Bisphenol A (BPA) is a ubiquitous chemical vital to the polymer industry and used in the production of thermal printing paper. However, BPA is a known estrogen mimic: thus environmental exposure may cause hormonal cancers and reproductive abnormalities. Distribution of BPA into the environment occurs on a large scale because it is essential in the thermal printing process (receipts) and is ubiquitous in the polymer industry. In the field of polymers and materials, the bisphenolic structure of BPA has been used in thermosetting epoxy resins to provide the polymerized structure with a rigidity promoting required robust thermomechanical properties. With no renewable source of BPA and adverse estrogenic health effects, the synthesis of a less estrogenic BPA substitute capable of being produced from renewable sources would be favorable for animal and human health, as well as the environment. In this project, monomers with structural properties mimicking BPA are targeted for synthesis from renewable feedstocks (green chemistry). This mode of action is to keep the rigid properties that BPA provides while inhibiting the ability to mimic estrogen. The monomers are characterized for purity using various methods of NMR and IR. The estrogenicity of the synthetic BPA mimics will be determined in a yeast assay performed in collaboration with Dr. Sheeler's group at Liberty University. These data will allow us to construct a preliminary structure-activity relationship. We can then use the results from the assay and the molecules with the best performance in this assay will be polymerized with 4,4'-diaminodicyclohexyl methane to produce thermoset epoxy resins. These resins will be characterized for their physical properties creating a structure-property relationship, relating the chemical structure to polymer properties. These molecules may prove useful in of the development of a cleaner, greener, and more efficient approach to the thermal printing process and may eventually displace BPA from some industrial operations: both consequences will result in the removal of estrogenic toxicants from the environment.