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Kevin Li, Christopher Xue* (christopher.xue@yale.edu), **Jack Hirsch** and **Jackson Petty**. *Isoperimetric Tilings of Closed Hyperbolic Surfaces*.

The regular hexagon is the least-perimeter tile of the Euclidean plane for any given area. On hyperbolic surfaces, this “isoperimetric” problem differs for every given area, as solutions do not scale. However, there exist tilings of hyperbolic surfaces that preserve much of the symmetry of the Euclidean solution. In particular, a regular k -gon with area $(k-6)\pi/3$ tiles certain hyperbolic surfaces with edges meeting in 3’s at 120-degree angles. Cox conjectured that on closed hyperbolic surfaces, such tiles are isoperimetric. We prove his conjecture for tilings by a collection of curvilinear polygons. (Received September 17, 2019)