

# Brandon Chase Russell

Department of Mathematics  
University of Kentucky  
715 Patterson Office Tower  
Lexington, Kentucky, 40506-0027

Tel.: (859) 257-7216  
Fax: (859) 257-4078  
brandon.russell700(at)uky.edu  
www.ms.uky.edu/(tilde)cru227

## Education

- **University of Kentucky (UK)** Lexington, KY  
*Ph.D., Mathematics (anticipated)* May 2018
  - Advisor: Zhongwei Shen
  - Research Topic: Homogenization in perforated domains and with soft inclusions
  - Passed Ph.D. comprehensive exams in real analysis, partial differential equations, and numerical analysis
- **University of Kentucky** Lexington, KY  
*M.A., Mathematics* May 2015
- **Western Kentucky University (WKU)** Bowling Green, KY  
*B.A., Mathematics, Summa cum Laude, Honors College graduate* May 2013

## Publications

- B. Chase Russell. “Homogenization in perforated domains and interior Lipschitz estimates.” *Journal of Differential Equations*, 263:3396-3418, 2017.
- B. Chase Russell. “Homogenization with soft inclusions and interior Lipschitz estimates at every scale.” Under revision.

## Teaching Experience

- **University of Kentucky**  
*Primary Instructor*
  - MA 162, Finite Mathematics and Its Applications (Summer 2014)
  - MA 201, Mathematics for Elementary School Teachers (Spring 2015)
  - MA 111, Introduction to Contemporary Mathematics (Spring 2016, Spring 2017)
- **University of Kentucky**  
*Recitation Leader*
  - MA 110, Precalculus (Fall 2013)
  - MA 114, Calculus II (Spring 2014, Fall 2014)
  - MA 123, Business Calculus (Fall 2015)
  - MA 213, Multivariable Calculus (Fall 2016)
  - MA 137, Calculus for Life Sciences I (Fall 2017)

## Awards/Financial Support

Supported in part by NSF grant DMS-1600520	2017
College of Arts and Sciences Certificate for Outstanding Teaching, UK	2016
Supported in part by NSF grant DMS-1161154	2015
Henry M. and Zula G. Yarbrough Award in Mathematics, WKU	2013
Hugh F. and Katherine A. Johnson Award in Mathematics, WKU	2012
Robert C. Bueker Award in Mathematics, WKU	2011

## Talks and Presentations

- (January 2017) *Homogenization with Soft Inclusions*. Talk at Joint Mathematics Meetings MAA General Contributed Paper Session on Analysis, San Diego, CA.
- (November 2017) *Homogenization with Soft Inclusions*. Talk at WKU 37th Annual Mathematics Symposium, Bowling Green, KY.
- (October 2017) *Homogenization with Soft Inclusions and Interior Lipschitz Estimates at Every Scale*. Talk at University of Kentucky PDE/Analysis Seminar, Lexington, KY.
- (July 2017) *Global Well-Posedness for Zakharov-Schrödinger and Klein-Gordon-Schrödinger Systems*. Expository talk on paper of the same name at MSRI Summer School in Cortona, Italy.
- (March 2017) *Homogenization in Perforated Domains and Interior Lipschitz Estimates*. Talk at Ohio River Analysis Meeting VII at University of Cincinnati, OH.
- (November 2015) *Homogenization in Perforated Domains*. Qualifying talk at University of Kentucky PDE/Analysis Seminar, Lexington, KY.
- (April 2015) *De Giorgi-Nash Theorem*. Masters talk proving the De Giorgi-Nash Theorem at University of Kentucky, Lexington, KY.
- (April 2015) *Hölder Continuity of Weak Solutions*. Expository talk proving the De Giorgi-Nash Theorem at University of Kentucky Graduate Student Colloquium, Lexington, KY.
- (February 2013) *Formulating Mathematical Models to Analyze the Treatment of Chronic Wounds*. Poster presented jointly with N. Krishna and H. Pennington at Kentucky State Posters-at-the-Capitol, Frankfort, KY.
- (March 2013) *Using Partial Differential Equations to Model and Analyze the Treatment of a Chronic Wound with Oxygen Therapy Techniques*. Paper presented at Society for Industrial and Applied Mathematics Southeastern Sectional Meeting, Knoxville, TN.
- (November 2012) *Using Partial Differential Equations to Model and Analyze the Treatment of a Chronic Wound with Oxygen Therapy Techniques*. Poster presented at National Institute for Mathematical and Biological Synthesis Undergraduate Research Conference at the Interface of Biology and Mathematics, Knoxville, TN.

