

*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*



## **Dr. Carlos Castillo-Chavez**

Joaquin Bustoz, Jr. Professor of Mathematical Biology  
Arizona State University

### *Building and Linking Communities through Mathematics: Epidemiological Approaches to Collaborative Learning*

The search for “tipping” points is central in many fields of study. For example, the idea that the spread of disease is not only possible but extremely likely as long as enough susceptible individuals (critical mass) are available is important in the study of infectious disease. In his recent book “Tipping Point,” journalist M. Gladwell has used this classical epidemiological paradigm to explain changes in social dynamics as well—including reductions in crime in New York City in the 90’s. Similarly, the absence of underrepresented US minorities in the mathematical sciences is, according to many, the result of not having such a critical mass in the educational pipeline. I will discuss the current state of affairs of underrepresented minorities in the mathematical sciences, identifying successful models and expanding the use of the critical mass epidemiological concept as the key paradigm. This analysis supports many of the programs being piloted today by the National Science Foundation in order to increase diversity at the highest levels of science.

**Monday, January 17, 2005**  
**4:00 p.m. Room 1360 East Hall**  
**525 E. University, 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/)