1147-05-62 **Sebastian M Cioaba*** (cioaba@udel.edu), University of Delaware, Department of Mathematical Sciences, Newark, DE 19716. *The smallest eigenvalues of Hamming, Johnson and other graphs.*

The smallest eigenvalue of graphs is closely related to other graph parameters such as the independence number, the chromatic number or the max-cut. In this talk, I will describe the well known connections between the smallest eigenvalue and the max-cut of a graph that have motivated various researchers such as Karloff, Alon, Sudakov, Van Dam, Sotirov to investigate the smallest eigenvalue of Hamming and Johnson graphs. I will describe our proofs of a conjecture by Van Dam and Sotirov on the smallest eigenvalue of (distance-j) Hamming graphs and a conjecture by Karloff on the smallest eigenvalue of (distance-j) Johnson graphs and mention some open problems. This is joint work with Andries Brouwer, Ferdinand Ihringer and Matt McGinnis. (Received November 19, 2018)