

D. Corbett Redden

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Education

Rice University

B.A. in Mathematics and Philosophy, Rice University, May 2001

University of Notre Dame

M.S. in Mathematics, May 2004

Ph.D. in Mathematics, University of Notre Dame, August 2006

Thesis Title: Canonical metric connections associated to string structures.

Thesis Advisor: Prof. Stephan Stolz

Employment

Simons/RTG Instructor. SUNY Stony Brook, Department of Mathematics. 2006 - 2009.

Teaching Assistant and Graduate Student Instructor. University of Notre Dame, Department of Mathematics. 2002 - 2006.

Research

Geometry, Topology, and their interactions with mathematical quantum field theories. In particular, the geometry of string structures.

Papers and Preprints

“Harmonic forms on principal bundles,” 2008. [arXiv:math.DG/0810.4578](https://arxiv.org/abs/math/0810.4578) (*submitted*)

“String structures and canonical 3-forms,” 2008. In preparation.

Teaching Experience

SUNY Stony Brook

MAT 552 – Lie Groups and Lie Algebras (graduate course), Fall 2008

MAT 531 – Topology and Geometry II (graduate course), Spring 2008

MAT 205 – Multivariable Calculus, Spring 2008

MAT 303 – Ordinary Differential Equations, Fall 2007

MAT 131 – Calculus I (course coordinator), Spring 2007

MAT 123 – Pre-calculus, Fall 2006

University of Notre Dame

Calculus II for Business, Spring 2005

Calculus I for Business, Fall 2005

Calculus III - Multivariable Calculus, Spring 2004

Teaching assistant for sections of Calculus I and II, Fall 2002 - Fall 2005

High School Research Students

Ian Drayer. 2007. Paper submitted to Intel STS, Siemens, and LISEF competitions.

Research Support

SUNY Stony Brook RTG Program in Geometry and Physics Postdoctoral Fellowship, Summer 2008-Summer 2009. (summer support, travel and computer stipend)

AIM SQuaREs research program in Algebraic Topology and Physics, 2008-2010. (support to attend yearly research meeting)

Selected Presentations

Geometry/Topology Seminar, Stony Brook, October 2008: *Harmonic forms on principal bundles*

Topology Seminar, University of Notre Dame, August 2008: *String structures and geometry*

Undergraduate Math Club, Stony Brook, April 2008: *The Gauss–Bonnet theorem*

Topology Seminar, University of Virginia, May 2007: *String structures and canonical 3-forms*

Topology Seminar, MIT, April 2007: *String structures and canonical 3-forms*

Talbot Workshop on Topological Modular Forms, March 2007: *Elliptic cohomology: a historical overview*

Geometry/Topology Seminar, Stony Brook, November 2006: *String Structures and Canonical 3-forms*

Topology Seminar, Northwestern University, April 2006: *The adiabatic limit of a string structure*

Graduate Geometry Seminar, University of Texas Austin, March 2006: *The adiabatic limit of a string structure*

Special Session on Topology and Physics, AMS Spring Sectional Meeting, Notre Dame, IN, April 2006: *Canonical metric connections associated to string structures*

Topology Seminar, University of Notre Dame, October 2005: *String Structures and Torsion Connections*

Talbot Workshop on the Stolz–Teichner Model of Elliptic Cohomology, February 2004: *Clifford linearity in field theories, and How does a 2-d SUSY CFT give a modular form?*

Numerous working seminar talks at Notre Dame.

Selected Workshops and Conferences Attended

FRG Workshop on Algebraic Topology and Quantum Field Theory, CUNY Grad Center (September 2008)

AIM SQuaREs workshop in Algebraic Topology and Physics (May 2008)

Yang/Simons Conference on The Stony Brook Dialogues in Mathematics and Physics, Stony Brook (March 2008)

Abel Symposium on Algebraic Topology, Oslo, Norway (August 2007)

MIT-Talbot Workshop on TMF (Spring 2007)

AMS Spring Central Sectional Meeting, Notre Dame (April 2006)

MIT-Talbot Workshop on Automorphisms of Manifolds (Spring 2006)

Workshop on Geometric Topology and Connections with Quantum Field Theory, Mathematisches Forschungsinstitut Oberwolfach, Germany (June 2005)

Workshop on Forms of Homotopy Theory: Elliptic Cohomology and Loop Spaces, The Fields Institute, Toronto, Canada (September 2004)

MIT-Talbot Workshop on The Stolz-Teichner Model of Elliptic Cohomology (February 2004)

Workshop on Topological Modular Forms, Westfälische Wilhelms-Universität Münster, Germany (October 2003)

Spring School on Noncommutative Geometry and Applications, Vanderbilt University (May 2003)

Assorted Midwest Topology Seminars

References

Stephan Stolz, University of Notre Dame. Stolz.1@nd.edu

Michael J. Hopkins, Harvard University. mjh@math.harvard.edu

Blaine Lawson, SUNY Stony Brook. blaine@math.sunysb.edu

Tony Phillips, SUNY Stony Brook. tony@math.sunysb.edu (Teaching)

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<http://www.math.sunysb.edu/~redden/CV.pdf>