



## AUTUMN KENT

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### EDUCATION

- Ph.D. (Mathematics) University of Texas at Austin · August 2006  
ADVISOR: Cameron McA. Gordon
- B.A. (Mathematics and Literature) University of North Carolina at Asheville · May 1999

### POSITIONS

- Professor* · University of Wisconsin – Madison · 2020–present
- Associate Professor* · University of Wisconsin – Madison · 2016–present
- Assistant Professor* · University of Wisconsin – Madison · 2010–2016
- Tamarkin Assistant Professor* · Brown University · 2006–2010

### VISITS

- IAS · 2015–2016
- PCMI · July 2012
- PCMI · July 2011
- MSRI · Fall 2007
- Centre Bernoulli, E.P.F. Lausanne · August 2005

### AWARDS, HONORS, FELLOWSHIPS, AND GRANTS

- Simons Fellow* · 2019–2020
- NSF Conference grant for conference LG&TBQ* · DMS-1916752 · 2019
- NSF Grant* · DMS-1904130 · 2019–2022
- Vilas Associate* · University of Wisconsin · 2018–2020
- von Neumann Fellowship* · Institute for Advanced Study · 2015–2016
- NSF CAREER Award* · DMS-1350075 · 2014–2019
- NSF Grant* · DMS-1104871 · 2011–2014
- University Housing Honored Instructor Award* · University of Wisconsin · Spring 2012
- University Housing Honored Instructor Award* · University of Wisconsin · Fall 2010
- National Science Foundation Postdoctoral Fellowship* · 2006
- Clay Mathematics Institute Liftoff Fellowship* · Summer 2006
- Frank Gerth III Dissertation Award* · University of Texas at Austin · 2006
- Finalist, American Institute of Mathematics Five-Year Fellowship* · 2006

*Donald D. Harrington Dissertation Fellowship* · University of Texas at Austin · 2005–2006  
*University Continuing Fellowship* · University of Texas at Austin · 2003–2004  
*University Preemptive Fellowship* · University of Texas at Austin · Spring–Summer 2001  
*Departmental Fellowship* · University of Texas at Austin · Fall 2000 · Summer 2001

**MATHEMATICAL WRITING** (preprints available at [www.math.wisc.edu/~kent](http://www.math.wisc.edu/~kent), or upon request)

- 26** *Big Torelli groups: generation and commensurations*  
(with J. Aramayona, T. Ghaswala, A. McCleay, J. Tao, and R. Winarski)  
Groups, Geometry, and Dynamics, Volume 13, Issue 4, 1373–1399.
- 25** *Undistorted purely pseudo-Anosov groups* (with M. Bestvina, K. Bromberg, and C. Leininger)  
Journal für die reine und angewandte Mathematik 760 (2020), 213–227.
- 24** *Spacious knots* (with J. Purcell)  
Mathematical Research Letters 25 (2018), no. 2, 581–595.
- 23** *Skinning bounds along thick rays* (with K. Bromberg and Y. Minsky)  
(to appear in the Journal of Topology & Analysis)
- 22** *Lipschitz constants to curve complexes* (with V. Gadre, E. Hironaka, and C. J. Leininger)  
Mathematical Research Letters 20 (2013), no. 4, 647–656.
- 21** *Thick-skinned 3-manifolds* (with Y. Minsky)  
Geometric and Functional Analysis, Volume 24 (2014), 1981–2001.
- 20** *Experiments with skinning maps* (with D. Dumas)  
(in preparation)
- 19** *Pseudo-Anosov subgroups of fibered 3-manifold groups* (with S. Dowdall and C. J. Leininger)  
Groups, Geometry, and Dynamics, Volume 8, Issue 4, 2014, 1247–1282
- 18** *A geometric criterion to be pseudo-Anosov* (with C. J. Leininger)  
Michigan Mathematical Journal 63 (2014), 227–251.
- 17** *Congruence kernels around affine curves*  
Journal für die reine und angewandte Mathematik 713 (2016), 1–20.
- 16** *Geometric limits of knot complements, II: Graphs determined by their complements*  
(with J. Souto) Mathematische Zeitschrift (2012) 271:565–575.
- 15** *A fake Schottky group in  $\text{Mod}(S)$*  (with C. J. Leininger)  
*In the tradition of Ahlfors–Bers, V*, 185–196, Contemporary Mathematics, 510, AMS, 2010.
- 14** *Bers slices are Zariski dense* (with D. Dumas)  
Journal of Topology 2009 2(2) 373–379.

