The Ergonomics Community of Practice is comprised of researchers and construction stakeholders committed to sharing information, and coordinating and collaborating toward disseminating research-based ergonomic solutions to reduce MSDs among construction workers. As a first step, the group has proposed doing so through the development and implementation of a pilot social marketing campaign focused on material handling hazards and solutions for a specific segment of the construction industry, target audience, and market.

Others who have been contacted and expressed interest in learning more and being part of this Community of Practice include Len Welsh, CA state workers’ comp and the CA BCTD, Tony Barsotti in Portland, the OH workers’ comp.

An important point raised by Tony B. is that “if you focus on mitigating the hazard it doesn’t fit into their (contractors) overall construction process – every production process should address ergonomics.” With this in mind, the goals of the ergonomics campaign are to:

1. Encourage Create a more efficient Address manual material handling process in as part of the overall construction planning process in order to reduce the risk for and incidents of materials handling related MSDs.

2. Raise awareness of the activities that put workers at risk for MSDs from materials handling. [To whom? Should be everyone involved in the project, not just the workers so all recognize when workers are at risk from materials handling.]

3. Raise awareness of available equipment and methods that mitigate risk and eliminate materials handling hazards and related injuries and where to go to find these solutions, and increase the intent to motivate use these solutions among all size contractors (smallest to largest) to use these solutions. [Need to revisit the wording – is this referring to the whole organization or just the person?]

Initial planning questions and responses discussed on 10/22/15 included the following:

1. **How are we defining “materials handling”**?

   Any objects, including construction materials, tools, and equipment, greater than 50 lbs. carried, lifted, or handled by workers. It includes the movement and placement of materials to position them for use in a task (e.g., moving the block to the scaffold) as well as how a material is used to perform a task (e.g., laying the block).

   **Discussion:** Over 35lbs is very heavy for one person to lift. What should the weight be based on? What are the weights that people are carrying (Sanchoi)? Decision that the weight needs to be based on the available science, which for NIOSH is 50lbs.
2. **What’s the magnitude of the problem?**

In addition to back injuries, the risk for shoulder and wrist injuries should be considered.

Preliminary data from BLS: In 2013, among trade workers there were 10,370 back injuries, 11,800 hand injuries, 4,230 shoulder injuries, and 1,830 wrist injuries. We don’t know how many of these are ergonomic in nature or due to materials handling. ([http://www.bls.gov/iif/oshwc/osh/case/ostb3991.pdf](http://www.bls.gov/iif/oshwc/osh/case/ostb3991.pdf), p. 37). [Note – CPWR’s Data Center has also reached out to BLS for the following data for additional possible analyses: number of back-related injuries for the construction industry by occupation, age of workers, ethnicity from 2009 to 2013; the rate of back-related injuries for the construction industry by occupation, age of workers, ethnicity from 2009 to 2013; and any information on the cause of the back-related injuries that can be pulled from the data.] Other possible sources include Hester Lipscomb’s paper, which looked at workers comp claims, and other insurance data if we can get it (e.g., Marsh, Liberty Mutual).

3. **Which type of construction worker is most affected (laborers, etc.) and what type of contractor employs them? Which segment of the construction industry records the highest rate of materials handling back injuries (residential, etc.)? Where geographically are the most injuries recorded?**

Based on BLS data distributed during the meeting: laborers & carpenters are most affected, followed by any other trades that handle >50 lbs. (materials, tools, equipment) as part of their work – pipe trades, masons, etc.)

We should check and take into consideration NIOSH’s lifting publication, which lists trades and occupations at risk. Look at occupational codes and back, shoulder, & wrist injury risk by occupation. Look for top 5 trades affected.

- Other comments: Arbouw – specific weight limits (red, yellow, green) – Weight more than 25kg when in standing position; 10 kg when sitting, squatting, or kneeling; 17 kg when lifting one-handed. We should consider building a matrix at some point, like the ACGIH table, or Arbouw.

4. **Who is the target audience? Is it the contractors who purchase equipment and make decisions about work practices? Or the workers who are at risk for injury?**

The key target audiences will be general contractors, subcontractors, supervisors, and foremen because of their role in organizing and planning out the work, as well as those involved in the pre-construction selection of materials. Each has a role to play. Specifically, we propose to target general contractors as the primary audience because they structure and control the environment that subcontractors work in and the larger planning process.
Subcontractors often must purchase or rent the equipment for the project or material for installation. Generals can facilitate the timeline and schedules. Owners, architects, or GCs may specify particular materials that create greater handling problems. In contrast, GCs and SCs can specify materials that reduce handling if given the choice. Sometimes these materials cost more upfront but reduce worker time for installation. Before construction starts, decisions are made about materials to be used.

