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Emily Gullerud, aBa Mbirika* (mbirika@uwec.edu) and **Rita Post**. *Characteristic polynomials and eigenvalues for a family of tridiagonal real symmetric matrices and a tantalizing connection to Pascal's triangle*. Preliminary report.

We explore the family $\{A_n\}_{n=1}^{\infty}$ of $n \times n$ tridiagonal real symmetric matrices with zeroes on the diagonal and ones on the subdiagonal and superdiagonal. After deriving a three-term recurrence relation for the characteristic polynomials of this family, we find a closed form solution. The coefficients of these characteristic polynomials turn out to involve the diagonal entries of Pascal's triangle in an attractively inviting manner. Lastly, we explore a relation between the eigenvalues of various members of the family. More specifically, we give a sufficient condition for when $\text{spec}(A_m)$ is contained in $\text{spec}(A_n)$. (Received September 26, 2017)