RUTGERS
UNIVERSITY | NEWARK

DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE

Colloquium

EIGENVALUE ESTIMATES AND A CONJECTURE OF YAU

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ABSTRACT:

I will describe various upper and lower bounds on the spectrum of the Laplace-Beltrami on Riemannian manifolds. The upper bounds led to some important results in spectral geometry establishing a link between the so-called conformal spectrum and branched minimal immersions into Euclidean spheres. I will then move to describe a conjecture by Yau on the first eigenvalue on minimal submanifolds of the sphere, which is known only for some examples. I will then present some recent results where we improve quantitatively the best known lower bound (in the general case) of Choi and Wang of the mid 80's. I will address some open problems and possible generalizations of our argument.

$5 - 6$pm
Thursday, November 2, 2023
Room 204, Smith Hall