

KURT W VINHAGE

CURRENT POSITION

UNIVERSITY OF CHICAGO
LE Dickson Instructor
Fall 2016 - Present

EDUCATION

FLORIDA STATE UNIVERSITY
B.S. in Mathematics, Summa cum Laude
June 2006 - May 2010
G.P.A.: 3.98

PENNSYLVANIA STATE UNIVERSITY
PhD in Mathematics
August 2010 - Summer 2016
Advisor: Anatole Katok

TEACHING EXPERIENCE

PENNSYLVANIA STATE UNIVERSITY, DEPARTMENT OF MATHEMATICS
Undergraduate Course Instructor
Fall 2011 - MATH018, Elementary Linear Algebra
Summer 2012 - REU Program Assistant and Group Coordinator
Fall 2012 - MATH497C, Teaching Assistant in the PSU MASS Program
Fall 2013 & Spring 2014 - MATH017, Finite Mathematics
Fall 2014 - MATH497B, Teaching Assistant in the PSU MASS Program
Fall 2015 - MATH250, Ordinary Differential Equations

UNIVERSITY OF CHICAGO, DEPARTMENT OF MATHEMATICS
Undergraduate Course Instructor
Winter 2018 - MATH204(10), Analysis in \mathbb{R}^n II (Accelerated)
Winter 2018 - MATH262, Point-Set Toplogy
Young Scholars Program
July 2018 - Instructor in 11-12th grade component

ORGANIZATIONAL EXPERIENCE

DYNAMICAL SYSTEMS STUDENT SEMINAR
Pennsylvania State University
Founder and Organizer
Fall 2012 - Fall 2015

DYNAMICAL SYSTEMS SEMINAR
University of Chicago
Organizer
Fall 2017 - Spring 2018

RESEARCH INTERESTS

Dynamical Systems, Algebraic and Homogeneous actions, Higher-rank abelian actions, Invariants of Smooth Dynamical Systems

RESEARCH PAPERS

KAKUTANI EQUIVALENCE OF UNIPOTENT FLOWS

Preprint.

Joint with Adam Kanigowski and Daren Wei.

SLOW ENTROPY OF SOME PARABOLIC FLOWS

Preprint.

Joint with Adam Kanigowski and Daren Wei

LOCAL RIGIDITY OF HIGHER RANK HOMOGENEOUS ABELIAN ACTIONS: A COMPLETE SOLUTION VIA THE GEOMETRIC METHOD

Geometriae Dedicata. 10.1007/s10711-018-0379-5.

Joint with Zhenqi Jenny Wang

ON THE NON-EQUIVALENCE OF THE BERNOULLI AND K PROPERTIES IN DIMENSION FOUR

Preprint, accepted by Journal of Modern Dynamics

Joint with Adam Kanigowski and Federico Rodriguez-Hertz

COCYCLE RIGIDITY OF PARTIALLY HYPERBOLIC ABELIAN ACTIONS WITH ALMOST RANK ONE FACTORS

Ergodic Theory and Dynamical Systems, 10.1017/etds.2017.119

ON THE RIGIDITY OF WEYL CHAMBER FLOWS AND SCHUR MULTIPLIERS AS TOPOLOGICAL GROUPS

Journal of Modern Dynamics, Volume 9 (2015), Pages 25-49

UNDERGRADUATE PROJECTS

AN INVESTIGATION INTO SMALL GROUP STABILITY WITH RESPECT TO PARITY
FLORIDA STATE UNIVERSITY, HONORS IN THE MAJOR THESIS

January 2007 - June 2009

Advisor: Mike Mesterton-Gibbons

SUPER EDGE-GRACEFUL LABELINGS OF TOTAL GRAPHS AND TOTAL CYCLES

UNIVERSITY OF WEST GEORGIA, SUMMER REU PROGRAM

June 2009 - August 2009

Journal of Combinatorial Mathematics and Combinatorial Computing, Vol 76, February 2011

TALKS

DYNAMICS SEMINAR

University of Maryland

September 6, 2018

Title: *Homogeneous Structures from Topological Flows and Applications in Dynamics*

DYNAMICS SEMINAR

Northwestern University

October 17, 2017

Title: *Polynomial Entropy of Unipotent Flows*

DYNAMICS SEMINAR

University of Chicago

October 5, 2015

Title: *Extending Cases of Smooth Rigidity by New Technology*

ROCKY MOUNTAIN DYNAMICAL SYSTEMS CONFERENCE

Brigham Young University
June 8, 2015
Title: *Local Rigidity of Homogeneous Actions*

ERGODIC THEORY AND DYNAMICAL SYSTEMS CONFERENCE
Toruń, Poland
May 12, 2014
Title: *Local Rigidity of Partially Hyperbolic Actions*

WORKSHOP ON DYNAMICAL SYSTEMS AND RELATED TOPICS
University of Maryland
April 13, 2014
Title: *Smooth Rigidity for Restrictions of Weyl Chamber Flows*

DYNAMICS SEMINAR
University of Houston
November 18, 2013
Title: *Local Rigidity of Algebraic Partially Hyperbolic Actions*

GRADUATE STUDENT GEOMETRY AND TOPOLOGY CONFERENCE, 2011
Michigan State University
April 2, 2011
Title: *The Crofton Formula and Around*

INTEGERS CONFERENCE, 2009
University of West Georgia
October 14 - 17
Title: *Van der Waerden Numbers on Finite Gap Sets*

HONORS/FELLOWSHIP

NSF Postdoctoral Fellowship: Fall 2016 - Spring 2019

Pritchard Dissertation Fellowship: Spring 2015

The PSU math department awards this fellowship to recognize very high quality of the recipients' thesis work

PSU Mathematics Teaching Award: Fall 2014
ZZRQ Award, PSU: 2013

The PSU math department awards this fellowship to a doctoral candidate who has contributed to the sense of community within the department

University Graduate Fellowship, PSU: Fall, 2010

PSU Awards a fellowship to provide additional funding for outstanding first-year graduate students

Marion Jewell Hay Award, Φ BK: Spring, 2010

Phi Beta Kappa awards this to an inductee with an emphasis on research

Outstanding Senior Scholar, FSU: Spring, 2010

FSU awards 10 seniors with this award each year, recognizing scholarship and academic leadership

Pennsylvania State University MASS Program: Fall, 2009

- Best Performance in Geometry
- Best Performance in Analysis
- Best Performance in Algebra
- Merit Scholarship

Kenneth G Boback Scholarship for an Outstanding Mathematics Undergraduate: May, 2009

This scholarship is awarded once every two years to a single undergraduate majoring in Mathematics

Phi Beta Kappa: Inducted Spring, 2010

Golden Key Honors Society: Inducted Spring 2009

Phi Kappa Phi: Inducted Spring, 2008

Pi Mu Epsilon Mathematics Fraternity: Inducted Spring, 2008

Cultaptation: Social Learning Strategies Tournament: Summer, 2008

The Social Learning Strategies Tournament was directed by Biologists and Computer Scientists, and accepted game-theoretic strategies to compete against other submissions. My strategy, "Wait for Something Better," ranked 35 out of 104 entries

COMPUTER SKILLS

Mathematica Proficiency

C++ Proficiency

L^AT_EX Proficiency

Linux and Unix Proficiency