

**APPLIED MATHEMATICS SEMINAR**  
Department of Mathematics  
University of West Georgia  
**4:40 PM, MONDAY, NOVEMBER 20, 2006, BOYD 304**

Speaker: Dr. Lotfi Hermi, University of Arizona

Title: **On Riesz Means of Eigenvalues**

**Abstract**

Over the past decade, Laptev, Weidl (and co-authors) have promoted the idea that the route to prove the Pólya conjecture for the eigenvalues of the fixed membrane problem is to view it in Riesz means terms. In any case, this view has led to many fruitful discoveries and beautiful connections.

The Pólya conjecture is the statement that the Weyl asymptotics for the eigenvalues (which give estimates for the high frequencies of a vibrating membrane in terms of the volume of the underlying domain) is always trapped between the eigenvalues of the fixed and free membrane problems. This conjecture was proved by Pólya for tiling domains, but is still open in general.

The talk will trace some known inequalities and feature some new results for the Riesz means of these frequencies in terms of the fundamental one in the case of the fixed membrane problem.

All are welcome.