

Curriculum Vitae
Gregory J. Parker

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Education

Massachusetts Institute of Technology (2017-2022)

Ph.D. candidate in mathematics.

Advisors: Tomasz Mrowka and Clifford Taubes (Harvard University)

Harvard University (2013-2017)

B.A. in Mathematics and Physics, *summa cum Laude*, with highest honors.

Honors Thesis: *Lefschetz Fibrations on 4-Manifolds*

Research Interests

Analytic and geometric aspects of mathematical gauge theory.

Publications and Preprints

- *Gluing \mathbb{Z}_2 -Harmonic Spinors*, Ph.D. dissertation, in preparation.
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Awards, Honors, and Fellowships

- NSF Graduate Research Fellowship (2017–2022).
 - Norman Levinson Fellowship (MIT, 2018-19).
 - Captain Jonathan Fay Prize for Top Senior Thesis, Harvard University (2017).
 - Hoopes Prize for Outstanding Senior Thesis, Harvard University (2017).
 - Hertz Foundation Fellowship Finalist (2017).
 - John Harvard Scholar (2016).
 - Certificate of Distinction in Teaching (2015).
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Teaching/Mentoring/Volunteering Experience

- 2019-2020 - Teaching Assistant MIT Mathematics Department.
Math 18.06 (Linear Algebra, Fall 2019), Math 18.02 (Calculus II, Spring 2020).
- 2019 - - Teaching Assistant, Massachusetts Correctional Institution at Concord.
Petey Green Program, Emerson Prison Initiative. Business Math, Creative Writing.
- 2017 - - Graduate Mentor, MIT Directed Reading Program.
Topics: Riemann Surfaces, Index theory, Floer theory.
- 2017-2018 - Seminar XL Facilitator, MIT Office of Minority Education.
Math 18.02 (Multivariable calculus), and Math 18.03 (Differential Equations).
- 2015 - Course Assistant, Harvard Mathematics department.
Math 131: Introduction to Topology.

Talks

Research Talks

- (3/2022) *Gluing \mathbb{Z}_2 -harmonic spinors*. AMS Special Session on Gauge Theory, Geometric Analysis, and Low-Dimensional Topology. Tufts University.

Expository Talks

- (11/2019) *Existence of \mathbb{Z}_2 -harmonic spinors*. Harvard graduate student gauge theory seminar.
- (09/2019) *Chern-Weil Theory and Equivariant Cohomology*. MIT Juvitop Seminar on Differential Cohomology. MIT.
- (06/2019) *Seiberg-Witten Monopoles, Fueter Sections, and G_2 -instantons*. British Isles Graduate Workshop III: gauge theory with a view towards higher-dimensions.
- (06/2019) *Generalized Seiberg-Witten Equations*. British Isles Graduate Workshop III: gauge theory with a view towards higher-dimensions.
- (05/2018) *The Maslov Index*. Kylerec Workshop for Graduate Students in Symplectic Topology.