

Daniel Allcock
21 September 2015

Research Interests

Group theory, Lie theory, algebraic geometry.

Education

- 1996 University of California, Berkeley: Ph.D., Mathematics
Dissertation: *The Leech Lattice and Hyperbolic Geometry*
Thesis advisor: Richard Borcherds
- 1991 University of Texas, Austin: B.S.(special honors), Mathematics
- 1991 University of Texas, Austin: B.S.(honors), Physics

Employment

- 2010–present Professor, U.T. Austin math department
- 2002–2010 Associate Professor (tenured), U.T. Austin math department
- 1999–2002 Assistant Professor (not tenure-track), Harvard University
- 1998–1999 Postdoctoral Fellow, Harvard University
- 1996–1998 Instructor, University of Utah
- 1991 Geophysicist, Shell Offshore Inc., New Orleans
- 1990 Research Assistant, Los Alamos National Laboratory

Visiting/Temporary Positions

- 2013 Visiting Professor (7 months), Kyoto University (RIMS)
- 2010–2011 J.S.P.S. Fellow (10 months), Kyoto University
- May-Jun 2010 Member, Max Planck Institut für Mathematik (Bonn)
- spring 2008 Member, Institute for Advanced Study
- fall 2007 Visiting Scholar, University of Michigan math department
- Jun 2000 E.T.H.-Zurich, Switzerland

External Grants

- 2012–2017 NSF Research Training Group grant
(with the U.T. math geometry and topology groups; Dan Freed is P.I.)
- 2011–2015 National Science Foundation grant DMS-1101566
- 2010–2011 J.S.P.S. Fellowship (10 months research in Japan)
- 2010–2011 Research Scholar, Clay Math Institute
- 2007–2012 NSF Research Training Group grant DMS-0636557
(with the U.T. math department geometry group; Dan Freed was P.I.)
- 2006–2010 National Science Foundation grant DMS-0600112
- 2004 Educational Advancement Foundation
- 2003–2007 National Science Foundation grant DMS-0245120
- 2000–2004 National Science Foundation grant DMS-0070930/0231585
- 1996–1999 National Science Foundation Postdoctoral Fellowship

Other Awards

2012 Fellow of the American Mathematical Society
2007–2008 Faculty Research Assignment, U.T. Austin
2005–2007 President’s Associates Centennial Teaching Fellowship, U.T. Austin
2001 Certificate of Distinction in Teaching, Harvard University
1998 Instructorship award, University of Utah mathematics department
Jun 1994 First place, 1st international dots & boxes tournament,
Combinatorial game theory conference, MSRI (\$500 cash prize)

Membership and service in professional organizations

2012–2014 Robbins Prize Committee (A.M.S.)
1995– American Mathematical Society
2003– $\Sigma\Xi$ (Scientific research society)

Address

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1 University Station C1200
Austin TX 78712-1082

(512)471-1120
allcock@math.utexas.edu
http://www.math.utexas.edu/~allcock

Administrative Committee Service (since joining U.T.)

2002–present	Math Dept. Budget Comm. (all tenured faculty are members)
2002–present	Math Dept. Graduate Studies Comm. (all tenured faculty are members)
2015–2016	Review committee
2015–2016	Awards committee
2015–2018	Parking and Traffic Appeals committee
2014–2015	Review committee
2014–2015	Annual review committee
2014–2015	Awards committee
2014–2015	Parking and Traffic Appeals committee
2014–2015	triad for Amir Mohammadi’s promotion to tenure (chair)
2014–2015	Algebra prelim committee (Jan 2015; chair)
2014–2015	Algebra prelim committee (Aug 2015; chair)
2013–2014	Review committee
2013–2014	Awards committee
2013–2014	Parking and Traffic Appeals committee (vice-chair)
2013–2014	3rd year review triad for Amir Mohammadi (chair)
2013–2014	Algebra prelim committee (spring; chair)
2012–2013	Post-tenure review committee
2012–2013	Colloquium Comm. (chair)
2012–2013	Graduate admissions (Algebra and number theory)
2011–2012	Review Comm.
2011–2012	Colloquium Comm. (chair)
2011–2012	Tenure file triad (for David Helm)
2010–2011	Graduate Admissions Comm. (served while on leave)
2009–2010	Postdoctoral Hiring Comm.
2009–2010	Faculty Grievance Hearing Pool (university-wide)
2009–2010	Admin. Subcomm. of the Graduate Studies Comm.
2009–2010	Colloquium Comm. (chair)
Aug 2009	Algebra Preliminary Exam Comm. (chair)
2008–2009	Postdoctoral Hiring Comm.
2008–2009	Faculty Grievance Hearing Pool (university-wide)
2008–2009	Assistant Graduate Advisor
2008–2009	Admin. Subcomm. of the Graduate Studies Comm.
2008–2009	Colloquium Comm. (chair)
Aug 2008	Algebra Preliminary Exam Comm.
2007-2008	(on leave)
2006–2007	Assistant Prof. Hiring Comm.
2006–2007	Colloquium Comm. (chair)
Aug 2006	Topology Preliminary Exam Comm.

