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Deepak Bal* (deepak.bal@montclair.edu) and **Patrick Bennett**. *The bipartite $K_{2,2}$ -free process and Ramsey numbers*. Preliminary report.

The smallest n such that every red-blue edge-coloring of $K_{n,n}$ contains a red $K_{2,2}$ or a blue $K_{t,t}$ is known as the two color bipartite Ramsey number, $br(2, t)$. In the bipartite $K_{2,2}$ -free process, we begin with an empty graph on vertex set $A \cup B$, $|A| = |B| = n$. At each step, a random edge from $A \times B$ is added under the restriction that no $K_{2,2}$ is formed. This step is repeated until no more edges can be added. We use the technique of dynamic concentration to analyze this process and show how the resulting graph can be used to improve the best known lower bound on $br(2, t)$. This is joint work with Patrick Bennett. (Received February 20, 2018)