

CCSU
DEPARTMENT OF MATHEMATICAL SCIENCES
COLLOQUIUM

Friday, November 19
2:00 – 3:00 PM
Maria Sanford, Room 101

**CONVERGENCE OF FOURIER SERIES
AND THE CARLESON OPERATOR**

ERIN TERWILLEGER MULLEN

UNIVERSITY OF CONNECTICUT

ABSTRACT

In the beginning of the 19th century, Joseph Fourier developed an infinite series of sine and cosine functions to describe heat flow in a long, thin rectangular plate. However, his assertions ran contrary to the prevailing understanding of functions and infinite series. It took some time for the mathematical world to accept his findings, but today we know Fourier series are extremely important and have led to a whole branch of mathematics called Fourier Analysis. In this talk, I will discuss types of convergence and conditions on functions sufficient to establish convergence of its Fourier series back to the function. The central result will be the pointwise almost everywhere convergence of L^2 functions on the torus proved by Carleson in the mid 1960's. We will end by discussing partial results and limitations in higher dimensions.

For further information:

gotchevi@ccsu.edu 860-832-2839

<http://www.math.ccsu.edu/gotchev/colloquium/>