# Hunter A. Stufflebeam

## Curriculum Vitae

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**ABSTRACT** I am a fifth year PhD student at The University of Pennsylvania under the supervision of Davi Máximo. My primary interests lie in geometry and analysis, especially in geometric partial differential equations and geometric measure theory. I was previously an undergraduate at The University of Texas at Austin, where my advisers were Francesco Maggi and Salvatore Stuvard.

**CITIZENSHIP**

- US Citizen

**LANGUAGES**

- English: Native
- Spanish: Basic

**EDUCATION**

**The University of Pennsylvania** Philadelphia, Pennsylvania, USA

- PhD in Mathematics 2019–current

**The University of Texas at Austin**, Austin, Texas, USA

- Bachelor of Science (B.S.) in Pure Mathematics 2015 – 2019
  - Highest Honors with Special Departmental Honors in Mathematics
  - Thesis: "Allard Type Regularity Theorems for Rectifiable Varifolds."
  - Cumulative Overall GPA: 4.0 / 4.0

**ACADEMIC AWARDS**

- **J.A. Shohat Memorial Fellowship**, The University of Pennsylvania 2020-2021
- **Bob Williams Scholar**, UT Austin Spring 2019
  - Nominated by the Department of Mathematics
- **Eva Woods Stevenson Unrestricted Endowed Presidential Scholarship**, UT Austin Spring 2018
  - Nominated by the Department of Mathematics
- **College of Natural Sciences Book Award**, UT Austin Spring 2018
  - Awarded to 20 students in the College of Natural Sciences. Nominated by Dr. Francesco Maggi.
- **Distinguished College Scholar**, UT Austin Spring 2017, Spring 2018, Spring 2019
  - For ranking in the top 4% of the class in the College of Natural Sciences.
- **University Honors**, UT Austin Fall 2015 – Spring 2019
  - For attaining a semester GPA of at least 3.50.

**RESEARCH**

- **Current Research**, UPenn Ongoing
  - Broadly, I am interested in problems from geometric analysis concerning curvature bounds and their consequences. Major themes in my work are those of *rigidity* and *almost rigidity*, wherein one studies how well geometric and analytic measurements of an object help identify it.
- **Width Stability of Rotationally Symmetric PSC Metrics** Spring 2024
  - With P. Sweeney Jr. In Progress.
- **Stability of Convex Spheres** Fall 2023
  - With Davi Máximo. Preprint: https://arxiv.org/abs/2312.13995.
- **Stability of Convex Disks** Fall 2022
  - Calc. Var. and PDEs 2023 No. 244, 20. Preprint: https://arxiv.org/abs/2301.13130.
- **Allard Type Regularity Theorems for Rectifiable Varifolds** Fall 2018 – Spring 2019
  - Undergraduate Thesis at UT Austin. Advisers: Francesco Maggi and Salvatore Stuvard.

**INVITED TALKS**

- **Temple Graduate Student Conference in Algebra, Geometry, and Topology**
  - The Min-Oo Conjecture, Toponogov's Theorem, and Almost Rigidity Problems — May 2023
- **Brown Workshop on Differential Geometry**
  - Stability of Convex Disks — March 2023
- **CUNY Geometric Analysis Seminar**
  - Stability of Convex Disks — March 2023
- **UPenn Geometry Seminar**
  - Stability of Convex Disks — March 2023
- **Australian Geometric PDE Seminar**
  - Stability of Convex Disks — October 2022

**TEACHING**

- **Lecturer**, UPenn
  - Lecturer for Math 241 (PDEs) — Summer 2023
- **Graduate Teaching Assistant**, UPenn
  - Graduate TA for Math 1080 (The Mathematics of Change Pt.II) — Spring 2024
  - Graduate Grader for Math 4250 (Advanced PDEs) — Spring 2023
  - Graduate TA for Math 241 (PDEs) — Spring 2022
  - Graduate TA for Math 240E (Linear Algebra and ODEs for Engineers) — Fall 2021
  - Graduate TA for Math 609 (Graduate Real Analysis) — Spring 2021
  - Graduate TA for Math 240 (Linear Algebra and ODEs) — Fall 2020
- **Learning Assistant**, UT Austin — Fall 2018
  - Undergraduate TA for all UT Austin calculus classes.
- **Undergraduate Grader**, UT Austin
  - Complex Analysis: course number M 361. — Fall 2018
  - Honors Discrete Math: course number M 325K-H. — Spring 2018
  - Probability I: course number M 362K. — Fall 2017
- **PLUS Tutoring (Peer Led Undergraduate Study)**, UT Austin — Spring 2016
  - PLUS facilitator for M-427J (Honors Differential Equations with Linear Algebra), which involved weekly meetings with the professor, running study sessions, and tutoring students.

**SERVICE**

- **GeMTrak Conference**, UPenn — April 2024
  - Co-organizer of the Ge(nder)M(inorities)(Am)Trak conference at UPenn.
- **Directed Reading Program Mentor**, UPenn
  - Riemannian Geometry and General Relativity. — Fall 2023
  - Riemannian Geometry. — Spring 2022
  - The Black-Scholes Equation and its Assumptions. — Fall 2021
  - Topics in ergodic theory and economics. — Spring 2021
  - Topics in dynamical systems. — Fall 2020
- **Graduate Pizza Seminar**, UPenn — 2020-2021
  - Organizer of the 2020-2021 UPenn Graduate Pizza Seminar
- **Graduate Student "Buddy" Program**, UPenn — Fall 2020
  - Served as a point of contact/mentor for an incomming first year graduate student.

