ELIZABETH GILLASPY, University of Montana
Homotopy of product systems, and K-theory for higher-rank graphs

One can model the C^*-algebra of a higher-rank graph (k-graph) via a product system, which is a higher-dimensional version of a C^*-correspondence. Just as for the Cuntz–Pimsner algebra associated to a C^*-correspondence, there is a 6-term exact sequence for the K-theory of the Cuntz–Nica–Pimsner algebra of a product system. This talk will present joint work with J. Fletcher and A. Sims, in which we establish the compatibility of this 6-term exact sequence with the new notion of a homotopy of product systems, and discuss the applications to higher-rank graphs. Our results imply that certain questions about the K-theory of k-graph C^*-algebras reduce to questions about the path-connectedness of certain spaces of matrices.