Jan 2007	Topology Preliminary Exam Comm.
2005–2006	Assistant Prof. Hiring Comm.
2005–2006	Colloquium Comm. (co-chair)
Jan 2006	Topology Preliminary Exam Comm.
2004–2005	Assistant Prof. Hiring Comm.
2004–2005	Colloquium Comm.
Aug 2004	Algebra Preliminary Exam Comm. (chair)
Jan 2005	Algebra Preliminary Exam Comm.
2003–2004	Assistant Prof. Hiring Comm.
2002–2003	Postdoctoral Hiring Comm.
2003	Tenure file comm. (for Jeff Brock)

Postdoctoral and Dissertation Supervising

Postdoctoral Fellow Supervised

2006–2008 Ken Chu

Ph.D. Students

2010 Cody Patterson, now at University of Arizona
2013 Mark Norfleet, now at University of Nevada, Reno
2015 Alice Mark, now at Arizona State University

Masters Student Supervised

2006 Josh Mercer (M.A.)

Undergraduate Honors Theses Supervised

2008 Michael Kelly

Student Candidacy and Dissertation Committees

pending Alessandro Rezende de Macedo (diss.)
pending Adam Hughes (diss.)
pending Cory Colbert (diss.; candidacy committee 2014)
pending Jennifer Berg (cand.)
2015 Alice Mark (Ph.D. supervisor; candidacy committee 2012)
2014 Sander Rieken (diss., U. Nijmegen; outside member)
2014 Samuel Taylor (diss.)
2014 Robert Grizzard (diss.)
2013 Mark Norfleet (Ph.D. supervisor; candidacy committee 2008)
2013 Ning Kang (diss.)
2013 Cid Vipismakul (candidacy committee 2011)
2013 Yuan Yao (diss.)
2012 Grant Lakeland (diss.)
2012 Braxton Collier (diss.; candidacy committee 2009)
2011 Mike Williams (diss.; candidacy committee 2008)
2011 Andrew Gillette (diss.)
2011 Brian Katz (diss.; candidacy committee 2005)
2011 Brandy Guntel (diss.)
2011 Zachary Miner (diss.)
2010 Eric Katerman (diss.)
2010 Matthew Stover (diss.; candidacy committee 2005)
2010 Parker Lowrey (diss.; candidacy committee 2006)
2010 David Jensen (diss.)
2010 Cody Patterson (Ph.D. supervisor; candidacy committee 2005)
2008 Mark Luxton (diss.; candidacy committee 2004)
2008 John Hammond (diss.)
2008 Sean Bowman (cand.)
2008 Michael Kelly (undergraduate honors thesis supervisor)
2006 Allison Moore (undergraduate honors thesis reader)

2006 Eric Chesebro (diss.)
2006 Richard Kent (diss.; candidacy committee 2003)
2006 Ryan Deby-Talbot (diss.; candidacy committee 2003)
2006 David McReynolds (diss.; candidacy committee 2003)
2006 Betsygail Rand (diss.)
2005 Kathleen Petersen (diss.)

