Grant S Lakeland* (lakeland@illinois.edu) and Christopher J Leininger. Systoles and Dehn surgery for hyperbolic 3-manifolds.

Given a closed hyperbolic 3-manifold $M$ of volume $V$, and a link $L \subset M$ such that the complement $M \setminus L$ is hyperbolic, we establish a bound for the systole length of $M \setminus L$ in terms of $V$. This extends a result of Adams and Reid, who showed that in the case that $M$ is not hyperbolic, there is a universal bound of $7.35534\ldots$. As part of the proof, we establish a bound for the systole length of a non-compact finite volume hyperbolic manifold which grows asymptotically like $\frac{4}{3} \log V$. This is joint work with Chris Leininger. (Received September 10, 2013)