1141-49-286 **David G Costa** and **Daniel Anthony Corral*** (dacorral@unlv.nevada.edu). *Remarks on Lagrange Multiplier Approach to Kazdan-Warner Equations on a Finite Graph.*

In 2016 Grigoryan, Lin, and Yang studied the finite graph analogue of the Kazdan-Warner equation. Given a finite graph $V$ and $c$ a constant, they studied the equations:

$$\Delta_\mu u = c - k(t)e^u \text{ in } V,$$

and

$$\Delta_\mu u = -k(t)e^u \text{ in } V.$$

They determined if and only if conditions for these equations to have a solution in several cases. They followed closely the technique used by J.Kazdan and F. Warner in their 1974 paper" Curvature functions for compact 2-manifolds" for proving existence of solution in the continuous analogue of this equation. Dr. David Costa and I have generalized some of these cases. (Received July 31, 2018)