Project Title: Angel Wings Bicycle Seat

Overview
The Angel Wings Bicycle Seat is the only two padded bike seat that moves with rides with the rider’s body. The seat eliminates the rubbing and chaffing that occurs from a typical bike seat and reduces the pinching of muscles, nerves, arteries, and veins in the groin area. The seat is still in the final design phase and is near ready for higher volume manufacturing. The cost of the initial prototype needs to be reduced and the design of the components needs to be analyzed to see where improvements can be made.

Objectives
- Determine a process where the three piece assembly can be manufactured as one piece.
- Find the optimal process and company to manufacture the base according to unit cost, initial tooling cost, ease of assembly, and proximity to DuBois.
- Reduce the cost and determine a more efficient process to manufacture the plastic seat pad.
- Find the optimal process and company to manufacture the pad according to unit cost, initial tooling cost, proximity to DuBois, and tooling life.
- Create packaging prototypes for the bike seat that can accommodate changing designs.

Approach
- Completed CAD model to give to companies for cost quotations.
- Researched different manufacturing processes.
- Contacted manufacturing companies to see how much it would cost to produce varying quantities of the seat base.
- Completed CAD Model to give to companies for cost quotations.
- Contacted plastic injection molding companies to see how much it would cost to produce varying quantities of the plastic seat.
- Contacted a foam packaging company to gain insight on packaging options and cost involved.
- Developed two alternative packaging layouts with different sub-assembled parts.

Outcomes
- Two companies were recommended for the production of the seat pad and the base of the seat that satisfied the criteria of tooling cost, unit price, proximity to DuBois, ease of assembly, and tool life/durability the best.
- Two packaging layouts were developed with distinct advantages to each design. The best alternative will be chosen based on the sponsor’s preference.