- 13** *Intersections and joins of free groups*  
Algebraic & Geometric Topology 9 (2009) 305–325.
- 12** *Slicing, skinning, and grafting* (with D. Dumas)  
American Journal of Mathematics 131 (2009), 1419–1429.
- 11** *Trees and mapping class groups* (with C. J. Leininger and Saul Schleimer)  
Journal für die reine und angewandte Mathematik 637 (2009), 1–21.
- 10** *Skinning maps*  
Duke Mathematical Journal 151, no. 2 (2010), 279–336.
- 9** *Subgroups of mapping class groups from the geometrical viewpoint* (with C. J. Leininger)  
*In the tradition of Ahlfors–Bers, IV*, 119–141. Contemporary Mathematics, 432, AMS, 2007.
- 8** *Uniform convergence in the mapping class group* (with C. J. Leininger)  
Ergodic Theory and Dynamical Systems (2008), 28, 1177–1195.
- 7** *Shadows of mapping class groups: capturing convex cocompactness* (with C. J. Leininger)  
Geometric and Functional Analysis, Volume 18 (2008), 1270–1325.
- 6** *Surface groups are frequently faithful* (with J. DeBlois),  
Duke Mathematical Journal 131, no. 2 (2006), 351–362.
- 5** *Totally geodesic boundaries of knot complements*,  
Proceedings of the American Mathematical Society 133 (2005), 3735–3744.
- 4** *Achievable ranks of intersections of finitely generated free groups*,  
International Journal of Algebra and Computation, Vol. 15 No. 2 (2005) 339–341.
- 3** *A short proof that composite twisted unknots are singly twisted unknots*,  
Journal of Knot Theory and its Ramifications 13 (2004), no. 7, 873–875.
- 2** *Bundles, handcuffs, and local freedom*,  
Geometriae Dedicata 106 (2004), 145–159.
- 1** *A geometric and algebraic description of annular braid groups* (with D. Peifer),  
International Journal of Algebra and Computation, Vol. 12, Nos. 1 & 2 (2002) 85–97.

#### **OTHER WRITING**

- 4** *Pen drawings*, in collection "Illustrating Mathematics," Diana Davis ed. AMS, 2020.
- 3** *Exploring the World of Asteroids, Doughnuts, and Geometry*, Wisconsin State Journal, Sunday, March 3, 2020.
- 2** *Cold, austere, or queer*, in collection "Living Proof: Stories of Resilience Along the Mathematical Journey," Allison K. Henrich, Emille D. Lawrence, Matthew A. Pons, and David G. Taylor, Eds. AMS/MAA 2019.
- 1** *Interview with Evelyn Lamb*, Scientific American blog "Roots of Unity," March 2017.

