

Daniel Freese

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Education

BS - Mathematics, Liberty University, Lynchburg, VA, May 2017, GPA: 4.0

MA - Mathematics, Indiana University, Bloomington, IN, January 2021, GPA: 4.0

PhD - Mathematics, Indiana University, Bloomington, IN September 2022, GPA: 4.0

- Advisor: Matthias Weber
- Dissertation: Periodic minimal surfaces from gluing helicoids

Research Interests

- Differential geometry and complex analysis: Minimal surfaces
- Geometry of non-positive curvature: Hyperbolic geometry, rigidity

Publications/Preprints

- Helicoids and Vortices, with Hao Chen – to appear in *Proceedings of the Royal Society A*
<https://arxiv.org/abs/2201.13091>
- Screw Motion Invariant Minimal Surfaces from Gluing Helicoids – to appear in *Geometriae Dedicata* <https://arxiv.org/abs/2111.03909>
- Two New Embedded Triply Periodic Minimal Surfaces, with Matthias Weber, Alfred Yerger, and Ramazan Yol - *Manuscripta Mathematica* September 2020
- On Intrinsic Surfaces of Revolution, with Matthias Weber - *Journal of Geometry* **108**, 743–762, 2017

Honors

Kappa Mu Epsilon Mathematics Honor's Society

- Member of Liberty University's Chapter, inducted April 2015

Awards from Liberty University's Department of Mathematics

- Freshman Mathematics Award, April 2014
- Wooldridge Merit Award, awarded to an outstanding Junior student every year, April 2015
- Senior Mathematics Award, April 2017

Awards from Indiana University's Department of Mathematics

- James P. Williams Memorial Award for first year graduate students, April 2018
- David A. Rothrock Mathematics Fellowship, for excellence in teaching, April 2021
- College of Arts and Sciences Dissertation Fellowship, May 2022

Employment History

- **Liberty University Department of Mathematics**, Lynchburg VA
August 2014 – May 2017
Grader/Tutor/Research Assistant
- **Indiana University Research Experience for Undergraduates**, Bloomington, IN
June 2016 – July 2016
Research Assistant to Matthias Weber
- **Indiana University Department of Mathematics**, Bloomington, IN
August 2017 – August 2022
Associate Instructor

Teaching Experience

As Instructor at IU:

- Precalculus (M025) Fall 2018, Spring 2019
- Precalculus with trigonometry (M027) Fall 2019
- Finite Math (M118) Spring 2020
- Brief Survey of Calculus (M119) Spring 2022
- Mathematics of Decision and Beauty (coteaching, online) (M106) Summer 2020
- Introduction to Finite Math I (D116, online) Fall 2020
- Introduction to Finite Math II (D117, online) Fall 2021

Other Assistantship at IU:

- Calculus Recitation (M211) Fall 2017, Fall 2021
- Grader for Quantum Computing (M556) Fall 2021
- Assistant for Finite Math (M118, Fall 2018, and D116, Spring 2019)

Journal Referee work

- Communications in Analytic Geometry