U.T.'s Junior Faculty Mentoring Program

2015–2016 Andy Neitzke (teaching)
2014–2015 Amir Mohammadi (research)
2013–2014 Tye Lidman (teaching) and Amir Mohammedi (research)
2012–2013 Tye Lidman (teaching)
2011–2012 Amir Mohammadi (research and teaching)

Classes Taught

U.T. Austin

fall 2015	M328K (2 sections; elementary number theory) graduate reading course: Spencer Johnson undergraduate reading course: Billy Swartworth
fall 2014	M328K (elementary number theory) M380C (graduate algebra I)
spring 2014	M390C (graduate topics course: linear algebraic groups) M367K (topology I)
fall 2013	M328K (two sections; elementary number theory)
fall 2012	M328K (elementary number theory) M390C (graduate topics course: quadratic forms)
spring 2012	M408D (calculus II) M367 (topology I)
fall 2011	M390C (graduate topics course: Coxeter groups)
fall 2010 and spring 2011	(on leave)
spring 2010	M390C (graduate topics course: finite group theory) M408L (calculus II)
fall 2009	M408D (calculus II)
spring 2009	M427K (vector calculus) M362K (probability)
fall 2008	M380C (graduate abstract algebra I) undergraduate honors thesis supervision (Michael Kelly)
summer 2008	graduate conference course (Mark Norfleet)
spring 2007	M390C (graduate topics course: linear algebraic groups)
fall 2006	M408D (calculus II) M325K (discrete math; Moore method)
spring 2006	M361 (complex analysis)
fall 2005	M382C (graduate topology I) M408K (calculus I)
summer 2005	graduate conference course (Josh Mercer)
spring 2005	M392C (graduate topics course: geometry of groups)
fall 2004	M408C (calculus I; special Moore method section)

spring 2004 M380D (graduate abstract algebra II)
fall 2003 M408C (calculus I), graduate conference course (Suzette Emberton)
summer 2003 graduate conference course (Laura Hitt)
spring 2003 M328K (elementary number theory; special Moore method section)
fall 2002 M408C (calculus I)

Harvard

spring 2002 m137 (undergraduate algebraic geometry)
fall 2001 m20 (linear algebra and multivariable calculus)
m1b (calculus II)
spring 2001 m21b (multivariable calculus II)
fall 2000 m124 (elementary number theory)
m21a (multivariable calculus I)
spring 2000 m21a (multivariable calculus I)
fall 1999 m112 (real analysis)
m272a (graduate algebraic topology)

U. Utah

fall 1997 M106 (precalculus II)
M251 (advanced engineering math)
spring 1997 M327 (proof-based calculus)
winter 1997 M106 (precalculus II; 2 sections)
fall 1996 M105 (precalculus I)

U.C. Berkeley

fall 1995 M1B (TA; calculus II)
spring 1995 PHYS 7A (TA; physics for scientists and engineers)

Publications
Daniel Allcock
21 September 2015

All papers are available electronically at <http://www.math.utexas.edu/~allcock>.

An asterisk (*) indicates an acceptance/publication in the last year, a preprint, or a submitted paper.

- *[45] Spherical space forms revisited
preprint 2015 (arxiv 1509.00906)
- *[44] A fake projective plane via 2-adic uniformization with torsion
to appear in *Tohoku Math. J.*
(joint with Fumiharu Kato)
- *[43] Presentation of hyperbolic Kac-Moody groups over rings
to appear in *J. Algebra*
(joint with Lisa Carbone)
- *[42] Presentation of affine Kac-Moody groups over rings
submitted 2015
- *[41] Prenilpotent pairs in E_{10}
submitted 2014
- *[40] Geometric generators for braidlike groups
to appear in *Geometry and Topology*
(joint with Tathagata Basak)
- *[39] Steinberg groups as amalgams
submitted 2015 (early version with weaker results submitted 2013)
- *[38] Binary Relations from Tournament Solutions, and Back Again
submitted 2013
(joint with Scott Moser)
- *[37] Root systems for Lorentzian Kac-Moody algebras in rank 3
Bull. Lond. Math. Soc. **47** (2015) 325–342
- [36] Reflection centralizers in Coxeter groups
Transformation Groups **18** (2013) 599–613
- [35] Completions, branched covers, Artin groups and Singularity Theory
Duke Math. J. **162** (2013) 2645–2689
- [34] The densest lattices in $\mathrm{PGL}_3(\mathbf{Q}_2)$
Advances in Math. **242** (2013) 102–115
(joint with Fumiharu Kato)
- [33] Normalizers of parabolic subgroups of Coxeter groups
Algebraic & Geometric Topology **12** (2012) 1137–1143
- [32] The reflective Lorentzian lattices of rank 3
Memoirs of the A.M.S., **220** (2012) no. 1033
- [31] Triangles of Baumslag-Solitar groups
Canad. J. Math. **64** (2012) 241–253

