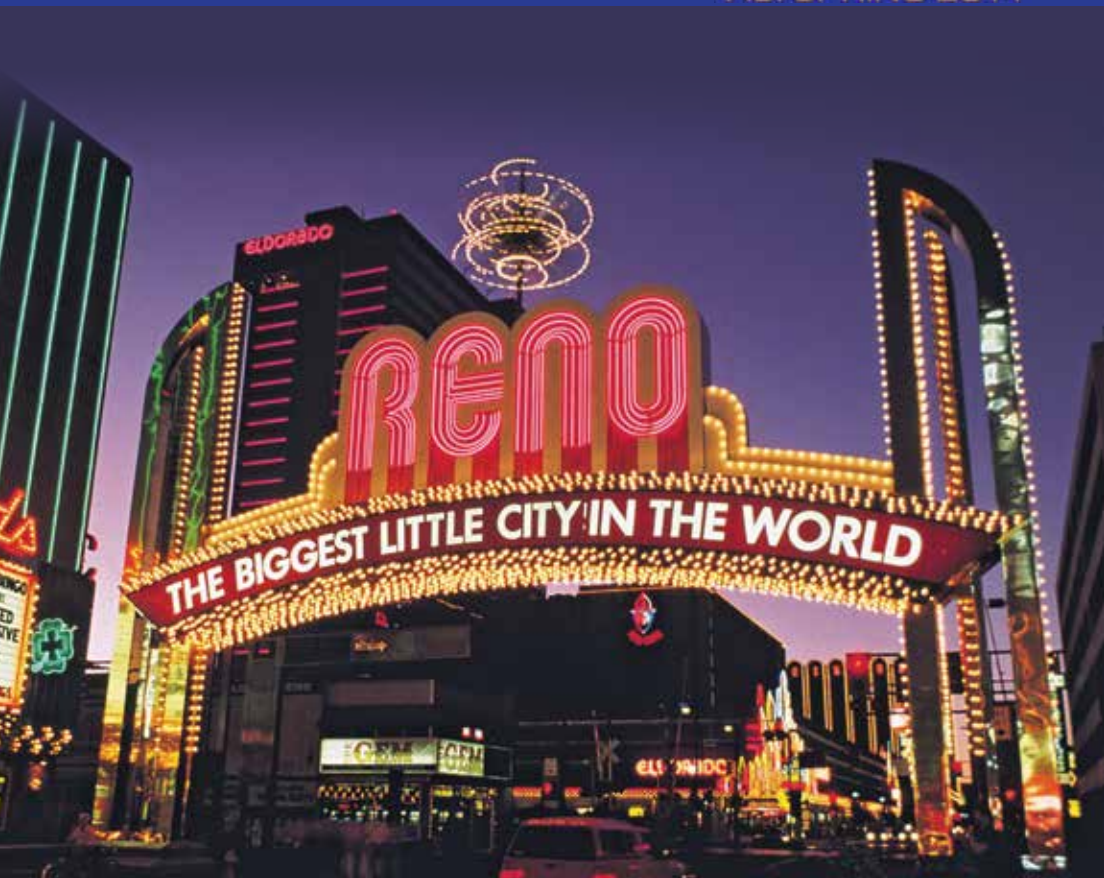
American Concrete Institute

Spring 2014

Convention Program Book

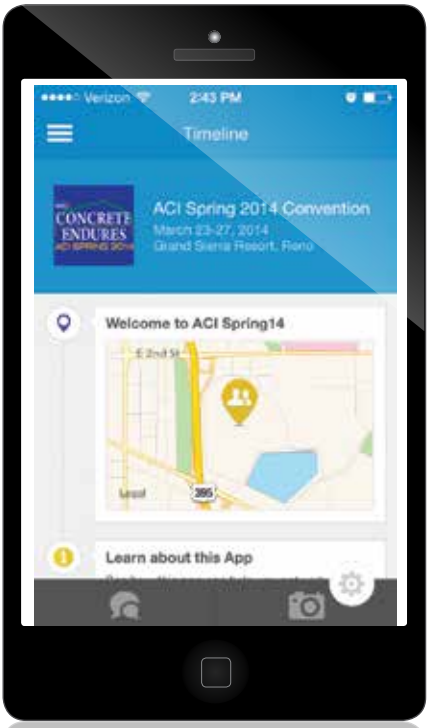
March 23-27, 2014
Grand Sierra Resort ✻ Reno, NV

CONCRETE ENDURES
ACI SPRING 2014



Download the Convention App!