**OTHER TALKS**

- **Graduate Pizza Seminar**, UPenn
  - "(Dont Fear) The Reaper or: How I Learned to Stop Worrying (About the Topology) and Love the Geometry " (a curve shortening flow talk) February 2022
- **Secret Geometry Seminar**, UPenn
  - "The Ricci Min-Oo Conjecture, and Possible Extensions" October 2021
- **Geometric Analysis Seminar**, UPenn
  - "$d_p$ Convergence and Almost Stability" October 2021
- **Graduate Geometry Seminar**, UPenn
  - "Curvature Bounds and Geometric Stability" October 2021
- **Graduate Geometry Seminar**, UPenn
  - "Convergence of Tori with Almost Non-Negative Scalar Curvature" April 2021
- **Spectral Geometry Student Seminar**, UPenn
  - "Topics in Spectral Geometry: Semiclassical Analysis" April 2021
- **Metric Geometry Student Seminar**, UPenn
  - "Convergence and Curvature of Metric Spaces" March 2021
- **Graduate Geometry Seminar**, UPenn
  - "The Yamabe Problem" February 2021
- **Geometric Measure Theory Seminar**, UPenn
  - "The Isoperimetric Problem in Metric Spaces" October 2020
- **Geometric Measure Theory Seminar**, UPenn
  - "The Theory of Currents in GMT: In Two Parts" July, August 2020
- **Geometric Measure Theory Seminar**, UPenn
  - "Rectifiable Varifolds In GMT" June 2020
- **Graduate Pizza Seminar**, UPenn
  - "Soviet Mathematics and the Productivity of Mathematicians post 1991" November 2019
- **Graduate Geometry Seminar**, UPenn
  - "The Isoperimetric Inequality on a Minimal Submanifold of Euclidean Space" September 2019
- **Geometric Measure Theory Seminar**, UT Austin
  - "Allard's Interior Regularity Theorem for Integer Rectifiable Varifolds" March 2019
- **UT Austin Math Club**, UT Austin
  - "Four Part Lecture Series on Differential Geometry and Topology" February 2019
- **UT Austin Math Club**, UT Austin
  - "A Primer on Geometric Measure Theory and Variational Problems." December 2018
- **Park City Math Institute–Experimental Math Lab**, Park City, Utah
  - "The Courant Nodal Domain Theorem and the 2-torus." July 2018
- **UT Austin Directed Reading Program Symposium**, UT Austin
  - "The Fourier Multiplier Problem for the Ball." April 2018
- **UT Austin Math Club**, UT Austin
  - "Dr. Levi Civita or: How I Learned to Stop Worrying and Love Torsion Free Connections." April 2018
- **UT Austin Directed Reading Program Symposium**, UT Austin
  - "Poking Fun at Surfaces, and How to Perturb your Manifolds." April 2017

**CONFERENCES AND WORKSHOPS ATTENDED**

- **Temple Graduate Student Conference in Algebra, Geometry, and Topology** May 2023
- **Brown Workshop in Differential Geometry**, Brown March 2023
- **Southern California Geometric Analysis Symposium**, UC Irvine March 2023
- **CTL Workshop on Inclusive and Equitable Teaching**, UPenn Fall 2023
- **MSRI Geometric Flows Summer School**, FORTH-IACM (Crete) June 2022
- **Geometric Analysis and Calibrated Geometries**, ETH Zürich June 2022
- **Rutgers Geometric Analysis Conference**, Rutgers University May 2022
- **Cornell Topology Festival**, Cornell University May 2022
- **Recent Developments in GMT and its Applications**, Rice University March 2022
  - On the occasion of Bob Hardt's retirement.
- **Texas Geometry and Topology Festival**, UT Dallas February 2022
- **UT Austin Summer Program in PDEs**, UT Austin Summer 2021
- **UT Austin Summer Program in PDEs**, UT Austin Fall 2020
- **MSRI Introductory Workshop in Microlocal Analysis**, MSRI September 2019
- **Princeton Summer School in Geometric Analysis**, Princeton June 2019
- **Differential Geometry, Calabi-Yau Theory and General Relativity**, Harvard May 2019
  - In celebration of Shing-Tung Yau's 70th birthday.
- **On Nonlinear PDEs and their Applications**, UT Austin March 2019
  - In celebration of Luis Caffarelli's 70th birthday.
- **Between Topology and Quantum Field Theory**, UT Austin January 2019
  - In celebration of Dan Freed's 60th birthday.
- **IAS Park City Math Institute**, Park City, Utah July 2018
- **University of Houston Summer School on Dynamical Systems**, Univ. of Houston May 2018
- **Undergraduate Workshop in Geometry and Topology**, Univ. of Notre Dame Aug 2017

**OTHER ACTIVITIES**

- **University of Pennsylvania Symphony Orchestra**, Principal Bass Trombonist 2019 – current
- **Math Club**, UT Austin 2016 –2019
- **The University of Texas University Orchestra**, Principal Bass Trombonist 2015 – 2019