1106-VN-1845 **Tung Hoang*** (hoangt@millsaps.edu), 150660 Millsaps College, 1701 North State Street, Jackson, MS 39210. *Some Results on Path Localities of Completed Bipartite Graphs.*

In everyday life, many people encounter the need of arranging objects from high-dimensional space into low-dimensional space while best preserving the relationships between them. For instance, grocery store owners want to arrange their products into online column lists such that the nearby products in their store are close to each other in the lists; computer developers want to improve the burst-mode by optimally arranging data into linear addresses; or engineers want to best order the tasks for space robots so that the robots can work efficiently and productively. Motivated by these needs, in 2012, Dr. Yan Wang and David Poliakoff from Millsaps College built a graph theory model and introduced the concept of locality – a parameter measuring how well the distance relationships between vertices in one graph are preserved while those vertices are arranged into another graph. Continuing their research, I apply the idea of locality to find the best arrangement of the vertices in completed bipartite graphs into paths. In my presentation, I will introduce the results of the best arrangement for three types of completed bipartite graphs: $K_{1,n}, K_{2,n}$, and $K_{3,n}$; and my conjecture for the general case $K_{m,n}$. (Received September 15, 2014)