

# Joshua Mirth

## Curriculum Vitae

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## Education

- 2015–present **Doctorate**, (*In progress*), Colorado State University, *Mathematics*.  
Advisor: Henry Adams
- 2015–2017 **Master of Science**, Colorado State University, *Mathematics*.  
Thesis – *Metric Thickenings of Euclidean Submanifolds*. Advisor: Henry Adams.
- 2011–2015 **Bachelor of Science**, *Summa Cum Laude*, with *Departmental Honors*, Hillsdale College, *Mathematics*.  
Senior Thesis – *Functional Analysis and the Dirichlet Problem*, minor in physics. Advisor: David Gaebler.

## Publications

- Submitted *Metric Thickenings of Euclidean Submanifolds* with Henry Adams. Available at arXiv:1709.02492.

## Talks and Presentations

- 2018 Apr. *Metric Thickenings of Euclidean Submanifolds*, Graduate Student Topology and Geometry Conference, University of Chicago (upcoming).
- 2017 Dec. *Morse Theory: An Introduction*, expository talk at CSU Greenslopes seminar.
- 2017 Sep. *Metric Thickenings of Euclidean Submanifolds*, SIAM Central States Sectional Meeting, Applied Algebraic Topology session, Colorado State University.
- 2017 Jul. *Metric Thickenings of Euclidean Submanifolds*, TDA: Theory and Applications, workshop at Macalaster College (Poster presentation).
- 2015 Apr. *Functional Analysis and the Dirichlet Problem*, Michigan Undergraduate Mathematics Conference, Hope College.
- 2013 Jul. *Simulating Post-Reconnection Coronal Flux Tubes* American Astronomical Society Solar Physics Division Meeting (Poster with Dana Longcope).

## Teaching

- 2015–2018 **Graduate Teaching Assistant**, *Colorado State University*, Mathematics Department.  
Instructor of record:
- Math 340 – Introduction to Ordinary Differential Equations, Spring 2018
  - Math 261 – Calculus for Physical Scientists III, Fall 2017
  - Math 160 – Calculus for Physical Scientists I, Fall 2016, Sprint 2017
- Teaching assistant:
- Math 161 – Calculus for Physical Scientists II, Fall 2015, Sprint 2016
- Outreach:
- Co-taught (with Henry Adams) a two week course on Applied and Computational Topology at the Universidad de Costa Rica, Summer 2017.

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## Experience

### Computational

2016–2017 **Programmer**, *Colorado State University*, Environmental Health Department.  
Developed tools for analysis of motion tracker data in MATLAB.

2013 **REU**, *Montana State University*, Solar Physics.  
Developed and tested numerical models of magnetic reconnection in the solar corona.

### Miscellaneous

2017-2018 **Secretary**, *SIAM*, Colorado State University Student Chapter.

2016-2017 **Treasurer**, *SIAM*, Colorado State University.

2014-2015 **Vice-President**, *Kappa Mu Epsilon*, Hillsdale College Chapter.

2013-2014 **Treasurer**, *Kappa Mu Epsilon*, Hillsdale College Chapter.

2013-2015 **Putnam Team**, *Hillsdale College*.

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## Awards

- Taylor Award - Highest GPA among Hillsdale College Mathematics graduates (2015)
- Kimball Medal - top male athlete at Hillsdale College (2015).
- Hillsdale College Dean's List (8 semesters)
- National Merit Scholar (2011)
- NCAA Division II All-American – three times (track and field, cross country)
- GLIAC conference champion – four times (indoor track)