1068-57-217 **Margaret Symington***, Department of Mathematics, Mercer University, 1400 Coleman Ave., Macon, GA 31201. *Encoding torus actions: topological, symplectic and Hamiltonian.*

Moment maps provide a very useful way to visualize symplectic manifolds that are equipped with a Hamiltonian torus action. However, further perspective on symplectic manifolds (and near-symplectic manifolds) can be gained by understanding how one can encode the topology of a manifold equipped with a smooth torus action, what constraints are imposed if one assumes that the manifold and the action are symplectic, what symplectic features you can see, and then finally the consequences of the action being Hamiltonian.

This lecture will be at an introductory level and will focus on what can be gleaned from two-dimensional diagrams of four-manifolds about the manifolds themselves and three-manifolds therein, including contact structures on such three-manifolds. (Received January 18, 2011)