## SPEAKING

- 60 *Congruence subgroups in genus one*—Bloomington Geometry Workshop · Indiana University · Spring 2019
- 59 *Congruence subgroups in genus one*—AMS Special Session · Auburn University · Spring 2019
- 58 *Congruence subgroups in genus one*—Groups, Geometry, and Dynamics Seminar · UIUC · Spring 2019
- 57 *Big Torelli groups*—Topology Seminar · Yale · Fall 2018
- 56 *Big Torelli groups*—Workshop on Geometry of Teichmüller Space · Fields Institute · Summer 2018
- 55 *Skinning maps along thick rays*—Geometry and Topology of 3-manifolds Workshop · OIST – Okinawa, Japan · Spring 2018
- 54 *On word hyperbolic surface bundles*—Geometry of Teichmüller space and mapping class groups · University of Warwick · Spring 2018
- 53 *Spacious knots*—Max Dehn Seminar · University of Utah · Spring 2018
- 52 *Skinning maps along thick rays*—Virginia Topology Conference 2017: Hyperbolic 3-manifolds and beyond · University of Virginia · Fall 2017
- 51 *Skinning maps along thick rays*—Geometric topology in low dimensions · University of Warwick · Fall 2017
- 50 *Skinning maps along thick rays*—Moduli Spaces · Ventotene, Italy · Fall 2017
- 49 *Hyperbolic-by-hyperbolic hyperbolic groups*—Groups explored through geometry and dynamics: A Conference in Celebration of Lee Mosher · Princeton University · Fall 2017
- 48 *On word hyperbolic surface bundles*—GEAR retreat · Stanford · Summer 2017
- 47 *On word hyperbolic surface bundles*—Geometry Seminar · UIC · Spring 2017
- 46 *Coarsely hyperbolic surface bundles*—GGD day · Indiana University · Spring 2017
- 45 *Crash course in convex cocompactness*—Group Theory Seminar · UIUC · Spring 2017
- 44 *Spacious knots*—Teichmüller Theory and Geometric Structures Seminar · Rutgers – Newark · Spring 2016
- 43 *Spacious knots*—Geometry/Topology Seminar · Boston College · Spring 2016
- 42 *Spacious knots*—Geometric Topology Seminar · Columbia University · Spring 2016
- 41 *Spacious knots*—Topology/Geometry Seminar · Temple University · Spring 2016
- 40 *Congruence Subgroup Problems*—Topology/Geometry Seminar · Yale · Fall 2015

- 39** *Skinning maps*—Workshop on Geometric Structures on 3–Manifolds · Institute for Advanced Study · Fall 2015
- 38** *Thoughts on convex cocompactness*—AMS Sectional Meeting · University of Alabama in Huntsville · Spring 2015
- 37** *Thoughts on convex cocompactness*—Wasatch Topology Conference · Park City, Utah · August 2014
- 36** *Congruence subgroups problems*—Teichmüller Theory and Mapping Class Groups · Israel · Spring 2014
- 35** *Congruence subgroups problems*—AMS Sectional Meeting · University of Maryland, Baltimore County · Spring 2014
- 34** *Congruence subgroups problems*—Plenary Lecture · 48th Spring Topology and Dynamics Conference · University of Richmond · Spring 2014
- 33** *Congruence subgroups problems*—AMS Sectional Meeting · Temple University · Fall 2013
- 32** *Thick–skinned 3–manifolds*—Geometry, Topology, and Dynamics Seminar · UIC · Spring 2013
- 31** *Congruence subgroup problems*—Topology Seminar · UW – Milwaukee · Spring 2013
- 30** *Congruence subgroup problems*—Geometric Group Theory on the Gulf Coast · South Padre Island, TX · Spring 2013
- 29** *Geometric subgroups of mapping class groups*—Geometry Seminar · Temple University · Fall 2012
- 28** *Geometric subgroups of mapping class groups*—Geometry & Topology Seminar · Caltech · Fall 2012
- 27** *Congruence subgroup problems*—Geometry Topology Seminar · Georgia Tech · Fall 2012
- 26** *Mapping class groups through profinite spectacles*—Geometry Seminar · University of Wisconsin · Spring 2011
- 25** *Mapping class groups through profinite spectacles*—Wasatch Topology Conference · Park City, Utah · Winter 2010
- 24** *Mapping class groups through profinite spectacles*—Topology Seminar · Rice University · Fall 2010
- 23** *Transcendence of Bers slices*—Topology Seminar · University of Michigan · Fall 2008
- 22** *Inequalities in free groups*—Geometric Group Theory Seminar · Tufts University · Fall 2008
- 21** *Mapping class groups through profinite spectacles*—AMS Mathematical Research Communities · Snowbird Resort, Utah · Summer 2008
- 20** *Curves and hyperbolic geometry* (two expository lectures)—AMS Mathematical Research Communities · Snowbird Resort, Utah · Summer 2008

