CURRICULUM VITAE

LUCAS CULLER

Contact Information

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Education and Employment

2014-17   Instructor at Princeton University
2009-14   Ph.D. Mathematics, Massachusetts Institute of Technology
           Advisor: Tomasz Mrowka
2009   B.S. Mathematics, University of Chicago

Teaching

2016-2017   Instructor for Differential Geometry (355) at Princeton.
                 I designed this entire course from scratch, including content, homework, and exams.
2016   Course Head for Linear Algebra (202) at Princeton.
                 I selected the homework and exam exercises and coordinated the other five instructors.
2014-15   Instructor for Calculus (103), Linear Algebra (202), Multivariable Calc. (201).
                 For all Princeton courses, I prepared and posted detailed lectures notes.
2011-14   Mentor for MIT's Directed Reading Program, an independent study program for undergrads.
                 Topics included differential geometry and number theory.
2011   Instructor for Interphase, a program for MIT freshmen from disadvantaged backgrounds.
2011-13   Recitation Leader for Diff. Equations (18.03) and Multivariable Calc. (18.02/22) at MIT.
2010   Teaching Assistant for Linear Algebra (18.06) and Abstract Algebra (18.701) at MIT.
2010   Instructor for After Klein, a class in Complex Analysis for engineers, which I co-created and organized with Josh Batson. Taught at Sprout, a community science organization.
2010-13   Research Project Coordinator for the PROMYS summer program. *Three summers total.*
2009   Head Counselor at PROMYS.
2005-8   Counselor at PROMYS. *Three summers total.*
2006   Teaching Assistant for Calculus (15100) at University of Chicago.

Research Interests

Gauge theory, Invariants of smooth 4-manifolds, Mirror symmetry.

Publications

Blowup Formulae for Higher Rank Donaldson Invariants, PhD Thesis.
3-Manifolds Modulo Surgery Triangles.
Floer Homology and Abelian Varieties, in preparation.
Surgery Formulae for SU(N) Floer Homology, in preparation.