16th U.S.-Japan-N.Z. Workshop
on the Improvement of Structural Engineering and Resiliency

Todaiji Temple Cultural Center in Nara, Japan
June 27-29, 2016

WORKSHOP PROGRAM

SUNDAY, JUNE 26, 2016
Location: Banquet Room, HITEN in Hotel Nikko Nara

6:00 pm – 9:00 pm: **Registration & Welcome Ice Breaker**

MONDAY, JUNE 27, 2016
Location: Small Hall at B1 in Todai-ji Cultural Center

8:30 am – 9:00 am: **Registration, Coffee/Tea**

9:00 am – 9:30 am: **Opening Remarks**; Kawamura (Japan); Miyamoto, Heintz (US) Elwood (NZ)

Session I: Resiliency Based Engineering
Chairpersons: Kawamura (Japan); Miyamoto (US)

9:30 am – 10:30 am: **Presentations** (5 presentations @ 10 minutes; 2 additional QA minutes per presenter)

- *P1-1* *Engineers: The Forgotten Stakeholder in the Resilience Conversation*; J. Heintz* (US)
- *P1-2* *On the Resiliency of Power Grids after Earthquakes*; J. Eidinger* (US)
- *P1-3* *Modal Decomposition and Behavior of Free Vibration Response with Grounding and Uplifting;* T. Masuno* (Jp)
- *P1-4* *Improving Resiliency by Designing for Community Needs*; V. Cedillos* (US)
- *P1-5* *Balance and Harmony*; D. Mar* (US)

10:30 am – 10:40 am: **Break**

10:40 am – 11:20 am: **Presentations** (3 presentations @ 10 minutes; 2 additional QA minutes per presenter)

- *P1-6* *Resilience and Earthquake Engineering*; P. Yanev* (US)
- *P1-7* *Performance versus Compliance*; R. Jury* (NZ)
- *P1-8* *Current Direction for Improving Structural Engineering and Resiliency in New Zealand*; M. Stannard* (NZ)

*Presenting author

11:20 am – 11:40 pm: **Discussions**; **Development of Technical and Policy Recommendations**

11:40 pm – 1:50 pm: **Lunch** (Location: Todaiji Cultural Center & Open Air Gardens)

Session II: Post-Earthquake Repair and Residual Capacity
Chairpersons: Celebi (US); Elwood (NZ)

1:50 pm – 2:50 pm: **Presentations** (5 presentations @ 10 minutes; 2 additional QA minutes per presenter)

P2-1 *Rapid Fatigue Damage Assessment for Earthquake Losses: Stochastic Model and an Example from Christchurch, NZ*; G. Rodgers* (NZ)

P2-2 *Assessing the Seismic Residual Fatigue Life of Reinforced Concrete Frame Buildings: A Proposed Framework*; A. Cuevas Ramirez* (NZ)

P2-3 *Residual Seismic Capacity Evaluation and Damage Classification for Reinforced Concrete Buildings;* M. Maeda* (Jp)

P2-4 *Post-Earthquake Residual Capacity of Damaged Reinforced Concrete Buildings*; K. Elwood* (NZ)

P2-5 *Determination of the Post-Earthquake Capacity of an Eccentrically Braced Frame Seismic Resisting System*; C. Clifton (NZ) to be presented by K. Elwood* (NZ)

2:50 pm – 3:00 pm: **Break**

3:00 pm – 3:50 pm: **Presentations** (4 presentations @ 10 minutes; 2 additional QA minutes per presenter)

P2-6 *Significance of Beating Effects Observed in Earthquake Responses of Two Tall Buildings*; M. Çelebi* (US)

P2-7 *Earthquake Performance of a Three Story Actual Sub-Standard Building*; M. Comert* (US)

P2-8 *Residual capacity of RC frame with walls based on full-scale loading test;* T. Mukai* (Jp)

P2-9 *Insight from Intensive Assessment Analyses – The Benefit to Targeted Performance Enhancement for a Christchurch Ductile RC Moment-Frame Building*; D. Pettinga* (NZ)

3:50 pm – 4:10 pm: **Discussions**; **Development of Technical and Policy Recommendations**

4:10 pm – 4:20 pm: **Closure** (Announcements, Kawamura)

6:30 pm – 9:30 pm: **Dinner Party** (Banquet Room, TENKU in Hotel Nikko Nara)

*Presenting author

TUESDAY, JUNE 28, 2016
Location: Small Hall at B1 in Todaiji Cultural Center

8:20 am – 8:30 am: **Opening Remarks** Kawamura (Japan)

Session III: Innovative Structural Design for Large Earthquakes
Chairpersons: Regos (NZ); Nishimura (Japan)

8:30 am – 9:30 am: **Presentations** (5 presentations @ 10 minutes; 2 additional QA minutes per presenter)

P3-1 *Seismic upgrading of existing high-rise buildings utilizing newly developed tuned mass damper, oil damper and steel damper;* N. Haneda* (Jp)

P3-2 *Structural Design of Tall Damped Building with Irregularly-Shaped Plane and Elevation for Large Earthquake;* Y. Okuno* (Jp)

P3-3 *Testing and Application of Low Damage Technologies for Bridges in New Zealand*; S. White* (NZ)

P3-4 *Structural design of high seismic performance twin tower by employing different structural system for each tower;* S. Yoshida* (Jp)

P3-5 *Study on Dynamic Behavior of Wooden Horizontal Hybrid Structure Involving Stiff Cores;* Y. Yamazaki* (Jp)

9:30 am – 9:40 am: **Break**

9:40 am – 10:40 am: **Presentations** (5 presentations @ 10 minutes; 2 additional QA minutes per presenter)

