

# Christopher Felder

## Curriculum Vitae

Tampa, Florida  
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📄 c-felder.github.io

### Employment

- 2025 – **Assistant Professor.**  
University of South Florida, Department of Mathematics & Statistics.
- 2022 – 2025 **Zorn Postdoctoral Fellow.**  
Indiana University, Bloomington.

### Education

- 2022 **PhD. in Mathematics.**  
Washington University in St. Louis.  
Advisor: John E. M<sup>c</sup>Carthy.
- 2018 **A.M. in Mathematics.**  
Washington University in St. Louis.
- 2016 **B.S. in Mathematics.**  
Butler University. Indianapolis, Indiana.
- 2016 **B.S. in Mechanical Engineering.**  
Indiana University–Purdue University. Indianapolis, Indiana.

### Grants

- 2018 **ICM Travel Grant.**  
AMS administered NSF grant for travel to the ICM in Rio de Janeiro, Brazil (\$3,300).
- 2015 **Seitz Award.**  
Butler University endowed grant for international research travel (\$5,300);  
Used for 8 week stay at Universidad Complutense de Madrid.

### Awards

- 2025 **Max Zorn Teaching Award.**  
Awarded by the Department of Mathematics at Indiana University in recognition of excellence in the teaching of mathematics (\$1,000).

- 2019 **Robert McDowell Teaching Award.**  
Awarded by the Department of Mathematics at Washington University for excellence in the teaching of mathematics & outstanding performance as a teaching assistant.
- 2016 **Amos Carpenter Award.**  
Awarded by the Department of Mathematics at Butler University for excellence in undergraduate mathematics research.
- 2015 **Bay Chotlos Award.**  
Awarded by the Department of Mathematics at Butler University for dedication to a professional career in mathematics.

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## Preprints

- [1] **Forward operator monoids.**  
*Submitted* (2024). arXiv:2409.16489 [↗](#).

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## Publications (Accepted/Published)

- [10] **Optimal polynomial approximants in  $H^p$ .**  
(w/ R. Center and R. Cheng)  
*J. Math. Anal. Appl.* (2025). DOI [↗](#).
- [9] **Some remarks on Shanks-type conjectures.**  
*Anal. Math. Phys.* (2024). DOI [↗](#).
- [8] **More properties of optimal polynomial approximants in Hardy spaces.**  
(w/ R. Cheng)  
*Pacific J. Math.* (2024). DOI [↗](#).
- [7] **On interpolation by functions in  $\ell_A^p$ .**  
(w/ R. Cheng)  
*Contemp. Math.* (Recent Progress in Function Theory and Operator Theory) (2024). DOI [↗](#).
- [6] **General optimal polynomial approximants, stabilization, and projections of unity.**  
*Anal. Theory Appl.* (2023). DOI [↗](#).
- [5] **On the geometry of the multiplier space of  $\ell_A^p$ .**

(w/ R. Cheng)

*Concr. Oper.* (2022). DOI [↗](#).

- [4] **Spectra for Toeplitz operators associated with a constrained sub-algebra.**

(w/ D. Pfeffer and B. Russo)

*Integral Equations Operator Theory* (2022). DOI [↗](#).

- [3] **Convexity of the Berezin range.**

(w/ C. Cowen)

*Linear Algebra Appl.* (2022). DOI [↗](#).

- [2] **Analogues of finite Blaschke products as inner functions.**

(w/ T. Le)

*Bull. Lond. Math. Soc.* (2022). DOI [↗](#).

- [1] **Active Manifolds: A non-linear analogue to Active Subspaces.**

(w/ R. Bridges, A. Gruber, C. Hoff, K. Verma)

*International Conference on Machine Learning* (2019). DOI [↗](#).

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## Other Publications [\(Feature Stories\)](#)

2021 **Is Virtual Conferencing Here to Stay?**, *The Ampersand* [↗](#).

2020 **Meet Soumendra Lahiri, the new Stanley A. Sawyer Professor,**  
*The Ampersand* [↗](#).

2019 **A Calculated Move**, *The Ampersand* [↗](#).

2018 **The Politics of Polygons: Using Math to Determine Fairness,**  
*The Ampersand* [↗](#).

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## Teaching



### [At University of South Florida](#)

Fall 2025 **Calculus II**, MAC 2312.

