



## ISWP Standards Working Group August 9, 2016 Meeting Recap

The ISWP Standards Working Group met by conference call on Tuesday, August 9, 2016 from 12:00 p.m. to 1:15 p.m. U.S. Eastern Time. This document provides a recap.

### Call Objectives:

1. Discuss progress updates from the subgroups and related future work.
2. Discuss funding proposal for December 2016 in-person meeting to reach consensus on design guidelines document

Next Call: Tuesday, September 13, 2016, 12:00 p.m. U.S. Eastern Time

### Discussion:

1. **Caster testing:** Anand Mhatre provided a written update; see page 3. Enhancements include a new plate with a matrix of holes so angle can be changed in 5 degree increments.

University of Pittsburgh has lights available to conduct UV testing to determine factors that contribute to breakdown of caster systems.

2. **Rolling resistance testing:** Work will continue at LeTourneau University when fall semester begins.
3. **Whole chair testing:** Don Schoendorfer has a couple of foundations which are very interested in providing financial support to develop a whole chair test track at Free Wheelchair Mission (FWM). The track would be used to test FWM chairs. Don is willing to share information related to building the track, testing chairs and tracking results. The whole chair test will still need to have field validation to ensure it is appropriate and replicable. A Standards WG subcommittee may be needed to oversee the field validation.
4. **Design Guidelines:** Following the July Standards Working Group call, ISWP prepared a budget for a December 2016 in-person meeting in California for external review of the ISWP design guidelines document. Budget of \$16,500 includes airfare, transportation, hotel and meeting expenses for 5 Standards Working Group members and 5 independent reviewers to attend. **Mark Sullivan** to submit funding proposal to ISWP for Advisory Board approval.

**Subgroups** (for reference):

- Design Guidelines: Mark Sullivan (lead), Daniel Martin, Jon Pearlman, Norman Reese, Chris Rushman, Eric Wunderlich
- Casters: Anand Mhatre (lead), Matt McCambridge, Jon Pearlman, Norman Reese, Don Schoendorfer
- Corrosion: Matt McCambridge, Don Schoendorfer, Anand Mhatre, Jon Pearlman
- Rolling Resistance: Norman Reese (lead), Matt McCambridge, Jon Pearlman
- Whole Chair Testing: Don Schoendorfer, Matt McCambridge, Josiah Auer, Mark Sullivan, Daniel Martin, Jon Pearlman, Norman Reese, Anand Mhatre, Dave Mahilo

**Participants:**

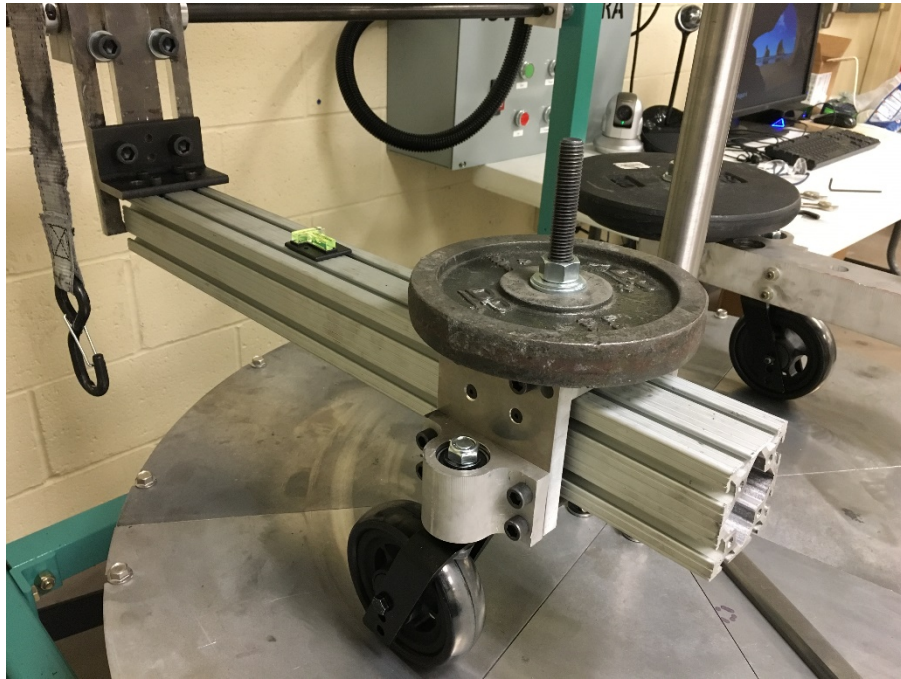
- Daniel Martin, Shonaquip
- Matt McCambridge: DEKA (formerly with Whirlwind)
- Norman Reese, LeTourneau University
- Caleb Elder, LeTourneau University
- Karen Rispin, LeTourneau University
- ✓ Mark Sullivan, Convoid and Polus Center (WG Chair)
- Don Schoendorfer, Free Wheelchair Mission
- Karl-Erik Westman, Handicap International
- ✓ Eric Wunderlich, LDS Charities
- Chris Rushman, Motivation
- Dave Mahilo, Invacare
- Dr. Rory Cooper, University of Pittsburgh
- Anand Mhatre, University of Pittsburgh
- ✓ Dr. Jonathan Pearlman, University of Pittsburgh
- ✓ Nancy Augustine, University of Pittsburgh
- Ben Gebrosky, University of Pittsburgh
- Josiah Auer, Free Wheelchair Mission
- Krithika Kandavel, ISWP

Prepared by: Nancy Augustine, University of Pittsburgh

## ISWP Caster Test Update 08/09/2016

### 1. New Caster Arm development:

Casters have different diameters and trail lengths and since we need casters placed on the orthogonal axes of the turntable, we needed flexibility in adjusting the position of the caster.



### 2. Adjustable slat assembly: assists in adjusting the shock angle (0.5 degree adjustment)



3. Video: <https://www.youtube.com/watch?v=zsURyZeFzlg>
4. Prospective testing:
  - a. Study with angled slats (5 designs; 2 casters from each design tested with 0, 15 and 30 degree shocks)
    - i. Manufacturers -
      1. UCP
      2. Convaid
      3. Roughrider
      4. LDS Standard Chair
      5. Need one more design!!
    - ii. Results will be stored here:  
<https://drive.google.com/open?id=1mzMYOZimukbR2RjzoxIH8z2TDTY6uxCEk8mZ7otcY10>
5. UV testing for casters - update
  - a. ISO Standard for UV exposure requires 400h of UVA exposure to simulate 8h of sunlight exposure for a year. UVA light bulbs are available at Pitt from standard testing of prosthetics.
  - b. UVB exposure is intense and causes faster degradation but not representative of sunlight exposure.
6. Require input from the group on tightening torque spec.
  - a. This affects the caster flutter after the shock.