

# 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

Lytle, Perry. *The Calderón problem for conductivities with truncated scattering transforms*. In preparation

### Ongoing Projects

Management Strategies using Optimal Control for Disease Outbreaks. Joint work with J. Blackwood, K. Dahlin, C. Edholm, L. Fox, M. Grogan, B. Hollingsworth, E. Howerton, S. Lenhart, K. Shea, & M. Walker.

## 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
  - 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 2021

*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

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: Ecological Modeling Across Multiple Scales  
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

- 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

- *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)