CCSU
DEPARTMENT OF MATHEMATICAL SCIENCES

COLLOQUIUM

Friday, October 12
3:00 – 4:00 PM
Maria Sanford, Room 101

MATRIX PATTERNS AND EIGENVALUES

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Abstract: Imagine all you know about a square matrix is which of its entries are zero and which are nonzero. In some sense, what you have is a combinatorial description of the matrix, which we refer to as its zero-nonzero pattern. We can also describe certain features of this pattern using combinatorial tools like graph theory. Then the question is: What can such a description tell you about the eigenvalues of the matrix?

This talk will review a bit of the history of this question. We will survey some past results, long-standing open problems, and recent developments. Although this is a problem from combinatorial linear algebra, one hope is that advanced tools from other areas of mathematics can shed light on the problem in new ways.