

DEPARTMENT OF MATHEMATICS COLLOQUIUM

University of West Georgia

4:00 PM, MONDAY, MARCH 12, 2007, BOYD 304

Speaker: **Prof. Elizabeth J. Billington**
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Title: **Decompositions of complete graphs,
with application to neighbourly translations of d -cubes**

Abstract.

Currently there is no purely graphical proof of the fact that a complete graph K_n which has an edge-disjoint decomposition into t bipartite graphs must satisfy $t \geq n - 1$. (This is known as Graham and Pollack's theorem.)

I shall give one of the known proofs of this result, using simple linear algebra, and include related results by Hoffman and de Caen on possible types of bipartite graphs in the extreme case, with equality above.

A neat application to neighbourly d -cubes due to Zaks will also be given.

All are welcome.