Daniel Weser

CONTACT INFORMATION	weser@unc.edu tarheels.live/weser/	
RESEARCH INTERESTS	Geometric analysis, geometric measure theory, partial differential equations	
ACADEMIC APPOINTMENTS	**Department of Mathematics, University of North Carolina at Chapel Hill**	
	Postdoctoral scholar	Fall 2023-present
EDUCATION	**Department of Mathematics, University of Texas at Austin**	
	Ph.D. in Mathematics	Summer 2023
	Advisor: Francesco Maggi	
	Department of Economics, Arizona State University	
	B.S. in Economics with Minor in Mathematics	Spring 2016
PAPERS	**A Heintze-Karcher inequality with free boundaries and applications to capillarity theory** with M.G. Delgadino. Submitted, preprint available at arXiv:2210.16376.	
	On stability estimates for almost-CMC hypersurfaces with bubbling *In preparation.*	
TEACHING EXPERIENCE	**Instructor, University of North Carolina at Chapel Hill**	
	Differential Equations	Fall 2023
	Teaching Assistant, RTG Analysis of PDE Summer Program 2021	
	Introduction to the Calculus of Variations and Gradient Flows	May 2021
	Teaching Assistant, University of Texas at Austin	
	Differential Equations	Spring 2020
	Integral Calculus	Fall 2019
	Summer Mini Course leader	
	Geometric analysis	Summer 2018
	Recitation Instructor, Arizona State University	
	Intermediate Microeconomic Theory	Spring 2016
HONORS AND AWARDS	**Provost's Graduate Excellence Fellowship,** UT Austin	2017-2022
	Roger L. Faith Outstanding Honors Thesis Award, ASU	2016
	Presidential Scholar, ASU	2011-2016

OUTREACH	**Directed Reading Program, UT Austin**	Fall 2018-Spring 2023

Mentored undergraduate students in reading projects on partial differential equations, calculus of variations, differential geometry, calculus on manifolds, measure theory, and graph theory

Mathematicians of Color Alliance of Texas, UT Austin Fall 2020-Fall 2021

Regularly volunteered and gave two introductory lectures for an undergraduate audience:

The mathematics of Vivienne Malone-Mayes Sep. 2021
An introduction to the work of Wilfrid Gangbo Nov. 2020

SERVICE

Mathematicians of Color Alliance of Texas, UT Austin

Co-founder and co-organizer Fall 2020-Fall 2021
Invited Wilfrid Gangbo as inaugural *Distinguished Mathematician of Color Colloquium Series* speaker Fall 2020

Directed Reading Program, UT Austin

Head organizer Fall 2021-Spring 2022
Co-organizer Fall 2018-Spring 2023

Junior Analysis Seminar, UT Austin

Organizer Fall 2019-Spring 2020

GMT Reading Seminar, UT Austin

Organizer Spring 2019

INVITED
TALKS

Geometry and Topology Seminar, North Carolina State University (Oct. 2023)

Geometric Analysis Seminar, Yale University (Mar. 2023)

CONTRIBUTED
TALKS

"A PDEs approach to geometric variational problems," Junior Analysis Seminar, University of Texas at Austin (Feb. 2022)

"PDEs on manifolds part II," Junior Analysis Seminar, University of Texas at Austin (Nov. 2021)

"An introduction to the theory of (embedded) constant mean curvature hypersurfaces," Junior Analysis Seminar, University of Texas at Austin (Feb. 2021)

"A brief introduction to PDEs on manifolds," Junior Analysis Seminar, University of Texas at Austin (Sep. 2020)

"The min-max construction of minimal surfaces," Junior Geometry Seminar, University of Texas at Austin (Nov. 2019)

"An introduction to geometric variational problems," Junior Analysis Seminar, University of Texas at Austin (Apr. 2019)

"Viscosity techniques in geometric variational problems," Junior Analysis Seminar, University of Texas at Austin (Nov. 2018)

"An introduction to varifolds," Junior Analysis Seminar, University of Texas at Austin (Apr. 2018)

"Pedestrian Dynamics with Decision Making Processes," PDE Seminar, Arizona State

University (April 2017)

CONFERENCE ATTENDANCE

Joint Mathematics Meeting, Boston (Jan. 2023)

Rutgers Geometric Analysis Conference, Rutgers (May 2022)

Hot Topics: Regularity Theory for Minimal Surfaces and Mean Curvature Flow [Virtual], Mathematical Sciences Research Institute (March 2022)

Texas Differential Equations Conference, University of Texas at Austin (Mar. 2020)

Joint Mathematics Meeting, Denver (Jan. 2020)

Convex integration in PDEs, geometry, and variational calculus, Banff International Research Station (Aug. 2019)

On nonlinear PDEs and their applications, University of Texas at Austin (Mar. 2019)

Workshop on mean curvature and regularity, Institute for Advanced Study (Nov. 2018)

16th school on interactions between dynamical systems and partial differential equations, Centre de Recerca Matemàtica (June 2018)

Kinetic Equations: Modeling, Analysis and Numerics, University of Texas at Austin (Sep. 2017)

Dynamics and Geometry From High Dimensional Data, Carnegie Mellon University (Mar. 2017)

Transport Phenomena in Collective Dynamics: From Micro to Social Hydrodynamics, ETH-Zurich (Nov. 2016)