

THE MATHEMATICS DEPARTMENT PRESENTS

A MATHEMATICS COLLOQUIUM

TUESDAY, May 5, 2009

BOND HALL 217

4:00 pm

Title: Invariant subspaces of operators

Speaker: Tim Olsen, Western Washington University

Abstract:

One of the most prominent open problems in functional analysis is the invariant subspace problem. The basic invariant subspace problem is the question of whether every bounded operator in a Banach space has a nontrivial invariant subspace. In a general Banach space, the answer has been shown to be no. However, this question garnered significant attention over the 20th century. It was shown in 1954 that any compact operator in a Banach space is guaranteed a nontrivial invariant subspace. In 1966 this result was extended to include polynomially compact operators. This presentation will focus on a result published by Victor Lomonosov in 1973, which was remarkable not only in the strength of its conclusion, but in the simplicity of its proof, which includes an ingenious use of Schauder's fixed point theorem. The goal is that this talk will be accessible to anyone familiar with linear algebra and calculus.

Refreshments will precede the talk at 3:30pm in Bond Hall 300
courtesy of Dr. Branko Curgus