Workshop on Engineering Resilient Tall CLT Buildings in Seismic Regions
January 24, 2014
Seattle WA

An Overview of NEES-CLT Project and Tall CLT Workshop

Shiling Pei

Colorado School of Mines

Presentation Summary

Presentation 1: NEES-CLT Project Overview (15min)
Presentation 2: CLT for Northwest U.S. (30min)
Presentation 3: Development in Canada (30min)
Coffee break
Presentation 4: Performance requirements and codify efforts (30min)
Presentation 5: New Zealand Experiences (30min)
Coffee break
Presentation 6: Resilient system concepts (35min)

- Contents
  - An overview of NEES-CLT project background and vision, and this workshop program.
- Break out discussion
  - This presentation include a brief introduction of the breakout sessions and the organization
- Key words
  - Motivation
  - Vision
  - Workshop program

Motivation

- New trend to build tall Cross Laminated Timber (CLT) buildings around the world. But limited to low seismic regions.

- Societal and economical impact of tall CLT building in the U.S. not well understood

- Resilient multi-story CLT prototypes that can be resilient in large earthquakes not available now.

NEES-CLT Planning Project

- NEES: Network for Earthquake Engineering Simulation

- Planning Project: Developing prototype and knowledge base for a larger NSF project to enable design of tall resilient CLT buildings

2014-2016 (NEES-CLT Planning) → 2016-2019 (NEES2-CLT) → First 14-st CLT building by 2020?

Planning and prototype development
(Current Effort)

