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Employment

- Universität Bielefeld, Bielefeld, Germany.
Postdoctoral researcher, Sept. 2011 - present. Supervisor: Kai-Uwe Bux.
Research position. Also teaching graduate-level topics courses.

Education

- University of Virginia, Charlottesville, VA.
PhD in Mathematics, May 2011. Advisor: Peter Abramenko.
Thesis title: *Strong Transitivity and Weyl Transitivity of Group Actions on Affine Buildings*.
- University of Virginia, Charlottesville, VA.
M.S. in Mathematics, May 2010.
- Kenyon College, Gambier, OH.
A.B. May 2007. Majors: Mathematics and Physics. Minor: Philosophy. Graduated *magna cum laude* with distinction in mathematics.
Thesis title: *Beyond Complex: An Inspection of Quaternions*.

Research Interests

Geometric group theory and algebraic groups. Group actions on buildings, groups of automorphisms of free groups and generalizations of Thompson's groups, including braided versions. Other interests include noncommutative algebra, Coxeter groups and number theory.

Publications

- *Rational homological stability for groups of partially symmetric automorphisms of free groups*. arxiv:1203.4845.
- *Rational homological stability for groups of symmetric automorphisms of free groups*. arxiv:1111.6506.
(Now subsumed by arxiv:1203.4845.)
- *Representatives of elliptic Weyl group elements in algebraic groups*. arXiv:1109.5487.
- *Some reductive anisotropic groups that admit no non-trivial split spherical BN-pairs*. With Peter Abramenko. arXiv:1108.4913.
- *Division algebras and transitivity of group actions on buildings*. arXiv:1105.1965.
- *Strongly and Weyl transitive group actions on buildings arising from Chevalley groups*. With Peter Abramenko. arXiv:1101.1113.
- *Waffles: Irreducible Representations of Metacyclic Groups*. Pi Mu Epsilon Journal, Issue 13:2 (Spring 2010). With Andrea Heald and Mark Pearson.
- *Generalized Thue-Morse sequences and the von Koch Curve*. International Journal of Pure and Applied Mathematics, Volume 47, No. 3 (2008). With Judy Holdener and Lee Kennard.

Fellowships and Grants

- Dissertation Fellowship - University of Virginia Math Department, Fall 2010
- Society of Fellows travel award, for travel to Spring Topology and Dynamics Conference, March 2010
- GAANN Fellowship, University of Virginia, 2007-2011
- National Merit Scholar; Distinguished Merit Scholarship; Ohio Academic Scholarship, 2003-2007

Invited Talks

- *Weyl transitive but not strongly transitive group actions on buildings*. Topology & Geometric Group Theory Seminar, Cornell University; November 9, 2010.
- *Weyl group representatives in Chevalley groups, and an application to buildings*. Special Session on Geometric Group Theory and Geometric Topology, 44th Annual Spring Topology and Dynamics Conference, Starkville, MS; March 18, 2010.
- *Chevalley groups and Weyl group representatives*. Special Session on Lattices, Coxeter Groups, and Buildings, 2009 Fall Southeastern Section AMS meeting, Boca Raton, FL; November 1, 2009.

Other Talks

- *Homological stability and partially symmetric automorphisms of free groups, parts I and II*. Seminar talk, Universität Bielefeld; March 19-21, 2012.
- *Some highly non-weakly transitive actions on buildings*. Buildings 2011 conference, Universität Münster; October 5, 2011.
- *Anisotropic groups and split BN-pairs*. Algebra Seminar, University of Virginia; February 23, 2011.
- *Never hire a division algebra to work on a building*. Binghamton University Graduate Conference in Algebra and Topology, Binghamton, NY; November 6, 2010.
- *Weyl transitive but not strongly transitive group actions on buildings*. Algebra Seminar, University of Virginia; November 3, 2010.
- *Cramming fields into quaternion phone booths*. Graduate Seminar, University of Virginia; October 29, 2010.
- *Torsion properties of representatives of Weyl group elements in Chevalley groups*. Algebra Seminar, University of Virginia; February 24, 2010.
- *VRGD systems and affine buildings*. Binghamton University Graduate Conference in Algebra and Topology, Binghamton, NY; November 14, 2009.
- *The Chevalley Group: The Chevrolet of groups*. Graduate Seminar, University of Virginia; September 18, 2009.
- *Buildings, from the ground up*. Graduate Student Topology and Geometry Conference, Madison, WI; April 19, 2009.
- *Irreducible representations of metacyclic groups: The Waffle Method*. Graduate Seminar, University of Virginia; November 16, 2007.

Other Conferences Attended

- Geometric Group Theory Summer School, Park City, UT; July 2012
- Topology and Groups, Berlin, Germany; June 2012
- Young Geometric Group Theory Meeting, Bedlewo, Poland; January 2012
- Workshop on Arithmetic Groups and their Applications in Combinatorics, Geometry and Topology, Charlottesville, VA; April 2010.
- Graduate Student Topology and Geometry Conference, Ann Arbor, MI; April 2010.
- Joint Mathematics Meeting, New Orleans, LA; January 2007 (presented poster).

Teaching Experience

At Universität Bielefeld

- Instructor for graduate level topics course: *Introduction to buildings II*, Spring/Summer 2012.
- Instructor for graduate level topics course: *Introduction to buildings*, Winter 2011/2012.

At the University of Virginia

- Instructor for Calculus III, Summer 2011
- Instructor for Calculus II, Spring 2010, Spring 2011 and Summer 2011
- Instructor for Calculus I, Fall 2009
- Instructor for Applied Calculus I, Spring 2009
- Instructor for Applied Calculus II, Fall 2008
- Teaching Assistant for The Art of Mathematical Thinking (Fall 2007) and Calculus II (Spring 2008)

At Kenyon College

- Tutor for general math, physics, and computer science classes, 2005-2007

Other

- Tutor for high school math and physics, Champion Tutoring, Charlottesville, VA, 2009-2010
- Tutor for high school math, Charlottesville High School, Charlottesville, VA, 2008-2009
- Tutor for linear/abstract algebra, freelance, Charlottesville, VA, 2007-present

Awards and Honors

- GTA Teaching Award, Honorable Mention - University of Virginia, Spring 2011
- GTA Teaching Award, Honorable Mention - University of Virginia, Spring 2010
- Phi Beta Kappa, inducted May 2007
- Franklin Miller award for excellence in extracurricular research, Kenyon College, May 2007
- Reginald B. Allen award for excellence in mathematics, Kenyon College, April 2007

References

- Peter Abramenko (Virginia; PhD thesis advisor)
- Kenneth S. Brown (Cornell University)
- Kai-Uwe Bux (Bielefeld; Postdoctoral supervisor)
- Mikhail Ershov (Virginia; teaching)
- Michael Mihalik (Vanderbilt University)
- Bernhard Mühlherr (Justus Liebig-Universität Giessen)
- Christopher Voll (Bielefeld; teaching)