Available on the Apple App Store and the Google Play Store.



Get up-to-the-minute convention updates, plan your schedule, and learn about exhibitors and sponsors—all at your fingertips!

ACI on Social Media

Use **#aciconvention** on your favorite social media site to stay connected with other attendees and share your experiences!

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ACI Spring 2014 Convention

March 23-27, 2014
Reno, NV

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ACI President's Welcome

ACI Members and Guests:

Welcome to Reno and the ACI Spring 2014 Convention!

ACI's conventions are the destination for leaders from around the world. Whether a student leader, professional leader, or leader of your craft, the ACI Convention provides educational opportunities for personal betterment, committee opportunities for technical advancement, and networking opportunities for professional enrichment. The opportunities are numerous, with over 300 committee meetings, 30+ technical sessions, a student competition, and numerous networking events, culminating with the Concrete Mixer on Tuesday night.

ACI and the ACI Northern California and Western Nevada Chapter have put a great deal of effort into developing a convention program that is both memorable and productive. I thank ACI staff and the ACI Northern California and Western Nevada Chapter for their dedication in planning this convention. If you have a good time this week, be sure to stop by the host chapter desk to let them know.

On behalf of Marc and myself, we are honored and excited to be able to share this week with you, and we hope you will enjoy all that Reno has to offer. Thank you for attending the convention and for your continued involvement with ACI.

Kind regards,

Anne M. Ellis

Anne M. Ellis
ACI President

ACI Sustaining Members

ACS Manufacturing Corporation

ACTS
Advanced Construction Technology Services
Build on our credentials

Advanced Construction Technology Services

American Society of Concrete Contractors

Ash Grove Cement Company

Ashford Formula

Baker Concrete Construction, Inc.

Barrier-1 Inc.

BASF Corporation

BCS

Buzzi Unicem USA

Cantera Concrete Company

CECO Concrete Construction

CHRYSO, Inc.

Concrete Reinforcing Steel Institute

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The Euclid Chemical Co.

Fibercon International, Inc.

Future Tech Consultants

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W.R. Grace & Co.


Headwaters Resources, Inc.


Holcim (US) Inc.


Keystone Structural Concrete, LC


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Lafarge North America


Lithko Contracting, Inc.


Meadow Burke


W. R. Meadows, Inc.


Metromont Corporation


Municipal Testing


North S.Tarr Concrete Consulting PC


Oztec Industries, Inc.


Pacific Structures


Penetron International Ltd.


PGESCo


Portland Cement Association


Precast/Prestressed Concrete Institute


Sika Corp.


STRUCTURAL


Structural Services, Inc.


Triad Engineering, Inc.


TWC Concrete Services


Wacker Neuson


Westroc, Inc.

Convention Sponsors

Sponsors are listed as of 2/13/14

Cement Sponsor
Baker Concrete Construction

Admixture Sponsors
BASF Corporation
The Euclid Chemical Company
Grace Construction Products
Somero Enterprises, Inc.

Coarse Aggregate Sponsor
ICC Evaluation Service

Fine Aggregate Sponsors
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Lafarge N.A.

Water Sponsors
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ACI Georgia Chapter
ACI Illinois Chapter
ACI Intermountain Chapter
ACI Kansas Chapter
ACI Las Vegas Chapter
ACI Maryland Chapter
ACI New Jersey Chapter
ACI New Mexico Chapter
ACI Northeast Texas Chapter
ACI Ontario Chapter
ACI Pittsburgh Area Chapter
ACI Rocky Mountain Chapter
ACI San Diego International Chapter
ACI Southern California Chapter
The Concrete Industry Board, Inc.

