

# COLLOQUIUM

DEPARTMENT OF MATHEMATICS AND STATISTICS  
OAKLAND UNIVERSITY  
ROCHESTER, MICHIGAN 48309

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## Eigenstructure of the Equilateral Triangle

### Abstract

Lamé's formulas for the eigenvalues and eigenfunctions of the Laplacian with either Dirichlet or Neumann boundary conditions on an equilateral triangle are derived via a symmetry procedure. They are shown to form a complete orthonormal system. Various properties of the spectrum and nodal lines are explored. The issue of modal degeneracy is treated. Implications for related geometries are considered.

**372 Science and Engineering Building**

**Thursday, January 31, 2002**

**3:00 to 4:00 P.M.**

**(Refreshment at 2:30 to 3:00 P.M. in Room 368,  
Science and Engineering Building)**

### About the speaker

Prof. Brian McCartin studied Applied Mathematics at the University of Rhode Island (B.S. 1976, M.S. 1977) and New York University's Courant Institute (Ph.D 1981). In addition, he earned the B.Mus. Summa Cum Laude from the Hartt School of Music of University of Hartford (1994). He was Senior Research Mathematician for United Technologies Research Center and Chairperson of Computer Science at RPI/Hartford before joining Kettering University in 1993. He was the recipient of the 2000 Outstanding Researcher Award and the 2001 Outstanding Teaching Award, both from Kettering University.