

# WELCOME TO TODAY'S WEBINAR:

## **Safety Voice for Ergonomics – a Research to Practice Example in the Masonry Trade**

**Presented by:**

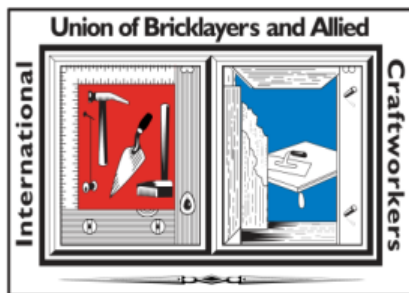
**Dan Anton**, Professor and Chair, Department of Physical  
Therapy, Eastern Washington University,

**Jennifer Hess**, Research Associate, University of Oregon,

**Dave Wysocki**, IMTEF North Central Regional Director, National  
Safety Director. Internal Facilitator, Masonry r2p Partnership

# Masonry r2p Partnership

- The International Union of Bricklayers and Allied Craftworkers (BAC)
- The International Council of Employers of Bricklayers and Allied Craftworkers (ICE)
- International Masonry Institute (IMI)



# Safety & Health Priority Areas

- **Reducing Ergonomic injuries**
  - Back and shoulder injuries
  - Hand, wrist and arm injuries
- Hand exposure/Skin disease
- Exposure to silica dust
  - Inhalation exposures
- Work-related hearing loss
- Potential hazards associated with the exposure to RF radiation from working near cell towers.
- Design and use of 7-1/4" circular saws to cut stone
- Eye injuries

# Partnership Efforts

- CPWR's Best Built Plans
- ChooseHandSafety.com
- RF Radiation Awareness Program
- CPWR Noise & Hearing Loss Survey Project & Training Program
- NIOSH Mast Climber & Production Table Research
- NIOSH Tuckpointing & Silica Control Research
- **SAVE Program**

# Benefits of Collaboration

## Industry:

- Research addresses industry priorities

## Researchers:

- Are able to conduct their research more efficiently and effectively
- Achieve buy-in from the end-users they want to reach early on in the process

## Industry & Researchers:

- Ensure findings and products generated are applicable and transferable to the real-world



Dan Anton, PT, PhD, ATC

Eastern Washington University

Jennifer Hess, DC, MPH, PhD

University of Oregon

Laurel Kincl, PhD; Amelia Vaughan, MLIS

Oregon State University

Doug Weeks, PhD

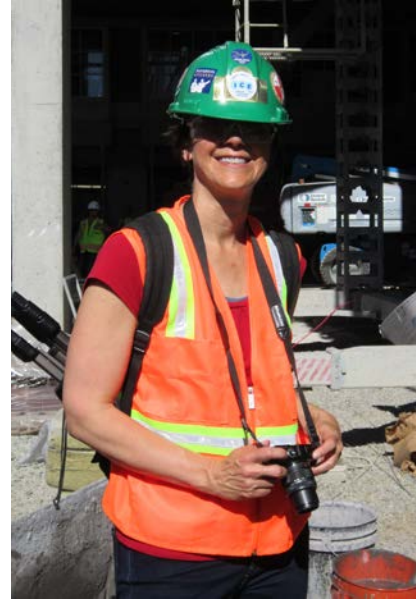
St. Luke's Rehabilitation Institute

# Our Team

Dan Anton



Laurel Kincl



Jennifer Hess



Amelia Vaughan



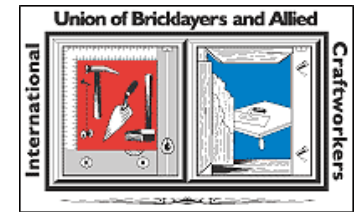
Doug Weeks



The SAVE project is funded by CPWR  
(CDC/NIOSH Cooperative Agreement U60 OH009762-06)



Masonry  
R2P  
Partnership



SAVE is a  
Collaboration



Masonry  
work is  
easy, right?

