1067-35-686   **John L Lewis*** (`john@ms.uky.edu`), Patterson Office Tower, Mathematics Deaprtment,
University of Kentucky, Lexington, KY 40506. *Regularity and Free Boundary Regularity for the p-Laplace Operator in Reifenberg Flat and NTA Ahlfors Regular Domains.* Preliminary report.

We discuss boundary regularity for the gradient of a positive p harmonic function, u, vanishing on a portion of the boundary of a sufficiently flat Reifenberg or NTA Ahlfors regular domain. We also discuss a free boundary problem involving the gradient of u. Our theorems are similar to those of Kenig and Toro for the harmonic p = 2 case. This work is joint with Kaj Nystrom. (Received September 13, 2010)