**Dynamin: Conformational Dynamics and Ligand-Induced Self-Association**  
David Jameson, Department of Cell and Molecular Biology, University of Hawaii,  
Honolulu, Hawaii, USA  
(djameson@hawaii.edu)

**Background:**  
We are using state-of-the-art fluorescence methodologies combined with molecular biological approaches to study the self-association and conformational dynamics of the large GTPase dynamin. These studies are being carried out both *in vitro* and *in vivo* using steady-state and time-resolved fluorescence as well as multiphoton Fluorescence Correlation Spectroscopy (FCS).

**Outcomes:**  
We seek an improved understanding of the biological function of dynamin in diverse biological processes including receptor mediated endocytosis and synaptic vesicle recycling.

**Progress to date:**  
We have extensively characterized the kinetic properties of dynamin using stopped-flow fluorescence methods. We are also studying the oligomerization state of dynamin in living cells, both in the cytoplasm and the nucleus. These latter studies utilize two-photon FCS and the Photon Counting Histogram method of analysis.

**Timeline:**  
This project is long term. We will continue to study the basic biochemistry and cell biology of this important protein system since the ultimate goal is basic knowledge.