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Robert Hightower, Syar Concrete

Vice President
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Past President
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Morgan Johnson, Lehigh Southwest Cement
Josh Patterson, BASF Construction Chemicals
Jim Pickett, Grace Construction Products
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ACI Reno Chapter Convention Committee

Organizing Committee Co-Chairs
Bruce Carter, Retired, Formerly Lehigh-Hanson
Tarek Khan, BASF Construction Chemicals

Organizing Committee Members
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Kelly Idiart, Central Concrete Supply Company, Inc.
David Sanders, University of Nevada

Guest Program
Bruce Carter, Retired, Formerly Lehigh-Hanson
Carrie Carter
Jennifer Khan
David Sanders, University of Nevada

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Megan Hill, Sierra Nevada Concrete Association
Bob Lema, Northern California and Western Nevada ACI Chapter
Paulette Thomas, California Nevada Cement Association
Rich Vance, Lehigh Southwest Cement Company

Technical Program Team
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Dan Gotta, Wood Rogers, Inc.
Ryan Henkensiefken, Central Concrete Supply Company, Inc.
Craig Hennings, Southwest Concrete Pavement Association
Kelly Idiart, Central Concrete Supply Company, Inc.
Tarek Khan, BASF Construction Chemicals
David Sanders, University of Nevada
Dan Speer, California Department of Transportation

Student Program
Akthem Al-Manaseer, California State University, San Jose
David Sanders, University of Nevada

Hospitality
Robert Hightower, Syar Concrete
Mark Hill, Cemex
Tom Van Damm, Nichols Consulting Engineers
Ron Weber, BASF Construction Chemicals

General Information

ACI Registration—Nevada Room
ACI staff is available to answer your convention questions at the ACI Registration Desk during the following hours:

Saturday	2:00 pm - 6:00 pm
Sunday - Tuesday	7:30 am - 5:00 pm
Wednesday	8:00 am - 12:00 pm

Name Badges
ACI uses color-coded name badges to identify attendees. Name badges are as follows:

Member	Blue
Attendee	Black
Fellow	Green
Honorary Member	Red
Staff	Orange
Guest	Tan
Student	Green ribbon

Attention, ACI Attendees!
First-time convention attendees have a neon green "Convention #1" ribbon on their name badge. Please welcome them to the convention!

Schedule Changes — ACI Registration—Nevada Room
Cancellations, additions, and location changes to the convention schedule will be posted daily on a monitor in the exhibit area at the Grand Sierra Resort.

Emergencies
In the event of an emergency, we kindly request that you do NOT dial 9-1-1. Please go to the nearest house phone to contact the operator by dialing "0."

Photographs/Videos
ACI will take photographs and video during the ACI Spring 2014 Convention and reproduce them in ACI educational, news, or promotional material—whether in print, electronic, or other media, including the ACI website. By participating in the ACI Spring 2014 Convention, you grant ACI the right to use your name, photograph, and biography for such purposes. Please note: Photographing, audio-recording, or videotaping a presentation or speaker is prohibited without the presenter's prior written consent.

General Information

Breaks—Nevada Room
Beverages are available courtesy of ACI during the following hours:

Saturday	Soda	2:00 pm - 6:00 pm
Sunday - Wednesday	Coffee	7:00 am - 10:00 am
	Soda	11:00 am - 2:00 pm

Water Stations
In an attempt to lessen the amount of bottled water thrown away during each convention, ACI has chosen not to provide bottled water to attendees. As a replacement, water stations will be placed throughout the meeting space for you to enjoy.

Alcohol Policy
Nonalcoholic beer and soft drinks are available at all ACI-sponsored receptions. The legal drinking age in Reno is 21.

ACI Bookstore—Nevada Room
Visit the ACI Bookstore to receive 10% off ACI publications and learn how to win the *Manual of Concrete Practice* on CD-ROM. The ACI Bookstore is open during the following hours:

Saturday	2:00 pm - 6:00 pm
Sunday - Tuesday	8:00 am - 5:00 pm
Wednesday	8:00 am - 12:00 pm

ACI Career Center—Nevada Room

Looking for a job or an employee? Visit the ACI Bookstore to view ACI's Online Career Center. This job search engine is specifically targeted to the concrete industry. Job seekers will have an opportunity to post their résumé and view, apply for, and save available jobs. Currently, there are approximately 150 jobs listed in the ACI Career Center. Employers will have the opportunity to post job openings, post internships FREE of charge, and target the individuals they want to attract.