1 day

about two small SUVs



1 week

about seven F350 trucks



1 year

about 2 1/2 fully loaded Boeing 747s



# Safety Voice for Ergonomics



Training for Masonry Apprentices

**INSTRUCTOR MANUAL**



# What is Ergonomics?



- Ergonomics is more than stretching!
- Science devoted to making changes in work environment and tasks to reduce risk of a worker injury
- Simply put, it is 'designing the work to fit the worker'

# Ergonomics is Good for Business

- 23% of all musculoskeletal injuries associated with over exertion
- Injuries costly:
  - Upper extremity: ~\$30,000
  - Low back: ~\$50,000
- Ergonomics programs reduce:
  - Time loss claims 25%
  - Recordable ergonomic injuries 70%
  - Worker's compensation claims 50%
- Ergonomics improves
  - Productivity
  - Quality



“If I just  
stay  
strong I  
won’t get  
injured”

- Fitness alone cannot prevent damage caused by cumulative trauma
- SAVE training explains why



**Safety Voice** is the skill of speaking up appropriately about safety hazards

All apprentices should master these skills:

What is Safety Voice?

masonry

safety/health/ergonomics

worker rights

safety and health responsibilities

communication

conflict resolution

problem solving

# SAVE Designed for Millennials



Important differences between millennials (born between ~1980-1995) and baby boomers:

- By 2020 millennials 46% of worker force
- Digital and social media natives
- Crave feedback and give it too!
- They want 'work with a purpose' and tend to be more engaged in making workplace changes

## Goal & Aims

### **Goal**

Reduce musculoskeletal injuries in masons by training apprentices

### **Aims**

- 1. Develop** materials for apprenticeship training program
- 2. Evaluate** SAVE effectiveness
- 3. Modify & broadly Disseminate** SAVE



# 1. Develop Materials

1. Focus groups
  - Masonry instructors
  - Contractors
2. Technology survey
  - Cell phone use, etc
  - Apprentices (n=40)
3. Develop SAVE Training
  - Ergonomics
  - Safety voice
4. Pilot test SAVE at 3 IMI training centers



## Early Lessons Learned

- Instructors and apprentices
  - Liked content
  - More interactive material & statistics
- Contractors
  - Benefits contractors
  - Masonry specific material important
  - Safety communication important
- Technology survey
  - Apprentices predominantly use cell phones
- Pilot test
  - Flipped learning not viable
  - Longer in class training OK

7 Units  
30 minutes  
each

## ERGONOMICS

- Intro to Ergonomics, Anatomy and Cumulative Trauma
- Awkward and Neutral Postures
- Heavy Lifting, Prolonged Postures and Repetition
- Ergonomic Solutions for Masonry

## SAFETY VOICE

- Safety Responsibility and Communication
- Identifying Hazards and Information
- Solving Safety Problems with Solutions

# Masonry Specific Pictures, Examples & Testimonials






# Interactive Units

**PAUSE  
VIDEO**  
— FOR —  
**DISCUSSION**

**PAUSE  
VIDEO**  
— FOR —  
**ACTIVITY**

**PAUSE  
VIDEO**  
— FOR —  
**QUIZ**

What do you call injuries to...?

MUSCLES	LIGAMENTS	TENDONS
		
<b>STRAIN</b>	<b>SPRAIN</b>	<b>TENDONITIS</b>

Video player controls are visible at the bottom of the image grid.

# Units link to Solutions & Resources

## SAVE RESOURCES

### ERGONOMICS

#### ERGONOMICS GUIDES AND CHECKLISTS

[WWW.CPWR.COM/RESEARCH/ERGONOMICS-GUIDES-CHECKLISTS](http://WWW.CPWR.COM/RESEARCH/ERGONOMICS-GUIDES-CHECKLISTS)

#### SOLUTIONS TO CONTROL HAZARDS

[WWW.OSHA.GOV/SLTC/ERGONOMICS/CONTROLHAZARDS.HTML](http://WWW.OSHA.GOV/SLTC/ERGONOMICS/CONTROLHAZARDS.HTML)

#### ERGONOMICS AND CONSTRUCTION — THE SMART MOVE

[WWW.LHSFNA.ORG/INDEX.CFM/OCCUPATIONAL-SAFETY-AND-HEALTH/ERGONOMICS/](http://WWW.LHSFNA.ORG/INDEX.CFM/OCCUPATIONAL-SAFETY-AND-HEALTH/ERGONOMICS/)

