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## Academic Appointments

- 2021–present **Simons Center for Geometry & Physics**, *Research Assistant Professor*  
2018–2021 **Harvard University**, *NSF Postdoctoral Fellow and Lecturer*

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## Education

- 2012–2018 **UC Berkeley**, *Mathematics*, **PhD**  
Advisor: Michael Hutchings  
2011–2012 **UC Berkeley**, *Experimental Physics* (PhD program)  
2007–2011 **Cornell University**, *Applied & Engineering Physics*, **BS**  
Magna cum laude, with Honors thesis

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## Research Focus

Geometric analysis and low-dimensional topology: gauge theory, symplectic/contact geometry

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## Papers

1. *Generic transversality for unbranched covers of closed pseudoholomorphic curves*  
(with C. Wendl) *Commun. Pure Appl. Math* **70** (2017), no. 3, 409–443
2. *Taming the pseudoholomorphic beasts in  $\mathbb{R} \times (S^1 \times S^2)$*   
*Geom. Topol.* **24** (2020), no. 4, 1791–1839
3. *Seiberg–Witten and Gromov invariants for self-dual harmonic 2-forms*  
*Geom. Topol.* (To appear) [arxiv.org/abs/1809.03405](https://arxiv.org/abs/1809.03405)
4. *No homotopy 4-sphere invariants using  $ECH = SWF$*   
*Algebr. Geom. Topol.* (To appear) [arxiv.org/abs/1905.10938](https://arxiv.org/abs/1905.10938)
5. *Lagrangian torus invariants using  $ECH = SWF$*   
*J. Symplectic Geom.* **19** (2021), no. 4, xxx–xxx
6.  *$G_2$  holonomy, Taubes’ construction of Seiberg–Witten invariants and superconducting vortices*  
(with S. Cecotti & C. Vafa) *J. High Energy Phys.* **04** (2020), no. 38, 0–20
7.  *$PU(2)$  monopoles and Casson invariants*  
(with A. Doan) In preparation

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## Awards & Grants

- 2021–2024 NSF Standard Grant, DMS#2105445  
2018–2021 NSF Postdoctoral Research Fellowship, DMS#1803136  
2018 Herb Alexander Prize (outstanding dissertation in mathematics at UC Berkeley)

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## Teaching

- Fall 2021 **Lecturer**, Math 644: Seiberg–Witten theory (at Stony Brook University)  
Spring 2021 **Lecturer**, Math 285x: Seiberg–Witten theory and generalizations (at Harvard)  
Fall 2020 **Lecturer**, Math 136: Differential Geometry (at Harvard)  
Spring 2020 **Lecturer**, Math 21A: Multivariable Calculus (at Harvard)  
Fall 2019 **Lecturer**, Math 261x: Embedded Contact Homology (at Harvard)  
Sp’17 Sp’18 **Assistant**, Math 32: PreCalculus (at UC Berkeley)  
Summer 2017 **Assistant**, Math W53: Multivariable Calculus, online course (at UC Berkeley)  
Spring 2016 **Instructor**, Math 191: Knot Theory, introduction to research (at UC Berkeley)  
Fall 2012 **Assistant**, Physics C10: Physics for Future Presidents (at UC Berkeley)  
Fa’11 Sp’12 Su’12 **Assistant**, Physics 7A: Newtonian Mechanics (at UC Berkeley)

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## Service

**Referee:** J. Eur. Math. Soc. (JEMS), *Geom. Topol.* (GT), *Commun. Anal. Geom.* (CAG)  
**MathOverflow:** highly active contributor  $\sim 11$  years

- Fa'11 – present **Co-organizer**, SCGP's *Math* seminar  
Fa'18 – Sp'20 **Organizer**, Harvard's *Gauge-Topology-Symplectic* seminar  
Fa'14 – Fa'16 **Co-chair**, UC Berkeley's *Graduate Social Club* (subset of graduate government)  
Su'11 Fa'11 **Graduate Student Researcher**, Stamper-Kurn's atomic physics group (at UC Berkeley)

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## Undergraduate Research @ Cornell University

- 2008–2011 **Experimental Physics under** Seamus Davis  
topic: *detect deviations from Newton's Law of gravitation using low temperature techniques*  
– designed/built Cavendish-type apparatus, ran experiments, wrote Honors thesis
- 2008–2011 **Mathematics under** Kenneth Brown  
topic: *group cohomology*  
– wrote solutions manual to Brown's book *Cohomology of Groups* (available on webpage)

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## Recommendations

1. Michael Hutchings  
`hutching@math.berkeley.edu`
2. Clifford Taubes  
`chtaubes@math.harvard.edu`
3. Simon Donaldson  
`sdonaldson@scgp.stonybrook.edu`
4. Peter Kronheimer  
`kronheim@math.harvard.edu`
5. Denis Auroux  
`auroux@math.harvard.edu`