

Erich C. Jauch | Curriculum Vitæ

Coulter Science Center 318, 501 Westminster Ave – Fulton, MO 65251
☎ (815) 830 3757 • 📠 (573) 592 5501 • ✉ erich.jauch@wcmo.edu
🌐 ecjauch.com

Education

Iowa State University <i>Doctorate of Philosophy in Mathematics</i>	Ames, IA 2016–2020
The University of North Dakota <i>Masters of Science in Mathematics</i>	Grand Forks, ND 2014–2016
The University of Illinois at Urbana–Champaign <i>Bachelors of Science</i>	Champaign, IL 2012–2014
Illinois Valley Community College <i>Associates of Science, Thomas J. McCormack Scholar</i>	Oglesby, IL 2010–2012

Research

Doctoral Thesis

Title: *A study of Galois and flag orders*

Advisor: Jonas T. Harwig

Description: This dissertation had three main focuses. Firstly, describing an alternating analogue of $U(\mathfrak{gl}_n)$ and its representations. Second, a technique for converting a Galois ring to a Galois order via localization. Finally, it described maps between different standard flag orders with related data.

Masters Thesis

Title: *Galois Embeddings*

Supervisor: Anthony Bevelacqua

Description: This thesis focused on extending Galois extensions to new Galois extensions that remained Galois over the original field. In particular, it focused on quadratic extensions over \mathbb{Q} .

Grants

College Preparedness Grant (with Dr. K. Rothrock) **NCTM & MET**
National Council of Teachers of Mathematics, \$8,000 *Spring 23*

This grant is to fund a pilot program we are looking to begin at Stanley-Boyd High School to improve the student readiness for college level mathematics.

Student-Faculty Research Project Grant **UWEC**
Office of Research and Sponsored Programs, \$2,000 *22-23 Academic Year*

This is an internal grant to fund research projects between undergraduate students and faculty.

Simmons Travel Grant (Wait-listed)
American Mathematical Society *2021*

Papers

[3]: *Hilbert-Samuel Polynomials for Algebras with Special Filtrations* w/ J.T. Hartwig & J. Schwarz (In Preparation)

[2]: *Maps between standard and principal flag orders* (Submitted), <https://arxiv.org/abs/2208.13117>

[1]: *An extension of $U(\mathfrak{gl}_n)$ related to the alternating group and Galois orders*, *Journal of Algebra* (2021), <https://doi.org/10.1016/j.jalgebra.2020.10.017>

Presentations

- [14]: Selected to present at the 56th Wisconsin Mathematics Council Annual Conference, *May 2024*
- [13]: Invited talk at the AMS Central Spring Sectional Meeting, *March 2022*
- [12]: Invited talk at the AMS Southeastern Spring Sectional Meeting, *March 2021*
- [11]: Invited talk at University of Iowa in their algebra seminar, *October 2019*
- [10]: Invited talk at University of Texas – Arlington in their AGANT (Algebraic Geometry, Algebra, and Number Theory) seminar, *October 2019*
- [9]: Invited talk at University of South Alabama in their colloquium series, *October 2019*
- [8]: Invited talk at St. Olaf College in their Research Seminar, *September 2019*
- [7]: Talk at the AMS Central Fall Sectional in the Contributed Papers Session on Algebra, Geometry, and Lie Theory, *September 2019*
- [6]: Talk at Iowa State Algebra and Geometry Seminar Seminar, *September 2019*
- [5]: Invited talk at the AMS Southeastern Spring Sectional in the Special Session on Geometric and Combinatorial Aspects of Representation Theory, *March 2019*
- [4]: Talk at the Iowa State Algebra and Geometry Seminar, *March 2019*
- [3]: Poster at Escolá de Algebra in Campinas, São Paulo, Brasil, *December 2018*
- [2]: Talk at Iowa State Combinatorics/Algebra Seminar, *November 2018*
- [1]: Talk at Iowa State Combinatorics/Algebra Seminar, *March 2017*

