WRIGHT STATE UNIVERSITY | DEPARTMENT OF MATHEMATICS AND STATISTICS

COLLOQUIUM

Speaker: **Dr. Xingxing Yu, Ph.D., Georgia Institute of Technology**

Title: **Possible Generalizations of the Four Color Theorem**

Date: **Friday, March 16, 2018**

Room/Time: **Meet-n-Greet:** **2:30 p.m.**   **Room 222 MM**
         Talk: **3:00 p.m.**   **Room 224 MM**

ABSTRACT:

The Four Color Theorem states that planar graphs are 4-colorable, i.e., there is an assignment of 4 colors to the vertices of a planar graph (one color for each vertex) such that adjacent vertices receive different colors. There are several possible ways to generalize this result. For example, one may consider graphs embeddable in a surface with fixed genus, or one can consider integer flows in graphs. In this talk, I will discuss two well-known conjectures in graph theory, the Hadwiger Conjecture and the Hajos Conjecture. They concern graphs not containing the complete graph on k vertices as a minor or as a topological minor.

SPEAKER BIO:

Dr. Xingxing Yu is a professor at Georgia Institute of Technology and a well-known world-class graph theorist. His research interests include graph theory, graph algorithm, and extremal combinatorics. He published over 100 journal articles and served as an editor for a number of top journals in combinatorics. He has solved many important conjectures in graph theory such as the longest cycle conjecture by Moon and Moser, the Hamilton cycle conjecture by Brunhaum, the induced path conjecture by Nash-Williams, the Hamilton cycle conjecture by Thomassen, and recently the Kelmans-Seymour Conjecture. Together with Thomas, he proved that every 4-connected planar graph and projective planar graph are hamitonian and also gave a polynomial algorithm to find a Hamilton cycle. This result is closely related to the Four Color Theorem and is well recognized in the graph theory community.