1135-03-2038 **Natasha Dobrinen***, University of Denver, Department of Mathematics, C.M. Knudson Hall, Room 300 2390 S. York St., Denver, CO 80209. *The triangle-free homogeneous graph had finite big Ramsey degrees.*

It is a central question in the theory of homogeneous relational structures as to which structures have finite big Ramsey degrees. A homogeneous structure $\mathbf{S}$ is said to have *finite big Ramsey degrees* if for each finite substructure A of $\mathbf{S}$, there is a number $n(A)$ such that any coloring of the copies of A in $\mathbf{S}$ into finitely many colors can be reduced down to no more than $n(A)$ colors on some substructure $\mathbf{S}'$ isomorphic to $\mathbf{S}$. This is interesting not only as a Ramsey property for infinite structures, but also because of its implications for topological dynamics. Prior to the work in this paper, finite big Ramsey degrees were proved for a handful of homogeneous structures, each of which do not omit a non-trivial substructure. Each of those results were critically tied to a Ramsey theorem on trees due to Milliken. Our work provides new tools to represent the homogeneous triangle-free graph and develops the necessary Ramsey theory, using the technique of forcing, to deduce finite big Ramsey degrees in ZFC. The methods developed seem robust enough that modifications should likely apply to a large class of homogeneous structures omitting some finite substructure. (Received September 25, 2017)