

The Department of Mathematics presents the

# Dr. Marjorie Lee Browne Colloquium

as part of the University of Michigan's  
Rev. Dr. Martin Luther King, Jr. Symposium



## Professor Rodrigo Bañuelos

Professor and Head, Department of Mathematics  
Purdue University

### *The Isoperimetric Problem: Queen Dido's Gift to Mathematics*

The speaker will first reflect on his path to academia and the lack of access to higher education that certain groups of students in our society are still experiencing today. This will include his views regarding the progress (or lack thereof) made in increasing the participation of women and minorities in mathematics in the sixty years since the University of Michigan awarded Dr. Marjorie Lee Browne a Ph.D. The talk will then turn to a discussion of the historical influence the isoperimetric problem of Queen Dido has had on some areas of modern mathematics. George Pólya's 1954 statement "the isoperimetric theorem, deeply rooted in our experience and intuition, so easy to conjecture but not so easy to prove, is an inexhaustible source of inspiration" will be explored, with examples from Brownian motion and Lévy processes. Such examples extend far and beyond the classical isoperimetric property of Faber-Krahn for eigenvalues of the Laplacian. Some examples of "easy to conjecture" but yet unsolved isoperimetric problems will be discussed.

**Monday, January 18, 2010**

**4:00 p.m. • Room 1360 East Hall**

**530 Church Street, Ann Arbor, MI**

**Reception to follow in the Mathematics Atrium**

The Colloquium honors Dr. Marjorie Lee Browne, the first African-American woman to earn a Ph.D. in Mathematics from the University of Michigan.

For information please contact the Math Department at (734) 764-0335 or see [www.math.lsa.umich.edu/mlk/](http://www.math.lsa.umich.edu/mlk/)