

EDUCATION

Northwestern University, Evanston, IL

Ph.D. in Applied Mathematics, December 2000

Title: *Localization of Oscillons and Periodically Forced Waves*

Advisor: Hermann Riecke

M.S. in Applied Mathematics, December 1997

Utah State University, Logan, UT

B.S. in Mathematics, Magna Cum Laude, June 1995

EMPLOYMENT RECORD AND EXPERIENCE

Elmhurst College, Elmhurst, IL

Assistant Professor Sept. 2000-present

Northwestern University, Evanston, IL

Research Assistant 1996-99

Teaching Assistant 1997-99

Graduate Student Fellow 1995-96, 1999-2000

Preparing Future Faculty Fellow 1998-99

Oakton Community College, Skokie, IL

Calculus Instructor Summer 1999

AWARDS, GRANTS, AND CONTRACTS

External Grants

SBC Ameritech (2002-2004), \$18,850

Development of Personal Digital Assistant Enhanced Calculus
(Departmental Grant)

NCUR/Lancy Grant (2002-2003), \$22,500 [faculty stipend, \$3500]

Issues related to the expansion of O'Hare International Airport
Proposal written by Jon Johnson and Dianne Chambers

Internal Grants

Elmhurst College Faculty Research Grant (2003), \$3500

Investigating the Effect of Periodic Forcing on Localized Traveling Waves Coupled to an Additional Mode

Elmhurst College Departmental Initiative Grant (2001), \$2500

Development of a Project-Based Technology Course for Preservice Mathematics Teachers

Awards and Fellowships

Illinois Section Project NExT Fellow (2003)

Funded Participant and Presenter at Association for Women in Mathematics (AWM)

Workshop for Women Recent Ph.D.'s and Graduate Students (2001)

Cabell Dissertation Year Fellowship (1999-2000)

Committee on Institutional Cooperation/Women in Science and Engineering (CIC/WISE)

Travel Award (1999)

Walter P. Murphy Graduate Student Fellowship (1995-96)

SCHOLARLY ACTIVITY

Refereed Journal Publications

C. Crawford, H. Riecke, *Tunable front interaction and localization of periodically forced waves*, Phys. Rev. E **65** 066307 (2002)

C. Crawford, H. Riecke, *Oscillon-type structures and their interaction in a Swift-Hohenberg model*, Physica D **129** 83 (1999)

Peer-Reviewed International Reports

C. Crawford, *Uranium metal slabs moderated with polyethylene, Plexiglas, and Teflon*, HEU-MET-FAST-007, International Handbook of Evaluated Criticality Safety Benchmark Experiments, **II** (1995), NEA/NSC/DOC(95)03/**II**.

C. Crawford, *Experiments with boron-poisoned highly enriched uranyl nitrate solution*, HUE-SOL-THERM-006, International Handbook of Evaluated Criticality Safety Benchmark Experiments **II**, (1995), NEA/NSC/DOC(95)03/**II**.

Works in Progress

Modulation of localized waves coupled to an additional mode.

Research Presentations

Tunable Front Interaction and Localization of Periodically Forced Waves, Society of Industrial and Applied Mathematics Annual Meeting, July 2001, San Diego, CA.

Localization of Periodically Forced Waves, Illinois Section of the Mathematical Association of America Annual Meeting, March 2001, Urbana-Champaign, IL (invited).

Localization of Waves by Temporal Modulation, Annual Meeting of the Division of Fluid Dynamics, American Physical Society, November 1999, New Orleans, LA.

Localized Traveling Waves under the Influence of Temporal Modulation, Fifth SIAM Conference on Applications of Dynamical Systems, May 1999, Snowbird, UT.

Tunable front interaction in periodically forced waves [Poster], Nonlinear Dynamics and Pattern Formation Conference, 2000, Austin, TX.

Pedagogical Presentations

Using PDA's in the Calculus Sequence, Annual Meeting of the Illinois Council of Teachers of Mathematics, October 2004, Springfield, IL. [Co-presenter: Dr. Abigail Hoit]

Cooperatively Developing and Teaching a Technology Course for Preservice Teachers, Fourteenth Annual International Conference on Technology in Collegiate Mathematics, November 2001, Baltimore, MD. [Co-presenters: Dr. Abigail Hoit and Tiffany Harms (student)]

Elmhurst College Presentations

Card Tricks and the Ceiling Function, Elmhurst College Department of Mathematics and Physics Seminar, March 2005, Elmhurst, IL.

