

# François Greer

fgreer@ias.edu

## Employment

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| 2020–2021 | <b>IAS Postdoctoral Member.</b><br>Institute for Advanced Study.<br>Princeton, NJ.             |
| 2017–2020 | <b>RTG Postdoctoral Fellow.</b><br>Simons Center for Geometry and Physics.<br>Stony Brook, NY. |

## Education

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|-----------|---|
| 2011–2017 | <b>Stanford University.</b><br>PhD in Mathematics.<br>Advisor: Jun Li.<br>Thesis Title: <i>Modular Forms in Enumerative Geometry.</i>   |
| 2007–2011 | <b>Harvard University.</b><br>AB-AM Joint Degree in Mathematics.<br>High honors in mathematics, secondary in physics.<br>Advisor: Joe Harris.<br>Thesis Title: <i>Hurwitz Moduli.</i> |

## Research Publications

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|------|---|
| 2020 | N. Chen, F. Greer, R. Yang. “Nodal elliptic curves on K3 surfaces.” <i>Submitted.</i>   |
| 2020 | F. Greer. “A Lagrangian sphere which is not a vanishing cycle.” <i>Invent. Math.</i> <b>219</b> (2020), 333-343.                                |
| 2020 | F. Greer. “Modular forms from Noether-Lefschetz theory.” <i>Algebra Number Theory.</i> <b>14</b> (2020), 2335-2368.                             |
| 2019 | F. Greer. “Quasi-modular forms from mixed Noether-Lefschetz theory.” <i>Adv. Math.</i> <b>355</b> (2019), 106765.                               |
| 2015 | F. Greer, Z. Li, and Z. Tian. “Picard Groups on Moduli Spaces of K3 Surfaces with Mukai Models.” <i>Int. Math. Res. Not.</i> (2015), 7238-7257. |

## Preprints in Preparation

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| 2020 | F. Greer. “Cycle-valued quasi-modular forms on genus 0 Kontsevich spaces.”   |
| 2020 | F. Greer, R. Laza, Z. Li, F. Si, Z. Tian. “Baily-Borel and GIT models for the moduli space of degree 6 K3 surfaces.” |

## Expository Publications

- 2012 “Poncelet’s Porism.” *Harvard College Math. Review*. Spring Issue (2012), 72-76.  
2008 “Error-Correcting Codes and Sphere Packings.” *Harvard College Math. Review*. Fall Issue (2008), 4-11.

## Honors & Awards

- 2019 **AMS-Simons Travel Grant.**  
2011, 2012 **NSF Graduate Research Fellowship, Honorable Mention.**  
2011 **Craig Franklin Fellowship in Mathematics.**  
2009, 2010 **Derek Bok Center for Teaching and Learning.**  
Certificate of Distinction in Teaching.  
2006 **National Science Bowl Champion.**

## Invited Talks

- Jan. 2020 “Enumerative geometry and modular forms.”  
*U. Hawaii Manoa, Special Colloquium.*  
Jan. 2020 “Lagrangian spheres which are not vanishing cycles.”  
*EDGE Seminar (Edinburgh Hodge Institute).*  
Jan. 2020 “Formes quasi-modulaires et fibrations elliptiques.”  
*Journée de jeunes chercheuses et jeunes chercheurs (Strasbourg).*  
Jan. 2020 “Enumerative geometry and modular forms.”  
*Leibniz U. Hannover Algebraic Geometry Seminar.*  
Jan. 2020 “Enumerative geometry and modular forms.”  
*Michigan State, Special Colloquium.*  
Oct. 2019 “A Lagrangian sphere which is not a vanishing cycle.”  
*Harvard/MIT Algebraic Geometry Seminar.*  
Sep. 2019 “A Lagrangian sphere which is not a vanishing cycle.”  
*Washington U. St. Louis Algebraic Geometry Seminar.*  
July 2019 “Applications of Mixed Hodge Modules to Complex Geometry.”  
*Jeunes en Arithmétique et Variétés Algébriques (Tatihou).*  
May 2019 “Quasi-Modularity from Noether-Lefschetz Theory.”  
*Symposium on Hodge Theory, Moduli, and Arithmetic (PIMS U. British Columbia).*  
Mar. 2019 “A Lagrangian sphere which is not a vanishing cycle.”  
*Valley Geometry Seminar (U. Mass. Amherst).*  
Feb. 2019 “Teichmüller Curves and Lagrangian Spheres.”  
*RepTile: A conference on representation theory and tilings (U. Georgia).*  
Jan. 2019 “Quasi-Modularity from Toroidal Compactifications.”  
*Modular structures in Gromov-Witten theory (U. Michigan).*  
Nov. 2018 “Rigid Varieties with Lagrangian Spheres”  
*U. Georgia Algebraic Geometry Seminar.*

- Oct. 2018 “Rigid Varieties with Lagrangian Spheres.”  
*Harvard CMSA Mathematical Physics Seminar.*
- May 2018 “Elliptic Fibrations in the Presence of Singularities.”  
*Stanford Algebraic Geometry Seminar.*
- Feb. 2018 “Elliptic Fibrations in the Presence of Singularities.”  
*Northeastern Geometry, Physics, and Representation Theory Seminar.*
- Sep. 2017 “Elliptic Fibrations and Noether-Lefschetz Theory.”  
*Stony Brook Algebraic Geometry Seminar.*
- Sep. 2017 “Modular Forms from Noether-Lefschetz Theory.”  
*Columbia Algebraic Geometry Seminar.*
- Aug. 2017 “Modular Curve Counts from Noether-Lefschetz Theory.”  
*Hodge Theory, Moduli, and Representation Theory (Simons Center).*
- June 2017 “Noether-Lefschetz Theory and Elliptic Calabi-Yau Threefolds.”  
*Mirror Symmetry Conference for Young Researchers (U. Michigan).*
- Feb. 2017 “Noether-Lefschetz Theory and Elliptic Calabi-Yau Threefolds.”  
*U. British Columbia Algebraic Geometry Seminar.*
- Feb. 2017 “Noether-Lefschetz Theory and Elliptic Calabi-Yau Threefolds.”  
*U.C. San Diego Algebraic Geometry Seminar.*
- Nov. 2016 “Noether-Lefschetz Theory and Elliptic Calabi-Yau Threefolds.”  
*Harvard/MIT Algebraic Geometry Seminar.*
- Jan. 2016 “Lines on Elliptic Calabi-Yau Threefolds.”  
*AMS JMM, Special Session on Moduli Spaces in Algebraic Geometry (Seattle).*
- Jan. 2015 “Picard Groups of K3 Moduli Spaces.”  
*PIMS-UBC Geometry and Physics Seminar (Pacific Institute for Math. Sciences).*

## Teaching

- 2017–2020 **Stony Brook University.**  
Instructor for Math 123, 126, 211, 615.
- 2011–2017 **Stanford University.**  
Graduate Teaching Assistant for Math 42, 51, 51A, 53, 113, 120.
- 2016 **Stanford University.**  
Summer  
Advisor at Stanford Undergraduate Research Institute in Mathematics (SURIM).  
Project Title: Quantum Cohomology of Toric Varieties.
- 2008–2011 **Harvard University.**  
Undergraduate Teaching Assistant for Math 101, 122, 123, 131, 132.
- 2009–2010 **Program in Mathematics for Young Scientists (PROMYS).**  
Summers  
Counselor and mini-course instructor.