

# Jim Fowler

Curriculum Vitae

The Ohio State University ▪ Department of Mathematics  
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## Education

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University of Chicago 2003–2009  
Chicago, Illinois

M.S. in Mathematics, June 2005.

Ph.D. in Mathematics, June 2009.

Harvard University 1999–2003  
Cambridge, Massachusetts

A.B. in Mathematics, *summa cum laude*, June 2003.

Junior Phi Beta Kappa.

## Employment

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The Ohio State University, Program Manager 2013  
Mathematics 2568: Linear Algebra.  
Calculus Two MOOC.

The Ohio State University, Lecturer 2012–2013  
Calculus One MOOC.  
Mathematics 1151: Calculus I.  
Mathematics 1161: Accelerated Calculus I.  
Mathematics 1181: Honors Calculus I.

The Ohio State University, Zassenhaus Assistant Professor 2009–2012  
Mathematics 151: Calculus and Analytic Geometry I.  
Mathematics 153: Calculus and Analytic Geometry III.  
Mathematics 254 and 254.02: Calculus and Analytic Geometry IV.  
Mathematics 660: Introductory Complex Analysis.  
Mathematics 953: Topics in Topology  
Mathematics 345: Foundations of Higher Mathematics  
Mathematics 758: Algebraic Topology: Cohomology  
Mathematics 765: Smooth Manifolds

The Ohio State University, Ross Mathematics Program Summer 2010–2013  
Ran a number theory recitation for high school students; taught a piecewise-linear topology course for undergraduate and high school students.

University of Chicago, Directed Reading Program, Mentor 2004–2009  
Mentored undergraduate projects on automatic groups, geometric group theory, combinatorial game theory, piecewise-linear topology, knot theory, stochastic processes.

University of Chicago, Polk Brothers Program	2005–2009
Taught middle school students in small groups and whole-classroom settings; assisted Chicago public school teachers with pedagogy and their study of mathematics.	
University of Chicago, Graduate Student Lecturer	2005–2006
	2008–2009
Mathematics 131–133: Elementary Functions and Calculus.	
Mathematics 153: Calculus.	
Mathematics 204–205: Inquiry-based learning (Moore method); analysis in $\mathbb{R}^n$ .	
University of Chicago, College Fellow	2004–2005
Mathematics 203–205: Analysis in $\mathbb{R}^n$ .	
University of Chicago, Research Experience for Undergraduates, Mentor	Summer 2004
	Summer 2006
	Summer 2007
University of Chicago, Undergraduate Lie Theory Seminar	Fall 2006
Canada/USA Mathcamp, Mentor	Summer 2004
	Summer 2005
Taught and mentored high school students in topics including piecewise-linear topology, quaternions, knots and links, game theory, projective geometry, $p$ -adic numbers.	
University of Chicago, Warm Up Program, Lecturer	September 2005
Lectured in a mini-course reviewing point-set topology for incoming graduate students.	
Harvard University, Course Assistant	2000–2003
Graded homework and ran weekly recitation sessions for multivariable calculus and linear algebra, representation theory, algebraic topology.	

## Awards and Fellowships

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NSF Graduate Research Fellowship	2003–2008
McCormick Fellowship, University of Chicago	2003–2005
Palfrey Exhibition, Harvard University	May 2003
Awarded to the most distinguished scholar in the senior class holding a stipendiary scholarship.	
Wister Prize, Harvard University	May 2003
Awarded to the student with the highest record in mathematics.	
Robert Fletcher Rogers Prize, Harvard University	May 2003
Awarded to the two students who gave the best talks at the undergraduate mathematics table.	
Certificate of Distinction in Teaching	Fall 2000
Derek Bok Center for Teaching and Learning	

## Invited talks

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- Turbocharging Our MOOCs with Mooculus  
EDUCAUSE  
Anaheim, California  
October 15–18, 2013
- Plenary lecture on Desargues' theorem  
Undergraduate Mathematics Symposium  
University of Illinois at Chicago  
October 5, 2013
- Manifolds realizing rational homotopy types  
AMS Special Session on Interactions Between Geometry and Topology  
AMS Fall Central Sectional Meeting  
October 20–21, 2012
- Rational projective planes  
Spring Topology and Dynamics Conference  
Universidad Nacional Autonoma de México  
March 22–24, 2012
- Poincaré duality groups  
Stratified Spaces: Joining Analysis, Topology and Geometry  
Mathematisches Forschungsinstitut Oberwolfach  
December 11–17, 2011
- Weighted algebraic topology  
Geometrical methods in high-dimensional topology  
The Ohio State University  
May 16–21, 2011
- $\mathcal{B}$ -bounded finiteness  
Spring Topology and Dynamics Conference  
The University of Texas at Tyler  
March 17–19, 2011
- Rational Poincaré duality groups and controlled symmetric signature  
Workshop in Geometric Topology  
Colorado College  
June 10–12, 2010
- Rational Poincaré duality groups and controlled symmetric signature  
Spring Topology and Dynamics Conference  
Mississippi State University  
March 18–20, 2010
- Rational Poincaré duality groups  
Ferryfest  
University of Chicago  
March 22–24, 2009
- Lattices with torsion and rational homology manifolds  
Topology of Stratified Spaces  
Mathematical Sciences Research Institute  
September 8–12, 2008

