Jason Starr: Spaces of Rational Curves on Fano Manifolds

I will quickly review how theorems on existence and density of rational points on Fano manifolds defined over non-algebraically closed fields (e.g., function fields of curves and surfaces) lead to questions about the geometry of the compactified spaces of rational curves on the Fano manifold, the spaces of stable maps. Then I will explain recent results on the geometry of these spaces, including recent joint work with Zhiyu Tian determining the Picard groups, ample cones and (regular) contractions of the spaces of stable maps on (most) Fano hypersurfaces.