1126-03-323 **Karen Lange*** (karen.lange@wellesley.edu), **Russell Miller** and **Rebecca Steiner**.
Classifications of algebraic structures.

Let $\mathcal{K}$ be a family of structures closed under isomorphism. A *computable classification* of $\mathcal{K}$ is a uniformly computable enumeration of the computable models in $\mathcal{K}$ such that each computable model is represented exactly once up to isomorphism. We discuss computable classifications of families of various algebraic structures. Although there is no computable classification of all (computable) fields, we prove that there is a computable classification of algebraic fields. Using a $\mathbf{0}'$ oracle, we can obtain similar classifications of the families of equivalence structures and of finite-branching trees. However, there is no computable classification of the family of finite-branching trees, nor of the family of torsion-free abelian groups of rank 1, even though these families are both closely allied with algebraic fields. To obtain these results, we leverage Friedberg's approach for showing that there is a computable enumeration of the family of all computably enumerable (c.e.) sets without repetitions. (Received January 17, 2017)