- [30] Monodromy groups of Hurwitz-type problems
Advances in Math. **225** (2010) 69–80.
(joint with Chris Hall)
- [29] A Banach Space determined by the Weil height
Acta Arithmetica **136** (2009) 279–298
(joint with Jeffrey Vaaler)
- [28] On the Y_{555} complex reflection group
J. Alg. **322** (2009) 1454–1465
- [27] A new approach to rank one linear algebraic groups
J. Alg. **321** (2009) 2540–2544
- [26] A monstrous proposal
in *Groups and Symmetries*,
eds. J. Harnad, P. Winternitz, CRM Proceedings and Lec. Notes **47** (2009) 17–24
- [25] The moduli space of cubic threefolds as a ball quotient
Memoirs of the A.M.S. **209** (2011) no. 985, xii+70 pp.
(joint with James Carlson and Domingo Toledo)
- [24] Complex hyperbolic geometry and the monster simple group (conjectural)
Oberwolfach Reports **5** Issue 4, 2008, pp. 2586–2588
- [23] Non-arithmetic uniformization of some real moduli spaces
Geom. Dedicata **122** (2006) 159–171
(joint with James Carlson and Domingo Toledo)
- [22] Hyperbolic geometry and moduli of real cubic surfaces
Ann. Sci. de L'É.N.S. (4) **43** (2010) 69–115.
(joint with James Carlson and Domingo Toledo)
- [21] Infinitely many hyperbolic Coxeter groups through dimension 19
Geometry & Topology **10** (2006) 737–758
- [20] Hyperbolic surfaces with prescribed infinite symmetry groups
Proc. Amer. Math. Soc. **134** (2006) 3057–3059
- [19] Hyperbolic geometry and the moduli space of real binary sextics
in *Algebra and Geometry around Hypergeometric Functions*,
eds. R.P. Holzapfel, A.M. Uludag, M. Yoshida, Birkhäuser, 2005, 1–22
(joint with James Carlson and Domingo Toledo)
- [18] Orbits in the Leech lattice
Experimental Math. **14** (2005) 491–509
- [17] Real cubic surfaces and real hyperbolic geometry
CRAS **337** (2003) 185–188
(joint with James Carlson and Domingo Toledo)
- [16] The moduli space of cubic threefolds
J. Alg. Geom. **12** (2003) 201–223
- [15] The complex hyperbolic geometry of the moduli space of cubic surfaces
J. Alg. Geom. **11** (2002) 659–724
(joint with James Carlson and Domingo Toledo)

- [14] Braid pictures for Artin groups
Trans. Amer. Math. Soc. 354 (2002) 3455–3474
- [13] Orthogonal complex hyperbolic arrangements
Symposium in Honor of C. H. Clemens, *Contemp. Math.* 312 (2002) 1-8
(joint with James Carlson and Domingo Toledo)
- [12] Cubic surfaces and Borcherds products
Comm. Math. Helv. 77 (2002) 270–296
(joint with Eberhard Freitag)
- [11] Asphericity of moduli spaces via curvature
J. Diff. Geom. 55 (2002) 441–451
- [10] New complex- and quaternion-hyperbolic reflection groups
Duke Math. J. 103 (2000) 303-333
- [9] The Leech lattice and complex hyperbolic reflections
Invent. Math. 140 (2000) 283-301
- [8] The period lattice for Enriques surfaces
Math. Ann. 317 (2000) 483-488
- [7] Ideals in the integral octaves
J. Alg. 220 (1999) 396-400
- [6] Reflection groups on the octave hyperbolic plane
J. Alg. 213 (1999) 467-498
- [5] A homological characterization of hyperbolic groups
Invent. Math. 135 (1999) 723-742 (joint with Steve Gersten)
- [4] Spotting infinite groups
Math. Proc. Camb. Phil. Soc. 125 (1999) 39-42
- [3] A complex hyperbolic structure for moduli of cubic surfaces
C.R.A.S. 326 (1998) 49-54 (joint with James Carlson and Domingo Toledo)
- [2] An isoperimetric inequality for the Heisenberg groups
G.A.F.A. 8 (1998) 219-233
- [1] Identifying models of the octave projective plane
Geom. Dedicata 65 (1997) 215-217

