1056-03-1592 **Tyler J Markkanen*** (tmarkkanen@smwc.edu), Department of Sciences and Mathematics, Saint Mary-of-the-Woods College, Hulman Hall, Room 316, St Mary-of-the-Woods, IN 47876.
"Separating the Degree Spectra of Structures" and Beyond: An Overview of My Dissertation in Computable Model Theory with Some New Extensions.

In computable model theory, the (Turing) degree spectrum of a countable structure $\mathfrak{A}$ is the set $\mathrm{DgSp}(\mathfrak{A}) = \{\deg_T(\mathfrak{B}) : \mathfrak{B} \cong \mathfrak{A}\}$ and is one way to measure the computability of $\mathfrak{A}$. Given various *classes* of structures, such as linear orders, groups, and graphs, we separate two classes $\mathcal{K}_1$ and $\mathcal{K}_2$ in the following way: we say that $\mathcal{K}_1$ is *distinguished from* $\mathcal{K}_2$ *with respect to degree spectrum* if there is an $\mathfrak{A} \in \mathcal{K}_1$ whose degree spectrum is not that of any $\mathfrak{B} \in \mathcal{K}_2$. We will investigate this separation idea and look at specific choices for $\mathcal{K}_1$ and $\mathcal{K}_2$ — for example, we show that with respect to degree spectrum, linear orders are distinguished from finite-component graphs, equivalence structures, rank-1 torsion-free abelian groups, and daisy graphs. From these proofs we will see a pattern for the structures from which linear orders are distinguished. With a goal to find more examples, we will also consider certain structures involving types (from classical model theory) and increasingly nested families (i.e., families of sets, families of families of sets, etc.). (Received September 22, 2009)