**Mentor:** Tom Hagan

**Student:** Kelsi Newman

**Project Description:** Targeted-cancer therapy where tumorigenic cells are destroyed leaving healthy normal cells untouched is a holy grail of chemotherapeutic research. Photodynamic therapy (PDT) entails the use of photosensitizers activated by light to effect the destruction of targeted cells. The development of photosensitizers is a rich area of exploration requiring a balance of biologically-relevant design with synthetically feasible and cost effective chemical synthesis. We are investigating the synthesis of carbohydrate-appended tetraphenylporphyrins (aka, glycosylated porphyrins) for such therapies. While we have preliminary evidence to support the synthesis of a glycosylated porphyrin (shown below), purity analysis indicates it is substantially impure, and hence categorically unacceptable in medical applications. The aim of this project is to develop effective purification procedures not only for the intended final product, but also to investigate reaction and purification procedures for the required precursor molecules.