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In this talk, we will discuss a project that extends work of Lehmer, Shanks, and Washington on cyclic extensions, and elliptic curves associated to the “simplest cubic fields”. In particular, if  $p \geq 3$  is a Sophie Germain prime (so  $q = 2p + 1$  is also prime), we will describe a family of hyperelliptic curves  $C : y^2 = f(x)$ , with  $f(x)$  of degree  $p$  and defined over  $\mathbb{Q}$ , such that the rank of the Mordell-Weil group of the jacobian  $J/\mathbb{Q}$  of  $C$  is bounded by the genus of  $C$  and the 2-rank of the class group of the (cyclic) field defined by  $f(x)$ . This is joint work with Harris Daniels (Amherst) and Erik Wallace (UConn). (Received July 24, 2017)