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**Michael T Lacey\*** (lacey@math.gatech.edu), Mathematics, Georgia Tech, Atlanta GA 30332, Atlanta, GA 30332, **Eric Sawyer** (sawyer@mcmaster.ca), math, McMaster University, Hamilton, ON L8S 4K1, Canada, **I Uriate-Tuero** (ignacio@math.gatech.edu), math, michigan state, East Lansing, MI 48824, and **Maria Carmen Reguera** (mreguera@math.gatech.edu), math, georgia tech, Atlanta, GA 30332. *Recent results in Weighted Theory.*

Our subject is two-weight inequalities for (discrete analogs of) singular integrals, and their application to questions about sharp dependence on the  $A_p$  constant in one weight inequalities. We will discuss recent characterizations of two weight inequalities due to Nazarov-Treil-Volberg and the speaker with Sawyer and Uriate-Tuero. The application of these results to  $A_p$  weights yields results on strong and weak-type inequalities that are sharp in the power of the  $A_p$  characteristic of the weight. The latter is joint with Maria Carmen Reguera, Armen Vagharshakyan and Tuomas Hytonen. (Received October 01, 2009)