1145-VP-2504 **Mike Krebs*** (mkrebs@calstatela.edu), CSULA Dept. of Mathematics, 5151 State University Drive, Los Angeles, CA 91711. *The closure chromatic number of the plane, and of Euclidean space.*

We say a subset A of the Euclidean plane avoids distance 1 if no two points in A are of distance 1 from one another. The classical "chromatic number of the plane" problem asks for the smallest number of sets in a partition of the plane such that each set avoids distance 1. The sets in the partition can be thought of as color classes for some coloring of the plane. For over half a century, it has been known that this number is at least 4 and at most 7. In 2018, de Grey improved the lower bound to 5. In this expository talk, we discuss the "closure chromatic number of the plane," that is, the smallest number of sets in a partition of the plane such that the closure of each set avoids distance 1. We show how the results of Grytczuk et al., drawing on the work of Nielsen, immediately imply a slightly weaker result than de Grey's, namely that the closure chromatic number of the plane is at least 5. We then extend these results to higher dimensions. Finally, we note the relationship between the closure chromatic number and the measurable chromatic number (that is, the smallest number of sets in a partition of the plane such that each set is measurable and avoids distance 1). (Received September 25, 2018)