

Colloquium

University of Notre Dame
Department of Mathematics

Zihui Zhao - University of Chicago

Speaker: Zihui Zhao

University of Chicago

Will give a lecture entitled

Regularity of elliptic PDEs and area-minimizing surfaces

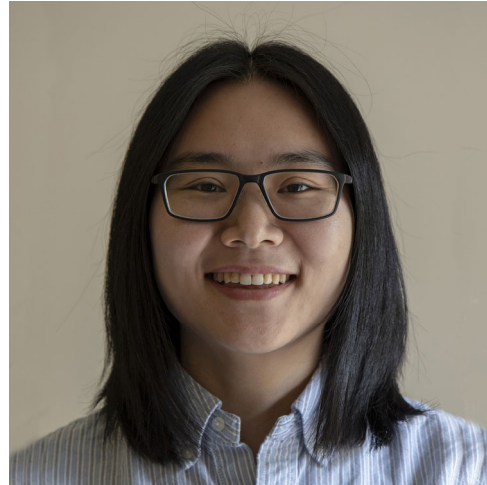
Date: Tuesday, December 7, 2021

Time: 4:00 PM

Location: 129 DeBartolo Hall

Zoom URL: <https://notredame.zoom.us/j/92667658389?pwd=ejRrVjBpelR6SnlOaU5hQXZXOVNSZz09>

Departmental Tea: Tea in Room 257 (lounge in Hurley Hall) at 3:30 p.m.



Abstract:

Unique continuation property is a fundamental property of harmonic functions, as well as solutions to a large class of elliptic and parabolic PDEs. It says that if a harmonic function vanishes to infinite order at a point, it must be zero everywhere. In the same spirit, we can use the local growth rate of harmonic functions to deduce global information, such as estimating the size of the singular set for elliptic PDEs. The second part of the talk is about Plateau's problem: Given a closed curve Γ , what is the surface of least area spanning Γ ? I will introduce the framework to study this minimization problem, with emphasis on the regularity of area minimizers. To conclude the talk I will briefly explain the connections between these two topics.