Service as Referee

NSF Grant Applications
NSA Grant Applications
NWO (Netherlands' equivalent of NSF) Grant Applications
FCT (Portugal's equivalent of NSF) Grant Applications
Advances in Geometry
Advances in Math.
Algebra and Number Theory
Annals of Math.
Compositio
Duke Math. J.
European J. Combinatorics
Foundations of Physics
Geom. Dedicata
Geometry and Topology
Groups, Geometry, and Dynamics
Int. J. of Math.
Int. Math. Research Notices
Inventiones Math.
J. of Algebra
J. Algebraic Geometry
J. Differential Geometry
J. für die reine und angewandte Mathematik (Crelle)
J. of the London Math. Society
J. Number Theory
J. de Thórie des Nombres de Bordeaux
Manuscripta Mathematica
Mathematische Nachrichten
Proceedings of the A.M.S.
Proceedings of the London Math. Soc.
Rocky Mountain J. Math.
Topology
Transactions of the A.M.S.
Transformation Groups
U. Texas Undergraduate Research Journal
several conference proceedings volumes

Lectures

An asterisk (*) indicates outreach, a colloquium, or other special talk.

- September 2015 *Introduction to Conformal Field Theory*
Geometry & string theory seminar, U.T. Austin (with Bezhat Ergun)
- September 2015 *Spherical space forms revisited*
Geometry seminar, U.T. Austin
- May 2015 *Automorphisms of Enriques surfaces*
Algebraic geometry seminar, Hiroshima U.
- * March 2015 *Complex hyperbolic geometry and (we hope) the monster simple group*
Colloquium, Purdue U.
- March 2015 *Complex hyperbolic geometry and (we hope) the monster simple group*
Algebraic geometry seminar, Purdue U.
- November 2014 *Presentation of hyperbolic Kac-Moody groups over rings*
Groups and dynamics seminar, Texas A&M
- October 2014 *Presentation of hyperbolic Kac-Moody groups over rings*
Actions and dynamics seminar, U.T. Group
- July 2014 *Geometric generators for braid-like groups*
South Kyushu Workshop on Algebra (Kumamoto U., Japan)
- July 2014 *Geometric generators for braid-like groups*
Algebraic geometry seminar, Research Inst. Math. Sci. (Kyoto U.)
- Apr 2014 *Geometric generators for braid-like groups*
Topology seminar, U.T. Austin
- Jan 2014 *Geometric generators for braid-like groups*
Conference "Geometry of Special Functions" (U. Nijmegen, Holland)
- July 2013 *Presentation of the E_{10} Kac-Moody group*
conference: Geometric Group Theory (RIMS, Kyoto U.)
- * July 2013 *Steinberg groups and Kac-Moody groups*
Colloquium, Kyoto U.
- * May 2013 *Steinberg groups and Kac-Moody groups*
Colloquium, Kumamoto U.
- May 2013 *New 2-adic uniformization of a fake projective plane*
algebraic geometry seminar, Kyoto U.
- May 2013 *2-adic uniformization with torsion, and a fake projective plane*
algebraic geometry seminar, Nagoya U.
- Feb 2013 *Root systems for rank 3 hyperbolic Kac-Moody algebras (3 lectures)*
Introduction to Singularity Theory (1 lecture)
winter school: Exceptional structures in geometry and field theory
(IPMU, Tokyo U.)
- Nov 2012 *Hyperbolic root systems with Weyl vectors*
conference: Algebraic geometry, modular forms and applications to physics
(ICMS, Edinburgh)
- * Oct 2012 *Root systems for hyperbolic Lie algebras*
Colloquium, U. Virginia math department

