

## **Taut Foliations and the L-Space Conjecture**

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The L-Space Conjecture is taking the low-dimensional topology community by storm. It aims to relate seemingly distinct Floer homological, algebraic, and geometric properties of a closed 3-manifold  $Y$ . In particular, it predicts a 3-manifold  $Y$  isn't "simple" from the perspective of Heegaard-Floer homology if and only if  $Y$  admits a taut foliation. The reverse implication was proved by Ozsvath and Szabo. In this talk, I'll present an example, originally due to Rachel Roberts, which shows that every non-L-space obtained by surgery along the right-handed-trefoil admits a taut foliation. Time permitting, I'll explain how to build on this strategy for positive 3-braid closures. This technique yields the first construction of taut foliations for every non-L-space obtained by surgery along an infinite family of *hyperbolic* L-space knots. No background in Heegaard Floer homology or foliation theory will be assumed.