

CURRICULUM VITAE

Christopher B. Truman, Ph. D.

Born 1978 in North Carolina, U. S. Citizen

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Education:

University of Maryland	Ph.D. (Mathematics)	2000-2006
Thesis Title: <i>Turaev torsion of 3-manifolds with boundary</i>	Advisor: James Schafer	
North Carolina State University	B.S. (Mathematics)	1996-2000
North Carolina State University	B.S. (Physics)	1996-2000

Teaching Experience:

University of Maryland

- Sole Contact Teacher for Engineering Calculus I, Business Calculus I, and Advanced Calculus I.
- Official Department Study Group leader for Qualifying Exams in Topology/Geometry and Algebra.
- Discussion Section TA for College Algebra, Engineering Calculus I, and Engineering Calculus II.

North Carolina State University

- Undergraduate TA for College Algebra.
- Physics Tutorial Center (tutor for lower level Physics courses).

Research:

My dissertation relates the Turaev torsion to certain “determinants” derived from various products in cohomology, and compares the results for three-manifolds with boundary to known results due to Turaev for closed three-manifolds (by gluing solid tori). Recently, I have begun studying how to use Reidemeister torsion in Khovanov’s homology theory for knots, links, and tangles (jointly with Juan Ariel Ortiz-Navarro at the University of Iowa). I have a general interest in areas (specified by MSC) 55-xx, 57-xx; particularly 57Mxx and 57Q10.

Publications:

Turaev torsion and cohomology determinants for 3-manifolds with boundary [arXiv:math.GT/0611210](https://arxiv.org/abs/math/0611210)

Cohomology determinants of compact 3-manifolds [arXiv:math.GT/0611248](https://arxiv.org/abs/math/0611248)

Co-Author: Mathematics: It’s not just Calculus A. K. Peters, Ltd. (accepted)
(working title)

Talks:

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| <i>Turaev torsion and cohomology determinants for 3-manifolds with boundary</i> | AMS Session on Geometry and Topology, IV, January 2007 |
| <i>Reidemeister torsion in the Khovanov complex</i> | University of Maryland Geometry/Topology Seminar, November 2006 |
| <i>Reidemeister torsion in the Khovanov complex</i> | University of Texas, Austin Geometry/Topology Seminar, November 2006 |
| <i>Turaev Torsion vs. Cohomology for 3-Manifolds with Boundary</i> | Knots in Washington XXII, May 2006 |
| <i>The torsions of Reidemeister, Milnor, and Turaev</i> | Graduate Student Topology Conference, April 2006 |
| <i>Cohomology determinants of 3-manifolds with boundary</i> | University of Maryland Student Geometry/Topology Seminar, March 2006 |
| <i>Turaev torsion of three manifolds with boundary</i> | University of Maryland Geometry/Topology Seminar, February 2006 |
| <i>Turaev torsion of three manifolds with boundary</i> | University of Maryland Student Geometry/Topology Seminar, December 2005 |
| <i>A Brief Introduction to Reidemeister Torsion</i> | University of Maryland Student Geometry/Topology Seminar, March 2005 |

Service:

- UMD College of Physical and Mathematical Sciences Graduate Education Working Group
- UMD Mathematics Department Arbitrary and Capricious Grading Committee
- UMD Mathematics Department Undergraduate Advisor

Computer Experience:

C++ and Java programming; shell scripting and perl scripting in Unix and Linux; Mathematica, Maple, L^AT_EX.

Awards and Honors:

- Φ BK, Φ K Φ , graduated *summa cum laude* in Physics and Mathematics, completed North Carolina State University Scholars program, completed honors programs in both Physics and Mathematics (Undergraduate)
- Nominated for and attended an MSRI/PIMS joint workshop/conference “Knots in Vancouver”
- VIGRE fellowship recipient
- VIGRE travel award recipient
- Goldhaber travel award recipient