1163-57-217 **Tye Lidman** and **Allison H Moore\*** (`moorea14@vcu.edu`), Virginia Commonwealth University, Richmond, VA , and **Claudius Zibrowius**. *Essential Conway spheres and Floer homology via immersed curves.*

We will consider the problem of whether Dehn surgery along a knot in the three-sphere produces an L-space, which is a Floer-theoretic generalization of a lens space. The geometric characterization of these manifolds remains a difficult outstanding problem, and it is natural to ask whether the existence of certain essential surfaces in the complement of a knot can obstruct non-trivial surgeries yielding L-spaces. We will prove any knot in the three-sphere with a nontrivial L-space surgery admits no essential Conway spheres. As a corollary, we recover a classic result of Wu that states that if a knot K has an essential Conway sphere, then the fundamental group of rational Dehn surgery along K is never finite. Our proof uses the technology of peculiar modules, a Floer theoretic invariant for tangles due to Zibrowius, and the geometric realization of these modules as certain decorated immersed curves on the four-punctured sphere. This is joint work with Lidman and Zibrowius. (Received August 27, 2020)