Full scale validation at system level

Research Team

Shiling Pei

Colorado School of Mines

Dan Dolan

Washington State University

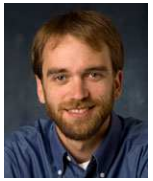
James Ricles

Lehigh University

Richard Sauce

Lehigh University

Jeffrey Berman



University of Washington

John van de Lindt

Colorado State University

Marjan Popovski

FPInnovations

Michael Willford

Hans-Erik Blomgren

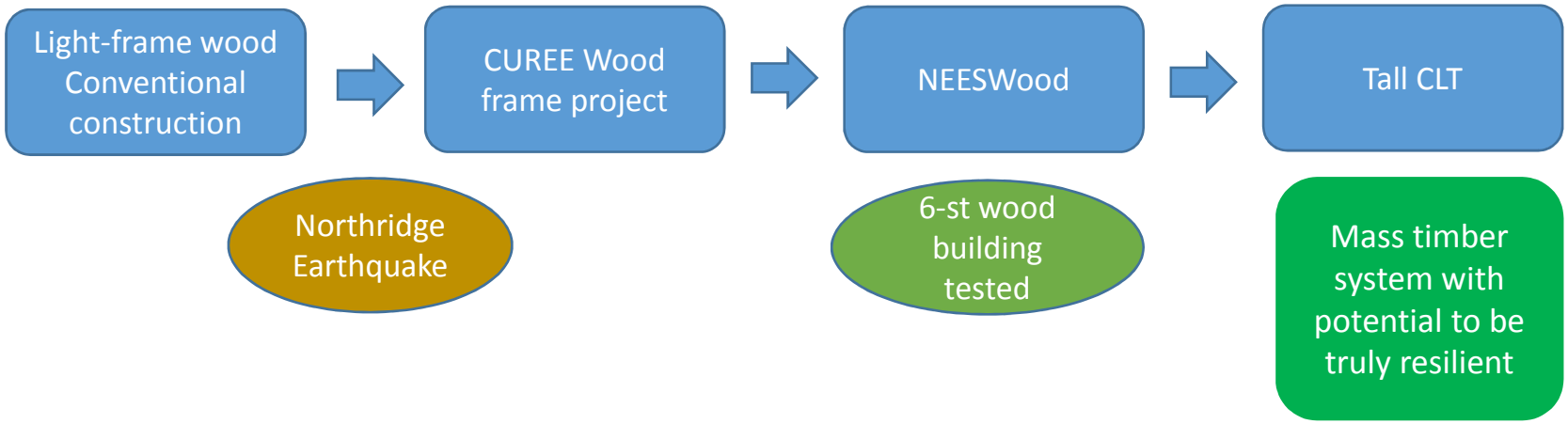
ARUP

Douglas Rammer

Forest Service, U.S. Department of Agriculture

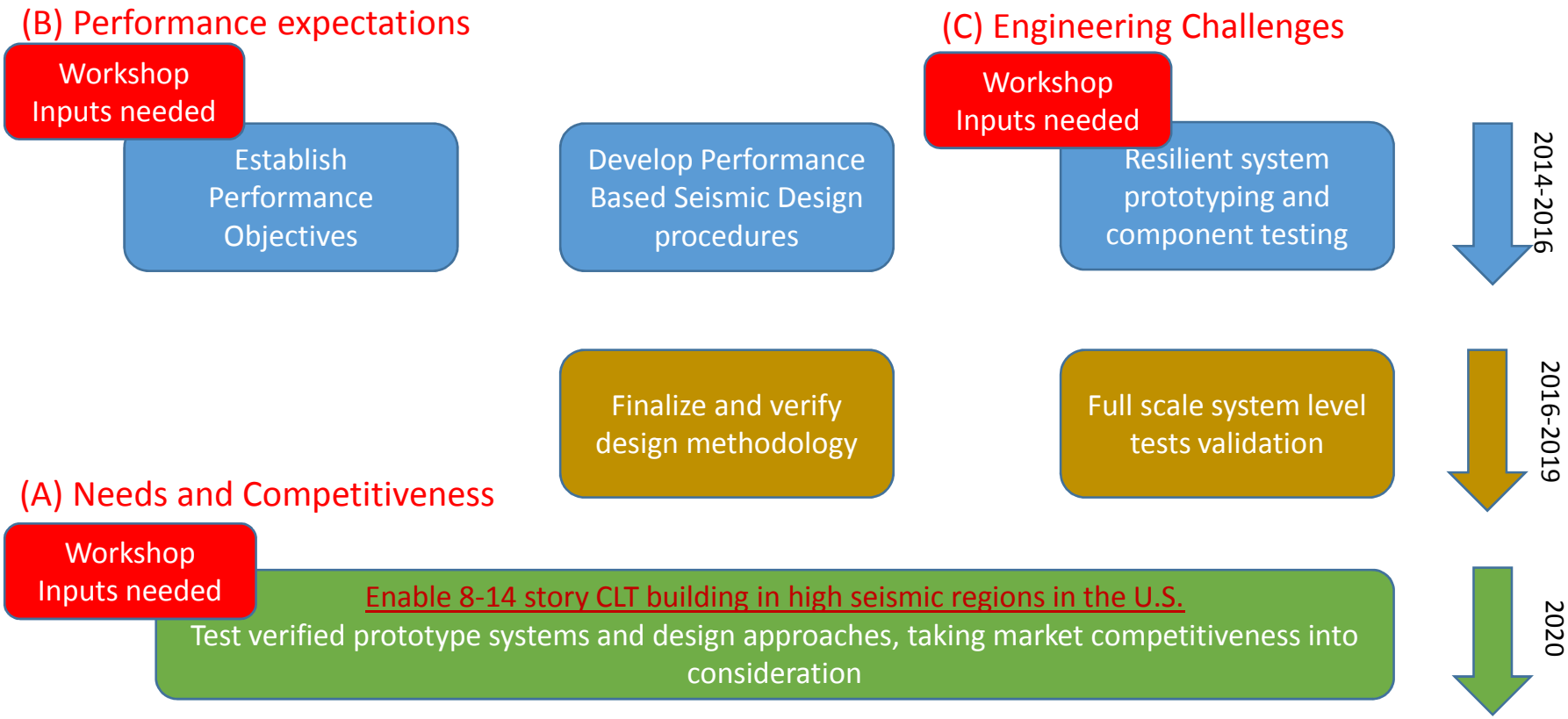
Brief history of wood building earthquake research

- The search for resilient wood systems against earthquakes is an on-going effort for nearly two decades



Game Plan?

