

**SYNTHESIS OF N-HETEROCYCLIC COMPOUNDS AS PROBES OF BIOLOGICAL SYSTEMS** Edith J. Banner, Department of Chemistry, Florida Southern College, 111 Lake Hollingsworth Dr., Lakeland, FL 33801

*N*-heterocyclic compounds are important synthetic targets as probes for studying biological systems and for the development of potential medicinal therapeutic agents. Current efforts are underway to develop efficient and cost effective synthetic approaches to these common structural motifs. Synthetic strategies include inter- and intramolecular cyclizations and focus on providing multiple points for structural variation to allow for molecular diversity. These scaffolds will provide important building blocks for the preparation of *N*-heterocyclic libraries of compounds for structure-activity relationship studies. Once prepared, these *N*-heterocyclic compounds are utilized in collaborative efforts to examine their activity in various biological systems to better understand the enzymes involved in bacterial resistance, to develop subtype specific inhibitors of sodium channels and to further understand the role of sodium channels in pain and cancer.