1077-11-674 **Carl Pomerance***, carl.pomerance@dartmouth.edu. *Elliptic Carmichael numbers.*

(This represents joint work with Aaron Ekstrom and Dinesh Thakur.) One hundred years ago, R. D. Carmichael discovered some composite numbers n that behave like primes with respect to the Fermat congruence; namely, $a^n \equiv a \pmod{n}$ for every integer a. The least example is $n = 561$, and after joint work with W. R. Alford and A. Granville, we now know that there are infinitely many such n. In the 1980's, D. M. Gordon defined an analogue where the Fermat congruence is replaced with $[n+1]P \equiv O \pmod{n}$, with P an arbitrary rational point on an arbitrary CM elliptic curve with discriminant coprime to n. An example is $n = p(2p+1)(3p+2)$, where $p = 468{,}686{,}771{,}783$. We show, modulo a mild conjecture on the least prime in a residue class, that there are infinitely many of these elliptic Carmichael numbers. (Received September 09, 2011)