P3-6 *Effect of Column Modeling Parameters on Collapse Behavior of RC Building*; A. Matamoros* (US)

P3-7 *An Experimental Study on the Buckling Stability of Laminated Rubber Bearings under Large Lateral Deformation;* I. Nishimura* (Jp)

P3-8 *Cyclic Tests of Cylindrical Concrete Containment Structures and Their 3-D Finite Element Predictions*; T. Hsu* (US)

P3-9 *Behavior of Precast Structural Walls Post-Tensioned by Unbonded Tendos in Shaking Table Tests on Actual-Size 4-Story Prestressed Concrete Building;* L. Bedrinana* (Jp)

P3-10 *Behavior of structural walls of 1/3-scale 6-story reinforced concrete building in shaking table tests;* M. Nishiyama* (Jp)

10:40 am – 11:00 am: **Discussions**; **Development of Technical and Policy Recommendations**

*Presenting author

11:00 am – 12:50 pm: **Lunch** (Location: Todaiji Cultural Center & Open Air Gardens)

Session VI: Engineering and Technology in Developing Countries
Chairpersons: Jury (NZ); Okoshi (Japan)

11:30 am – 12:10 pm: **Presentations** (3 presentations @ 10 minutes; 2 additional QA minutes per presenter)

P6-1 *Can Big Data Approaches Help Earthquake Engineering in Underdeveloped Countries?;* I. H. Cho* (US)

P6-2 *Reconstruction Assistance to Damaged Building in Nepal Earthquake 2015;* T. Okoshi* (Jp)

P6-3 *Preparing Earthquake Disaster in Emerging Nations: The USAID "PREPARE" Program in Costa Rica and Colombia;* K. Miyamoto* (US)

12:10 pm – 12:30 pm: **Discussions; Development of Technical and Policy Recommendations**

Session IV: Risk Identification and Reduction
Chairpersons: Kennedy (US); Haneda (Japan)

12:50 pm – 2:05 pm: **Presentations** (6 presentations @ 10 minutes; 2 additional QA minutes per presenter)

P4-1 *Design of Structures for Target Risk Using Nonlinear Analysis;* M. Dolsek* (US)

P4-2 *Structural Morphogenesis for Tunnel-Shaped Frame Structure;* D. Wada* (Jp)

P4-3 *Evaluation and Performance of Taiwan Housing and Schools in the Tainan/Meinong Earthquake;* J. Mugford* and C. Huang* (US)

P4-4 *The Role of Nonlinear Damping Measurement in Identifying Damage, Tracking Ageing and Design Prediction;* T. Winant* and A. Jeary* (US)

P4-5 *The Anatomy of Regulatory Reform for Buildings: The Role of Equity;* A. Brower* (NZ)

P4-6 *Laboratory Tsunami Loading Experiments on Buildings, and Comparison to U.S. and Japanese Standards*; A. Kennedy* (US)

2:05 pm – 2:25 pm: **Discussions; Development of Technical and Policy Recommendations**

2:25 pm – 2:40 pm: **Break**

*Presenting author

Session V: Earthquake Response and Recovery
Chairpersons: Yanev (US); Shinozaki (Japan)

2:40 pm – 4:05 pm: **Presentations** (7 presentations @ 10 minutes; 2 additional QA minutes per presenter)

P5-1 *Kumamoto;* M. Takayama* (Jp)

P5-2 *Kumamoto;* K. Morita* (Jp)

P5-3 *Kumamoto;* Y. Yanev* (US)

P5-4 *Nepal;* K. Miyamoto* (US)

P5-5 *Nepal;* R. Dhskal* (NZ)

P5-6 *Ecuador;* K. Miyamoto* (US)

P5-7 *Christchurch;* N. Regos* (NZ)

4:05 pm – 4:25 pm: **Discussions; Development of Technical and Policy Recommendations**

4:25 pm – 4:30 pm: **Closure** (Announcements)

6:30 pm – 9:30 pm: **Dinner Party** (Location: Downtown Nara)

*Presenting author

WEDNESDAY, JUNE 29, 2016
Location: Small Hall at B1 in Todaiji Cultural Center

8:40 am – 8:50 am: **Opening Remarks** Heintz (US)

Session VII: Resiliency of Non-Structural Elements
Chairpersons: Mar (US); Mori (Japan)

8:50 am – 9:50 am: **Presentations** (5 presentations @ 10 minutes; 2 additional QA minutes per presenter)

P7-1 *JSCA'S Efforts on the Safety of Non-Structural Elements;* T. Teramoto* (Jp)

P7-2 *JSCA's Recommendation "Design and Detail of Non-structural Elements for Structural, Building and Building-Equipment Engineers";* A. Osada* (Jp)

P7-3 *Preliminary Guidelines for Enhanced Non-structural System Design to Achieve Functionality-Level Seismic Performance of Buildings;* S. Soroushian* (US)

P7-4 *Experimental Evaluation of the Influence of Seismic Clips on Grid Joints in a Suspended Ceiling System;* R. Dhakal* (NZ)

P7-5 *The Next Frontier – Improving the Seismic Resilience of Nonstructural Components;* H. Ferner* (NZ)

9:50 am – 10:10 am: **Discussions; Development of Technical and Policy Recommendations**

10:10 am – 10:30 am: **Break**

Closing Session
Chairpersons: Miyamoto, Heintz (US); Kawamura (Japan); Elwood (NZ)

10:30 am – 11:30 pm: **Workshop Summary & Wrap-Up**

12:00 pm: **Leave for Hotel**

Lunch by own

Historical Tour: Wooden Traditional Structure

Horyu-ji Temple

14:00 pm – 17:20 pm: **Tour by Bus**

*Presenting author