Andrew J. Havens

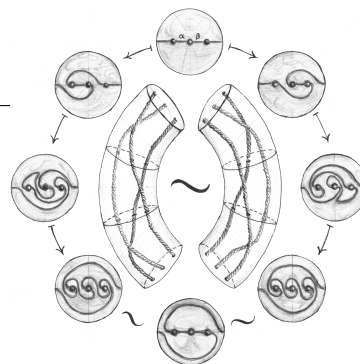|	
CONTACT INFORMATION	Department of Mathematics and Statistics University Massachusetts, Amherst Lederle Graduate Research Tower 710 North Pleasant Street Amherst, MA 01003-9305, USA Email: havens@math.umass.edu Webpage: http://people.math.umass.edu/~havens
RESEARCH INTERESTS	Broadly, I am interested in geometric and low dimensional topology. Current research interests include smooth 4-manifold topology, knotted surface embeddings, trisections, contact and symplectic geometry, mapping class groups, and embedding spaces of knots in 3-manifolds.

EDUCATION

University of Massachusetts, Amherst

Ph.D. Candidate, Mathematics (anticipated graduation May 2018)
- Dissertation Topic: *Irreducible Surface Embeddings in 4-Manifolds via Equivariant Constructions*
- Under the Advisement of R. İnanç Baykur

M.S. in Mathematics, May 2015

B.S. in Mathematics, May 2010
- Magna Cum Laude
- Major: Mathematics, with a concentration in pure mathematics

Holyoke Community College

A.S. May 2008

CONFERENCE TALKS

Irreducible Embeddings and Equivariant Twisted Fiber Sums, Graduate Student Topology and Geometry Conference, University Illinois, Chicago. (April 2018)

Irreducible Embeddings and Equivariant Twisted Fiber Sums, Geometric structures on 3 and 4 manifolds IUC Dubrovnik, HR. (June 2018)

OTHER TALKS

From Tangles to Tensors: the Power of Diagrammatics in Topology and Algebra UMass Amherst Undergraduate Mathematics Seminar. (October 2018)

Games with Topological Secrets, UMass Amherst Undergraduate Mathematics Seminar. (April 2018)

The Idea of a Mathematical Invariant UMass Amherst Undergraduate Mathematics Seminar. (March 2017)

The Very Round 3-Sphere, UMass Amherst Undergraduate Mathematics Seminar. (September 2016)

What is Homology?, UMass Amherst Undergraduate Mathematics Seminar. (March 2016)

Some Curiosities in 4 Dimensions, Mini-Conference for Prospective Mathematics Graduate Students at UMass. (March 2016)

A Pair of Conway's Games, With a Topological Flavor, UMass Amherst Undergraduate Mathematics Seminar. (January 2016)

Math Camp Card Games, UMass Amherst Undergraduate Mathematics Seminar. (October 2015)

Handlebodies, Knots, and Surgery: Tools of the Low-Dimensional Topologist, UMass Amherst Undergraduate Mathematics Seminar. (September 2015)

TEACHING EXPERIENCE

University of Massachusetts, Amherst
Instructor for Calculus I (Math 131): Fall 2013
Instructor for Calculus II (Math 132): Spring 2014 & Summer 2014
Instructor for Multivariate Calculus (Math 233): Fall 2018, Fall 2017, & Fall 2014
Instructor for Linear Algebra (Math 235): Spring 2018 & Spring 2015
Teaching Assistant for Calculus I (Math 131) Fall 2012
Teaching Assistant for Calculus II (Math 132) Spring 2013
Teaching Assistant for Discrete Mathematics (Math 455) Spring 2017 & Spring 2016
Teaching Assistant for Writing in Mathematics (Math 370) Fall 2016

Amherst College
Instructor for Introduction to the Calculus (Math 111), Fall 2015

Hampshire Camp Science Investigators
July 2007 Hampshire Camp Science Investigators Counselor and Teaching Assistant

TUTORING EXPERIENCE

Holyoke Community College Math Center
September 2006 – August 2008, September 2011 – May 2012, August 2013
- Recipient of the Learning Assistance Center Award for Tutorial Excellence, HCC, May 2008
- Peer Level II certified with the College Reading and Learning Association, HCC, May 2008
- Professional Tutor from 2011-2012
- Experience tutoring full community college mathematics catalogue, as well as physics, chemistry, and music theory
- Facilitated a rapid college placement preparation course focused on Intermediate Algebra, August 2013 through the Math Center

Private Tutoring
2007 – present
- Tutoring services working with ages ≥ 10 years on material ranging from elementary and middle school mathematics through graduate coursework in algebraic and differential topology
- Preparatory tutoring for AP exams, SATs, and GREs

SERVICES AND OUTREACH

Co-organizer, UMass Undergraduate Mathematics Seminar ("The Math Club")
September 2015 – May 2017

Contributor of the heavily illustrated expository article on braids and mapping class groups, *Andrew Havens Explores the Mathematical Theory of Braids*, UMass Mathematics Department newsletter 2016-2017

OTHER HONORS,
AWARDS, AND
EXPERIENCES

Recipient of the UMass Mathematics Department Distinguished teaching award for graduate instructors, Spring 2017

Recipient of the Five College Teaching Fellowship, Fall 2015

Recipient of the 2009 M. K. Bennett Geometry Award for excellence in the UMass Geometry course, Math 461

Participant in the 2009 William Lowell Putnam Mathematical Competition

Nominated for UMass Research Experience for Undergraduates program, 2009
- Under the supervision of Professor Paul Gunnells at UMass Amherst
- Researched Coxeter groups, Kazhdan-Lusztig cells, and three-dimensional hyperbolic geometry
- Programmed, working initially in Processing (Java based), and later in Python to produce images of hyperbolic Kazhdan-Lusztig cells as represented by cells of a tetrahedral tessellation of conformal hyperbolic three-space

Participant in the AMATYC National Mathematics Competition 2006-2007, and 2007-2008
- Certificate of Merit Recipient for 2006-2007 and 2007-2008, awarded for outstanding achievement in the National Competition

GRADUATE
COURSEWORK

- ❏ Real Analysis
- ❏ Algebra
- ❏ Topology
- ❏ Asymptotic Problems
- ❏ Probability and Statistics
- ❏ Lie Groups and Lie Algebras
- ❏ Differential Equations and Dynamical Systems

- ❏ Algebraic Topology
- ❏ Knot Invariants
- ❏ Complex Geometry
- ❏ Symplectic Geometry and Topology
- ❏ Morse Theory and Handle Calculus
- ❏ Low Dimensional Topology
- ❏ Mapping Class Groups

REFERENCES

Associate Professor R. İnanç Baykur, dissertation advisor, Department of Mathematics, UMass Amherst

Ilona Trousdale, staff administrator, Department of Mathematics, UMass Amherst

Gail Hilyard, Math Center Coordinator, Holyoke Community College