Patterns and Pulses: Stripes, Squares, and Oscillons in a Model Equation, Elmhurst College Board of Trustees, March 2004, Elmhurst, IL.

Interacting Fronts and Localized Pulses of Periodically Forced Waves, Elmhurst College Department of Mathematics and Physics Seminar, March 2002, Elmhurst, IL.

Patterns and Pulses: Stripes, Squares, and Oscillons in a Model Equation, Elmhurst College Women's Faculty Research Symposium, March 2001, Elmhurst, IL.

Patterns and Pulses: Stripes, Squares, and Oscillons in a Model Equation, Elmhurst College Research Forum, October 2001, Elmhurst, IL.

Patterns and Pulses: Stripes, Squares, and Oscillons in a Model Equation, Elmhurst College Department of Mathematics and Physics Seminar, September 2000, Elmhurst, IL.

Advisor to Student Presentations at National Meetings (Conferences Attended)

National Conference on Undergraduate Research, March 2003, Salt Lake City, UT

Student Presentation: *O'Hare Airport Expansion: A Mathematical Model and Simulation Comparison of Resulting Traffic Flow* by Jennifer Szostak

National Joint Meeting of Pi Mu Epsilon (PME) and the Mathematical Association of America (MAA), August 2002, Burlington, VT.

Student Presentation: *The Effect of 4:1 Forcing: Kicking the System:* by Benjamin Blaiszik

Conferences and Workshops Attended

Illinois Section of the Mathematical Association of America Annual Meeting, March 2004, Schaumburg, IL

Project NExT Session: *Using Palm PDA's in Introductory Mathematics Courses*

Illinois Section of the Mathematical Association of America Annual Meeting, March 2003, Jacksonville, IL

Project NExT Session: *Assessment Forum*

National Conference on Undergraduate Research, April 2002, Whitewater, WI.

Mathematical Association of America Annual Summer Meeting (Mathfest), August 2001, Madison, WI.

Workshop: *Teaching Workshop for Graduate Students and New Faculty*

Society of Industrial and Applied Mathematics (SIAM) Annual Meeting, July 2001, San Diego, CA.

Workshop: *Association for Women in Mathematics (AWM) Workshop for Women Recent Ph.D.'s and Graduate Students*

SIAM Conference on Applications of Dynamical Systems, May 2001, Snowbird, UT.

Northwestern University/University of Chicago Nonlinear Workshop, May 2001, Evanston, IL.

Venier Computer and Graphing Calculator Workshop, April 2001, Naperville, IL

Illinois Section of the Mathematical Association of America Annual Meeting, March 2001, Urbana-Champaign, IL

Workshop: *MAA/NSF Grant Writing Workshop*

Committee on Institutional Cooperation/Women in Science and Engineering (CIC/WISE) Leadership Conference, October 1999, Indianapolis, IN

Intensive Summer Course on Nonlinear Oscillations, Waves, and Patterns, July 1997, Cork, Ireland.

PROFESSIONAL SOCIETIES AND ORGANIZATIONS

American Mathematical Society	1999-present
Association for Women in Mathematics	1999-present
Mathematical Association of America	1999-present
Society for Industrial and Applied Mathematics	1996-present
Pi Mu Epsilon	2001-present
Phi Kappa Phi	2002-present
Illinois Project NExT	2003-present

INSTITUTIONAL SERVICE

External

Associated Colleges of the Chicagoland Area (ACCA)

Mathematics Division

Co-Secretary/Chair-Elect with Abigail Hoit

2003-2004

Chair

2004-present

College-Wide

VPAA/Dean of Faculty Search Committee

present

Faculty Council (Elected)

2004-present

Assessment Committee (Elected)

2003-present

Research and Performance Showcase Committee

2002-present

Student Affairs Council (Elected; Chair 2003-2004)

2002-2004

January-Term Committee

2001-02

Mathematics Department

Co-Advisor for the Math Club

2003-present

Mathematics and Physics Seminar Organizer

2002-2004

Mathematics and Science Academy Workshop Presenter

Summers 2002-2005

Mathematical Software Tools Course Development

2001

Advisor for Seven Senior Research Projects/Papers