Toni A. Watson

CONTACT INFORMATION

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EDUCATION

University of Maryland, College Park, Maryland USA
Department of Mathematics

Master of Arts in Mathematics
Thesis Topic: Twisted Cohomology Groups
Advisor: Jonathan M. Rosenberg

Howard University, Washington, District of Columbia USA
Department of Mathematics

Bachelor of Science in Pure and Applied Mathematics
Minor Subject: Physics

ACADEMIC EXPERIENCE

National Cathedral School, Washington, District of Columbia USA

Upper School Mathematics Faculty **August 2006 - present**

Instruct high school courses. Responsible for preparing lectures, exams, homework assignments, and grades. Serve as the academic advisor to eight students; supervise two work study students; and serve as a math resource instructor for students in Geometry, Pre-Calculus and AP Calculus(AB). Courses taught include:

♢ AP Statistics
♢ Introductory Statistics and Calculus
♢ Algebra II

University of Maryland, College Park, Maryland USA

Graduate Student **August 2003 - present**

Includes current Ph.D. research, Ph.D. and Masters level coursework and research/consulting projects. *Notable Courses:* General and Algebraic Topology, Algebraic Geometry, Riemannian Geometry, Differential Forms, Differential Topology, Geometric Measure Theory, Partial Differential Equations, Hamiltonian Dynamics (Symplectic Geometry)

Instructor **August 2003 - May 2004**

Served as the sole contact instructor for lower level Mathematics courses. Shared responsibility for lectures, exams, homework assignments, and grades.

♢ MATH-111 Introduction to Probability, Fall 2003.
♢ MATH-115 Pre-Calculus, Spring 2004

Teaching Assistant **August 2004 - August 2006**

Assisted with course instruction and administration. Duties included but were not limited to leading discussion sections, creating and administering quizzes and grading MATLAB projects and exams.

♢ MATH-405 Advanced Linear Algebra (unofficial grader), Fall 2004
♢ MATH-241 Multivariable Calculus, Fall 2005
♢ MATH-246 Elementary Differential Equations, Spring 2006
♢ MATH-463 Complex Variables for Scientists and Engineers (grader), Summer 2006

Other **Summer 2004, Summer 2006**

♢ SPIRAL Program, a research experience for undergraduate students
Teaching Assistant.
Assisted with instruction of the academic component as well as the mentoring of research groups.

Howard University, Washington, District of Columbia USA

Undergraduate Teaching Assistant **January 1996 - May 2003**

Duties included leading weekly discussion sections, grading homework and exams, creating and grading quizzes and holding office hours for the following courses:

♢ 015-009 Introduction to Statistics, Spring 2003;

♢ 015-007 Pre-Calculus, Fall 2002;

♢ 214-305 Thermodynamics, Spring 1996 - Spring 1997;

♢ 214-307 Fluid Dynamics (unofficial), Fall 1996.

University of Southern California, MedCOR Program, Los Angeles, California USA

Lead Facilitator **August 2000 - June 2002**

Primarily responsible for instructing weekly enrichment courses in Mathematics (all levels through AP Statistics and AP Calculus BC), Chemistry, Physics and Physical Science to students from low performing Secondary Schools. Additional duties included the following:

♢ Develop and Coordinate SAT I Preparation Seminar;

♢ Train and Mentor new facilitators;

♢ Grade exams and maintain student records.

Selected Talks

Introduction to Genus Zero Gromov-Witten Invariants.
Colloquium Talk, Howard University, Washington, DC. October 2005

Hodge Star Operators. Guest Lecture.
Differential Forms Course, University of Maryland, College Park, MD. April 2005

Supersymmetric Quantum Mechanics. Series Talk.
String Theory Research Interaction Team,
University of Maryland, College Park, MD. February 2005

Introduction to Zero Dimensional Quantum Field Theory. Series Talk.
String Theory Research Interaction Team,
University of Maryland, College Park, MD. September-October 2004

A Glimpse of Pseudoholomorphic Curves and Various Applications.
Differential Topology Course, University of Maryland, College Park, MD. December 2003

Morse-Bott Theory with Several Applications.
Differential Topology Course, University of Maryland, College Park, MD. December 2003

Generating Functions Through Reflections Across Multiple Glass Plates (award).
Howard University Symposium for Undergraduate Research in Engineering and Mathematics.
Washington, DC. July 2003

Poster Presentations

Genus Zero Gromov-Witten Invariants (award).
11^{th} annual CAARMS Meeting, UCLA/IPAM, Los Angeles, CA. June 2005
PROMISE Graduate Student Research Symposium, UMCP, College Park, MD. January 2006
Graduate Student Topology Conference, University of Indiana, Bloomington, IN. April 2006

Honors and Awards

CAARMS11 Best Graduate Student Poster (Theory)
Title: Genus Zero Gromov-Witten Invariants, June 2005

PROMISE Graduate Student Preparation in Research Competition Winner, August 2004

University of Maryland/Department of Education GAANN Fellowship

University of Maryland, Department of Mathematics, Competitive Teaching Assistantship

First Place, Oral Presentation. Howard University Symposium for Undergraduate Research in Engineering and Mathematics, July 2003

Selected Conferences & Workshops Attended

SREB Institute on Teaching and Mentoring, Arlington, VA	October 2005
EMERGE meeting, Atlanta, GA	September 2005
11^{th} annual CAARMS meeting, Los Angeles, CA	June 2005
Spring School in Nonlinear Analysis, College Park, MD	May 2005
FRG Conference celebrating women in Algebraic Geometry, Symplectic Topology and Mathematical Physics, Philadelphia, PA	May 2005
MIT-Harvard Current Developments in Mathematics, Cambridge MA,	November 2004
SREB Institute on Teaching and Mentoring, Atlanta, GA	October 2004
MSRI Workshop on Symplectic Geometry and Mathematical Physics, Berkeley, CA	March 2004
Knots In Washington, George Washington University, Washington, DC	December 2003
AMS-MAA Annual Joint Meeting, Baltimore, MD	January 2003

Computer Skills

- ♢ Applications: LaTeX, MATHEMATICA, MATLAB, Maple, common Microsoft applications
- ♢ Languages: HTML, C++, FORTRAN, Pascal, limited use of Unix shell scripts,.

Memberships & Service

- ♢ Member, American Mathematical Society **2004-Present**
- ♢ Member, Association of Women in Mathematics **2004-Present**
- ♢ Volunteer, Mathnerds.com **2003-Present**
- ♢ Peer Mentor, University of Maryland Department of Mathematics **2004-2006**
- ♢ Peer Mentor, University of Maryland PROMISE Program **2004-2006**
- ♢ Graduate Senator, University of Maryland University Senate **2004-2006**
- ♢ Co-Organizer, University of Maryland Department of Mathematics Spotlight on Graduate Research Competition **2004-2005**
- ♢ Judge, University of Maryland Department of Mathematics Spotlight on Graduate Research Competition **2003**