1060-20-133 **Jay R. Williams*** (jaywil@math.rutgers.edu), Department of Mathematics, Rutgers University, Hill Center for the Mathematical Sciences, 110 Frelinghuysen Rd., Piscataway, NJ 08854-8019. *A negative result regarding the construction of groups with word problem of a given Turing degree.*

It is well-known that given a subset $X \subseteq \mathbb{N}$ with Turing degree $\mathbf{d}$, one can construct a finitely generated group G_X whose word problem also has Turing degree $\mathbf{d}$. The usual constructions are highly dependent on the set X, in the sense that distinct sets X, Y with the same Turing degree usually give rise to non-isomorphic groups G_X, G_Y; and it is natural to ask if there is a more uniform construction with the property that sets of the same Turing degree give rise to isomorphic groups. In this talk, I will discuss some joint work with Simon Thomas which implies that no such construction exists. (Received March 27, 2010)