1014-11-1461 **Andrew R Shallue*** (shallue@math.wisc.edu), University of Wisconsin-Madison, Mathematics Department, 480 Lincoln Dr, Madison, WI 53706. *Message Encoding on Elliptic Curves over Characteristic 2 in Deterministic Polynomial Time.*

While fast probabilistic algorithms for finding points on elliptic curves over finite fields are well-known, the problem of derandomizing these algorithms is not so well studied. For elliptic curves over finite fields of characteristic two, we give an algorithm for finding a nontrivial point in deterministic polynomial time. We also extend the algorithm to the encoding problem, so that now messages can be encoded as points on such curves in deterministic polynomial time for use in elliptic curve cryptography, in particular the ECC analogs of Massey-Omura and ElGamal. (Received September 28, 2005)