Curriculum Vitae

Ellen Weld
413 N. Salisbury Apt D
West Lafayette, IN 47906
(765) 744-0916

Education

Doctor of Philosophy, Expected May 2020
Purdue University, West Lafayette, Indiana
Advisor: Marius Dadarlat
Dissertation Topic: Connective Bieberbach Groups

Bachelor of Science, May 2013
Ball State University, Muncie, Indiana
Major: Mathematics
Minor: Spanish

Research Experience

Purdue University, Nov. 2016 — Present
Operator Algebras, Bieberbach Group C^*-algebras
Supervisor: Marius Dadarlat, Purdue University
Description: Characterizing the connectivity and investigating the C^*-rigidity of Bieberbach group C^*-algebras.

Louisiana State University REU, June — Aug. 2012
Braid Theory, Knot Floer Homology
Supervisor: David Shea Vela-Vick, Louisiana State University
Description: Worked with a team that developed an algorithm for computing the Knot Floer Homology of an arbitrary braid word.

Ball State University, Aug. 2010 — May 2011
Combinatorics, Modular Magic Sudoku Solutions
Supervisor: John Lorch, Ball State University
Description: Computed the number of order 9 modular magic sudoku solutions.

Publications

M. Dadarlat and E. Weld. Connective Bieberbach groups. Preprint (2019). arXiv:1906.00942.

J. Lorch and E. Weld. Modular magic sudoku. In *Involve*, 5(2):173-186, 2012. DOI: 10.2140/involve.2012.5.173

Other Writings

E. Weld. *An Unofficial Guide to Math 16020* [PDF File]. 2019. Retrieved from `http://www.math.purdue.edu/~weld/Writings/Math16020TextbookSpring2019.pdf`
Description: A comprehensive collection of mathematical concepts and examples from Math 16020 (an applied calculus II course offered at Purdue University) divided into 37 lessons, the goal of which is to provide students with thorough

explanations of the topics involved, in addition to providing a repository of examples with which to explore these ideas.

Conferences and Workshops

- QLA Meets QIT, West Lafayette, Indiana, Nov. 2019
- Wabash Mini-Conference, Indianapolis, Indiana, Sept. 2019
- ICM Operator Algebras Satellite Conference, Florianopolis, Brazil, July 2018
- Great Plains Operator Theory Symposium, Miami University, May 2018
- Noncommutative Geometry and Operator Algebras, WWU Munster, May 2018
- Workshop on Computability of K-theory for C^*-algebras, Texas A&M University, Feb. 2018
- Quantum Symmetries: Subfactors and Planar Algebras, Maui, Hawaii, July 2017
- Subfactors: planar algebras, quantum symmetries, and random matrices, MSRI Summer School, Berkeley, California, June 2017
- East Coast Operator Algebra Symposium, Loyola University, Oct. 2016

Presentations

- Subfactor Seminar, Vanderbilt University, Apr. 2020
- Purdue Graduate Research Day, Purdue University, Nov. 2019
- Wabash Mini-Conference, IUPUI, Sept. 2019
- Modern Analysis and Geometry Seminar, IUPUI, Feb. 2019
- Junior Operator Algebra Seminar, Purdue University, Feb. 2019
- Student Colloquium, Purdue University, Feb. 2019
- Junior Operator Algebra Seminar, Purdue University, Oct. 2018
- Workshop on Computability of K-theory for C^*-algebras, Texas A&M University, Feb. 2018
- Junior Operator Algebra Seminar, Purdue University, Feb. 2018
- Purdue Graduate Research Day, Purdue University, Nov. 2017
- Junior Operator Algebra Seminar, Purdue University, Oct. 2017
- Faculty Colloquium Series, Ball State University, Oct. 2016
- Student Colloquium, Purdue University, Feb. 2016
- Student Colloquium, Purdue University, Nov. 2015

Teaching Experience

Course Instructor, Purdue University

MA 16010: Applied Calculus I, *Fall 2019*

MA 16020: Applied Calculus II, *Spring 2019, Fall & Spring 2018, Fall & Spring 2017*

MA 15800: Precalculus - Functions and Trigonometry, *Fall 2015*

Description: Prepared and gave lectures over course material MWF for 2 sections. Wrote and graded in-class quizzes.

Recitation Instructor (I), Purdue University
MA 16100: Plane Analytic Geometry and Calculus I, *Spring 2015*
MA 16200: Plane Analytic Geometry and Calculus II, *Fall 2014*
Description: Answered homework questions, gave and graded quizzes TR for 2 sections.

Recitation Instructor (II), Purdue University
MA 16600: Analytic Geometry and Calculus II, *Spring 2014*
MA 16500: Analytic Geometry and Calculus I, *Fall 2013*
Description: Answered homework questions, gave and graded quizzes R for 2 sections.

Coordinating Grader, Purdue University
MA 51100: Linear Algebra with Applications, *Summer 2019*
Description: Graded and created solutions to homework. Coordinated a group of graders and generated uniform grading criteria.

Grader, Purdue University
MA 26100: Multivariate Calculus, *Summer 2014*
Description: Graded homework. Wrote and graded quizzes.

Programming Experience

LON-CAPA, Purdue University
MA 37300: Financial Mathematics, *Fall & Summer 2016*
MA 16020: Applied Calculus II, *Spring 2016, Summer 2015*
Description: LON-CAPA is an online homework system originally developed by Michigan State University. Converted static homework problems into dynamic questions having several different versions. LON-CAPA employs Perl, HTML, and LaTeX.

Leadership and Organization

Leadership, Purdue University
Purdue Graduate Student Government Senator, Aug. 2019 — Present
Description: Represent the interests of Purdue graduate math students in the Purdue Graduate Student Government, the officially recognized advocate of Purdue graduate students.
Graduate Student Representative, June 2016 — May 2017
Description: Acted as an intermediary between Purdue graduate math students and the Purdue math department. Organized departmental social events including a visit weekend for incoming students.

Organization, Purdue University
Bridge to Research, Aug. 2016 — May 2017
Description: Invited Purdue math professors to speak to younger graduate students about research interests.
Student Colloquium, Aug. 2016 — May 2017
Description: Invited Purdue math students to give talks on an interesting math topic of their choosing.

Honors and Awards

Kunze RA Fellowship, Jan. 2020 — May 2020
Goldwater Scholarship, Mar. 2012
Honors Distinction Scholarship, Full tuition for 8 semesters, Aug. 2009 — May 2013
Math Science Faculty Honors, Aug. 2012
Excellence in Calculus, Oct. 2010
Dean's List, Aug. 2009 — May 2013