

1154-05-1221      **Joel Louwsma\*** (jlouwsma@niagara.edu), Department of Mathematics, Niagara University,  
P.O. Box 2044, Niagara University, NY 14109. *Arithmetical structures on graphs.*

An arithmetical structure on a finite, connected, simple graph is a labeling of the vertices with positive integers such that, at each vertex, the number there is a divisor of the sum of the numbers at adjacent vertices, and where the numbers used have no common factor. We discuss results, joint with Archer, Bishop, Diaz-Lopez, García Puente, and Glass, about counting arithmetical structures and classifying their critical groups on graphs such as bidents. We also discuss results, joint with Harris, about possible largest values of arithmetical structures on complete graphs. These projects stem from the 2017 REUF program. (Received September 14, 2019)