Membership Information—Nevada Room
To learn MORE about the new ACI membership benefits and how to become a member, visit the ACI Bookstore.

General Information

Attendee Lounge & Cyber Café—Nevada Room

The exhibit hall will feature an Attendee Lounge, giving attendees a place to meet, relax, network, and get connected. Six cyber stations will be available with printers and wireless Internet. Charge your laptop and other devices at the charging station and also learn about ACI's social media efforts. To access the wireless connection, look for **ACI Cyber Café** in your network connections. The attendee lounge will also feature the ACI 318-14 learning center. Stop by to learn more about the reorganized code!

Hours

Saturday	2:00 pm - 6:00 pm
Sunday - Tuesday	8:00 am - 5:00 pm
Wednesday	8:00 am - 2:00 pm

Meeting Spot—Nevada Room

Convention attendees are encouraged to visit the meeting spot for coffee or lunch and to meet first-time and other convention attendees Monday and Tuesday, 8:00 am - 8:30 am and 12:00 pm - 1:00 pm.

Session Handouts On Demand

Handouts are available from speakers who have elected to provide and post them to the ACI website. Stop by the Cyber Café or go to **http://www.concrete.org/Events/Conventions/CurrentConvention/SessionHandouts.aspx** to download or print a copy of the handouts for the sessions you plan to attend. If you do not find a handout for a particular session, please contact the speaker for more information.

Local Information—ACI Reno Convention Committee—Nevada Room

ACI Northern California and Western Nevada Chapter members will be happy to answer general convention questions and provide information about the local area. Stop by their information desk during the following hours:

Saturday	2:00 pm - 5:00 pm
Sunday - Tuesday	8:00 am - 5:00 pm

General Information

Grand Sierra Resort Restaurants
Check at ACI Registration or each individual restaurant for the most up-to-date hours of operation.

Fine Dining
Charlie Palmer Steak
Voted Las Vegas's Best Steakhouse, Charlie Palmer Steak features the finest cuts of artisan meats and trademark eclectic wine spotlighting West Coast vintages.

Briscola
This family-style Italian eatery features Italian favorites at affordable prices.

Rim
Take a culinary trip through Asia with specialty dishes from China, Japan, Korea, and Thailand. Rim also features a full-service sushi bar, sake, and a wide range of specialty drinks.

Casual Dining
Elements Buffet
Elements Buffet features a cozy atmosphere and a spectacular array of foods! Chefs are at attention to serve up hot carved meats, pizzas right from the oven, and fresh tossed salads. There's a pasta station with hot sauces prepared before your eyes, a south-of-the-border station with enchiladas, and more. Also featured is an international station with foods from around the world, as well as the ever-popular seafood station, which is filled with fresh-cooked shrimp nightly.

Grand Café
Enjoy classic café favorites and international specialties at the Grand Café. A breakfast buffet is open each morning, the café also serves and it serves breakfast, lunch, and dinner fare 24 hours a day.

2nd Street Express
Open 24 hours daily, this grab-'n'-go market located on the lobby level has everything from breakfast sandwiches and pastries to savory deli sandwiches and soups. Fresh pizza is served all day and a variety of ice cream and other desserts are also available.

Starbucks
Located in the lobby of the Grand Sierra and open Sunday - Wednesday, 5:00 am - 6:00 pm; Thursday, 5:00 am - 8:00 pm; and Friday and Saturday, 5:00 am - 12:00 am.

Johnny Rockets
Serving all-American food such as hamburgers, fries, classic sandwiches, and handmade milk shakes and malts, this casual restaurant offers a fun and refueling atmosphere.

General Information

Port of Subs
Port of Subs' fresh-to-order sandwiches are prepared right in front of you. Their unique taste comes from freshly sliced, top-quality meats and cheeses, freshly baked breads, and zesty dressings and spices. Port of Subs also offers breakfast sandwiches, hot sandwiches, fresh salads, chips, an extensive line of deli trays, desserts, and a variety of refreshing beverages.

