

# George H. Lytle

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## Education

- **University of Kentucky (UK)** Lexington, KY  
*PhD, Mathematics* May 2019
  - Advisor: Peter Perry
  - Research Interests: Inverse Problems, Partial Differential Equations, Functional Analysis, Numerical Analysis
- **Asbury University (AU)** Wilmore, KY  
*B.A., Mathematics and Spanish, summa cum laude* May 2013

## Professional Experience

- **University of Montevallo** Montevallo, AL  
*Assistant Professor of Mathematics, 2019-Present*

## Research

### Publications

- Lytle, Perry, Siltanen. Nachman's reconstruction method for the Calderón problem with discontinuous conductivities. *Inverse Problems* **36** (2020), no. 3, 035018. DOI: 10.1088
- Howerton, Dahlin, Edholm, Fox, Reynolds, Hollingsworth, Lytle, Walker, Blackwood, Lenhart. *The effect of governance structures on optimal control of two-patch epidemic models*. Submitted for publication.
- Lytle, Perry. *The Calderón problem for conductivities with truncated scattering transforms*. In preparation

## Teaching Experience

- **University of Montevallo**
  - *Primary Instructor - Undergraduate*
    - Intermediate Algebra
    - Pre-Calculus Algebra
    - Pre-Calculus Algebra & Trigonometry
    - Calculus III
    - Survey of Mathematics
    - Linear Algebra
    - Numerical Analysis
    - Real Analysis
    - Directed Reading in Mathematics
    - Senior Seminar

### Senior Seminar Advising

- Alex Dozzi - *Boolean Network Models of the Lac Operon* - Fall 2020

- Collin Nietfeld - *Cholesky Factorization* - Spring 2021
- KayCee Creel - *SIR Models of Disease* - Spring 2022
- Macy Lowery - *Qualitative Analysis of Predator-Prey Models* - Fall 2022
- Micah Flores - *The PageRank Algorithm* - Spring 2023

*Primary Instructor - Graduate*

- Mathematics for Teachers
- History and Philosophy of Mathematics
- Linear Algebra for Teachers
- Elementary Function Theory for Teachers

• **University of Kentucky**

*Primary Instructor*

- Intro to Numerical Methods - upper division math/computer science course
- Ordinary Differential Equations - major course for math/engineering majors
- Math for Elementary Teachers II - second content course for elementary and middle education majors
- Intro to Contemporary Math - general education course for non-STEM majors
- College Algebra - online course

• **University of Kentucky**

*MathExcel Workshop Leader*

- The MathExcel program is an intensive problem-solving approach to the standard calculus sequence. Students spend extra time each week working on enriching exercises in small groups with assistance from the workshop leader and undergraduate assistants.

*Graduate Reading Course Facilitator - Differential Forms & Stokes' Theorem*

- The Graduate Scholars in Mathematics program at the University of Kentucky offers summer support to a senior graduate student who facilitates a reading course on a topic suitable to students finishing their first year of graduate studies.

*First Year Graduate Seminar*

- Developed curriculum to help first-year graduate students improve their skills in proof-writing and reading mathematics for success in graduate math courses. Content focused on communicating mathematics through formal proofs and reading mathematics with a goal of understanding.

*College Algebra Emporium Assistant*

- University of Kentucky piloted an emporium-style course for College Algebra. Students met in computer labs and worked through material at a self-guided pace with assistance from the graduate assistant and undergraduate peer tutors. Students met with the faculty member once each week for a recap lecture.

*Grader for Graduate Analysis*

- Graded assignments for the graduate course Principles of Analysis and provided first-year graduate students feedback on their proof-writing techniques.

• **University of Kentucky**

*Recitation Leader*

- College Algebra & Trigonometry
- Calculus I
- Calculus II
- Honors Calculus II
- Calculus III

## Achievements & Activities

UM Academic Development Grant - Summer 2021  
AMS Mathematics Research Community - *Dynamics of Infectious Diseases* - 2020-2021  
UM Academic Development Grant - Summer 2020  
MAA Project NExT Fellow - 2019-2020  
Cliff Swauger Jr. Summer Graduate Fellowship – 2016  
UK College of Arts & Sciences Certificate for Outstanding Teaching – 2015  
COMAP Mathematical Contest in Modeling - 2010-2013

## Outreach & Service

### University of Montevallo

Faculty Senator for Biology, Chemistry, Mathematics & Computer Science, 2022-Present  
Concert and Lecture Committee, 2020-Present  
Traffic Appeals Committee, 2021-Present  
Mathematics Graduate Course Coordinator, 2020-Present  
Faculty Advisor, *Kappa Mu Epsilon* Honor Society, 2021-Present

### Outreach

UM Upward Bound STEMinar, *Domino Tilings and Fibonacci Numbers*  
Triage Judge, COMAP ICM 2019-2021

### Service to the Profession

Co-organizer of the AMS Special Session on Dynamics of Infectious Diseases, Joint Mathematics Meeting, April 2022  
Journal Reviewer, *Inverse Problems*, 2020-2021  
Undergraduate Poster Session Judge, Joint Mathematics Meeting, January 2020  
Coach, SIMIODE Challenge Using Differential Equations Modeling, October 2018

### University of Kentucky

Treasurer, UK SIAM Student Chapter, 2018-2019  
Treasurer, UK Mathematics Graduate Student Council, 2017-2018  
President, UK SIAM Student Chapter, 2014-2017  
Co-coordinator, Mathematics Graduate Student Colloquium, Fall 2016  
Graduate Student Representative, Calculus Textbook Committee, Feb-Mar 2016  
Co-coordinator, Mathematics Graduate Student Colloquium, Spring 2016  
Panelist, “Becoming a Professional” UK Mathematics Graduate Student Orientation; August 20, 2015 Lexington, KY  
UK Math Club Talk: UK’s Next Top Model: an Introduction to Mathematical Modeling; Oct 30, 2014 - Lexington, KY  
Coordinated COMAP Mathematical Contest in Modeling Competition at University of Kentucky, 2015, 2016