- Sep 2012 *The reflective Lorentzian lattices in rank 3*
Group actions and dynamics seminar, U.T. Austin
- Feb 2012 *The densest lattices in $PGL_3(\mathbf{Q}_2)$*
Topology seminar, U.T. Austin
- Feb 2012 *Nonpositive curvature in algebraic geometry* (2 lectures)
conference: Extended root systems and fundamental groups (IPMU, Tokyo)
- Oct 2011 *Finite Presentation of Kac-Moody groups over rings*
conference: Moduli spaces and automorphic forms (Luminy, France)
- Sep 2011 *Finite Presentation of Kac-Moody groups over rings*
conference: CFT, automorphic forms and related topics (Heidelberg)
- Sep 2011 *Finite Presentation of Kac-Moody groups over rings*
geometry seminar, U.T. Austin
- Apr 2011 *Classification of reflective Lorentzian lattices*
algebraic geometry seminar, Nagoya U.
- * Feb 2011: 2 lectures, *How to see spacetime* and *How to see a black hole*
“Yoshida Juku Senior” (4-day program for advanced Japanese undergraduates)
- Jan 2011 *Curvature and branched covers in singularity theory*
conference: Arithmetic and algebraic geometry 2011 (Tokyo U.)
- Dec 2010 *Completions and Branched Covers*
algebraic geometry seminar, Kyoto University
- Nov 2010 *Completions and branched covers*
conference: Lattices, reflection groups and algebraic geometry (Nagoya U.)
- Jun 2010 *Hyperbolic reflection groups and Lie algebras*
conference: Geometry and quantum theory (U. Nijmegen and U. Amsterdam)
- * Jun 2010 *Hyperbolic reflection groups and Lie algebras*
colloquium: University of Bonn
- * Jun 2010 *Hyperbolic reflection groups and Lie algebras*
colloquium: Hamburg University
- * Feb 2010 *Hyperbolic reflection groups and Lie algebras*
faculty colloquium: U.T. Austin
- Oct 2009 *Monodromy groups of Hurwitz-type problems*
algebraic geometry seminar, Texas A&M
- Sep 2009 *On the classification of reflective Lorentzian lattices*
conference: Lie algebras, vertex algebras and automorphic forms (Edinburgh, UK)
- Jun 2009 *On the classification of reflective Lorentzian lattices*
conference: Moduli and discrete groups (Kyoto, Japan)
- June 2009 *Monodromy groups of Hurwitz-type problems*
algebraic geometry seminar, U. Nagoya (Japan)
- June 2009 *Monodromy groups of Hurwitz-type problems*
algebraic geometry seminar, Kyoto U. (Japan)
- Jun 2009 *On the classification of reflective Lorentzian lattices*
conference dedicated to Mike Davis (Bedlewo, Poland)
- Apr 2009 *On the classification of reflective Lorentzian lattices*
conference: Geometric Group Theory on the Gulf Coast (South Padre Island)

- Apr 2009 *Introduction to Coxeter groups and Lorentzian lattices*
conference: Geometric Group Theory on the Gulf Coast (South Padre Island)
- Mar 2009 *Invitation to Coxeter groups*
short presentation to prospective graduate students, UT Austin
- Mar 2009 *Triangles of Baumslag-Solitar Groups*
Topology seminar, U.T. Austin
- * Feb 2009 *The Jump to Light Speed*
Undergraduate math club, U.T. Austin
- Dec 2008 *A Banach space determined by the Weil height*
Number theory seminar, N.Y.U.
- * Nov 2008 *Dottier and Boxier*
Saturday Morning Math Group, U.T. Austin (for mid- and high-school students)
- Oct 2008 *A conjectural role for the monster simple group in complex hyperbolic geometry*
Geometry and arithmetic around hypergeometric functions,
workshop, Oberwolfach, Germany
- May 2008 *The metric completion of a nonpositively curved space*
Geometry seminar, U. Chicago
- * May 2008 *Complex moduli spaces as quotients of symmetric domains*
Colloquium, U. Penn
- * Apr 2008 *The Hurwitz monodromy problem in degree 4*
Distinguished lecture series (Max Dehn seminar), U. Utah
- * Apr 2008 *The jump to light speed*
Distinguished lecture series (undergraduate colloquium), U. Utah
- * Apr 2008 *Recent progress in hyperbolic reflection groups*
Distinguished lecture series (colloquium), U. Utah
- Apr 2008 *The metric completion of a locally CAT(0) space*
Geometry/topology seminar, Columbia
- * Apr 2008 *Complex moduli spaces as quotients of symmetric domains*
Colloquium, Institute for Defense Analysis–Center for Communications Research
- * Mar 2008 *Infinitely many hyperbolic Coxeter groups through dimension 19*
Colloquium, Rutgers (New Brunswick)
- Oct 2007 *The moduli space of cubic threefolds as a ball quotient*
Algebraic geometry seminar, Ohio State U.
- Oct 2007 *The moduli space of cubic threefolds as a ball quotient*
Algebraic geometry seminar, U. Michigan
- May 2007 *Finite quotients of the mapping class groups*
Hodge theory, Kahler manifolds and homogenous spaces,
conference in honor of James Carlson, U. Utah
- Apr 2007 *A monstrous proposal*
Groups and symmetries: from the neolithic Scots to John McKay,
conference in honor of John McKay, C.R.M., Montreal

