

### **Engineering Specification #14 – Force needed to transport bike**

The purpose of this test is to verify that the force needed to lift the rear of the bike while using the “wheel barrow” portability design feature does not exceed the recommended weight limit as specified under the conditions of the NIOSH lifting equation. The ideal value is less than 51 lbs, and the marginal value is 51 lbs.

**Start Date:** 5/14/08

**Finish Date:** 5/14/08

**Engineers set-up experiment:** Jonathan Bawas, Carl Mangelsdorf, James Nardo, Jeffrey Tempest, Jen Zelasko

#### **Equipment Needed:**

1. Weight scale

#### **Experiment Set-up:**

- 1.) **Measure the vertical lifting force needed to be applied while gripping the highest part of the seat post to lift the rear of the bike until only the front wheels are touching the ground.**

Vertical lifting force: 50 lbs

#### **Conclusions:**

The maximum force needed to be applied to lift the rear of the bike is 50 lbs. As the bike is lifted the force needed to hold the rear of the bike up decreases. The ideal value for this specification has been met.