Benjy Firester

✉ benjyfir@mit.edu
🌐 benjyjf.com
Citizenship: USA, Israel, Portugal
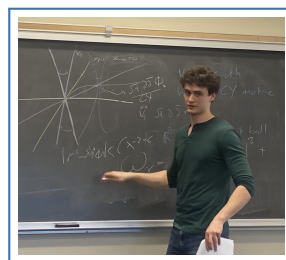
Education

2023–   **Ph.D. in Mathematics**, *MIT*
Geometric Analysis & Complex Geometry

2023   **A.B. & A.M. in Mathematics**, *Harvard University*, *Summa Cum Laude*
Honors thesis advised by Curt McMullen

Research & Expository

[1] Benjy J. Firester. Mostow rigidity and hyperbolic 3-manifolds, 2023. benjyjf.com/thesis.pdf.

[2] Benjy J. Firester. Complete Calabi-Yau metrics from smoothing Calabi-Yau complete intersections, 2022. *arXiv:math/2208.04279*.

[3] L. Becker, S. Elliott, B. Firester, S. Gonen Cohen, M. Pnueli, and V. Rom-Kedar. Impact Hamiltonian systems and polygonal billiards. *Proceedings of the MSRI 2018 Fall Semester on Hamiltonian Systems*, 2020. *arXiv:math/2001.03726*.

Awards

2023   **Mumford Prize**, *"Most promising senior concentrator in mathematics"*
math.harvard.edu/undergraduate-prizes-and-awards-2022-2023

2023   **Friends Prize**, *Top two theses present to The Friends of the Harvard Math Department*
Presented senior thesis [1] see: math.harvard.edu/event/special-lecture... and interviewed in the
2023 Harvard Math Newsletter

2023   **Hoopes Prize**, *$5,000*
Awarded for my senior thesis [1] see: prizes.fas.harvard.edu/.../2022-2023_hoopes...

2022   **Phi Beta Kappa**, *Member of Senior 48*
National academic honor society see: thecrimson.com/article/2022/11/15/harvard-pbk-senior-48

2022   **Goldwater Scholar**, *$7,500*
For my work [2] see: goldwaterscholarship.gov/2022-goldwater-scholars...

2022   **Herchel-Smith Fellow**, *"A competitive and generous award" for Harvard research*
Research funding for [1] see: uraf.harvard.edu/.../herchel-smith-summer-fellowship

2022   **PRISE Fellow**, *Harvard summer research community for science*
Research funding for [1] see: uraf.harvard.edu/uraf-opportunities/prise

2022   **John Harvard Scholar**, *Harvard College Scholar (2019)*
Dean's list

2018   **Winner of Regeneron Science Talent Search**, *$250,000*
Formerly Westinghouse/Intel STS see: societyforscience.org/...regeneron-science-talent-search-2018

2017	**Davidson Fellow**, *$25,000*
	Scientific scholarship winner from the Davidson Institute see: davidsongifted.org/.../2017-fellows

Presentations

4/1/2023	**Harvard Special Lecture for Friends Prize Recipient**
	Presented senior thesis [1] see: math.harvard.edu/event/special-lecture...
3/29/2023	**Harvard Math Table**
	Non-compact Calabi-Yau manifolds [2] see: sites.google.com/.../mathtable...
2/23/2023	**Stanford Special Geometry Seminar**
	Complete CY metrics from smoothing CY complete intersections
	see: mathematics.stanford.edu/...geometry-seminar-complete-calabi-yau-metrics...
1/5/2023	**Joint Mathematics Meeting**, *AMS Contributed Papers in Geometry*
	Complete CY metrics from smoothing CY complete intersections
	see: meetings.ams.org/math/jmm2023/meetingapp.cgi/Paper/19585
11/18/2022	**RTG Partial Differential Equations on Manifolds**, *Undergraduate Analysis and PDE Seminar*, with T. C. Collins
	Complete CY metrics from smoothing CY complete intersections
	see: tarheels.live/waves/activities/undergraduate-online-seminar-fall-2022

Teaching

Spring 2023	**Harvard Math 123**, *Course Assistant*, taught by Curt McMullen
	Rings, Fields, Galois theory
Fall 2022	**Harvard Math 101**, *Course Assistant*, taught by Curt McMullen
	Sets, Groups, and Knots
Spring 2022	**Harvard Math 123**, *Course Assistant*, taught by Mark Kisin
	Rings, Fields, Galois theory
Fall 2021	**Harvard Math 114**, *Course Assistant*, taught by Dennis Gaitsgory
	Measure, Integration, Banach spaces, Duality, and Fourier analysis
Spring 2020	**Harvard Math 55b**, *Course Assistant*, taught by Joe Harris
	Topology and Real/Complex analysis
Fall 2019	**Harvard Math 55a**, *Course Assistant*, taught by Joe Harris
	Group theory, Linear algebra, Representation theory

Languages

Hebrew	**Advanced**
	Citation in Modern Hebrew from Harvard
Spanish	**Proficient**

Service

2023	**Math community undergraduate mentor for GIIM**, *Harvard GIIM*
	Gender Inclusivity In Mathematics see: harvardgiim.org
2019-2022	**Volunteer at JF&CS**
	Volunteered helping Holocaust survivors at the Jewish Family and Children's Service

Affiliations

2023– **MIT Mathematics Department**, *PhD Student*
Geometric Analysis & Complex Geometry

2018–2023 **Harvard Mathematics Department**, *Bachelors (Summa Cum Laude) and Masters, Course Assistant*
Advised by Curt McMullen, Joe Harris, Cliff Taubes, Peter Kronheimer

2019–2023 **The Harvard Advocate**, *Technology editor 2019–2020*
theharvardadvocate.com/

2019–2023 **The Harvard Political Review**, *Technology board member*
harvardpolitics.com/

2019–2022 **MIT Mathematics Department**, *Research with Tristan Collins*
Funded by HCRP

2020 **D. E. Shaw**, *Systematic Equities*
Quantitative research intern

2019 **Microsoft**, *Excel Alpha Team*
Software engineering intern

2018 **Weizmann Institute**, *Advised by Vered Rom-Kedar*
International Summer Science Institute research program (ISSI)

2012–2018 **Hunter College High School**

2017 **Rockefeller University**, *Krueger Group*
Summer Science Research Program (SSRP)

2015–2016 **The Agricultural Research Organization (Volcani)**, *Research advised by Lior Blank and Dani Shtienberg*

Misc.

2020 **The MIT Undergraduate Journal of Economics**, *with Andrew Komo*
Resource allocation with externalities second best paper award

2020 **Journal of Biomedical Optics**, *Gareau et al.*
Deep learning-level melanoma detection by interpretable machine learning and imaging biomarker cues

2018 **Plant Pathology**, *with Dani Shtienberg & Lior Blank*
Modelling the spatiotemporal dynamics of Phytophthora infestans at a regional scale
doi:10.1111/ppa.12860

2018 **The Concord Review**, *Volume 28, No. 3*, Emerson Prize
Mail-Order

2017 **Euroblight**, *International conference*
Presentation by Lior Blank on our paper in Plant Pathology see: Euroblight programme

Last updated: June 6, 2023