Chad Berner

Mathematics and Statistics

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https://chadmberner.com/

Education
PhD in Mathematics: August 2021-May 2025
Dissertation: *Frame-like Fourier expansions for finite Borel measures*
Advisor: Eric Weber
Iowa State University, Ames, Iowa

MS in Mathematics: August 2020-May 2021
Creative component: *Shift Invariant Subspaces on Locally Compact Abelian Groups*
Advisor: Joseph Iverson
Iowa State University, Ames, Iowa

BS in Mathematics with magna cum laude: August 2017-May 2021
Iowa State University, Ames, Iowa

Academic Employment
Assistant Teaching Professor: August 2025-Present
Missouri University of Science and Technology

Lead Teaching Assistant: August 2023-May 2024
Assisting with teaching development of graduate students and facilitating communication among
graduate students and faculty
Iowa State University, Ames, Iowa, Department of Mathematics

Teaching Assistant: August 2021-May 2025
Iowa State University, Ames, Iowa, Department of Mathematics

Science Bound Geometry and Pre-Calculus Instructor: Summer 2018, 2019, 2020
Teaching underrepresented groups of high school students planning on enrolling in university
Iowa State University, Ames, Iowa, School of Education

Teaching Experience
Instructor of Record:
Calculus 1A: Fall 2025

Calculus 1: Fall 2025

Matrices and Linear Algebra: Spring 2025
Average and median student rating: 3.74/5; 4/5

Survey of Calculus: Fall 2024
Average and median student rating: 4.15/5; 5/5

Matrices and Linear Algebra: Fall 2023
Average and median student rating: 4.38/5; 5/5

Survey of Calculus: Spring 2023
Average and median student rating: 4.44/5; 4.5/5

Survey of Calculus: Spring 2022
Average and median student rating: 3.75/5; 4.5/5

Guest Lecturer:
Fourier Analysis and Applications: Fall 2024
University of Iowa, Iowa City, Iowa

Teaching Assistant:
Real Analysis: Fall 2022

Calculus I: Fall 2021

Geometry I: Fall 2021

Publications
Alpay, Berner, and Weber
The Kaczmarz Algorithm in Hilbert C* modules
Expositiones Mathematicae
Fall 2025, arxiv DOI

Berner, Giddings, Herr, and Jorgensen
Fourier series for two-dimensional singular-fibered measures
Journal of Mathematical Analysis and Applications
Summer 2025, arxiv DOI

Berner and Weber
Operator orbit frames and frame-like Fourier expansions
Accepted for publication in book series Operator Theory: Advances and Applications
Spring 2025, arxiv

Berner, Herr, Jorgensen, and Weber
Fourier series for singular measures in higher dimensions
Journal of Fourier Analysis and Applications
Fall 2024, arxiv DOI

Berner
Frame-like Fourier expansions for finite Borel measures on R
Pure and Applied Functional Analysis
Fall 2024, arxiv DOI

Preprints

Berner
Sequences that do frame reconstruction
Fall 2025, arxiv

Invited Talks

Operator orbit frames and frame-like Fourier expansions: March 2025
Online Seminar, New classes of spectral duality, inverse problems, operators, analysis, and algorithms

Operator orbit frames and frame-like Fourier expansions: October 2024
University of South Dakota, Vermillion, South Dakota, Math Department Seminar

Frame-like Fourier expansions for finite Borel measures: July 2024
Codex Seminar, youtube

Contributed Talks

Operator orbit frames and frame-like expansions: November 2024
Chapman University, Orange, California, Advances in Operator Theory with Applications to Mathematical Physics

Operator orbit frames and frame-like expansions: October 2024
Saint Louis University, Saint Louis, Missouri, Frame Theory days

Normalized Cauchy transform for higher dimensions: June 2024
University of Nebraska-Lincoln, Lincoln, Nebraska, Great Plains Operator Theory Symposium

Frame-like Fourier expansions for finite Borel measures on R: February 2024
Iowa State University, Ames, Iowa, Analysis and Probability Seminar

Fourier series for singular measures on real spaces: April 2023
Iowa State University, Ames, Iowa, Graduate Student Research Symposium

Fourier series for singular measures on R: March 2023
University of Nebraska-Lincoln, Lincoln, Nebraska, Functional Analysis Seminar

Fourier analysis from singular measures: Fall 2022
Iowa State University, Ames, Iowa, Analysis and Probability Seminar

Fourier analysis from singular measures: Fall 2022
Iowa State University, Ames, Iowa, Junior Analysis Seminar

Hilbert Spaces of Entire Functions: Spring 2022
Iowa State University, Ames, Iowa, Junior Analysis Seminar

Poster Presentations

Operator orbit frames and frame-like expansions: October 2024
Indiana University Bloomington, Bloomington, Indiana, Midwestern Workshop on Asymptotic Analysis

Frame-like Fourier expansions for finite Borel measures: October 2023
Indiana University–Purdue University Indianapolis, Indianapolis, Indiana, Midwestern Workshop on Asymptotic Analysis

Frame-like Fourier expansions for finite Borel measures: October 2023
University of Maryland, College Park, Maryland, Fall Fourier Talks

Fourier analysis from singular measures: Fall 2022
The University of Kansas, Lawrence, Kansas, Prairie Analysis Seminar Poster Session

Awards

JJL Hinrichsen Research Award: Fall 2024
Departmental award that recognizes graduate students who have demonstrated success in research
Iowa State University, Ames, Iowa, Department of Mathematics

Wolfe Fellowship: Summer 2024
Paid assistantship to strengthen preparation for an academic career awarded by the Graduate Committee
Iowa State University, Ames, Iowa, Department of Mathematics

Center for the Integration of Research, Teaching and Learning Associate: Fall 2023
Certificate for attending five professional development events on student learning
Iowa State University, Ames, Iowa

Johnston-Peters Fellowship: Summer 2023
Paid assistantship to strengthen preparation for an academic career awarded by the Graduate Committee
Iowa State University, Ames, Iowa, Department of Mathematics

ISU Teaching Excellence: Spring 2022
Iowa State University, Ames, Iowa, Department of Mathematics

Academic Service

Reviewer: Linear Algebra and Its Applications, Complex Analysis and Operator Theory: 2025

Junior Analysis Seminar Coordinator: Spring 2023-May 2025
Iowa State University, Ames, Iowa, Department of Mathematics

Graduate student peer Mentor: Fall 2023-May 2025
Iowa State University, Ames, Iowa, Department of Mathematics