

Wesley R. Perkins – Curriculum Vitae

CONTACT INFORMATION

Department of Mathematics
Lehigh University
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EDUCATION

University of Kansas, Lawrence, KS
Ph.D. in Mathematics, with honors, *May 2021*
Thesis Advisor: Prof. Mathew A. Johnson
Thesis Title: “Modulational and Subharmonic Dynamics of Periodic Waves”
M.A. in Mathematics, with honors: *May 2017*

Lyon College, Batesville, AR
B.A. in Mathematics, *summa cum laude: May 2015*
Minors in Physics and Computer Science

PROFESSIONAL EXPERIENCE

Lehigh University, Bethlehem, PA
C.C.-Hsiung Visiting Assistant Professor: *Fall 2021 through Present*
Postdoctoral Advisor: Prof. Lei Wu

University of Kansas, Lawrence, KS
Graduate Teaching Assistant: *Fall 2015 through Fall 2019; Spring 2021 (excluding summers)*
Course Coordinator for Precalculus: *Fall 2020*
Graduate Research Assistant: *Summer 2017, 2018, 2019; Spring – Summer 2020*
Coordinator for the Placement and Gateway Exams: *Summer 2016*

Lyon College, Batesville, AR
Supplemental Instruction Leader: *Spring 2014 through Spring 2015 (excluding summer)*
APPLE Upward Bound Math/Science Tutor: *Spring 2013 through Spring 2014 (including summer)*

SELECTED HONORS AND AWARDS

University of Kansas, Lawrence, KS
Bernstein Award for Future Faculty: *Spring 2021*

- This award recognizes and honors one KU graduate student each year who has approached their teaching as an inquiry into learning. Awarded by KU’s Center for Teaching Excellence.

Two-time finalist for Florence Black Graduate Teaching Award: *Spring 2019, Spring 2021*

- A prestigious award limited to 5 finalists and 1 awardee (out of 60+ GTAs) per year.

Charles J. and Mary Pat Himmelberg Graduate Student Award: *Spring 2020*

- An award traditionally given to the most outstanding, non-graduating student.

Elbert Walker Graduate Summer Scholarship: *Spring 2020*
Rashleigh Family Graduate Summer Scholarship: *Spring 2019*

Lyon College, Batesville, AR
Dr. Samuel W. Williams Fellowship: *Spring 2015*

- An award given to a graduating student whose academic record and promise of future service are deemed outstanding; intended for use in graduate school.

Supplemental Instruction Leader of the Year (AY 2014-2015): *Spring 2015*

Boy Scouts of America
Eagle Scout: *December 2009*

Research Activities

RESEARCH INTERESTS

I am interested in the existence, stability, and dynamics of nonlinear waves in partial differential equations arising from applications.

PEER-REVIEWED PUBLICATIONS

5. Mathew A. Johnson and Wesley R. Perkins, *Subharmonic Dynamics of Wave Trains in the Korteweg-de Vries/Kuramoto-Sivashinsky Equation*, Studies in Applied Mathematics, Vol. 148 Iss. 3: pp. 1274-1302 (2022).
4. Mathew A. Johnson and Wesley R. Perkins, *Subharmonic Dynamics of Wave Trains in Reaction Diffusion Systems*, Physica D, Vol. 422: 11pp (2021).
3. Mariana Haragus, Mathew A. Johnson, and Wesley R. Perkins, *Linear Modulational and Subharmonic Dynamics of Spectrally Stable Lugiato-Lefever Periodic Waves*, Journal of Differential Equations, Vol. 280: pp. 315-354 (2021).
2. Mathew A. Johnson and Wesley R. Perkins, *Modulational Instability of Viscous Fluid Conduit Periodic Waves*, SIAM Journal on Mathematical Analysis, Vol. 52 Iss. 1: pp. 277-305 (2020).
1. Jacob Haddock, Wesley R. Perkins, John Pope, and Jeremy Chapman, *Circles in \mathbb{F}_q^2* , Aletheia: The Alpha Chi Journal of Undergraduate Scholarship, Vol. 2 Iss. 1: 7pp (2017).

PREPRINTS

5. Mathew A. Johnson and Wesley R. Perkins, *Nonlinear Stability of Periodic Waves in the Hamiltonian Magma Equations*, in preparation.
4. Mathew A. Johnson and Wesley R. Perkins, *Subharmonic Dynamics of Wave Trains in Systems of Viscous Conservation Laws*, in preparation.
3. Mariana Haragus, Mathew A. Johnson, Wesley R. Perkins, and Björn de Rijk, *Nonlinear Subharmonic Dynamics of Spectrally Stable Lugiato-Lefever Periodic Waves*, in preparation.
2. William A. Clarke, Robby Marangell, and Wesley R. Perkins, *Rigorous Justification of the Whitham Modulation Equations for Equations of Whitham-type*, **Submitted (2021)**.
1. Mariana Haragus, Mathew A. Johnson, Wesley R. Perkins, and Björn de Rijk, *Nonlinear Modulational Dynamics of Spectrally Stable Lugiato-Lefever Periodic Waves*, **Submitted (2021)**.

