

Joshua Jordan

Curriculum Vitae

Department of Mathematics
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🌐 [jpjorda1.github.io/math/](https://github.com/jpjorda1/math/)

Education

- 2017–2023 **PhD in Mathematics**, *University of California – Irvine*, Irvine, CA
Thesis title: *Pluriclosed flow and generalized geometry*
Advisor: Prof. Jeffrey Streets
- 2013–2017 **BSc in Mathematics and Physics**, *Wright State University*, Dayton, OH

Employment

- 2023–2026 **NSF-RTG Postdoctoral Research Scholar**, *Univ. of Iowa*, Iowa City, IA
Grant: *Geometry and Topology at Iowa* (DMS-2038103)
Supervisor: Prof. Hao Fang

Research Experience

- 2023–2026 **NSF-RTG Postdoctoral Fellow**, *University of Iowa*
Grant DMS-2038103. Conducting research on fully nonlinear partial differential equations on Hermitian manifolds under Prof. Hao Fang.
- 2017–2023 **Research Assistant**, *University of California – Irvine*
Studied intrinsic geometric flows on non-Kähler manifolds under Prof. Jeffrey Streets.

Research Interests

Complex & Differential Geometry

Canonical metrics, non-Kähler geometry, generalized Kähler geometry, conformal geometry, algebraic geometry

Geometric Analysis & PDEs

Monge-Ampère equations, non-concave PDEs, curvature flows, quasilinear systems

Mathematical Physics

Geometric flows from string theory

Publications

Pre-print / Submitted

- Jordan, J. "The parabolic split-type Monge-Ampère on split tangent bundle surfaces." [arXiv: 2507.07084](https://arxiv.org/abs/2507.07084). Submitted to *Calc. Var. Partial Differential Equations* ("Under Review" as of 10 December 2025).

Published

- Fang, H. & Jordan, J. "On canonical metrics of complex surfaces with split tangent and related geometric PDEs." *J. Reine Angew. Math.* **823** (2025) 255-289.
- Fang, H. & Jordan, J. "Split-type canonical metrics and related geometric PDEs." In *Surveys in Geometric Analysis*, editors. Tian, G.; Han, Q.; & Zhang, Z. pp. 1-34. Science Press Beijing. Beijing.
- Jordan, J. "Generalized geometry and pluriclosed flow." *UC Irvine. eScholarship*.
- Garcia-Fernandez, M., Jordan, J., & Streets, J. "Non-Kähler Calabi-Yau geometry and pluriclosed flow." *J. Math. Pures Appl.* **177** (2023) 329-367.
- Jordan, J. "A steady length functional for Ricci flow." *Proc. Amer. Math. Soc.* **149** (2021) 397-406.
- Jordan, J. & Streets, J. "On a Calabi-type estimate for pluriclosed flow." *Adv. In Math.* **366** (2020) Article 107097.

Talks and Presentations

- "Canonical metrics on complex surfaces with split tangent." *Differential Geometry Seminar*. University of California – Irvine. (29 May 2025).
- "Generalized geometry and pluriclosed flow." *Differential Geometry, Topology, and Special Structures*. Graduate College, City University of New York. (14 March 2025).
- "On canonical metrics of complex surfaces with split tangent and related geometric PDEs." *Prairie Analysis Seminar*. University of Kansas. (26 October 2024).
- Mini Course. *Workshop on Generalized Complex Geometry*. Westlake University. (8, 9 October 2023).
- "Non-Kähler Calabi-Yau geometry and pluriclosed flow." *Differential Geometry Seminar*. University of Iowa. (6 November 2022).
- "Non-Kähler Calabi-Yau geometry and pluriclosed flow." *Differential Geometry Seminar*. University of British Columbia. (4 October 2022).
- "Non-Kähler Calabi-Yau geometry and pluriclosed flow." *Generalized Geometry in Interaction*. Instituto de Ciencias Matemáticas. Madrid, Spain. (14 June 2022).
- "Non-Kähler Calabi-Yau geometry and pluriclosed flow." *4th Geometric Analysis Festival*. Jeonbuk National University. (2022).
- "Pluriclosed flow on Bismut-flat backgrounds." *AMS Spring Western Virtual Sectional*. Contributed Paper Session IV. (1 May 2021).

Teaching & Mentoring

Spring 2025 **Independent Study Instructor**, University of Iowa

Led an independent study for motivated undergraduate students in differential geometry. Used the book *Differential Geometry of Curves and Surfaces* by Manfredo do Carmo.

- 2023–2026 **Instructor of Record**, *University of Iowa*
 MATH 7400: Current Geometry and Topology—Complex Geometry: Fall 2025
 MATH 2700: Linear Algebra: Fall 2024, Spring 2025
 MATH 1850: Differential Calculus: Fall 2023, Spring 2024
- Fall 2023 **Graduate Seminar Instructor**, *University of Iowa*
 Led a one-semester seminar for graduate students in Riemannian geometry. Used the book *Introduction to Riemannian Manifolds* by John Lee.
- 2017–2023 **Teaching Assistant**, *University of California – Irvine*
 MATH 220A: Complex Analysis (graduate level): Fall 2022, Fall 2021
 MATH 140C: Analysis in Several Variables: Spring 2020, Winter 2019
 MATH 184: History of Math: Spring 2020, Spring 2019
 MATH 140A: Elementary Analysis: Fall 2019
 MATH 162B: Introductory Differential Geometry: Spring 2019
 MATH 121A: Linear Algebra (advanced undergraduate level): Winter 2019
 MATH 2B: Integral Calculus: Fall 2018, Fall 2017
 MATH H2E: Honors Multivariable Calculus: Spring 2018
 MATH 140B: Elementary Analysis: Spring 2018
 MATH H2D: Honors Multivariable Calculus: Winter 2018
 MATH 2D: Multivariable Calculus: Winter 2018.

Service

- 2025–2026 **Treasurer**, *University of Iowa Postdoctoral Association*
 Responsible for record-keeping and financial solvency of the association.
- Summer **Session Co-Organizer**, *Univ. of Iowa*
 2025 Co-organized the [Early Career Session](#) of the 2025 [Midwest Panorama of Geometry and Topology](#) at the University of Iowa. Supported by NSF-RTG grant DMS-2038103.
- 2024–2025 **Chair, Travel Awards Committee**, *Univ. of Iowa Postdoc. Assn.*
 Responsible for developing evaluation criteria and recruiting evaluators for the UIPDA Travel Awards Program, which awards \$5000/yr for academic travel to postdoctoral scholars at the University of Iowa.
- 2021–2023 **Recording Secretary**, *UAW 4811 (formerly UAW 2865)*
 Elected as a campus-level representative. Responsible for organizing meetings, taking minutes, and assisting in contract negotiations.