- We can include questions on the contractor survey on who plans the project; who contacts suppliers; who tells them where to position the work/materials? Workers don’t have control, but we will be interested in whether awareness and training are reaching workers through contractor and supervisor audiences.

Identify the “moveable middle” – those interested in safety, but may not have the information or resources – will be key.

5. What do they already know? [Where we left off on 10-30-15]

This varies across GCs and foremen – some clearly get it, others don’t have the knowledge. In general it relates to the size of the contractor and who the contractor’s safety person is (if they have one). Some are looking for information but don’t know where to get it. Often times small contractors are just getting by and haven’t been aware or focused on ergonomics, haven’t had the time, or don’t have a safety person. But this is not always the case. Some large contractors are resistant to interventions.

In thinking about safety culture, there are only the reactive or proactive types (“compliant” category doesn’t exist because there is no standard).

6. What are they [target audiences] already doing?

**This question wasn’t fully addressed** – beyond saying that some are looking for information, or the example of Turner construction’s program. However:

- In the NORA survey of 100 companies, 88% said they have a current program in place to protect workers from soft tissue injuries. The following are their responses to a question asking what changes they have made to the worksite/organization to help prevent soft tissue injuries:
  a. Workers are encouraged to use mechanical means and/or get help with heavy lifts (91%)
  b. Workers are training in safe lifting techniques (87%)
  c. Workers are encouraged to offer ideas for improving the work process to reduce risk (e.g., during JSAs or toolbox talks) (80%)
  d. Workers are taught principles and work procedures to minimize the risk of soft tissue injuries (74%)
  e. Carts and dollies are required to minimize hand carrying and clear pathways are enforced (73%)
  f. Lifting equipment has been purchased to reduce heavy lifting (69%)
g. Weight limits are set and enforced for manual lifting/carrying (62%)

h. Policies exist to encourage work at waist height (e.g., on tables, sawhorses) (50%)

i. Repetitive work has been reviewed for ways to minimize risk (e.g., using power tools) (55%)

j. Rest breaks are encouraged and enforced to prevent fatigue (51%)

k. Ergonomics (e.g., comfort, grip) is an important factor in tool purchases (46%)

l. Overhead work is minimized (43%)

m. Tools have been purchased to minimize bending work (e.g., extension handles to allow for work from standing height) (35%)

n. Policies to reduce vibration such as using lower vibration tools, anti-vibration gloves (35%)

o. Job rotation (31%)

p. Materials are stored off the ground and just-in-time delivery is used (29%)

q. Stretching exercises are done each day (e.g., before each shift) (29%)

- Masonry r2p Partnership Survey of contractors (2011) found that 64% of those surveyed said they have used equipment or tools designed to reduce injuries due to sprains and strains on a current or recent project. When asked to give an example, lifting equipment such as forklifts and mast or adjustable scaffolds topped the list. Other examples given were lighter-weight and low-vibration tools, knee pads, back braces and stomach belts, a high reach machine instead of ladders and mud silos.

7. **What do they [target audiences] perceive as barriers to change?** Do we have practical and effective solutions in place to address these barriers?

   Barriers include:
   - Time
   - Money
   - Expectations that ergonomic injuries are just part of the job
   - Reluctance to speak up
   - Psychological barriers
   - Information, price, productivity impact, convenience, and availability of tested and effective tools
   - Lack of awareness of the connection between the task and the injuries
   - Lack of awareness of the hazard and available solutions
   - Lack of organization and cleanliness on jobsites
   - Employers who don’t see this as their problem (due to the cumulative nature of injuries). Though another view is that they can be an immediate workers comp issue (back injuries) and there is recognition of this as a problem.
   - Materials that are not accurate or designed for contractors

The group will need to review collected information materials and select fewer and high-quality pieces, remove dated, inaccurate, or less helpful pieces, and identify gaps in available solutions.
8. How ready are they [the target audience] for change? Where are different segments of the audience? Are they not aware of the problem or not taking it seriously? Are they aware but not ready to start planning and preparing? Are they planning to take action in the next 3-6 months? Are there efficacy or confidence needs in addition to information and knowledge needs?

This question wasn’t addressed because the meeting was coming to a close.

Final comments made:

- We need to figure out what resonates with contractors to overcome the barriers.
- Challenges for a social marketing campaign: "Diversity within the trades each with their own union, tools, training and work processes makes it difficult to create a uniform call to action."