1077-05-2308 **Craig Eric Larson*** (clarson@vcu.edu), **Taylor Short** and **Bethany Turner**. *Towards Vizing's Independence Number Conjecture.*

The *chromatic index* χ' of a graph is the minimum number of colors that are required so that incident edges are colored different colors. A graph G with maximum degree Δ is *edge critical* if $\chi(G-e)=\Delta$ for every edge e. The independence number α is the cardinality of a largest set of vertices which are pairwise non-adjacent. Vizing conjectured that $\alpha \leq \frac{n}{2}$ for edge-critical graphs. Woodall has shown that $\alpha \leq \frac{3n}{5}$ for these graphs. We discuss improvements on this bound that follow from the Independence Decomposition Theorem: namely that any graph can be decomposed into unique subgraphs $G[X]$ and $G[X^c]$ having certain nice properties. It follows immediately from this theorem that $\alpha \leq \frac{3n}{5}$ for *any* graph where $|X| \leq \frac{n}{5}$. Further improvements are possible using the special structure of edge-critical graphs. (Received September 22, 2011)