## Conferences/Workshops Attended

Ohio River Analysis Meeting VIII (upcoming), Lexington, KY	March 2018
Joint Mathematics Meeting, San Diego, CA	January 2018
37th Annual WKU Mathematics Symposium, Bowling Green, KY	November 2017
MSRI Summer Graduate School: Nonlinear dispersive PDE, Quantum Many Particle Systems and The World Between, Cortona, Italy	July 2017
Ohio River Analysis Meeting VII, Cincinnati, OH	March 2017
MSRI Summer Graduate School: Harmonic Analysis and Elliptic Equations on Real Euclidean Spaces and on Rough Sets, Berkeley, CA	June 2016
Midwest PDE Seminar, Cincinnati, OH	May 2016
Ohio River Analysis Meeting VI, Lexington, KY	March 2016
35th Annual WKU Mathematics Symposium, Bowling Green, KY	November 2015
SIAM Southeastern Sectional Meeting, Knoxville, TN	March 2013
Kentucky State Posters-at-the-Capitol, Frankfort, KY	February 2013
NIMBioS Undergraduate Research Conference at the Interface of Biology and Mathematics, Knoxville, TN	November 2012

## Outreach and Service

- MAA Session Moderator, January 2018
  - Introduced speakers and their talks during the Analysis II MAA General Contributed Paper Session at the Joint Mathematics Meetings in San Diego, CA
- Undergraduate Poster Session Judge, January 2018
  - Evaluated content of undergraduate research posters and assessed students on professionalism and presentation
- Graduate School Orientation Panelist, August 2017
  - Seasoned graduate students were invited to discuss their research experiences with new and incoming graduate students
- University of Kentucky FastTrack, Fall 2017
  - Freshmen move in early to participate in an intensive one week workshop to prepare for rigorous undergraduate course work
- Leader for Analysis Preliminary Study Group, Summer 2016
  - Hired by UK Math Department to prepare first year students for the Preliminary Exam
- Vice President of UK SIAM Chapter, Spring 2015-Spring 2017
  - Organized SIAM Chapter events and helped coordinate annual guest lecturers
- High School Math Day, November 2015
  - High school women from around the community come together to explore advanced yet accessible topics in mathematics not often encountered in high school curriculum, such as the RSA encryption algorithm
- Verbally and Mathematically Precocious Youth (VAMPY) Teaching Assistant, Summer 2012, Summer 2013
  - Middle school students from around the state spend three weeks living on the Western Kentucky University campus studying one mathematical subject in great depth

## Computer Experience

L<sup>A</sup>T<sub>E</sub>X, Java, MATLAB, Mathematica

## Professional Memberships

Society for Industrial and Applied Mathematics  
American Mathematical Society

(SIAM)  
(AMS)

## Contact Information for References

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| (1) Professor <i>Zhongwei Shen</i><br>Email: zshen2@uky.edu<br>Phone: (859) 257-3231<br>Address: 737 Patterson Office Tower<br>University of Kentucky<br>Lexington, KY, 40506-0027 | (2) Professor <i>Russell Brown</i><br>Email: russell.brown@uky.edu<br>Phone: (859) 257-3470<br>Address: 723 Patterson Office Tower<br>University of Kentucky<br>Lexington, KY, 40506-0027 | (3) Faculty lecturer <i>erica Whitaker</i> <sup>1</sup><br>Email: ewhitaker@uky.edu<br>Phone: (859) 257-6792<br>Address: 741 Patterson Office Tower<br>University of Kentucky<br>Lexington, KY, 40506-0027 |
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<sup>1</sup>Dr. Whitaker can specifically speak to my teaching experience and comment on my award-winning effectiveness.