Hypergraph list coloring and Euclidean Ramsey Theory

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It is well known that one can color the plane by 7 colors with no monochromatic configuration consisting of the two endpoints of a unit segment. In sharp contrast we show that for any finite set of points K in the plane, and for any finite integer s, one can assign a list of s distinct colors to each point of the plane, so that any coloring of the plane that colors each point by a color from its list contains a monochromatic isometric copy of K. The proof follows from a general new theorem about coloring uniform hypergraphs with large minimum degrees from prescribed lists.

Joint work with A. Kostochka

For more information please visit the seminar website at:
http://www.math.nyu.edu/seminars/geometry_seminar.html.