TOM BAIRD, Memorial University of Newfoundland
GKM-sheaves and equivariant cohomology

Let T be a compact torus. Goresky, Kottwitz and Macpherson showed that for a large and interesting class of T-manifolds M, the equivariant cohomology ring $H_T^*(M)$ can be encoded in a graph, now called a GKM-graph, with vertices corresponding to the fixed points M^T and edges labeled by characters of T.

In this lecture, we explain how the GKM construction can be generalized to any compact T-manifold. This generalization gives rise to new mathematical objects: GKM-hypergraphs and GKM-sheaves. If time permits, we will show how these methods were used to resolve a conjecture concerning the moduli space of at connections over a non-orientable surface.