VCU Discrete Mathematics Seminar

Reconfiguration of Colorings and List Colorings

Prof Dan Cranston
(VCU!)

Wednesday, Mar. 5
1:00-1:50 EDT

In person! in 4145 Harris Hall. And on Zoom:

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https://vcu.zoom.us/j/92975799914
         password=graphs2357
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A *proper* k-*coloring* of a graph G assigns to each vertex v a color $\alpha(v)$, with $\alpha(v) \in \{1, \ldots, k\}$ such that $\alpha(v) \neq \alpha(w)$ for every edge vw. (A *list coloring* is similar, except that distinct vertices may have distinct lists of allowable colors.)

A *recoloring step* in a graph G for a coloring α recolors some vertex v with a color allowable for v that is not used by α on any neighbor of v, yielding a new proper coloring. Given proper colorings α and β of G, we ask questions like: Can we transform α to β by a sequence of recoloring steps? And: Over all α and β, what is the longest that a shortest sequence from α to β can be?

In this talk we survey results on reconfiguration of colorings and list colorings. We end with a few conjectures.

For the DM seminar schedule, see:

https://go.vcu.edu/discrete