Research Plan and Vision



Workshop Objectives

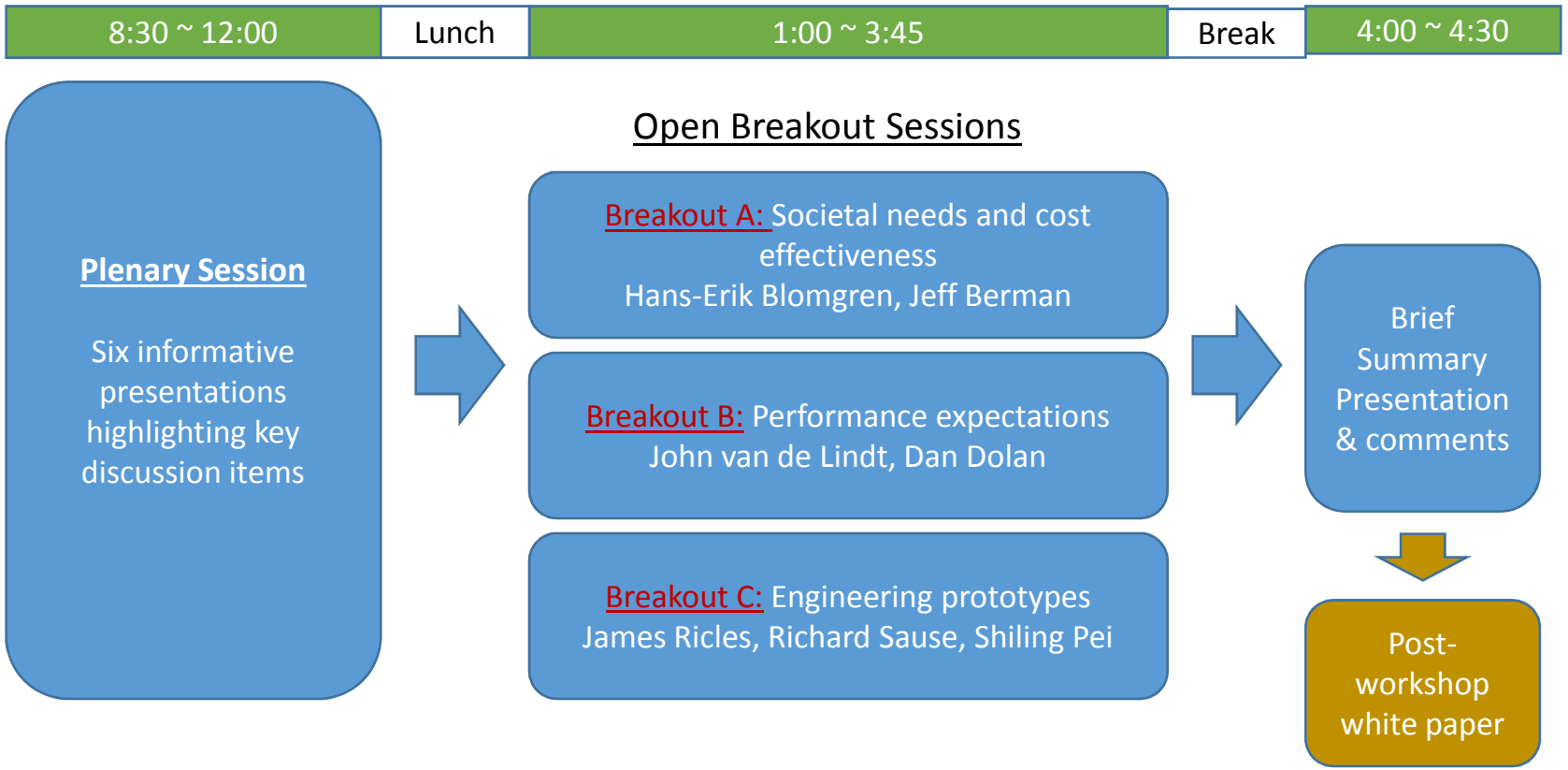
- Objectives
  - Gather practitioner, industry, and stakeholder inputs and opinions on key issues and challenges related to tall CLT building construction
  - Outline a road map for enabling tall CLT building construction in Northwest U.S.
  - Discussing the challenges in the application of earthquake resilient structural concepts to CLT from a practice engineering stand point.

Seeking answers to some Key Questions as a community

Key Questions to be Discussed

- Where does the societal need lies for tall timber buildings in range of 8-14 stories?
- Can we design a system that is cost competitive in the long run for high seismic regions? Where is CLT standing now?
- What is a reasonable set of expectations for these tall CLT buildings?
- Could existing resilient system concepts be ported to CLT? What are the challenges for design and construction?

Workshop Program



Questions?

- Thank you for making the time to participate in this workshop!

- Looking forward to fruitful discussions!

Acknowledgement

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