- 19** *Skinning maps*—Ahlfors–Bers Colloquium (workshop) · Rutgers University · Spring 2008
- 18** *Slicing, skinning, and grafting*—Topology Seminar · University of Texas at Austin · Spring 2008
- 17** *The leopard and Lobachevskii*—MSRI · Fall 2007
- 16** *The beginning of the end*—Geometry and Dynamics in Surfaces and 3–Manifolds · Brown University · Spring 2007
- 15** *Skinning maps*—Topology Seminar · Princeton University · Spring 2007
- 14** *Skinning maps*—Topology Seminar · University of Texas at Austin · Spring 2007
- 13** *Geometry and the mapping class group*—Midwest Topology Seminar · University of Illinois at Chicago · Spring 2007
- 12** *Skinning maps*—Geometry Seminar · California Institute of Technology · Spring 2007
- 11** *Skinning maps*—Topology/Geometry Seminar · Yale · Fall 2006
- 10** *Skinning maps*—AMS Sectional Meeting · University of Connecticut · Fall 2006
- 9** *Being purely pseudo-Anosov*—The 2<sup>nd</sup> annual William Rowan Hamilton Geometry and Topology Workshop · Trinity College, Dublin · Fall 2006
- 8** *The beginning of the end*—Hyperbolic Geometry Workshop · Program at the Fields Institute: Holomorphic Dynamics, Laminations, and Hyperbolic Geometry · Spring 2006
- 7** *Boundaries of hyperbolic 3–manifolds*—Georgia Topology Conference · Spring 2006
- 6** *Totally geodesic boundaries of 3–manifolds*—Thesis defense · Topology Seminar · University of Texas at Austin · Spring 2006
- 5** *Shadows of mapping class groups: capturing convex cocompactness*—Twenty–First Wasatch Topology Conference · Park City · 2005
- 4** *Shadows of mapping class groups: capturing convex cocompactness*—Topology Seminar · University of Texas at Austin · Spring 2005
- 3** *Surface groups are frequently faithful*—AMS Central Section Meeting · Meeting #1001 · Northwestern University · October 2004
- 2** *Totally geodesic boundaries of knot complements*—Topology Seminar · University of Texas at Austin · Fall 2004
- 1** *Bundles, handcuffs, and local freedom*—Topology Seminar · University of Texas at Austin · Spring 2003

## SERVICE

*Mental Health Liaison for UW Mathematics department* in academic year 2018–2019.

*Member*—AMS Committee on the Human Rights of Mathematicians · 2019–2022

*Organizer*—LG&TBQ, a conference honoring the work of LGBTQ+ mathematicians · University of Michigan · Summer 2019

*Panelist, Gender Gap Panel*—Women in Math and Statistics Conference · Harvard University · Spring 2018

*Organizer*, Moduli Crossroads Retreat, I · Madison, WI, June 2015.

*Organizer with S. Dowdall, C. Leininger, & A. Reid*, Workshop on Mapping Class Groups and Out( $F_N$ ) · Austin, TX, May 2015.

*Organizer with C. Leininger & K. Rafi*, AMS special session, Sectional Meeting, Lawrence, KS, March 2012.

*Organizer with C. Leininger & J. DeBlois*, AMS special session, Sectional Meeting, Urbana II, March 2009.

*Organizer with M. Tomova*, AMS Mathematics Research Community special session, Joint Meetings, Washington D. C., January 2009.

*Primary speaker*: Expository lectures at AMS Mathematics Research Community at Snowbird, Summer 2008.

