1145-VP-995 **Jason J Molitierno*** (`molitiernoj@sacredheart.edu`), Department of Mathematics, Sacred Heart University, 5151 Park Avenue, Fairfield, CT 06825-1000. *A tight upper bound on the spectral radius of bottleneck matrices of graphs.*

The Laplacian matrix, $L = [\ell_{i,j}]$, of a graph G on n vertices labeled $1, \ldots, n$ is the $n \times n$ matrix in which $\ell_{i,i}$ is the degree of vertex i, $\ell_{i,j} = -1$ if vertices i and j are adjacent, and $\ell_{i,j} = 0$ if vertices i and j are not adjacent. The eigenvalues of L are $0 = \lambda_1 \leq \lambda_2 \leq \ldots \leq \lambda_n$. The eigenvalue λ_2 is known as the algebraic connectivity of G because it gives a measure of how connected G is. In this talk, we will investigate the spectral radius ρ of the bottleneck matrix $M_i = (L\overline{\{i\}})^{-1}$ where $L\overline{\{i\}}$ is the matrix created from L by deleting the row and column corresponding to vertex i. It is known that $1/\rho(M_i)$ is a lower bound for λ_2. We will find tight upper bounds on $\rho(M_i)$ which will, in turn, give tight lower bounds on λ_2. (Received September 18, 2018)