

Wöden B. Kusner

CONTACT INFORMATION	<p>Department of Mathematics University of Pittsburgh Dietrich School of Arts and Sciences 301 Thackeray Hall Pittsburgh, PA 15260</p> <p>☎ (413) 225-1323 ✉ wkusner@gmail.com</p>
CITIZENSHIP	USA
RESEARCH INTERESTS	Discrete and Metric Geometry, Topological and Geometric Frustration, Emergent Phenomena, Geometric Analysis, Geometric Measure Theory, Integral Geometry, Representation Theory
EDUCATION	<p>University of Pittsburgh, Pittsburgh, PA USA</p> <p>Ph.D., Mathematics, August 2014 Advisor: Professor Thomas C. Hales Dissertation: <i>Bounds on packing density via slicing</i></p> <p>M.A., Mathematics, August 2010</p> <p>Haverford College, Haverford, PA USA</p> <p>B.S., Mathematics, May 2007 Advisor: John J. Flynn Thesis: <i>Results in sphere packing density</i></p>
PAPERS	<p>Kusner, W. An upper bound on packing density for circular cylinders of high aspect ratio. <i>Accepted, Discrete Comput. Geom.</i> http://arxiv.org/abs/1309.6996</p> <p>Kusner, W. On the densest packing of polycylinders in any dimension. <i>ArXiv preprint</i> http://arxiv.org/abs/1405.0497</p> <p>Kusner, W. Slicing linear programs: local criticality of the conjectured optimal density pentagon packing. <i>In preparation</i></p>
TALKS AND CONFERENCES	<p>Visitor, Brown University – ICERM: Phase Transitions. February-May 2015.</p> <p>Large Structures Seminar, Aalto University: <i>Packing density bounds in higher dimensions</i>. November 22, 2014.</p> <p>ESI Workshop: <i>A brief analysis of regular pentagon packings in the plane</i>. October xx, 2014.</p> <p>Visitor, University of Vienna – ESI: Minimal Energy Point Sets. October 2014.</p> <p>Researcher, IAS – PCMI: Mathematics and Materials. July 2014.</p> <p>Oberwolfach Seminar: Recent Methods in Sphere Packing and Optimization. <i>Packing polycylinders</i>. June 2014</p> <p>Dissertation Defense, University of Pittsburgh: <i>Bounds on packing density via slicing</i>. May 22, 2014</p> <p>Seminar, TU Graz: <i>Packing density bounds via slicing</i>. May 8, 2014</p>

Erdős Memorial Lectures, University of Memphis: *Revisiting Bezdek and Kuperberg: A sharp upper bound for the packing density of polycylinders in higher dimensions.* March 2014

Fields Institute Workshop in Discrete Geometry, Fields Institute. November 2013 (*attended*)

Graduate Student Seminar, University of Pittsburgh: *Some packing problems and an upper bound.* March 28, 2013

Dietrich School of Arts and Sciences Graduate Expo, University of Pittsburgh: *Packing cylinders with high aspect ratio.* March 23, 2013

Algebra, Combinatorics and Geometry Seminar, University of Pittsburgh: *An upper bound on packing density for circular cylinders with high aspect ratio.* February 12, 2013

Topological Dynamics Workshop, Isaac Newton Institute: *Packing circular cylinders.* November 2012

IMA Summer School in Topological Methods, University of Pennsylvania 2011 (*attended*)

Graduate Algebra, Combinatorics and Geometry Seminar, University of Pittsburgh:

- *The Jones Polynomial and the Kauffman Bracket*
- *Category Theory V (Representable Functors)*
- *Category Theory IV (Limits Informally/Formally)*
- *Category Theory III (Slice and Comma Categories)*
- *Category Theory II (Products and Limits)*

Senior Thesis Defense, Haverford College: *Results in sphere packing density.* May 2007

AWARDS

University of Pittsburgh Honors Convocation 2013, 2014

Outstanding Presentation: Graduate Expo 2013

University of Pittsburgh Irvis Fellowship 2009, 2012

Bronze Presidential Service Award for AmeriCorps Volunteer Service 2008

TEACHING EXPERIENCE

University of Pittsburgh, Pittsburgh, PA USA

Teaching Fellow September 2010 to December 2011

Assistant for Math 0220: Calculus I

Fall 2011 (3 sections)

Assistant for Math 1700: Topology

Spring 2011

Assistant for Math 1410: Foundations of Mathematics

Spring 2011

Assistant for Math 1250: Abstract Algebra 2

Spring 2011

Assistant for Math 0230: Calculus 2

Fall 2010

Assistant for Math 0220: Calculus 1

Fall 2010 (2 sections)

Teaching Assistant

September 2009 to August 2010

Instructor for Math 0120: Business Calculus

Summer 2010

Responsible for lectures and course material

Assistant for Math 0120: Business Calculus

Spring 2010 (3 sections)

Assistant for Math 0240: Calculus 3

Fall 2009 (3 sections)

Sample material and student evaluations available upon request

PROFESSIONAL
EXPERIENCE

Representative: Dietrich School of Arts and Sciences Council, 2012 - 2014

Delegate: Arts and Sciences Graduate Student Organization, 2011 - 2014

President: Mathematics Graduate Student Organization, 2013 - 2014

Treasurer: Mathematics Graduate Student Organization, 2011 - 2013

Treasurer: SIAM University of Pittsburgh Chapter, 2010 - 2011

Organizer: Graduate Seminar in Algebra, Combinatorics and Geometry, 2010 - 2011

TECHNICAL SKILLS

T_EX (L^AT_EX, B_IB_TE_X), Mathematica.

REFERENCES

Prof. Thomas C. Hales
Andrew Mellon Professor
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Bettye J. and Ralph E. Bailey Dean
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