1042-11-118 **Dragos Ghioca**, **Thomas J. Tucker** and **Michael E. Zieve*** (`zieve@math.rutgers.edu`).
Intersections of polynomial orbits, and a dynamical Mordell–Lang conjecture.

Pick nonlinear $f, g \in \mathbb{C}[x]$, and arbitrary $x_0, y_0 \in \mathbb{C}$. I will discuss the following result: if the orbits $\{x_0, f(x_0), f(f(x_0)), \dots\}$ and $\{y_0, g(y_0), g(g(y_0)), \dots\}$ have infinite intersection, then f and g have a common iterate.

The main ingredients in the proof are Siegel's theorem on integral points on curves, specialization arguments, and various new and old results on functional decomposition of polynomials. I will also present a general framework which includes both this result and the Mordell–Lang conjecture. (Received August 14, 2008)