

CHRISTOPHER S. FRAYER  
ASSISTANT PROFESSOR  
UNIVERSITY OF WISCONSIN, PLATTEVILLE

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EDUCATION

**University of Kentucky**, Lexington, Kentucky

- Ph.D., Mathematics, summer 2008
  - Dissertation Topic: “Scattering Theory on the Line with Singular Miura Potentials”
  - Advisor: Peter Perry
- M.A., Mathematics, May 2005

**Grand Valley State University**, Allendale, Michigan

- B.S., Summa cum Laude, Mathematics, May 2003
- Minors in Statistics and History

RESEARCH

**Research Interests:**

- Analysis and its applications to physics; most recently, the problem of scattering theory on the line with singular potentials. My dissertation gives a complete description of scattering on the line for singular Miura potentials.

AWARDS AND FELLOWSHIPS

**University of Kentucky**, Lexington, Kentucky

- Wimberly C. Royster Teaching Assistant Award, Spring 2007
- Steckler Fellowship, Spring 2006
- Kentucky Opportunity Fellowship, 2003-2004 and 2005-2006
- Ready Fellowship, Fall 2003 - Spring 2006

**Grand Valley State university**, Allendale, Michigan

- Niemeyer Award (The University’s most prestigious academic award) Spring 2003
- Outstanding Senior Award (Mathematics Department), Spring 2003
- Outstanding Graduate Award in Mathematics, Spring 2003
- Phi Kappa Phi (National Honor Society) Inductee, Spring 2002
- Pi Mu Epsilon (National Mathematics’ Honor Society) Inductee, Spring 2001

TEACHING EXPERIENCE

**Primary Instructor:** Duties included designing syllabi, writing and grading homework and exams, lecturing and leading class discussions, and holding office hours.

- *Math 111, Introduction to Contemporary Mathematics*, University of Kentucky, Fall 2005
- *Math 113, Calculus I*, University of Kentucky, Fall 2006
- *Math 322, Linear Algebra*, University of Kentucky, Spring 2007

- *Math 213, Calculus III*, University of Kentucky, Fall 2007
- *Math 214, Differential Equations*, University of Kentucky, Spring 2008

**Recitation Leader:** Duties included leading recitation sections, grading quizzes and exams, and holding office hours.

- *Math 113, Calculus I*, University of Kentucky, Fall 2003
- *Math 114, Calculus I*, University of Kentucky, Fall 2003 and Fall 2005

**Math Excel Leader:** Duties included writing challenging group worksheets, writing and grading homework and quizzes, facilitating a group learning environment, and holding office hours.

- *Math 193, Math Excel for Calculus I*, University of Kentucky, Fall 2004
- *Math 194, Math Excel for Calculus II*, University of Kentucky, Spring 2005
- Math Excel is a special version of the freshman calculus sequence designed to give capable and disadvantaged students the best chance to excel. Math Excel students participate in intensive problem-solving workshops for 6 hours per week, working with fellow students in a friendly, informal setting.

#### PRESENTATIONS AND TALKS

- “Solitons, the KdV Equation and Scattering Theory” University of Kentucky, Graduate Student Colloquium, Spring 2008
- “Searching for an Academic Job” University of Kentucky, Graduate Student Colloquium, Spring 2008
- “Solitons and the KdV Equation” Grand Valley State University, Departmental Seminar, Spring 2008
- “Euler and the Basel Problem” Cabrini College, Spring 2008
- “Solving the KdV Equation” College of Mount Saint Joseph, Spring 2008
- “Scattering Theory on the Line with Singular Miura Potentials” Joint Meetings, San Diego, January 2008
- “Direct Scattering with Singular Potentials” Pan-American Advanced Studies Institutes, Santiago Chile, August 2006
- “The Hausdorff Measure of a Fractal” University of Kentucky, Graduate Student Colloquium, Spring 2006
- “Sturm-Liouville Operators with Singular Potential” University of Kentucky, Seminar, Summer 2006
- “Convergence of Neumann Series in Higher Norms” University of Kentucky, Seminar, Spring 2005

#### PUBLICATIONS

- Inverse Scattering for Miura Potentials, I, with Rostyslav Hryniv, Jaroslav Mykytyuk and Peter Perry, in progress
- Some Geometry of the Hausdorff Metric, Furman University Electronic Journal of Undergraduate Mathematics, Volume 8, 2003
- Properties of Divisor Graphs, Rose Hulman Undergraduate Mathematics Journal, Volume 4, 2003 issue 2

#### CONFERENCES

##### Past Conferences

- Joint Meeting of the AMS and MAA, San Diego, California, 6-9 January 2008

- Pan-American Advanced Studies Institute 2006, Analysis and Probability in Quantum Physics, Santiago Chile, July 24 - August 4 2006

#### DEPARTMENTAL SERVICES

**Development of an Academic Job Search Manual**, University of Kentucky, Spring 2008

- I created a job search manual to assist future graduates with their academic job search.

**Graduate Student Colloquium Organizer**, University of Kentucky, Spring 2004-Spring 2006

- Duties included scheduling speakers, advertising the upcoming talks, and providing refreshments.

#### PROFESSIONAL MEMBERSHIPS

**American Mathematical Society**, Member, 2003-present

#### REFERENCES

Peter Perry, University of Kentucky, perry@ms.uky.edu

Peter Hislop, University of Kentucky, hislop@ms.uky.edu

Russell Brown, University of Kentucky, russell.brown@uky.edu