### At Indiana University

- Spring 2025 **Elementary Computational Methods**, Math-M 371.  
Spring 2025 **Calculus IV**, Math-M 312.  
Fall 2024 **Calculus I**, Math-M 211.  
Spring 2024 **Linear Algebra for Undergraduates**, Math-M 303.  
Fall 2023 **Brief Survey of Calculus I**, Math-M 119.  
Spring 2023 **Elementary Computational Methods**, Math-M 371.  
Fall 2022 **Brief Survey of Calculus I**, Math-M 119.  
Two sections.

### At Washington University in St. Louis

- Summer 2021 **Elementary Probability and Statistics**, Math 2200, Co-instructor w/ Nathan Wagner .  
Summer 2021 **Introduction to Statistics**, Math 1011, Co-instructor w/ Nathan Wagner .  
Summer 2020 **Calculus II**, Math 132.  
Two sections.  
Summer 2019 **Matrix Algebra**, Math 309.

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### Invited Talks

- October 2025 **AMS Fall Central Sectional Meeting**. Special Session on Real and Complex Function Theory with Application to Operator Theory. St. Louis University.  
October 2025 **Virginia Operator Theory and Complex Analysis Meeting**. University of Richmond.  
January 2025 **Joint Mathematics Meetings**. New Faces in Operator Theory.  
September 2024 **Brown University Analysis Seminar**. Providence, Rhode Island.  
March 2024 **Southeastern Analysis Meeting (Plenary)**. University of Florida.  
October 2023 **Purdue University Operator Algebras Seminar**.  
August 2023 **Stockholm University Analysis Seminar**.  
August 2023 **IWOTA 2023**. Hilbert function spaces/Model spaces, their operators, and applications (two talks). Helsinki, Finland.  
July 2023 **Saarland University Analysis Seminar**.  
April 2023 **University of Florida Analysis & Probability Seminar** (Online).  
February 2023 **University of South Florida Analysis Seminar**.

- November 2022 **Wabash Mini-Conference (Plenary)**. IUPUI.
- October 2022 **Women in Operator Theory Workshop**. University of Memphis.
- October 2022 **Midwestern Workshop on Asymptotic Analysis**. Purdue University Fort Wayne.
- September 2022 **IWOTA 2022**. Model spaces, their operators, and applications. Krakow, Poland.
- March 2022 **Joint Mathematics Meetings**. Recent Progress in Function Theory and Operator Theory (Online).
- December 2021 **Canadian Mathematical Society Winter Meeting**. Approximation Theory in Function Spaces (Online).
- November 2021 **Indiana University Analysis Seminar** (Online).
- October 2021 **Focus Program on Analytic Function Spaces**. The Fields Institute (Online).
- September 2021 **Clemson University Analysis Seminar** (Online).
- September 2021 **IUPUI Operator Theory Seminar**.
  - June 2021 **Trends in Operator Theory and its Applications**. University of Lisbon (Online).
  - June 2021 **ComPlane: the next generation** (Online).
  - April 2021 **University of Toledo Complex Analysis & Operator Theory Seminar** (Online).
- September 2020 **IUPUI Operator Theory Seminar** (Online).
- August 2020 **Operator Theory with its Applications**. University of Florida (Online).
- March 2019 **Butler University Colloquim**.

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## Other Selected Talks

- June 2023 **Spaces of Analytic Functions and their Operators**. Saarland University, Germany.
- June 2023 **Harmonic and Complex Analysis: Modern and Classical** (in honor of L. Zalcman). Bar-Ilan University, Israel.
- March 2023 **Operator Theory, Free Probability, and Random Matrices** (in honor of H. Bercovici). Georgia Institute of Technology.
- February 2023 **Indiana University Analysis Seminar**.
  - July 2021 **Working Groups in Operator Theory**. Lorentz Center (Online).
  - March 2021 **The Southeastern Analysis Meeting**. University of Florida (Online).
  - February 2021 **Early Career Workshop in Operator Theory/Algebras** (Online).

- December 2019 **Szegő Graduate Seminar.** Washington University in St. Louis.
- June 2019 **Advanced Course in Operator Theory and Complex Analysis.** U. Paris-Est Marne-la-Vallée.
- April 2019 **Washington University in St. Louis Analysis Seminar.**
- December 2018 **Washington University in St. Louis Analysis Seminar.**
- September 2017 **Szegő Graduate Seminar.** Washington University in St. Louis.
- October 2016 **Szegő Graduate Seminar.** Washington University in St. Louis.
- January 2016 **Joint Mathematics Meetings.** AMS Special Session on Functional Analysis and Operator Theory.

## Professional Service

- January 2024– **Equity, Diversity, and Inclusion Advisory Board Member.**  
Banff International Research Station [↗](#).