*Referee for the following journals*: Acta Mathematica, Algebraic & Geometric Topology, American Journal of Mathematics, Annales scientifiques de l'École normale supérieure, Asian Journal of Mathematics, Bulletin of the London Mathematical Society, Duke Mathematical Journal, Geometriae Dedicata, Geometry & Topology, Inventiones Mathematicae, Journal of Combinatorial Algebra, Journal of Differential Geometry, JP Journal of Geometry and Topology, Mathematische Annalen, Pacific Journal of Mathematics, Proceedings of the American Mathematical Society, Proceedings of the London Mathematical Society, Proceedings – Mathematical Sciences, Revista Matemática Complutense, Transactions of the American Mathematical Society.

## TEACHING

*Spring 2021* · Math 376—Topics in Multivariable Calculus and Linear Algebra II · University of Wisconsin

*Spring 2021* · Math 752—Introductory Topology II · University of Wisconsin

*Fall 2020* · Math 375—Topics in Multivariable Calculus and Linear Algebra · University of Wisconsin

*Spring 2019* · Math 851—Hyperbolic Geometry · University of Wisconsin

*Fall 2018* · Math 340—Linear Algebra · University of Wisconsin

*Spring 2018* · Math 752—Introductory Topology II · University of Wisconsin

*Fall 2017* · Math 340—Linear Algebra · University of Wisconsin  
*Spring 2017* · Math 240—Discrete Math · University of Wisconsin  
*Fall 2016* · Math 751—Algebraic Topology I · University of Wisconsin  
*Spring 2015* · Math 213—Calculus and introduction to differential equations · University of Wisconsin  
*Fall 2014* · Math 851—Teichmüller Theory · University of Wisconsin  
*Fall 2014* · Math 551—Elementary Topology · University of Wisconsin  
*Spring 2014* · Math 990—Supervised reading in geometry · University of Wisconsin  
*Spring 2014* · Math 752—Introductory Topology II · University of Wisconsin  
*Spring 2013* · Math 221—Calculus I · University of Wisconsin  
*Fall 2012* · Math 751—Algebraic Topology I · University of Wisconsin  
*Spring 2012* · Math 990—Supervised reading in geometry · University of Wisconsin  
*Spring 2012* · Math 234—Multivariable Calculus · University of Wisconsin  
*Fall 2011* · Math 851—Mapping Class Groups · University of Wisconsin  
*Fall 2011* · Math 990—Supervised reading in geometry · University of Wisconsin  
*Spring 2011* · Math 320—Linear Algebra and Differential Equations · University of Wisconsin  
*Spring 2011* · Math 752—Introductory Topology II · University of Wisconsin  
*Fall 2010* · Math 234—Multivariable Calculus · University of Wisconsin  
*Fall 2009* · Math 0170—Advanced Placement Calculus · Brown University  
*Spring 2009* · Math 1010—Analysis: Functions of One Variable · Brown University  
*Spring 2009* · Math 0100—Introductory Calculus II · Brown University  
*Fall 2008* · Math 0090—Introductory Calculus I · Brown University  
*Spring 2008* · Math 0540—Honors Linear Algebra · Brown University  
*Fall 2004* · Assistant Instructor: M305G—Elementary Functions and Coordinate Geometry · University of Texas at Austin  
*Fall 2001* · Teaching Assistant/Grader: M373K—Algebraic Structures I and M367L—Topology II: Knot Theory · University of Texas at Austin  
*Fall 2000* · Teaching Assistant: M403K—Business Calculus · University of Texas at Austin  
*Fall 1999* · Instructor: Math 060—Basic Mathematics · Asheville—Buncombe Technical Community College

#### **SUPERVISION**

Benjamin Branman · current  
 Rebecca Eastham · current  
 Benjamin Wright · current  
 Balázs Strenner · Ph.D. 2015.



**REFERENCES**

Mladen Bestvina, University of Utah

Jeffrey Brock, Brown University

Richard Canary, University of Michigan

Cameron Gordon, University of Texas at Austin

Yair Minsky, Yale University

Alan Reid, University of Texas at Austin

Gloria Mari-Beffa, University of Wisconsin – Madison (Teaching reference)