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Christian Millichap* (cmillich@linfield.edu) and **David Futer**. *Mutations and geometric invariants of hyperbolic links and 3-manifolds.*

A mutation is a modification of a link complement (and more generally, a 3-manifold) obtained by cutting along a hyperelliptic surface, rotating this surface by a hyperelliptic involution, and then regluing along this surface. While mutations often produce a different link or manifold, they are notorious for preserving many classical, quantum, and geometric invariants. In this talk, we will examine conditions under which mutations preserve many geometric invariants of hyperbolic 3-manifolds and discuss some open questions in this area. Geometric invariants of interest will include the volume, the length spectrum, the area spectrum, and the Cheeger constant of a hyperbolic 3-manifold. Part of this project comes from joint work with David Futer. (Received September 13, 2017)