

CCSU
DEPARTMENT OF MATHEMATICAL SCIENCES

COLLOQUIUM

Friday, May 1

2:00 – 3:00 PM

Maria Sanford, Room 101

**A GENTLE INTRODUCTION
TO OPERADS - PART I**

RACHEL SCHWELL

CENTRAL CONNECTICUT STATE UNIVERSITY

ABSTRACT

An *operad* is an algebraic structure whose use and behavior are best observed in the way it acts upon an algebra (akin to representations in group theory). In this talk, we will define operads as well as *algebras over operads*, and give several easy examples of both. In particular, we will define and discuss the *associahedra* $\{K_n\}$, which are a set of poly-topes whose vertices, edges, and faces are given by the possible associations in an n -letter multiplication. When viewed as an operad acting upon an algebra, these $\{K_n\}$ give rise to what is known as an A_∞ – *algebra*, loosely thought of as a “homotopy-associative” algebra.

This is the first part of a two-part talk. It will contain many easy pictures and examples, and assumes no prior knowledge of the subject.

For further information:
gotchevi@ccsu.edu 860-832-2839