TEMPLE UNIVERSITY

Department of Mathematics

Analysis Seminar

Zoom Talk (link will be sent by email)

Monday, October 11 2021, 2:30 p.m.

Heat content and geometric analysis

by Pat McDonald

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Abstract: The heat content associated with a bounded domain in a Riemannian manifold is a function obtained by solving an initial value problem for the heat operator on the domain. Heat content gives rise to a collection of geometric invariants closely related to the Dirichlet spectrum. In this talk I will survey results that compare and contrast the role of heat content invariants to the role of spectral data in geometric analysis. In particular, I will discuss results involving planar polygons and provide explicit examples of where heat content invariants and Dirichlet spectrum behave similarly, and also where they behave differently.