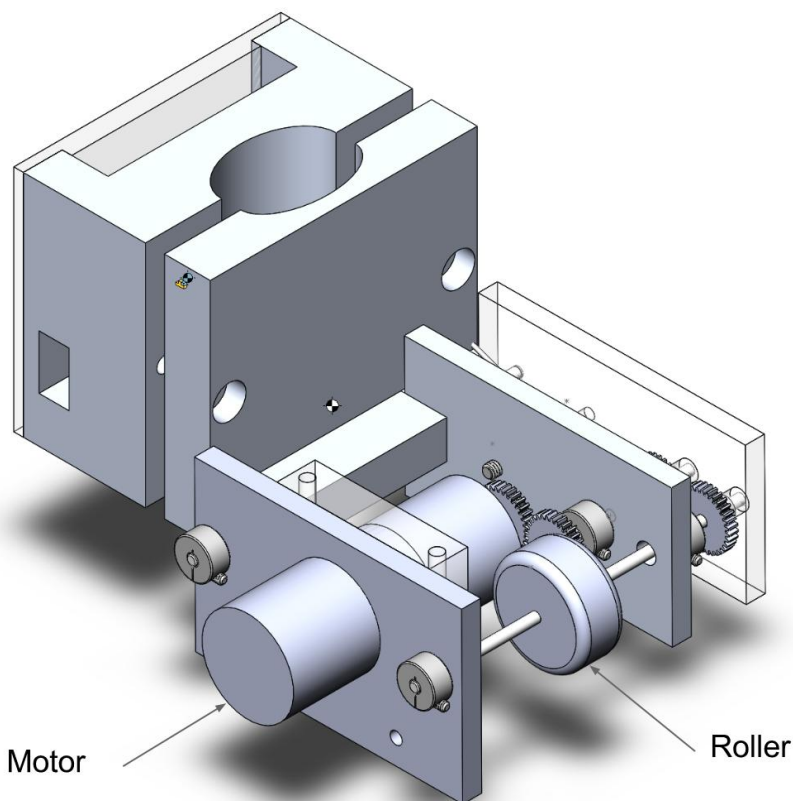


Bicycle-powered Phone Charger

For the final project in my ME14 class, I worked with two other classmates to create a bicycle-powered phone charger. The idea and design were completely our own. Although any project that had at least one moving part and was mechanical in nature would satisfy the project criteria, we wanted to produce something that involved components we were not previously familiar with and something that would be relevant in helping other countries of the world.

We measured the relevant dimensions of a Caltech library bicycle and, using these dimensions, modeled the design of the phone charger in SolidWorks 2016. To convert the mechanical energy of the bike to electricity that could power a phone, we used a 12V DC motor generator in combination with a DC step-down voltage transformer.



Using milling machines, lathes, and laser-cutters, we made the phone charger and tested it on a Caltech Library bicycle. The product successfully charged an iPhone after the bicycle was ridden around campus.