1106-11-445 **Edray Herber Goins*** (egoins@math.purdue.edu), Mathematical Sciences Building, 150 North University Street, West Lafayette, IN 47907, and **Alejandra Alvarado** (aalvarado2@eiu.edu), Mathematics and Computer Science, 600 Lincoln Avenue, Charleston, IL 61920. *Arithmetic Progressions on Curves.*

The set $\{1,\ 25,\ 49\}$ is a 3-term collection of integers which forms an arithmetic progression; the common difference is 24. Hence the set $\{(1,1),\ (5,25),\ (7,49)\}$ is a 3-term collection of rational points on the parabola $y = x^2$ whose y-coordinates form an arithmetic progression. Similarly, the set $\{6,\ 12,\ 18\}$ is a 3-term collection of integers which also forms an arithmetic progression; the common difference is 6. Hence the set $\{(6,3),\ (12,39),\ (18,75)\}$ is a 3-term collection of rational points on the elliptic curve $y^2 = x^3 - 207$ whose x-coordinates form an arithmetic progression. Are there other examples such as these? What is the longest progression of rational points on either a quadratic or cubic curve such that either the x- or y-coordinates form an arithmetic progression? In this talk, we give a survey on what's known about arithmetic progressions on algebraic curves. We introduce elliptic curves as a means to show the non-existence of certain arithmetic progressions. We also introduce bielliptic curves in order to settle conjectures of Saraju P. Mohanty. (Received August 28, 2014)