## Conferences & Workshops

- *Calculus Reinforcement in Real Analysis*, AMS Special Session on Analysis & Differential Equations at Undergraduate Institutions, Joint Mathematics Meeting, Jan 2023 - Boston, MA
- Joint Mathematics Meeting, Apr 5-8, 2022 - Virtual

- AMS Mathematics Research Community Workshop - *Dynamics of Infectious Diseases*, May 30-June 5, 2021 - Virtual
- SIAM Southeastern Atlantic Section Meeting, Sept 18-19, 2020 - Auburn, AL
- MAA MathFest, Jul 28-Aug 2, 2020 - Philadelphia, PA
- SIAM Conference on Applied Mathematics Education, Jul 28-Aug 2, 2020 - Philadelphia, PA
- Joint Mathematics Meeting, Jan 14-18, 2020 - Denver, CO
- MAA MathFest, Jul 29-Aug 3, 2019 - Cincinnati, OH
- Joint Mathematics Meeting, Jan 15-19, 2019 - Baltimore, MD
- Ohio River Analysis Meeting VIII, Mar 24-25, 2018 - University of Kentucky, Lexington, KY
- Focus Program on Nonlinear Dispersive Partial Differential Equations and Inverse Scattering, July 31-Aug 18, 2017 - The Fields Institute for Research in Mathematical Sciences, Toronto, Canada
- Ohio River Analysis Meeting VII, Mar 25-26, 2017 - University of Cincinnati, Cincinnati, OH
- Graduate Student Workshop on Inverse Problems, Aug 8-11, 2016 - Colorado State University, Fort Collins, CO
- Great Lakes Mathematical Physics Meeting, Jun 17-19, 2016 - Michigan State University, East Lansing, MI
- Ohio River Analysis Meeting VI, Mar 12-13, 2016 - University of Kentucky, Lexington, KY
- Institute for Math & Applications 2015 PI Summer Graduate Program: Harmonic Analysis and Applications, July 20-August 7, 2015 - University of Maryland, College Park, MD
- Meeting of the Kentucky Chapter of the Mathematical Association of America, Mar 27-28, 2015 - Morehead State University, Morehead, KY
- Ohio River Analysis Meeting V, Feb 28 - Mar 1, 2015 - University of Cincinnati, Cincinnati, OH

## Presentations

- *Mathematics in the Online Classroom*, UM Faculty Research and Teaching Symposium, Oct 13, 2021 - Montevallo, AL
- *Management Strategies using Optimal Control for Disease Outbreaks*, UM Faculty Research and Teaching Symposium, Oct 13, 2021 - Montevallo, AL
- *Management Strategies using Optimal Control for Disease Outbreaks*, SIAM SEAS Meeting, Sept 18, 2021 - Auburn, AL
- *Cholesky Factorization*, Sienna College Mathematics Colloquium, Sept 28, 2020 - Loudonville, NY (virtual)
- *Approximations in the Direct Problem for Impedance Tomography*, AMS Special Session on Harmonic Analysis, PDE, and Applications, Joint Mathematics Meetings, Jan 2019 – Baltimore, MD
- *Compact Operators and You*, UK Mathematics Graduate Student Colloquium Aug 29, 2018 – Lexington, KY
- *Calderón's problem for rough conductivities*, Ohio River Analysis Meeting VIII Mar 24, 2018 – Lexington, KY

- *At Last: Astala & Päivärinta's Solution to Calderón's Problem*, University of Kentucky Analysis/PDE Seminar Nov 14, 2017 – Lexington, KY
- *When Are Two Directions Enough: The Gehring-Lehto Theorem*, UK Mathematics Graduate Student Colloquium Nov 8, 2017 – Lexington, KY
- *Quintessential Quadrature: A Look at the Trapezoid Rule*, UK Mathematics Graduate Student Colloquium Aug 31, 2016 – Lexington, KY
- *Lines! Surfaces! Solids! oh my!: A Review of Vector Calculus Theorems*, University of Kentucky Mathematics Graduate Student Colloquium Jan 20, 2016 – Lexington, KY
- *Nachman's Inverse Conductivity Result*, University of Kentucky Analysis/PDE Seminar (Qualifying Exam) Nov 24, 2015 – Lexington, KY
- *Frames: Capturing More Than a Kodak Moment*, University of Kentucky Mathematics Graduate Student Colloquium Sept 9, 2015 – Lexington, KY
- *Calderón's Problem and Scattering Theory*, University of Kentucky Mathematics Graduate Student Colloquium Apr 22, 2015 – Lexington, KY
- *Leave Your LIPS at Home: a New Look at Error in the Trapezoid Rule*, 2015 Meeting of the Kentucky Chapter of the Mathematical Association of America - Morehead, KY
- *Do the Wave: Applying Group Finite Elements to the Shallow Water Equations*, Poster Presentation: IMACS International Conference on Nonlinear Evolution Equations and Wave Phenomena: Computation and Theory, March 27, 2013 – Athens, GA
- *Do the Wave: Applying Group Finite Elements to the Shallow Water Equations*, Joint Mathematics Meetings, Jan 11, 2013 – San Diego, CA

## Professional Memberships

Society for Industrial and Applied Mathematics (SIAM)  
 SIAM Activity Group on Applied Mathematics Education(SIAG-ED)  
 SIAM Activity Group on the Analysis of PDE's (SIAG-APDE)  
 American Mathematical Society (AMS)  
 Mathematical Association of America (MAA)