Conferences & Workshops

Wisconsin Mathematics Council 56th Annual Conference <i>Green Lake Conference Center</i> Presented work from grant funded project regarding mathematical readiness of seniors in high school.	Green Lake, WI <i>May 2024</i>
MAA Missouri Sectional Meeting <i>William Jewel College</i> Inducted into the Missouri Section of Project NExT	Liberty, MO <i>April 2024</i>
AMS Fall Southeastern Sectional Meeting <i>University of South Alabama, Funded</i> Organized the special session <i>New Directions in Noncommutative Algebras and Representation Theory</i> .	Mobile, AL <i>October 2023</i>
Joint Mathematics Meetings 2023 <i>Hynes Convention Center, Funded</i> Presented research results and participated in professional development.	Boston, MA <i>January 2023</i>
AMS Spring Central Sectional Meeting <i>Formerly Purdue University</i>	Virtual <i>March 2022</i>
AMS Spring Southeastern Sectional Meeting <i>Formerly Georgia Institute of Technology</i>	Virtual <i>March 2021</i>
Conference on Lie and Jordan Algebras, Their Representations and Applications- IX Chengdu, China <i>Tianyuan Mathematical Center in Southwest China, Funded</i>	Chengdu, China <i>January 2020</i>
AMS Fall Central Sectional Meeting <i>University of Wisconsin</i>	Madison, WI <i>September 2019</i>
MSRI Summer School 850 – Representation Stability <i>MSRI, Funded</i>	Berkeley, CA <i>June 2019 – July 2019</i>

Selected to participate in a two-week intensive research school at MSRI conducted by experts in the area of representation stability.

AMS Southeastern Spring Sectional Meeting Auburn, AL
Auburn University March 2019

Representations of simple finite-dimensional and affine Lie algebras St. John's, Newfoundland
Atlantic Algebra Centre – Memorial University, Funded January 2019

A week long mini-course covering topics in the study of representations of Lie algebras.

XXV Escolá de Aglebra Campinas, São Paulo
Instituto de Matemática – Universidade Estadual de Campinas, Funded December 2018

The largest conference dedicated to algebra held biannually in Brasil.

AMS Spring Central Sectional Meeting Columbus, OH
Ohio State University March 2018

Experience

Academia

Assistant Professor Fulton, MO
WESTMINSTER COLLEGE (MISSOURI) 2023–Current
Provided instruction for a variety of courses, and provided service to the department and college via committee work.

Math Pathways Coordinator Fulton, MO
WESTMINSTER COLLEGE (MISSOURI) 2023–Current
Oversaw the courses in the math pathway including course development, hiring and supervising of adjunct instructors, and determining transfer equivalencies. Provided additional service college via committee work.

Visiting Assistant Professor Eau Claire, WI
UNIVERSITY OF WISCONSIN – EAU CLAIRE 2020–2023
Provided instruction for a variety of courses, and provided service to the department via committee work.

Independent Learning Math 109 Course Facilitator Virtual
UNIVERSITY OF WISCONSIN – EXTENDED CAMPUSES 2021–2023
Served as the instructor for a fully online and self-paced course in Algebra for Calculus through the Independent Learning program. Assisted students learning and graded their work.

Lead Teaching Assistant Ames, IA
IOWA STATE UNIVERSITY 2019–2020
Administrative position that included scheduling graduate student teaching assignments, organizing first-year teaching orientation, observing the first-years' teaching to provide feedback, and serving as the coordinator of the Math Department Computer Lab.

Graduate Teaching Assistant Ames, IA
IOWA STATE UNIVERSITY 2016–2020
Provided instruction in various recitation and instructor-of-record courses.

Math Learning Center Instructor Oglesby, IL
ILLINOIS VALLEY COMMUNITY COLLEGE Summer 2016
Provided instruction for several remedial mathematics courses at IVCC.

