

## Senior Design Project Description for SPRING 2016

### Project Title: Balance Pro (KP\_BALPRO)

Supporter: Kelly Paris

Supporter Technical Representative: ASSIGNED

Faculty Mentor: \_\_\_\_\_ ASSIGNED  TBD (check one)

Single Team  Dual Team \_\_\_\_\_ (check one)

Personnel (EN/ET): \_\_\_\_\_ E, 2 Cp, \_\_\_\_\_ Cv, 2 M, \_\_\_\_\_ SE

(Complete if the number of students required is known)

Expected person-hours: (250 per student)

#### Description of Project:

Baseball and softball are sports that require a player to hit a pitched ball. The manner that a player swings a bat, strides when swinging at a pitched ball and the player's overall balance directly affects whether and how squarely the bat strikes the ball at impact and, thus, the likelihood of the batter obtaining a hit. Players often practice their swing in an attempt to improve their mechanics. Such mechanics include stride length of a player, swing path of the bat and maintaining good overall balance during the swing. The goal is to train the muscles of the body to swing in a manner most likely to powerfully and squarely hit a pitched ball.

The goal of this project is to design a training device that provides direct feedback as to the swing path and/or stride length of a player. The player should be able to use such the device when facing live pitching.

#### Initial Project Requirements (e.g. weight, size, etc.):

The design of the device should be similar to that in the patent application that has been filed. A sketch of the device from the patent application is shown in Fig. 1. The work will include material selection and calculations to verify the strength of the device. Requirements of the device are:

- Rugged – able to withstand being hit and knocked over
- Weather resistant
- Able to provide instant feedback
- Store data for transfer to a lap top computer
- Adjustable
- Portable and collapsible for transport
- Light weight – less than 20 lb. total weight

#### Expected Deliverables/Results:

A fully functioning prototype with complete operating instructions shall be provided.

List here any specific skills or knowledge needed or suggested (If none please state none):

None

