Abstract: In a recent paper by Griffin, Ono, Rolen, and Zagier, the authors discuss an equivalent formulation of the Riemann Hypothesis in terms of polynomials having real roots and give partial progress towards this conjecture. In this talk, which is intended for a general audience, we will explain basic properties of the Riemann zeta function, give the ideas behind this recent paper, and introduce the broader impact this paper has to other areas of number theory, such as partition theory. Moreover, we will discuss the extent to which the results of this paper can be made to be effective, which is based on joint work with Griffin, Ono, Rolen, Thorner, and Wagner.