1025-32-95 **Michael C. Fulkerson*** (michaelf@math.tamu.edu), 502 Southwest Parkway, #218, College Station, TX 77840. *Radial Limits of Holomorphic Functions.*

In 1925, Lusin and Privaloff proved that if a holomorphic function f on the unit disk has radial limit 0 at every point of the unit circle, then $f \equiv 0$. In fact, they proved the following much stronger result: If E is a set of points on the unit circle C for which there exists a non-constant holomorphic function which has radial limit 0 at each point of E, then for every arc $\alpha \subset C$, either $\alpha \cap E$ is first Baire category or there exists a subarc $\beta \subset \alpha$ such that $E \cap \beta$ has Lebesgue measure 0. In 1983, Robert Berman showed that the above condition on E is also sufficient. So, for example, there do exist non-constant holomorphic functions which have radial limit 0 almost everywhere on the unit circle. In this talk, I will review some ideas related to these results and examine some techniques for generalizations to the unit ball and half-space in $\mathbb{C}^n$. (Received January 16, 2007)