

CURRICULUM VITAE

CHRIS JOHNSON

CONTACT INFORMATION

ADDRESS Mathematics and Computer Science Department
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CITIZENSHIP United States of America

EMPLOYMENT HISTORY

POSITION Assistant Professor
Western Carolina University
August 2020 - Present

POSITION Visiting Assistant Professor
Bucknell University
August 2019 - May 2020

POSITION Visiting Assistant Professor
Indiana University
August 2017 - May 2019

POSITION Visiting Assistant Professor
Wake Forest University
July 2015 - July 2017

POSITION Visiting Instructor
Clemson University
August 2014 - May 2015

EDUCATION

PH.D. Mathematical Sciences
Dissertation: *Involutive Translation Surfaces and Panov Planes*
May 2014
Clemson University

M.S. Applied Mathematics
May 2007
Western Carolina University

B.S. Computer Science and Applied Mathematics
May 2005
Western Carolina University

TEACHING EXPERIENCE

COURSE Introduction to Topology
SCHOOLS Western Carolina University

COURSE Abstract Algebra
SCHOOLS Western Carolina University

COURSE Linear Algebra
SCHOOLS Western Carolina University, Indiana University, Wake Forest University

COURSE Complex Analysis
SCHOOLS Western Carolina University

COURSE Introduction to Logic & Proof
SCHOOLS Western Carolina University

COURSE Real Analysis
SCHOOLS Western Carolina University

COURSE Ordinary Differential Equations
SCHOOLS Western Carolina University, Indiana University

COURSE Multivariable Calculus III
SCHOOLS Western Carolina University, Clemson University

COURSE Single Variable Calculus II
SCHOOLS Western Carolina University, Bucknell University, Clemson University

COURSE Single Variable Calculus I
SCHOOLS Western Carolina University, Bucknell University, Indiana University, Wake Forest University, Clemson University

COURSE Geometry
SCHOOLS Bucknell University

COURSE Introduction to Probability & Statistics
SCHOOLS Indiana University

COURSE Introduction to Numerical Analysis
SCHOOLS Indiana University

COURSE Introduction to Number Theory
SCHOOLS Clemson University

RESEARCH INTERESTS

Abelian differentials, geometric structures on surfaces, mapping class groups, moduli and Teichmüller spaces of Riemann surfaces.

PUBLICATIONS

1. *Reciprocal Transformations and Their Discrete Maharam Extensions*. Accepted. To appear in Contemporary Mathematics volume *Current trends in dynamical systems, fractal geometry, and their applications*. (Peer Reviewed.)
2. *The Wild, Elusive Singularities of the T-fractal surface* (with R. Niemeyer). Accepted. To appear in Rocky Mountain Journal of Mathematics. (Peer Reviewed.)
3. *(Almost) Everything is Differentiable*. Accepted. To appear in Mathematics Magazine. (Peer Reviewed.)
4. *Haupt's theorem for strata of abelian differentials* (with M. Bainbridge, C. Judge, and I. Park). Israel Journal of Mathematics, **252** (2022), no. 1, 429 – 459. (Peer Reviewed.)
5. *Cutting sequences on square-tiled surfaces*, *Geom. Dedicata*, **190** (2017), 53 – 80. (Peer Reviewed.)
6. *Hyperelliptic translation surfaces and folded tori* (with M. Schmoll), *Topology and its Applications*, **161** (2014), 73 – 94. (Peer Reviewed.)
7. *Pseudo-Anosov eigenfoliations on Panov planes* (with M. Schmoll), *Electronic Research Announcements in Mathematical Sciences*, **21** (2014), 89 – 108. (Peer Reviewed.)

OTHER SCHOLARSHIP

MathSciNet reviews of research articles while at WCU (not peer-reviewed)

1. Erlandsson, Viveka; Souto, Juan; Tao, Jing. *Genericity of pseudo-Anosov mapping classes, when seen as mapping classes*. *Enseign. Math.* 66 (2020), no. 3-4, 419–439.
2. Fraczek, Krzysztof; Hubert, Pascal. *Recurrence and non-ergodicity in generalized wind-tree models*. *Math. Nachr.* 291 (2018), no. 11-12, 1686–1711.
3. Ghazouani, Selim. *Mapping class group dynamics and the holonomy of branched affine structures*. *Math. Z.* 289 (2018), no. 1-2, 1–23.

INVITED TALKS

TITLE Generalized Periodic Points on Torus Covers
LOCATION AMS Fall Southeastern Sectional Meeting 2025
Tulane University
DATE October 4, 2025

TITLE Reciprocal Transformations and Their Discrete Maharam Extensions
LOCATION AMS Spring Southeastern Sectional Meeting 2025
Clemson University
DATE March 9, 2025

TITLE Ergodic theory of certain affine and infinite interval exchanges
LOCATION AMS Fall Central Sectional Meeting 2024
University of Texas at San Antonio
DATE September 21, 2024

TITLE Compositions of Scaling Involutions and Measure-Preserving Transformations
 LOCATION The 13th AIMS Conference on Dynamical Systems, Differential Equations, and Applications
 University of North Carolina at Wilmington
 DATE June 4, 2023

