Dr. Michael J. Reddish (Postdoctoral Fellow)

One project involves cytochrome P450 (P450) 19A1, the steroid aromatase. This enzyme oxidizes androgens to estrogens and is important not only in normal steroid homeostasis but also as a target in hormonal cancer. In different species, the enzyme catalyzes three different reactions. We are delineating these in the human and the three hog variants, plus site-directed mutants.

Another project also involves P450 11B1 and 11B2 and steroid metabolism and deals with the processivity of the steps involved in the indicated pathway. Others have reported that one reaction is processive and not distributive. We are addressing this issue and studying the biochemical basis for the reported phenomena, using kinetic and structural approaches.