- Oct 2006 *A new Torelli theorem for cubic threefolds*
Algebraic geometry seminar, Stanford
- Mar 2006 *Moduli of cubic threefolds and complex hyperbolic geometry*
Algebraic geometry seminar, Texas A&M
- Mar 2006 *A monstrous proposal*
Complex geometry—a conference in honor of
Domingo Toledo’s 60th birthday, U. Utah
- Apr 2006 *Infinitely many Coxeter groups through dimension 19*
31st annual Arkansas Spring Lecture Series, U. Arkansas
- * Aug 2005 *Infinitely many hyperbolic Coxeter groups*
Colloquium, Rice U.
- Jul 2005 *Introduction to Chevalley groups*
A.M.S. graduate summer school, U. Washington
- * Jul 2005 *Linear algebraic groups* (minicourse: 5 days, 3–4 hours/day)
A.M.S. graduate summer school, U. Washington
- Jun 2005 *Hyperbolic geometry in real algebraic moduli problems* (2 lectures)
Algebra and geometry around hypergeometric functions,
summer school at Galatasaray U., Istanbul
- Mar 2005 *Infinitely many hyperbolic Coxeter groups*
Group theory seminar, Université de Paris, Orsay
- * Nov 2004 *Topology of hyperplane complements and moduli spaces*
Frank Stones Research Lectureship, Texas Christian U.
- Mar 2004 *Topology of moduli spaces and discriminant complements*
Western algebraic geometry seminar, U. Utah
- Mar 2004 *Branched covers and their curvature*
Introduction to math research, U.T. Austin
- Nov 2003 *Hyperbolic geometry and real cubic surfaces*
Joint Stanford-Berkeley algebraic geometry/commutative algebra seminar
- Nov 2003 *The fundamental group of the space of smooth cubic surfaces*
Texas Geometry and Topology Conference, Rice U.
- Oct 2003 *Geometry of exceptional Lie groups*
Algebra seminar, U.T. Austin
- Apr 2003 *Geometry of groups*
Introduction to mathematical research, UT Austin
- * Apr 2003 *On the asphericity of hyperplane complements*
Invited Address, AMS central sectional meeting, Bloomington IN
- Nov 2002 *Arithmetic in the Cayley numbers*
Algebra seminar, U.T. Austin
- Oct-Nov 2002 *Geometry of Coxeter and Artin groups, and discriminant complements*
(3 lectures) GADGET seminar, U.T. Austin

- Sep 2002 *Linking numbers*
Topology seminar, U.T. Austin
- Apr 2002 *Complex hyperbolic reflection groups: a primer*
Informal seminar on geometry, topology and dynamics, Harvard
- Feb 2002 *Hyperbolic geometry and moduli of real cubic surfaces*
Algebraic geometry seminar, Columbia
- * Feb 2002 *Braid groups in algebraic geometry*
Colloquium, U. British Columbia
- Feb 2002 *Hyperbolic geometry and moduli of real cubic surfaces*
Joint topology/algebraic geometry seminar, U. British Columbia
- Feb 2002 *Braid groups in algebraic geometry*
Special seminar, U.C. San Diego
- * Jan 2002 *Braid groups in algebraic geometry*
Colloquium, U. Utah
- Dec 2001 *Negatively curved metric spaces in algebraic geometry*
Topology seminar, U.T. Austin
- Nov 2001 *The moduli space of cubic threefolds*
Workshop on moduli spaces, U. Nagoya (Japan)
- Oct 2001 *Complex hyperbolic arrangements*
Geometry/topology seminar, U. Maryland
- Oct 2001 *Hyperbolic reflection groups*
Basic notions seminar, Harvard
- May 2001 *Reflection groups on the octave hyperbolic plane*
Max Dehn seminar, U. Utah
- May 2001 *Reflection groups on the octave hyperbolic plane*
Cornell Topology Festival
- Apr 2001 *Reflection groups on the octave hyperbolic plane*
Differential geometry seminar, Harvard
- Mar 2001 *The moduli space of cubic threefolds*
Topology seminar, U.C. San Diego
- Feb 2001 *The moduli space of cubic threefolds*
Geometry seminar, Boston U.
- Oct 2000 *Hyperbolic geometry of the moduli space of real cubic surfaces*
Lie groups seminar, Yale U.
- Aug 2000 *The moduli space of cubic threefolds*
Algebraic geometry seminar, U. Utah
- * Jul 2000 *Hyperbolic geometry of the moduli space of real cubic surfaces*
Colloquium, U. Heidelberg
- Jun 2000 *Automorphic forms on the 4-ball and moduli of cubic surfaces*
Algebraic geometry seminar, U. Freiberg

