1033-03-234 **Jacob Carson**, **Ekaterina Fokina**, **Valentina Harizanov**, **Julia F Knight** and **Christina M Maher*** (`cmaher@nd.edu`), University of Notre Dame, 255 Hurley Building, Notre Dame, IN 46556, and **Sara Miller** and **John Wallbaum**. *The Embedding Problem for Some Classes of Computable Structures.* Preliminary report.

For a class K of structures, the computable embedding problem, denoted $Em(K)$, is the set of pairs $\{(a, b)\}$, where a and b are computable indices for structures $\mathcal{A}$ and $\mathcal{B}$ in K such that $\mathcal{A}$ is isomorphic to a substructure of $\mathcal{B}$. This is a variant of the isomorphism problem, which was studied by Wesley Calvert. We will describe how hard the embedding problem of a class K is by considering the complexity of the set $Em(K)$. Many of our results are obtained via a transformation from a class with an embedding problem of known complexity to a second class. If the transformation has certain properties, we have information about the complexity of the embedding problem for the second class. If time allows, I will present several examples of our results, including classes such as linear orders, graphs, torsion-free abelian groups, fields, and two-step nilpotent groups. (Received September 11, 2007)