Professional Tutor Oglesby, IL
ILLINOIS VALLEY COMMUNITY COLLEGE Summer 2016
Tutored mathematics students at IVCC.

Elementary Mathematics Summer Camp Instructor Oglesby, IL
ILLINOIS VALLEY COMMUNITY COLLEGE Summer 2016
Provided instruction for a select group of 4th grade students a preparatory course for the next school year.

Graduate Teaching Assistant Grand Forks, ND
UNIVERSITY OF NORTH DAKOTA 2014–2016
Served as the instructor of record for courses in College Algebra.

Part-Time Instructor

UNIVERSITY OF NORTH DAKOTA
Provided instruction for Calculus I.

Grand Forks, ND
Summer 2015

Math Learning Center Instructor

ILLINOIS VALLEY COMMUNITY COLLEGE
Provided instruction for several remedial mathematics courses at IVCC.

Oglesby, IL
Summer 2014

Mathematics Student Worker

UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN
Served as a grader and provided additional instruction during help hours.

Champaign, IL
2012-2013

Math Learning Center Student Worker

ILLINOIS VALLEY COMMUNITY COLLEGE
Assisted in the instruction for several remedial mathematics courses at IVCC.

Oglesby, IL
2010-2012

Additional Experience.....

Summer Internship

ILLINOIS DEPARTMENT OF TRANSPORTATION
Worked drafting road repaving plans using CAD software, and computed material quantities and costs.

Ottawa, IL
Summer 2014

Summer Internship

ILLINOIS DEPARTMENT OF TRANSPORTATION
Worked drafting bridge repainting and maintenance plans using CAD software, and computed material quantities and costs.

Ottawa, IL
Summer 2013

Courses Taught

Instructor of Record Courses.....

- [12]: Advance Calculus
- [11]: Modern Algebra
- [10]: Quantitative Reasoning for Mathematical Problem Solving (x4)
- [9]: Linear Algebra
- [8]: Introduction to Mathematical Thinking
- [7]: Calculus II (x4)
- [6]: Trigonometry
- [5]: A Short Course in Calculus (x2)
- [4]: Algebra for Calculus (x11)
- [3]: High School Algebra
- [2]: Calculus I (x5)
- [1]: College Algebra (x6)

Independent Studies.....

- [1]: Mathematics Seminar

Teaching Assistant Courses.....

- [2]: Calculus II (Team-Based Learning Course)
- [1]: College Algebra

Lab Courses.....

- [4]: Intermediate Algebra – Foundations of STEM Math
- [3]: Foundations of Algebra
- [2]: Intermediate Algebra

[1]: Basic Algebra

Grading Courses.....

[7]: Calculus III

[6]: Calculus I

[5]: Intermediate Abstract Algebra *I also assisted in leading a problem discussion session associated with this course.*

[4]: Graduate Abstract Algebra II

[3]: Graduate Abstract Algebra I *I also organized and lead a qualifying exam prep course associated with this course.*

[2]: Discrete Mathematics for Business and Social Sciences

[1]: Calculus for Business and Social Sciences

Awards and Honors

Awards.....

2024: Missouri Section of Project NExT Fellow *Accepted into the Missouri Section of Project NExT, a professional development program for early career mathematicians in higher education.*

2019: Aggie Ho Teaching Award *The highest teaching award a math graduate student can receive at Iowa State.*

2018: Iowa State University Teaching Excellence Award *Awarded for outstanding teaching accomplishments in a graduate program*

2015: Ronald C. & Ann C. Bzoch Scholarship *Issued to students of exceptional caliber in mathematics at the University of North Dakota*

2012: Thomas J. McCormack Scholar *Highest honor a student can receive at Illinois Valley Community College*

2012: Paul Simon Student Essay Contest Winner *Winner reads their essay at that years commencement for Illinois Valley Community College*

Honor Societies.....