TITLE Homoclinic saddle connections, non-self-illuminating points, and cylinders
 LOCATION AMS Joint Mathematics Meetings 2023
 Boston, MA
 DATE January 7, 2023

TITLE The wild, elusive singularities of the T -fractal surface, part II
 LOCATION AMS/MAA Joint Mathematics Meetings
 Special session on fractal geometry, dynamical systems, and applications
 Denver, CO
 DATE January 18, 2020

TITLE From the bridges of Königsberg to data analysis
 LOCATION Colloquium
 Bucknell University
 DATE November 21, 2019

TITLE Abelian differentials with prescribed periods
 LOCATION Analysis seminar talk
 Clemson University
 DATE November 15, 2019

TITLE A class of non-singular transformations with an application to infinite-area translation surfaces
 LOCATION AMS Spring Central and Western Joint Sectional Meeting
 University of Hawaii at Manoa
 DATE March 22, 2019

TITLE A class of non-singular transformations with an application to infinite-area translation surfaces
 LOCATION Teichmüller Theory Seminar
 Indiana University
 DATE November 9, 2018

TITLE From billiards in the T -fractal to non-singular transformations
 LOCATION Ergodic Theory and Dynamical Systems Seminar
 University of North Carolina, Chapel Hill
 DATE November 29, 2016

TITLE From billiards in the T -fractal to non-singular transformations
 LOCATION Analysis Seminar
 Clemson University
 DATE November 1, 2016

TITLE Non-Singular Ergodic Theory, Affine Interval Exchanges, and the T -fractal
 LOCATION Colloquium
 University of Maine
 DATE October 13, 2016

TITLE Can You Play Billiards in a Fractal?
 LOCATION Colloquium
 Wake Forest University
 DATE September 23, 2015

TITLE Eigenfoliations of half-translation tori and their universal covers
 LOCATION AMS Western Spring Sectional
 University of New Mexico
 DATE April 5, 2014

TITLE Dynamics on Panov planes
 LOCATION UIUC Ergodic Theory Seminar
 University of Illinois at Urbana-Champaign
 DATE February 24, 2014

TITLE Hyperelliptic translation surfaces and Panov planes
 LOCATION International conference and workshop on surfaces of infinite type
 Universidad Nacional Autónoma de México (Morelia campus)
 DATE August 2, 2013

TITLE Involutive translation surfaces and associated Panov planes
 LOCATION AMS Southeastern Spring Sectional
 University of Mississippi
 DATE March 3, 2013

CONTRIBUTED TALKS

TITLE Oblivious points on translation surfaces
 LOCATION Carolina Dynamics Symposium 2023
 Davidson College
 DATE April 16, 2023

TITLE Geometric Intersection of Simple Closed Curves
 LOCATION Indiana University Teichmüller Theory Seminar
 Indiana University (over Zoom)
 DATE March 16, 2021

SERVICE AT WCU

University service

SERVICE Visiting Scholar Committee
 ROLE Member, August 2025 - May 2026

SERVICE University Scholarship Committee
 ROLE Member, Spring 2022 & Spring 2025

College service

SERVICE College of Arts and Sciences Student Appeals Committee
 ROLE Member, 2025 - 2026

SERVICE College of Arts and Sciences Faculty Awards Committee
 ROLE Member, 2022 - 2023

Departmental service

SERVICE	Awards Committee
ROLE	Member, August 2020 - Present
SERVICE	Colloquium Committee
ROLE	Member, August 2020 - May 2025
SERVICE	Colloquium Committee
ROLE	Chair, August 2025 - Present
SERVICE	Math Club
ROLE	Faculty Advisor, March 2021 - May 2025
SERVICE	Curriculum Committee
ROLE	Member, August 2020 - May 2025
SERVICE	DCRD Fixed-Term Faculty Promotion Committee
ROLE	Chair, Spring 2024
SERVICE	Traditional Concentration Working Group
ROLE	Chair, Fall 2022
SERVICE	Linear Algebra Working Group
ROLE	Member, Fall 2022
SERVICE	AFE for Non-Tenure Track Faculty
	Member, August 2021 - May 2023
SERVICE	Ad Hoc Freshman Math Placement Committee
ROLE	Member, Summer 2021

SERVICE TO THE PROFESSION

DESCRIPTION	PI on NSF Grant to fund <i>Carolina Dynamics Symposium</i> (In Progress)
DESCRIPTION	Co-organizer of Spring 2026 <i>Carolina Dynamics Symposium</i> (In Progress)
DESCRIPTION	Co-organizer of the <i>Geometry and Dynamics in Moduli Spaces of Abelian Differentials</i> Special Session at the 2023 AMS Joint Mathematics Meeting
DATE	January 7, 2023
DESCRIPTION	Co-organizer of the <i>Topological, Measurable, and Symbolic Dynamics and Interactions with Geometry</i> Special Session at the 2022 AMS Fall Southeastern Sectional
DATE	October 15 – 16, 2022
DESCRIPTION	Co-organizer of the <i>Invariant Measures of Smooth Dynamical Systems</i> Special Session at the 2016 AMS Spring Southeastern Sectional meeting
DATE	March 5 – 6, 2016