Weak coloring numbers of planar graphs

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(Weak) coloring numbers generalize the notion of the degeneracy of a graph. They were introduced by Kierstead & Yang (2003) in the context of coloring games on graphs. The notion gained more attention when Zhu characterized classes of graphs with bounded expansion as exactly those with bounded coloring numbers. In fact, coloring numbers became a very handy way to work with sparse classes of graphs. I will give a quick introduction to the area, emphasizing some intriguing open problems. In particular, I will discuss a conjecture that the maximal value of the r-th weak coloring number of a planar graph is $O(r^2 \log(r))$ and present some related results.