1056-05-1359 **Adam Goyt** and **Lara Pudwell*** (`Lara.Pudwell@valpo.edu`), Department of Mathematics & Computer Science, 1900 Chapel Drive, Valparaiso, IN 46383. *Avoiding Colored Partitions.* Preliminary report.

One challenging problem is counting pattern-avoiding set partitions. A set partition can be written in a uniform way if each block is written in increasing order, and the blocks are ordered by increasing minimal elements. With this convention, any set partition of $\{1, \ldots, n\}$ can be encoded as a string $s_1 \cdots s_n$ where $s_i = j$ if element i lies in block j. It is easily seen that a partition is non-crossing if its string encoding avoids the pattern 1212. Further results involving pattern-avoiding set partitions were developed by Klazar, Sagan, and Goyt.

Motivated by recent results for pattern avoidance in colored permutations, we define the notion of pattern-avoiding colored partitions. A colored set partition is one where each number of the set partition is assigned one of k colors. Given colored set partitions P and R, let P^* and R^* be the underlying uncolored set partitions for P and R respectively. We say P contains R if P^* contains R^* as a subpartition, and if the colors on the subpartition equal those of R. Initial enumerative results will be provided as well as conjectured relationships to other combinatorial objects. (Received September 21, 2009)