**Referee for:** *Annali dell'Universita di Ferrara, Bulletin of the London Mathematical Society, Complex Analysis and Operator Theory, Constructive Approximation, Demonstratio Mathematica, Linear & Multilinear Algebra, Houston Journal of Mathematics, Rocky Mountain Journal of Mathematics.*

**Reviewer for:** *AMS Mathematical Reviews, Banff International Research Station (Equity, Diversity, & Inclusion)*

## Departmental Service

- 2025 **Nagle Lecture Series Committee,** *Department of Mathematics & Statistics, University of South Florida.*
- 2023 **Diversity, Equity, and Inclusion Committee,** *Department of Mathematics, Indiana University.*
- 2022 **Undergraduate Math Club Faculty Advisor,** *Department of Mathematics, Indiana University.*
- 2020 **Director,** *Mathematics and Statistics Online Help Room,* Washington University in St. Louis.  
[sites.wustl.edu/mathhelp/](https://sites.wustl.edu/mathhelp/) [↗](#)
- 2019 **Committee Member,** *Guido L. Weiss Teaching & Service Award.*  
Selected by department faculty to decide presentation of faculty award for teaching and service

- 2018 **Graduate Council Representative**, *Washington University in St. Louis*.  
Selected by department faculty.


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## Student Mentorship

- 2023 **Summer Undergraduate Research**. Mentees: Teresa Chen, Thomas Radke, Ben Roark (Coe College). Joint w/ B. Miller. Project: Berezin range of composition operators on  $H^2$  (recently accepted paper to The Rose-Hulman Undergraduate Mathematics Journal).
- 2020 **Undergraduate Teaching Assistant Mentor**, *Calc I/II*, Washington University in St. Louis (8 students).

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## Community Involvement and Outreach

- 2020– **Founding Member/Organizer**, *Operator Theory Talks for Early Researchers (OTTER)*.  
<http://www.sites.google.com/view/otter-math> 
- 2016 – 2018 **Szegő Graduate Seminar Organizer**, *Washington University in St. Louis*.  
Bi-weekly math seminars for graduate students, given by graduate students
- 2017 **Math Circle**, *Washington University in St. Louis*.  
Presentation of 'Hilbert's Hotel' to K-12 students.
- 2015 **Presenter, National Chemistry Week and Celebrate Science Indiana**, Indiana State Fairgrounds and Children's Museum of Indianapolis.  
Presentation of an electrochemical cell, in the form of a potato battery, to K-12 students.

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## Conference Organization

- August 2026 **IWOTA Special Session on Invariant Subspaces and Cyclicity**.  
2026 IWOTA, Laval University, Quebec.
- January 2026 **AMS Special Session on Recent Endeavors in Complex Analysis and Operator Theory**.  
2026 JMM, Washington, D.C.
- January 2025 **AMS Special Session on Recent Advances in Function Theoretic Operator Theory**.  
2025 JMM, Seattle.

January 2022 **The OTTER Math Meeting.**  
Online [!\[\]\(082f818d99f166a3ba574d9284d73064\_img.jpg\)](#).

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## Invited Workshop Participation

- October 2022 **Working Groups for Women in Operator Theory**, *University of Memphis* [!\[\]\(9063468a59e93f469b71000ac5796bc3\_img.jpg\)](#).
- July 2021 **Working Groups for Women in Operator Theory**, *Lorentz Center* [!\[\]\(1db6320223680ab4bd04b0d269ab6c8a\_img.jpg\)](#) (Online).
- June 2017 **Complex Functions, Operators, Partial Differential Equations, and Applications** (in honor of D. Khavinson), *Mittag-Leffler Insitute* [!\[\]\(cd69309a3e813d8c682e56d54a0f4a01\_img.jpg\)](#).

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## Professional Memberships

American Mathematical Society  
Canadian Mathematical Society  
Society for Advancement of Chicanos/Hispanics and Native Americans in Science  
Association for Women in Mathematics  
MathSafe (trained) [!\[\]\(6605b201d6f14d9b3bcb8ab5f274d107\_img.jpg\)](#)

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## Other Professional Experience

- Summer 2016 **Science Undergraduate Laboratory Intern**, *U.S. Department of Energy*, Oak Ridge National Laboratory, Mentor: Robert Bridges.  
Project: Non-Linear Dimension Reduction
- 2014 – 2016 **Peer Tutoring Supervisor**, *Engineering Dual Degree Program*, Butler University.
- 2014 – 2015 **Engineering Intern**, *Freije-RSC Engineered Solutions Co.*, Fishers, Indiana.  
Focus: Industrial Refrigeration