CCSU
DEPARTMENT OF MATHEMATICAL SCIENCES

COLLOQUIUM

Friday, September 3
2:00 – 3:00 PM
Maria Sanford, Room 101

THE HOPF CONJECTURE

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(Work in progress - joint work with Ji-Ping Sha)

Abstract: One of the most important theorems relating geometry and topology is the Gauss-Bonnet theorem. As a consequence of this theorem we have that the sphere is the only oriented compact surface with no boundary that can have positive curvature everywhere. In general, the problem of finding out all the restrictions on the curvature provided by the topology of a manifold is a problem that is not well understood. Hopf conjecture states that it is impossible to have a metric on the product of spheres with positive sectional curvature. This conjecture still remains open. In this talk we will discuss several concepts involved in the statement of the Hopf conjecture and we will show some partial solutions.