1086-11-1436 **Joseph H Silverman***, Mathematics Department, Box 1917, Brown University, Providence, RI 02912. *Dynamical Degree and Arithmetic Entropy for Rational Maps.* Preliminary report.

Let $f : X \dashrightarrow X$ be a dominant rational self-map of a smooth projective variety defined over $\overline{\mathbb{Q}}$. The dynamical degree δ_f of f is a real number that measures the dynamical complexity of the iterates f^n of f. I will describe how δ_f also bounds the arithmetic complexity of the f-orbit of a point $P \in X(\overline{\mathbb{Q}})$. More precisely, for every $\varepsilon > 0$ and ample height function h_X, we have $h_X\bigl(f^n(P)\bigr) \le C_{f,\varepsilon}(\delta_f + \varepsilon)^n h_X(P)$. Applications include an inequality $\alpha_f(P) \le \delta_f$ for the arithmetic entropy and the construction of a dynamical canonical height for morphisms f satisfying an algebraic equivalence $f^*D \equiv \beta D$ for some $\beta > \sqrt{\delta_f}$. (Joint work with Shu Kawaguchi.) (Received September 21, 2012)