2013: Phi Sigma Theta *National Honor Society for Undergraduates*

2013: Tau Sigma *National Honor Society for Transfer Students*

2011: Sigma Kappa Delta *National English Honor Society for Two-Year College Students*

2011: Phi Theta Kappa *National Honor Society for Two-Year College Students*

Memberships

- o American Mathematical Society
- o Association for Women in Mathematics
- o Mathematical Association of America

Service & Trainings

Admissions Committee **Fulton, MO**
WESTMINSTER COLLEGE (MISSOURI) 23-24 Academic Year

PEP: Inclusive Active Learning in Undergraduate Mathematics **Boston, MA**
JMM 2023 Spring 2023

PEP: Getting Started in the Scholarship of Teaching and Learning **Boston, MA**
JMM 2023 Spring 2023

JMM Workshop: Equitable and Active Strategies That You Can Try in Your Next Class **Boston, MA**
JMM 2023 Spring 2023

JMM Workshop: Inquiry-Oriented Linear Algebra: Exploring (infinite) solution sets JMM 2023	Boston, MA <i>Spring 2023</i>
JMM Workshop: Inquiry-Oriented Linear Algebra: Exploring Determinants JMM 2023	Boston, MA <i>Spring 2023</i>
Teaching Academy 2 CETL, <i>University of Wisconsin - Eau Claire</i> A special training for instructors in the second or third year of teaching at UWEC.	Eau Claire, WI <i>Fall 2022</i>
Student Recruitment Committee Member MATHEMATICS DEPARTMENT, <i>University of Wisconsin - Eau Claire</i>	Eau Claire, WI <i>2021-2023</i>
Early Career STEM Educators Workshop WAS - WOMEN AND SCIENCE PROGRAM, <i>University of Wisconsin System</i>	Eau Claire, WI <i>Summer 2021</i>
Student Evaluation Improvement Workgroup Member MATHEMATICS DEPARTMENT, <i>University of Wisconsin - Eau Claire</i> Selected to work to develop new and improved student evaluations of instructors for the mathematics department.	Eau Claire, WI <i>Summer 2021</i>
Co-Coordinator for Math 109 MATHEMATICS DEPARTMENT, <i>University of Wisconsin - Eau Claire</i> Worked to coordinate the instruction of Math 109 for the Spring semester.	Eau Claire, WI <i>Spring 2021</i>
Teaching Academy CETL, <i>University of Wisconsin - Eau Claire</i> A special training for new instructors at UWEC.	Eau Claire, WI <i>Fall 2020</i>
Tutor for Student Veterans MATHEMATICS DEPARTMENT, <i>Iowa State University</i>	Ames, IA <i>Fall 2019</i>
President MATHEMATICS GRADUATE STUDENT ORGANIZATION, <i>Iowa State University</i>	Ames, IA <i>2018-2019 Term</i>
Communications Officer MATHEMATICS GRADUATE STUDENT ORGANIZATION, <i>Iowa State University</i> Handled the majority of communication based duties including: organizing the speakers for Math Career Day, distributing meeting minutes, and keeping the webpage up to date. I handled a major remodel of the webpage during this time.	Ames, IA <i>2017-2018 Term</i>
Chair of the Outreach Committee ASSOCIATION FOR WOMEN IN MATHEMATICS STUDENT CHAPTER, <i>Iowa State University</i>	Ames, IA <i>Spring 2018</i>
Essential Studies Committee Member ESSENTIAL STUDIES, <i>Univeristy of North Dakota</i> Worked with a committee of faculty members to evaluate the general education requirements. I additionally served on a subcommittee to restructure general education requirements for the university.	Grand Forks, ND <i>2015-2016 Term</i>

Computer skills

Advance: Adobe Acrobat, L^AT_EX, MacOS, Microsoft Windows, WebWork

Intermediate: ALEKS, JAVA, Knewton Alta, MyMathLab, WebAssign, Terminal-based computing,

Basic: SAGE, Adobe Illustrator