#### ELECTRONIC LIBRARY OF CONSTRUCTION SAFETY AND HEALTH

[WWW.ELCOSH.ORG/](http://WWW.ELCOSH.ORG/)

#### RETURN ON INVESTMENT (ROI) OF ERGONOMIC INTERVENTIONS AND PROGRAMS (2019),

BLAKE MCGOWAN: [WWW.CDC.GOV/NIOSH/PROGRAMS/MSD/WEBINAR.HTML](http://WWW.CDC.GOV/NIOSH/PROGRAMS/MSD/WEBINAR.HTML)

### FOUNDATIONS OF SAFETY LEADERSHIP

[WWW.CPWR.COM/FOUNDATIONS-SAFETY-LEADERSHIP-FSL](http://WWW.CPWR.COM/FOUNDATIONS-SAFETY-LEADERSHIP-FSL)



### VARIOUS SAFETY TOPICS

#### CHOOSE HAND SAFETY

[HTTPS://CHOOSEHANDSAFETY/COM](https://CHOOSEHANDSAFETY/COM)

#### MAST CLIMBERS

[WWW.CPWR.COM/RESEARCH/MAST-CLIMBERS](http://WWW.CPWR.COM/RESEARCH/MAST-CLIMBERS)



#### NOISE INFOGRAPHICS

[WWW.CPWR.COM/RESEARCH/PREVENTING-HEARING-LOSS-NOISE-INFOGRAPHICS](http://WWW.CPWR.COM/RESEARCH/PREVENTING-HEARING-LOSS-NOISE-INFOGRAPHICS)

#### TOOLBOX TALKS

[WWW.CPWR.COM/PUBLICATIONS/TOOLBOX-TALKS](http://WWW.CPWR.COM/PUBLICATIONS/TOOLBOX-TALKS)

#### HAZARD ALERTS

[WWW.CPWR.COM/PUBLICATIONS/HAZARD-ALERT-CARDS](http://WWW.CPWR.COM/PUBLICATIONS/HAZARD-ALERT-CARDS)





RCT evaluated at 13 randomly assigned training centers across US

## 2. Evaluate Effectiveness

Full training

Safety Voice &  
Ergonomics

Ergo only

No Safety Voice

Control

No training

Secondary training

Weekly text messages for 6 months



# Apprentices evaluated 4 times



## Evaluations included

- Demographic information
- Musculoskeletal Symptoms
- Health Status
- SAVE Reaction to Training
- SAVE Knowledge Acquisition
- SAVE Attitude, Compliance, Participation
- SAVE Adoption

