Workshop Sponsor:

National Science Foundation- NEESR
Dr. Joy Pauschke, Program Director

Steering Committee:

Atorod Azizinamini, Florida International U.
Harry Capers, ARORA and ASSOCIATES
Mike Keever, Caltrans
Bijan Khalegh, Washington State DOT
Myint Lwin, Federal Highway Administration
Mary Lou Ralls, Ralls Newman, LLC
Kevin Thompson, ARORA and ASSOCIATES
Objectives:

(1) Disseminate the results of the NSF-NEESR study of 4-span bridges,

(2) hold breakout sessions to discuss practical and efficient methods to widely implement innovation not only in unique bridges but also in common bridges, and

(3) develop an action plan with milestones and measurable indices for future implementation of innovation in bridge engineering.
Message from Byron Lord, Program Coordinator
FHWA Highways for LIFE:

The challenge is great.
The need is greater.
The opportunity is even greater.

Need rapid, safe, durable and cost competitive replacement of the nation’s bridges.
Not enough to meet just one of these goals, must meet all.
To succeed it will take strong cooperation between the industry and the public sector.
Workshop Focus:

I. Bridge types and components to incorporate innovation-- Candidates for early adoption; immediate, short-term, and long-term action plan.

II. Opportunities, obstacles, and solutions to widespread adoption of innovation in bridge engineering practice; immediate, short-term, and long-term action plan.

III. Education, outreach, research, and information dissemination; immediate, short-term, and long-term action plan.
Workshop Program – Day 1:

8:30-11:45 Opening Session

Purpose:
Welcome remarks
NSF programs in innovation
Examples of innovation in research, practice in the US, and practice in other countries
Workshop Program – Day 1 (Cont’d):

11:45-12:45 Lunch – Napa B

12:45-3:15 Discussion Group Meetings- Session 1

3:15-3:30 Coffee Break

3:30-4:30 Progress Reports by Groups (Session Moderators: M. Elicegui) – Napa A

5:00-6:00 Cocktails – Napa B

6:00-7:30 Dinner - Napa B
Workshop Program – Day 2:

7:30-8:30  Continental Breakfast – Napa A

8:30-8:45  Recast of Working Group Progress/Plans for Day 2  
(M. Saiidi) - Napa A

8:45-10:30  Discussion Group Meetings Session 2

10:30-11:00  Coffee Break- Hotel Checkout – Napa A

11:00-12:30  Discussion Group Meetings Session 3

12:30-1:30  Lunch – Sonoma D

1:30- 2:45  Discussion Group Report Preparation

2:45-3:30  Group Recommendations by Leaders  
(Session Moderator: M. Saiidi) – Napa A

3:30-3:45  Closing Remarks – (Session Moderator: M. Saiidi)  
- Napa A
Bridges of the Future - Widespread Implementation of Innovation
An International Workshop to Develop Action Plans

Working Groups:

<table>
<thead>
<tr>
<th>Bridge types and components to incorporate innovation -- Candidates for early adoption; immediate, short-term, and long-term action plan</th>
<th>Opportunities, obstacles, and solutions to widespread adoption of innovation in bridge engineering practice; immediate, short-term, and long-term action plan</th>
<th>Education, outreach, research, and information dissemination; immediate, short-term, and long-term action plan</th>
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<tbody>
<tr>
<td>Bridge Working Group</td>
<td>Opportunities Working Group</td>
<td>Education Working Group</td>
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Composition of Participants

Federal: NSF and FHWA

National Academies: NCHRP

State DOTs: California, Iowa, Nevada, Utah, Washington, West Virginia

Academia: Cementitious materials, bridge structures, FRPs, earthquakes, hurricanes, smart materials, chemical engineering, nanotechnology, base isolation, accelerated bridge construction, sensing

Industry: Bridge design, FRP manufacturing/design, fiber-reinforced concrete, shape memory alloys, base isolation, high-strength steel
Guidelines for Discussion Groups
Guidelines for Discussion Groups

- Dedicate the first half of Session 1 to brainstorming.
- Generate brief bullets on the computer/LCD.
- Be open and list all ideas.
- In the second half of the session select ideas from the above list for detailed discussions.
- Might eliminate or combine about one-half of the ideas.
- After the coffee break, the leader/co-leader from each group will present a 12-minute Power Point progress report to all participants.

- In Session 2, start discussions on selected ideas and focus on the selected ideas for further refinement. The goal is to reduce the number of issues and ideas to 5 to 8 and start detailed discussions on those, with detailed notes. Start developing draft immediate (6 months to a year), short-term (one to three years) and long-term (four years and beyond) action plans.
- Further discussions of selected ideas and action plans will be held in Session 3 with two goals: (i) to converge on cohesive and practical ideas, and (ii) to develop descriptive details for each (approximately one half to a full page, single-spaced). By the end of this session, the group leaders should have all the material needed to write the recommendations of their groups.

- The agenda includes an hour and 15 minutes after lunch on the second day for the leaders/co-leaders to compose their report and prepare a 12-minute Power Point presentation to all participants at the end of the second day.
Innovation

- Demanded by the owner/user
- Developed by the researcher
• Can you make a telescope to watch New York from Los Angeles?

Answer: Literally, no; practically, yes.
Sticky note—Reusable adhesive was invented in 1968.

No one had any use for it for 9 years!!!

3-M’s Post-It hit the market in 1977.
Bridges of the Future - Widespread Implementation of Innovation
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June 6-7
2011
Las Vegas
Nevada

Sponsored by the National Science Foundation, and The University of Nevada, Reno
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Bringing stakeholders together

Center

Bridge Owners (State, Federal)

Decision Makers (NEES Owners)

Industry

Sponsored by the National Science Foundation, and The University of Nevada, Reno
Possible role of the center:

Form a cohort of progressive visionary members from departments of transportation, FHWA, consultants, academia, builders, and industry.

Work with the cohort to envision ideas and forms of innovative bridges.

Facilitate interaction among groups to create synergy.

Promote innovation and help bridge owners embrace new concepts for widespread participation in taking advantage of federal programs promoting innovation.

Serve as a central source for information dissemination and assistance.

Facilitate funded interdisciplinary research.
Roadmap for the center:

Recommendations from this workshop

Center funding- Baseline support for:

- A full-time manager experienced in working with state DOTs, federal agencies, consulting engineers, and researchers

- Administrative support staff

- Annual workshop of stakeholders

- Educational materials

Initial duration: 5 years
Travel Forms
(non-Federal participants)

Please complete the forms. Zach Haber will handle.

Mail airline and other travel receipts to M. Saiidi (no meal receipts are needed)

(See my email signature for address)