A restraint $r$ on a graph $G$ is a function which assigns each vertex $v$ of $G$ a finite set of forbidden colours $r(v)$. A proper colouring of $G$ is said to be permitted by the restraint $r$ if each vertex receives a colour which is not from its assigned forbidden colours. We say that $r$ is a $k$-restraint if each vertex is assigned exactly $k$ forbidden colours.

Restraint colourings arise in a natural way as a graph is sequentially coloured, since the colours already assigned to vertices induce a set of forbidden colours on their uncoloured neighbours. Moreover, restrained colourings have applications to scheduling and timetabling.

I will discuss our recent research results on the following problem: among all $k$-restraints $r$ on $G$ such that $r(V(G)) \subseteq [nk]$, which restraint permits the largest or smallest number of colourings? (Received September 13, 2014)