Measures

# Results

## Apprentices Completing SAVE

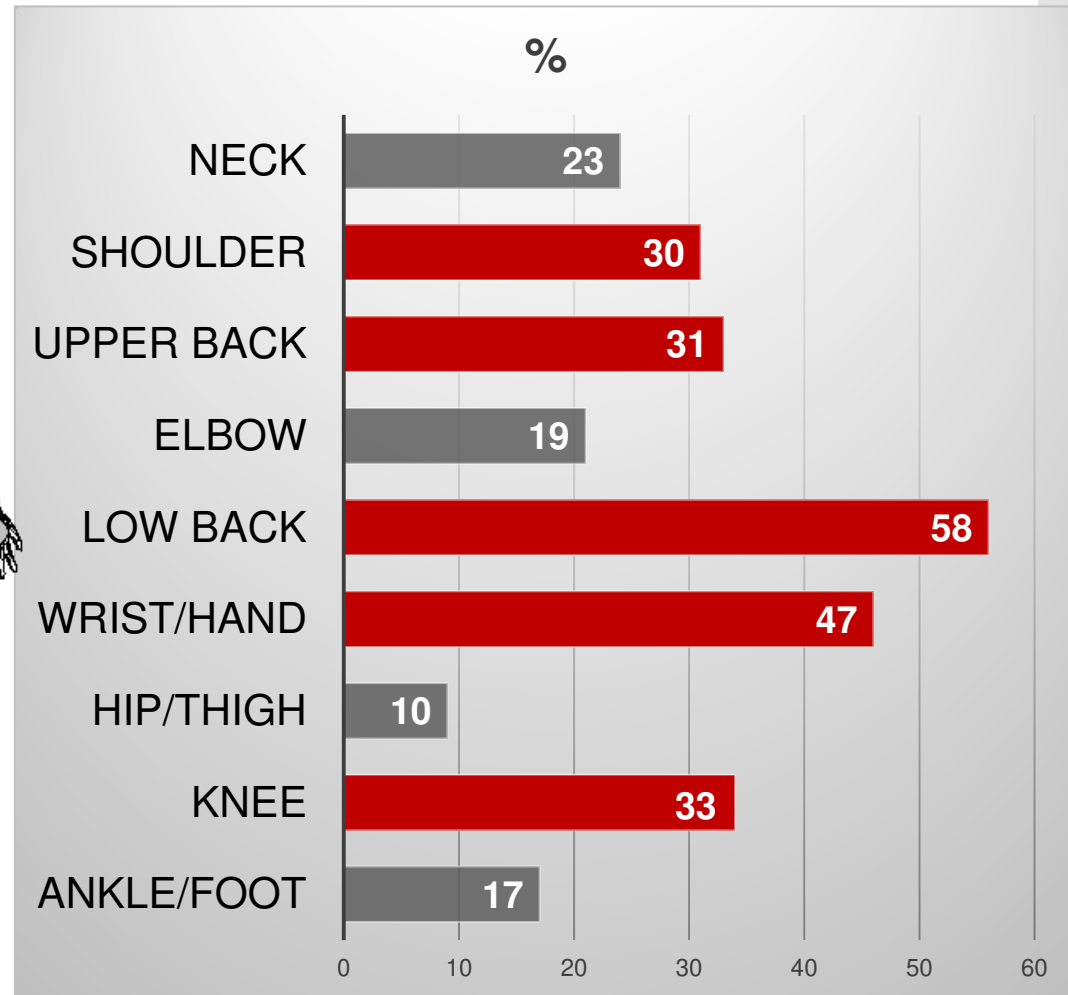
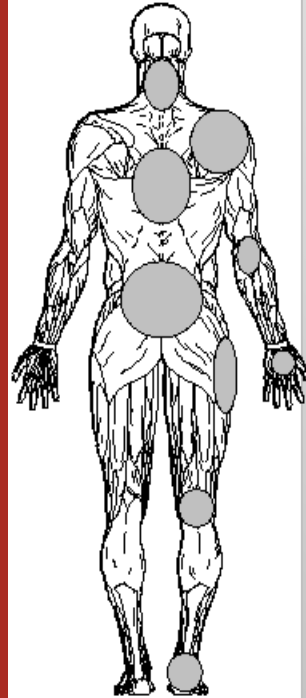
Age mean (SD)	29 years (7.4)
Male	97%
Caucasian	60%
Education: some college	51%

## Previous Training

OSHA 10 training	72%
Ergonomics training	17%
Stretch & Flex	33%

# Pain and Cumulative Trauma Begin Early

## Prevalence of Symptoms in Apprentices



Mean number of regions with reported symptoms = 2.6 (2.1)

# User Satisfaction High

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Program extremely useful for improving my health and safety	42%	36%	17%	3%	2%
I changed behaviors as a result of participating in program	42%	42%	10%	3%	3%
Information provided in program was excellent	37%	49%	12%	0%	2%
I would recommend this program to my co-workers	42%	45%	9%	3%	2%
Text messages I received from the SAVE team really helped to reinforce the program	36%	33%	22%	5%	5%

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# 3. Finalize & Disseminate SAVE

Materials available at:

- CPWR ([www.cpwr.com](http://www.cpwr.com))
- IMI Instructor Dropbox



Training for Masonry Apprentices

**INSTRUCTOR MANUAL**



Training for Masonry Apprentices

**Apprentice Workbook**



## Who Should Use SAVE?

Freely use the SAVE Training with any construction trade and with journey level as well as apprentices.

However, SAVE was developed with examples and solutions specifically targeting masonry brick and block apprentices.

# Our gratitude to everyone involved!

Thanks!

- NIOSH/CPWR Grant # U60 OH009762-06
- Masonry R2P Partnership
- Bob Arnold, IMI
- Dave Wysocki (advisor)
- Dave Naprstek (content advisor)
- IMI Instructors across the U.S.
- Apprentices at IMI training centers

**Questions?**

