Garen Chiloyan*, Department of Mathematics, University of Connecticut, Storrs, CT 06269, and Álvaro Lozano-Robledo, Department of Mathematics, University of Connecticut, Storrs, CT 02629. A Classification of Isogeny-Torsion Graphs over Q.

An isogeny graph is a nice visualization of the isogeny class of an elliptic curve. A theorem of Kenku shows sharp bounds on the number of distinct isogenies that a rational elliptic curve can have (in particular, every isogeny graph has at most 8 vertices). In this talk, we classify what torsion subgroups over $\mathbb Q$ can occur in each vertex of a given isogeny graph of elliptic curves defined over the rationals. This is joint work with Álvaro Lozano-Robledo. (Received August 13, 2020)