## Invited seminar talks

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- Projective Planes  
OSU Radical Pi  
April 20, 2011
- CAT(0) square complexes  
OSU Math Circle  
April 17, 2011
- $\mathcal{B}$ -bounded finiteness  
University of Michigan  
March 31, 2011

Rational Poincaré duality and controlled symmetric signature  
University of Notre Dame

March 4, 2010

Dividing a square into triangles of equal-area  
OSU Radical Pi

January 13, 2010

## Other conferences attended

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Workshop on High Dimensional Topology  
University of Notre Dame

December 8–9, 2012

Singularities in Geometry and Topology  
Courant Institute of Mathematical Sciences

March 17–20, 2008

AMS Special Session on Geometric Topology  
Courant Institute of Mathematical Sciences

March 15–16, 2008

Topological and Geometric Rigidity  
Banff International Research Station

July 29–August 3, 2007

Problems in Geometric Group Theory  
American Institute of Mathematics

April 23–27, 2007

Nil Phenomena in Topology  
Vanderbilt University

April 14–15, 2007

Introductory Workshop on Computational Application of Algebraic  
Topology  
Mathematical Sciences Research Institute

September 5–8, 2006

Conference on Geometric Group Theory  
Centre de recherches mathématiques

July 3–14, 2006

Workshop on Group Actions and Rigidity  
University of Hawaii, Manoa

March 20–22, 2006

Ricci Flow, 3-manifolds, and Geometry  
Clay Mathematics Institute

June 20–July 15, 2005

Submanifolds, Singular Varieties and Stratified Spaces  
Courant Institute of Mathematical Sciences

March 13–16, 2005

Braids, Links, and Mapping Class Groups  
Columbia University

March 15–20, 2005

Conference on Low-dimensional topology  
University of Virginia

December 15–19, 2004

## Local seminar talks

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Numeric methods in topology  
OSU Topology Seminar

November 13, 2012

$\mathcal{B}$ -bounded finiteness OSU Topology Seminar	February 15, 2011
$\mathcal{B}$ -bounded finiteness OSU Topology Seminar	February 15, 2011
A first talk on surgery OSU Topology Seminar	October 5, 2010
Rational Poincaré duality and controlled symmetric signature OSU Topology Seminar	March 2, 2010
Rational Poincaré duality groups OSU Topology Seminar	November 24, 2009
Double suspensions of homology spheres Farb and Friends Student Seminar	May 20, 2008
The $\alpha$ -approximation theorem Farb and Friends Student Seminar	November 4, 2008
Quaternionic toric varieties Farb and Friends Student Seminar	April 4, 2008
Hyperbolization of polyhedra Farb and Friends Student Seminar	March 7, 2008
Classifying high-dimensional manifolds Farb and Friends Student Seminar	October 12, 2007
Wall's finiteness obstruction Algebraic Topology Proseminar	September 27, 2007
Introduction to Surgery Algebraic Topology Proseminar	May 29, 2007
PL-unknotting of codimension $\geq 3$ knots Farb and Friends Student Seminar	May 11, 2007
Building Aspherical Manifolds via Davis' Construction Farb and Friends Student Seminar	January 25, 2007
Approximating $L^2$ invariants by finite-dimensional analogues $L^2$ Seminar	November 22, 2006
Algebraic topology and distributed computing Applied algebraic topology seminar	November 2, 2006
The $h$ -cobordism theorem Shmuel's Student Seminar	March 7, 2005
Wall's finiteness obstruction Algebraic Topology Proseminar	November 23, 2004
2-adics and equidissections of squares Pizza Seminar	November 16, 2004

Introduction to characteristic classes Algebraic Topology Proseminar	October 19, 2004
Dissecting squares into equal-area triangles Harvard Mathematics Table	October 15, 2002
Bounding the volume of hyperbolic 3-manifolds Harvard Mathematics Table	October 23, 2001
Functions growing faster than any computable function Harvard Mathematics Table	December 12, 2000

## Professional activities and service

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The Ohio State University, Patent Rights Committee	2013–Present
The Ohio State University, eLearning Committee Organized technology enhanced lectures; built <code>mooculus.osu.edu</code> .	2012–Present
University of Chicago, Directed Reading Program, Committee Member Paired undergraduates with graduate student mentors; organized undergraduate talks; designed database-driven website to monitor students' progress.	2006–2009
University of Chicago, Center for Teaching and Learning, Panelist Moderated a large-group discussion of teaching issues, including initial course design, midquarter course changes, assessment techniques, lecturing styles.	September 2007 September 2008