- Jun 2000 *Automorphic forms on the 4-ball and moduli of cubic surfaces*
E.T.H.-Zurich
- Jun 2000 *Hyperbolic geometry of the moduli space of real cubic surfaces*
Geometry/topology seminar, U. Chicago
- May 2000 *Automorphic forms on the 4-ball and moduli of cubic surfaces*
Algebraic geometry seminar, U. Chicago
- Mar 2000 *Borcherds products and moduli of cubic surfaces*
Joint Harvard/MIT algebraic geometry seminar
- Mar 2000 *Computing in the Leech lattice*
Combinatorics seminar, MIT
- Jan 2000 *Hyperbolic geometry of the moduli space of real cubic surfaces*
Lie groups seminar, U. Michigan
- Jan 2000 *Automorphic forms on the 4-ball and moduli of cubic surfaces*
Joint AMS/MAA meeting, Washington DC
- Oct 1999 *Hyperbolic Polyhedra and Moduli of Real Cubic Surfaces*
Lafayette College Group Theory Workshop
- Oct 1999 *The complex hyperbolic geometry of the moduli space of cubic surfaces*
Geometry/topology seminar, U. Maryland
- May 1999 *Metric curvature in infinite branched covers*
Topology seminar, Ohio State U.
- Mar 1999 *Metric curvature of infinite branched covers*
Wasatch Topology Conference, U. Utah
- Jan 1999 *Braid pictures for Artin groups*
Low-dimensional topology seminar, Columbia
- Dec 1998 *The Deligne-Mostow groups*
Number theory seminar, Harvard
- Nov 1998 *Braid pictures for Artin groups*
Algebra seminar, Brandeis
- Nov 1998 *Curvature in infinite branched covers*
Differential geometry seminar, MIT
- Nov 1998 *Arithmetic in the Cayley numbers*
Basic notions seminar, Harvard
- Nov 1998 *Complex hyperbolic lattices*
Special seminar, U. Heidelberg
- Oct 1998 *Hyperbolic lattices*
Special seminar, U. Heidelberg
- Oct 1998 *Braid pictures for Artin groups*
Geometry seminar, U. Edinburgh
- Oct 1998 *Curvature of infinite branched covers; applications to moduli of cubic surfaces*
Geometry seminar, Oxford

- Oct 1998 *Curvature of infinite branched covers; applications to moduli of cubic surfaces*
Group theory seminar, Southampton University
- Oct 1998, *The moduli space of cubic surfaces as a ball quotient*
Algebraic geometry seminar, Harvard
- Mar 1998 *Homological characterization of hyperbolic groups*
Max Dehn seminar, U. Utah
- May 1997 *New complex hyperbolic reflection groups*
Special seminar, U.C. Los Angeles
- Mar 1997 *The Leech lattice and hyperbolic geometry* (4 lectures)
Max Dehn seminar, U. Utah
- Oct 1996 *An isoperimetric inequality for the Heisenberg groups* (2 lectures)
Max Dehn seminar, U. Utah
- Oct 1996 *New complex hyperbolic reflection groups*
Group theory seminar, U.C. Berkeley
- Jun 1996 *New complex hyperbolic reflection groups*
Special seminar, U.C. Santa Barbara
- Mar 1996 *Computing in the Leech Lattice*
Group theory seminar, U.C. Berkeley
- Oct 1995 *Introduction to hyperbolic Coxeter groups*
Group theory seminar, U.C. Berkeley
- Apr 1995 *An isoperimetric inequality for the Heisenberg groups*
Math. Sci. Research Inst.
- Sep 1993 *Spotting infinite groups*
Low-dimensional topology seminar, Princeton
- Aug 1993 *Spotting infinite groups*
SUNY-Albany conference on group theory and low-dimensional topology
- Sep 1992 *The Kirby calculus*
Low-dimensional topology seminar, U.C. Berkeley