INVITED TALKS AND CONFERENCE PRESENTATIONS

14. Drexel University Mathematics Department, PDE/Applied Math Seminar - seminar presentation: *May 26, 2022*
13. Conference on Mathematics of Wave Phenomena, - invited talk: *February 14-18, 2022*
12. SIAM Conference on Applications of Dynamical Systems - invited talk: *May 23-27, 2021*
11. University of Stuttgart, Chair of Analysis and Modeling Oberseminar - webinar presentation: *November 19, 2020*
10. Modulation Theory and Dispersive Shock Waves Workshop - invited talk: *July 13-17, 2020 (Cancelled due to COVID-19)*
9. Waves in One World - webinar presentation: *July 8, 2020*
8. KU Analysis Seminar - webinar presentation: *July 6, 2020*
7. CU-Boulder Applied Mathematics Department, Nonlinear Waves Seminar - seminar presentation: *April 28, 2020 (Cancelled due to COVID-19)*
6. KUMUNU-ISU Conference on PDE, Dynamical Systems, and Applications - poster presentation: *April 25-26, 2020 (Cancelled due to COVID-19)*

5. KUMUNU Conference on PDE, Dynamical Systems, and Applications - poster presentation: *April 27-28, 2019*
4. IMACS International Conference on Nonlinear Evolution Equations and Wave Phenomena: Computation and Theory - invited talk: *April 17-19, 2019*
3. KU Computational and Applied Mathematics Seminar - seminar presentation: *March 20, 2019*
2. Workshop on Nonlinear Differential Equations, Dynamical Systems, and Applications - poster presentation: *October 20-21, 2018*
1. KUMUNU Conference on PDE, Dynamical Systems, and Applications - poster presentation: *April 21-22, 2018*

Teaching Activities and Professional Development

TEACHING EXPERIENCE

Lehigh University, Bethlehem, PA:

Instructor of Record:

- Math 205, Linear Methods: *Fall 2021, Spring 2022*
 - Led lecture section; lectures were Hybrid In-Person for Fall 2021.
 - Course covers both Linear Algebra and Differential Equations.
- Math 021, Calculus I: *Fall 2021, Fall 2022*
 - Led large lecture section; lectures were Hybrid In-Person for Fall 2021.

University of Kansas, Lawrence, KS:

Course Coordinator for Math 104, Precalculus: *Fall 2020*

- Coordinated, mentored, and organized eight GTAs and one lecturer, each of whom was an instructor of record for the course.
- Supervised the instruction and testing for a combined total of 250 students in synchronous Hybrid Online sections.
- Created and maintained course content, including lecture notes/videos, written/online homework, quizzes, reviews, and exams.

University of Kansas, Lawrence, KS:

Teaching Experience: *Fall 2015 through Fall 2019, Spring 2021*

- Instructor of Record:
 - Math 126/197, Calculus II, Enhanced Section: *Spring 2021*
 - * The enhanced section is geared toward academically at-risk students.
 - * Led both lecture and lab in synchronous Hybrid Online sections.
 - * Created own materials including lecture notes, interactive group work, and quizzes.
 - Math 115/197, Business Calculus I, Enhanced Section: *Fall 2018, Fall 2019*
 - * The enhanced section is geared toward academically at-risk students.
 - * Led both lecture and lab sections.
 - * Created own materials including lecture notes, interactive group work, and quizzes.
 - Math 104, Precalculus: *Fall 2016, Spring 2017*
 - * Led both lecture and lab sections.
- Kansas Algebra Program (KAP):
 - Math 101, College Algebra: *Spring 2016*
 - * Primary instructor.
 - * Supervised undergraduate TAs, help room, and testing procedures.

- Math 002, Intermediate Algebra: *Fall 2015*
 - * Primary instructor.
 - * Supervised undergraduate TAs, help room, and testing procedures.
- Teaching Assistant:
 - Math 127, Calculus III, Lab Section: *Spring 2018, Spring 2019*
 - Math 126, Calculus II, Lab Section: *Fall 2017*

PROFESSIONAL DEVELOPMENT & SYNERGISTIC ACTIVITIES

University of Kansas, Lawrence, KS

KU GTA Flex and Online Teaching Program: *Summer 2020*

- Learned how to design and teach flexible and online courses that are equitable, inclusive, and provide opportunities for engagement and connection among a diverse group of students.

Created YouTube Channel - Life Lessons from Math: *Spring 2020*

- Creator of YouTube videos presenting technical math results and ideas to a general audience, as well as incorporating applications to everyday life.
- Sharpened teaching skills and prepared for teaching in an online format.

Treasurer of the KU Mathematics Graduate Student Organization: *Fall 2019 through Spring 2020*

- Initiated Graduate Student Mentoring Program, wherein older graduate students mentor younger students as they adjust to graduate school.

Real Analysis Qualifying Exam Study Group Leader: *Summer 2018, Fall 2018, Fall 2019*

Numerical Analysis Qualifying Exam Study Group Leader: *Summer 2018, Fall 2018, Fall 2019*

- Led discussions and problem-solving sessions for first- and second-year graduate students preparing for the Ph.D. qualifying exams in both real analysis and numerical analysis.