Christopher Stith
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EDUCATION

University of Michigan, Ann Arbor   Ann Arbor, MI (September 2019 – Present)
- Ph.D. in Mathematics (Expected June 2025)
- M.S. in Mathematics (April 2021)
- Advisor: Lydia Bieri

University of Chicago   Chicago, IL (September 2015 – June 2019)
- Bachelor of Science, Mathematics (with Honors)

APPOINTMENTS

Graduate Student Instructor (GSI) at the University of Michigan, Ann Arbor
- Math 116: Calculus II (Primary Instructor/Instructor of Record)   Winter 2024
- Math 116: Calculus II (Co-coordinator)   Fall 2022
- Math 216: Introduction to Differential Equations (Lab Instructor)   Winter 2021
- Math 116: Calculus II (Primary Instructor/Instructor of Record)   Fall 2020
- Math 116: Calculus II (Primary Instructor/Instructor of Record)   Winter 2020
- Math 115: Calculus I (Primary Instructor/Instructor of Record)   Fall 2019

RESEARCH INTERESTS

- Mathematical general relativity, partial differential equations, geometric analysis.

PAPERS

- *Linear hyperbolic equations in a double null foliation*, preprint in progress.
- *Local well-posedness for the Einstein equations in a double null gauge*, preprint in progress.
- *Trapped surface formation with null dust* (joint with Lydia Bieri, Pengyu Le, and Neel Patel), preprint in progress.

HONORS

- Rackham Merit Fellowship (University of Michigan)   2019 – Present
- Joel Smoller Graduate Fellowship (University of Michigan)   2023
- Data Science Bootcamp Certificate of Completion with Distinction (Erdős Intitute)   2023
- Gabrielle & Sophie Rainich Fellowship (University of Michigan)   2020
- Dean's List (University of Chicago)   2015 – 2019
- Phi Beta Kappa

SELECTED TALKS

- Student Analysis Seminar, *Hyperbolic equations and double null foliations* (University of Michigan, 2024)
- AMS Special Session on Dynamics of Solutions to Wave Equations, *Hyperbolic equations in a double null gauge* (University of California, Riverside, 2024)
- Student Analysis Seminar, *General Relativity and the Einstein equations* (University of Michigan, 2024)
- 33rd Midwest Relativity Conference, *Black hole formation with null dust* (University of Chicago, 2023)
- University of Maine Mathematics Department Colloquium, *Trapped surface formation in general relativity* (University of Maine, 2023)

- 32nd Midwest Relativity Conference, *Black hole formation with null dust* (Oakland University, 2022)
- Student Dynamics/Geometry/Topology Seminar, *Penrose's incompleteness theorem* (University of Michigan, 2022)
- Student Analysis Seminar, *Field equations on flat spacetime* (University of Michigan, 2022)
- Student Dynamics/Geometry/Topology Seminar, *Black hole spacetimes and closed trapped surfaces* (University of Michigan, 2021)
- Student Analysis Seminar, *Lagrangians in PDE* (University of Michigan, 2021)
- MCAIM Student Seminar, *The Cauchy problem in general relativity* (University of Michigan, 2020)
- Student Analysis Seminar, *Optimal transport theory* (University of Michigan, 2020)
- Student Analysis Seminar, *The Cauchy problem in general relativity* (University of Michigan, 2020)

ATTENDED CONFERENCES & WORKSHOPS

- 34th Midwest Relativity Conference (University of Michigan, Fall 2024)
- AMS Fall Western Sectional (University of California, Riverside, Fall 2024)
- Recent Progress on Geometric Analysis and Riemannian Geometry (SLMath, Fall 2024)
- 33rd Midwest Relativity Conference (University of Chicago, Fall 2023)
- 32nd Midwest Relativity Conference (Oakland University, Fall 2022)
- MSRI Summer School on Geometric Flows (FORTH-IACM, Crete, Summer 2022)
- CMSA General Relativity Program Visitor (Harvard University, Spring 2022)
- Boston City Limits 2018 (Massachusetts Institute of Technology, 2018)

SERVICE

- Help with 34th Midwest Relativity Conference at the University of Michigan (planned, Fall 2024)
- Invited panelist at Mathematics – Opportunities in Research and Education (MORE 2023) Conference
- Co-organizer for the Midwest Research Experience for Graduates (MREG 2023), previously known as the Michigan Research Experience for Graduates
- Organizing Committee member for the Michigan Research Experience for Graduates (MREG 2022)
- Co-organizer, Student Analysis Seminar (2021 – 2023)
- Friend of the Math Corps summer camp at the University of Michigan
- Led Math Circle sessions at the University of Michigan on 1) Conway's Game of Life and 2) Spherical geometry

OTHER RELEVANT EXPERIENCE

- I have worked on data-related projects with local organizations such as the Oakland Livingston Human Service Agency, the Michigan Collaborative to End Mass Incarceration, the Girl Scouts of Southeastern Michigan, and Brilliant Detroit through the Ginsberg Center at University of Michigan.

- I have worked on a team project for the Erdős Institute that used machine learning and other data science methods to identify the direction of incoming neutrinos from cosmic rays. Our project received a Certificate of Completion with Distinction. I have also worked on a team project for the Erdos Institute's Deep Learning Bootcamp, where we used LLMs (specifically DeBERTa and RoBERTa) to identify personally identifying information (PII) in academic writing