1135-51-2359 **Laney Bowden**, **Andrea Haynes**, **Clayton Shonkwiler** and **Aaron Shukert***
(aaron.shukert@colostate.edu). *Spherical Geometry and the Least Symmetric Triangle.*

"What is the least symmetric triangle?" This question isn't well-posed, but given a quantitative measure of the asymmetry of a triangle, a reasonable answer is: the triangle which maximizes this measure. In turn, if we have a notion of distance on triangle space, the minimum distance to a symmetric triangle (isosceles or degenerate) provides such a measure of asymmetry, and the triangle with the largest such distance can reasonably be called the least symmetric triangle. We use a construction originally developed to study ring polymers like bacterial DNA to define a distance on the space of triangles. Specifically, this will allow us to identify triangles with points on the unit sphere and then use spherical geometry to explicitly find the point on the sphere which is furthest from the isosceles and degenerate triangles: this point then gives us the least symmetric triangle. (Received September 26, 2017)