

1086-K5-1995      **J. Christopher Twedde\*** (ct55@evansville.edu). *Should I get new wheels? The effects of rotational versus non-rotational mass in bicycling.*

A common adage in road cycling is that “a gram off the wheels is two grams off the frame.” That is to say, moving the wheels takes twice as much energy as moving the frame and rider, since energy is required to both rotate and propel the wheels forward, whereas the the frame and rider merely move forward. We will use fundamental principles from physics to explore the energy savings of lighter wheels as compared to a lighter frame and rider. We will conclude by putting any savings into perspective by comparing this savings to other forces acting against the cyclist, such as wind resistance and friction. (Received September 24, 2012)