Curriculum Vitae

Brendan Owens

Department of Mathematics
Cornell University
310 Malott Hall
Ithaca, NY 14853
USA
Tel: +1(607)255-4640
Fax: +1(607)255-7149

113 W. Buffalo St., #5
Ithaca, NY 14850
USA
Tel: +1(607)272-9737
email: owensb@math.cornell.edu
www: www.math.cornell.edu/~owensb

Nationality: Irish
Date of Birth: 7 March 1972
Research Interests: Gauge theoretic invariants of manifolds, Floer homology

Employment History

- Cornell University, Ithaca, New York 2004 - 2005

  Visiting Assistant Professor

- McMaster University, Hamilton, Ontario 2001 - 2004

  Britton Postdoctoral fellow

- Imperial College, London, England Jan - June 2002 & Jan - June 2003

  EDGE Postdoctoral fellow (funded by European Differential Geometry Endeavour)

- Trinity College Dublin 2000-2001

  Mathematics lecturer

Education

- Ph.D., Mathematics, Columbia University, October 2000

  Thesis Advisor: John Morgan

- M.A., Mathematics, Columbia University, May 1994

- B.A. (*First Class Honours*), Mathematics, Trinity College Dublin, July 1993

Papers and Publications

- B. Owens. *Unknotting information from Heegaard Floer homology*, in preparation.

- B. Owens & S. Strle. *Definite manifolds bounded by rational homology three spheres*, submitted for publication.

- B. Owens & S. Strle. *A characterisation of the $\mathbb{Z}^n \oplus \mathbb{Z}(\delta)$ lattice*, in preparation.

- B. Owens & S. Strle. *A characterisation of the $n\langle 1\rangle \oplus \langle 3\rangle$ form and applications to rational homology spheres*, math.GT/0312266, submitted for publication.

- B. Owens & S. Strle. *Rational homology spheres and the four-ball genus of knots*, math.GT/0308073, accepted for publication in Advances in Mathematics.

- B. Owens. *Instantons on cylindrical manifolds and stable bundles*, Geometry and Topology, Vol. 5 (2001) 761–797.

Graduate Teaching Experience

- Spring 2005: I am currently teaching *Riemannian Geometry* in Cornell. I intend to include an introduction to Ricci flow on three-manifolds.

- *An introduction to the Heegaard Floer homology of Ozsváth and Szabó*, Imperial College, Spring 2002.

Undergraduate Teaching Experience

Cornell University

- Engineering Calculus, Fall 2004, Spring 2005

McMaster University

- Complex Analysis I, Spring 2004

- Calculus III, Fall 2003

- Linear Algebra for Engineering, Fall 2001, Fall 2002

Trinity College Dublin

- First year science calculus, Spring 2001

- First year engineering calculus, 2000–2001

- Mathematica lab for third year scientists, Fall 2000

  Studied problems in classical and quantum mechanics – this was a self-contained course which I designed myself.

Columbia University

- From Fall 1996 through Spring 2000 I held the position of Calculus Computer Lab Coordinator. I was responsible for design and development of Mathematica course materials, training and supervision of instructors, and general administration such as scheduling.

- Taught Basic Mathematics, College Algebra, Calculus I, Calculus III, Linear Algebra.

Upcoming conference talks

- Invited speaker, Cornell Topology Festival, Cornell University, May 2005.

- Invited speaker, Canadian Mathematical Society Summer Meeting, University of Waterloo, June 2005.

Seminar and conference talks given

- *A generalisation of a theorem of Elkies*, Geometric Group Theory and Topology Seminar, Cornell University 2004.

- *Definite manifolds bounded by rational homology three-spheres*, CMI summer school on Floer homology, gauge theory, and low-dimensional topology, Budapest 2004.

- *Definite manifolds bounded by rational homology three-spheres*, Conference on geometry and topology of manifolds, McMaster University 2004.

- *On the four-ball genus of Montesinos knots*, Geometry and Topology Seminar, Université de Quebec à Montreal 2004.

- *On the four-ball genus of Montesinos knots*, Topology Seminar, University at Buffalo 2004.

- *Cobordisms of rational homology spheres*, Floer homology for 3-manifolds, MSRI hot topics workshop, Banff 2003.

- *Rational homology spheres and 4-ball genus*, McMaster University Geometry and Topology Seminar 2003.

- *Lectures on Bauer and Furuta's refinement of Seiberg-Witten invariants*, series of lectures given jointly with Simon Donaldson, Imperial College 2003.

- *Four-manifolds bounded by rational homology spheres*, London Geometry and Topology Seminar, Imperial College 2003.

- *Homology lens spaces and four-ball genus*, Gauge Theory Seminar, Max-Planck-Institut für Mathematik, Bonn 2003.

- *Homology lens spaces and four-ball genus*, Scottish Topology Seminar, University of Edinburgh 2003.

- *Constraints on four-manifolds bounded by homology lens spaces*, Warwick Differential Geometry Day, Warwick University 2003.

- *Floer homology of a surface times a circle using Bott-Morse theory*, McMaster University Geometry and Topology Seminar 2002.

- *A Hitchin-Kobayashi correspondence for certain noncompact Kähler manifolds*, McMaster University Geometry and Topology Seminar 2001.

- *Floer cohomology of a surface times a circle and holomorphic bundles*, Topology of manifolds and group actions, CRM conference, Montreal 2001.

- *Floer homology of a surface times a circle and holomorphic bundles*, London Geometry and Topology Seminar, Imperial College 2001.

- *Floer homology of a surface times a circle and holomorphic bundles*, Gauge Theory Seminar, Max-Planck-Institut für Mathematik, Bonn 2001.

- *Instantons on cylindrical manifolds and stable bundles*, Gauge Theory and Topology Seminar, Trinity College Dublin, 2000.

- *Lectures on the proof of Floer's exact triangle theorem*, series of lectures given in Columbia University 1999.

Other experience

- I have reviewed several papers for MathSciNet (AMS).

- I have refereed papers for Algebraic and Geometric Topology and for Geometry and Topology.

References

Hans Boden, McMaster University	`boden@math.mcmaster.ca`
Simon Donaldson, Imperial College	`s.donaldson@imperial.ac.uk`
John Morgan, Columbia University	`jm@math.columbia.edu`
Peter Ozsváth, Columbia University	`petero@math.columbia.edu`
Andrew Nicas, McMaster University (teaching)	`nicas@univmail.cis.mcmaster.ca`