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Susan Morey* (morey@txstate.edu), **Loiuza Fouli** and **Huy Tài Hà**. *Depth Bounds for Monomial Ideals*.

In this talk, we examine lower bounds for the depths of monomial ideals. Starting with edge ideals of graphs, which are in one-to-one correspondence with square-free monomial ideals generated in degree two, we view lower bounds on the depth of R/I (and in some cases, the depths of R/I^t) in a way that allows the bounds to be extended to bounds that hold for all square-free monomial ideals and in some cases to bounds that hold for general monomial ideals. The techniques used involve a combination of extending known results and creating a new sequence of regular elements. While the sequence is not guaranteed to be a regular sequence on R/I , it provides a lower bound on the length of a maximal regular sequence on R/I , and thus on the depth of R/I . In the square-free case, the argument provides insight through the combinatorial correspondence with clutters on a geometric way to visualize a regular sequence. (Received January 19, 2018)