold Workshop Mathematical Sciences Research Institute, Berkeley CA.	Jan, 1997
Georgia Topology Conference University of Georgia, Athens GA.	June, 1996

Colloquia

Cornell University (also Conference Talk), Ithaca, NY	May, 2004
University of California, San Diego, La Jolla CA	Feb, 2004
University of Southern California, Los Angeles CA	Jan, 2004
George Washington University, Washington D.C.	Oct, 2003
Dartmouth University, Hanover NH	Oct, 2003
SUNY Buffalo, Buffalo NY	Mar, 2003
Rice University, Houston, Texas	Oct, 2002
Osaka University, Osaka, Japan	May, 2002
George Washington University, Washington D.C.	Mar, 2002
University of Georgia, Athens GA	Mar, 2002
Bryn Mawr, Philadelphia PA	Oct, 2001
Emory University, Atlanta GA	Feb, 2001
University of Pennsylvania, Philadelphia PA	Oct, 2000
Washington University, St. Louis MO	Feb, 2000
Santa Clara University, Santa Clara CA	Oct, 1999
Tulane University, New Orleans LA	Jan, 1999
Auburn University, Auburn AL	Jan, 1999
University of Nevada, Reno NV	Feb, 1998
Emory University, Atlanta GA	Oct, 1997

Seminar Talks

2003: University of Virginia, Charlottesville VA; Dartmouth University, Hanover NH; Courant Institute, NYC NY; University of California, Berkeley CA; SUNY Buffalo, Buffalo NY; Georgia Technical Institute, Atlanta GA; Princeton University, Princeton NJ

2002: Columbia University, NYC NY; Columbia University, NYC NY; Rutgers University, New Brunswick NJ; Tokyo Institute of Technology, Tokyo, Japan; University of Tokyo, Tokyo, Japan; University of Tokyo, Tokyo, Japan; Johns Hopkins University, Baltimore MD; University of Georgia, Athens GA; Princeton University, Princeton NJ

2001: University of California, Santa Barbara CA; Rutgers University, New Brunswick NJ; University of California, Berkeley CA

2000: University of Pennsylvania, Philadelphia PA; University of Pennsylvania, Philadelphia PA; State University of New York, Stony Brook NY; University of California, Riverside CA; Columbia University, NYC NY; New York University, NYC NY; Massachusetts Institute of Technology, Cambridge MA; University of Illinois, Urbana IL

1999: University of California, Berkeley CA; University of California, Berkeley CA; University of Texas, Austin TX; University of Texas, Austin TX; Rice University,

Houston TX; Tulane University, New Orleans LA; University of Georgia, Athens GA;
Duke University, Durham NC; Duke University, Durham NC

1998: University of California, Berkeley CA; University of California, Santa Barbara
CA

1997: University of California, Irvine CA; University of California, Berkeley CA; Uni-
versity of Georgia, Athens GA; State University of New York, Stony Brook NY
