1167-57-114 David Futer, Mathematics Department, Temple University, Philadelphia, PA 19122, Jessica S. Purcell* (jessica.purcell@monash.edu), School of Mathematics, 9 Rainforest Walk, Monash, VIC, 3004, Australia, and Saul Schleimer, Mathematics Institute, University of Warwick, Coventry, CV4 7AL, United Kingdom. Effective drilling and filling tame hyperbolic 3-manifolds.

It is known that every compact orientable 3-manifold can be obtained by Dehn filling a hyperbolic link complement. Moreover, Dehn fillings of hyperbolic 3-manifolds are almost always hyperbolic, by work of Thurston. Thus hyperbolic Dehn fillings form an important tool in 3-manifold geometry and topology. However, many original theorems on hyperbolic Dehn filling are not effective: they predict limiting behavior in sequences, but are difficult to apply to concrete individual examples. In recent work, the authors gave effective bilipschitz control on the change of hyperbolic metric under Dehn filling, using cone deformation techniques of Hodgson, Kerckoff, Brock, and Bromberg, deforming a metric with singularities along a geodesic. However, the effective control applied only when the 3-manifold had finite-volume. In this talk, we will explain how to combine our recent results in the finite-volume case with major recent results in Kleinian groups to extend our effective control to any tame hyperbolic 3-manifold. (Received February 28, 2021)