Round Table Pizza
This relaxed restaurant chain has built its national reputation by offering an affordable variety of thin- and thick-crust pizzas, all available with a multitude of toppings, as well as a sampling of Italian favorites.

Cantina
Authentic Mexican small-plate cuisine is served at Cantina, with over 115 tequilas available. Hours of operation are based on clientele levels.

Bars and Lounges
WET Ultra Lounge
Located in the Grand Sierra Casino area, WET Ultra Lounge has a distinct, modern nightclub ambiance and intimate lounge vibe. WET features live entertainment, a dance floor, and a party pit.

The Reserve
This wine bar allows you to taste over 80 wines by the ounce or by the glass, and pairs with appetizers from Charlie Palmer Steak.

Crystal Bar
This bar is located on the casino floor, serves beer and cocktails, and offers video poker games to patrons sitting at the bar rail.

Escalator Bar
Open 24 hours a day and located right near the escalators and elevators on the lobby level, this full-service bar features a selection of draft beers and well drinks. Built-in video gaming machines make each seat exciting and relaxing.

Room Service
Room service is available at the Grand Sierra Resort 6:00 am - 12:00 am daily.

General Information

Transportation

Airport Shuttle

A complimentary shuttle is available to take you to and from the Reno-Tahoe International Airport. The shuttle leaves the Grand Sierra Resort on the hour and half-hour between 5:00 am and 11:30 pm daily.

Taxis

There are several taxi services available in Reno. A taxi to the Reno-Tahoe International Airport from the Grand Sierra Resort will cost approximately $8 to $10. The following companies are regularly stationed at the Grand Sierra Resort:
Reno Sparks Cab—+1.775.333.3333
Yellow Cab of Reno—+1775.355.5555
Rates remain the same regardless of company, number of passengers, and number of bags. The first mile is $5. Each additional mile is $2.30. Each hour of a traffic delay is $23. The minimum fare is $15. Each per-trip airport surcharge is $1. Bellmen will be available at the hotel to call for a taxi for you and your group.

Rental Cars

Hertz is the official car rental agency of the ACI Spring 2014 Convention. Receive discounts on upgrades and weekly and weekend rentals. To make advance reservations, call +1.800.654.3131 or visit **www.hertz.com**. Provide the group code **1993380** when making your reservation.

RTC Public Transit

Public transportation in Reno is made possible with the RTC Sierra Spirit Buses. The RTC operates every day of the year from 7:00 am to 7:00 pm for only 25 cents. The buses feature free WiFi. Route 12 will take visitors from the airport to the Grand Sierra Resort every 10 minutes from 5:00 am to 1:00 am, Monday through Friday, and 5:30 am to 12:45 am, Saturday and Sunday. For more information and complete routes and schedules, visit **www.rtcwashoe.com**.

Parking

Self-parking and valet parking at the Grand Sierra Resort are complimentary for hotel guests.

Continuing Education

All sessions approved by the American Institute of Architects (AIA) are noted with AIA/CES and the number of hours. ACI is an AIA/CES Registered Provider.

General Information

Session Attendance Tracking Form

The Session Attendance Tracking Form found at the back of the program book can be submitted to state boards that allow self-reporting of Continuing Education activities as evidence of participation. In most cases, one contact hour is equal to one Professional Development Hour (PDH). Check with your state board for acceptance criteria. Codes will be given out during each session to track your attendance.

Please note: ACI does not track and cannot provide documentation confirming attendee participation or attendance at any ACI session held during the convention unless otherwise noted.

Speaker Ready Room—Registration 3

The Speaker Ready Room is available to moderators, speakers, and committee Chairs during the following hours:

Saturday	2:00 pm - 6:00 pm
Sunday - Tuesday	7:00 am - 6:00 pm

All speakers are requested to check in at the Speaker Ready Room 1 day prior to their session to ensure that:

- ACI has downloaded their presentation on the network in the session rooms; and
- Speakers' session handouts are uploaded onto the ACI website.

ACI Fall 2014 Convention—Nevada Room

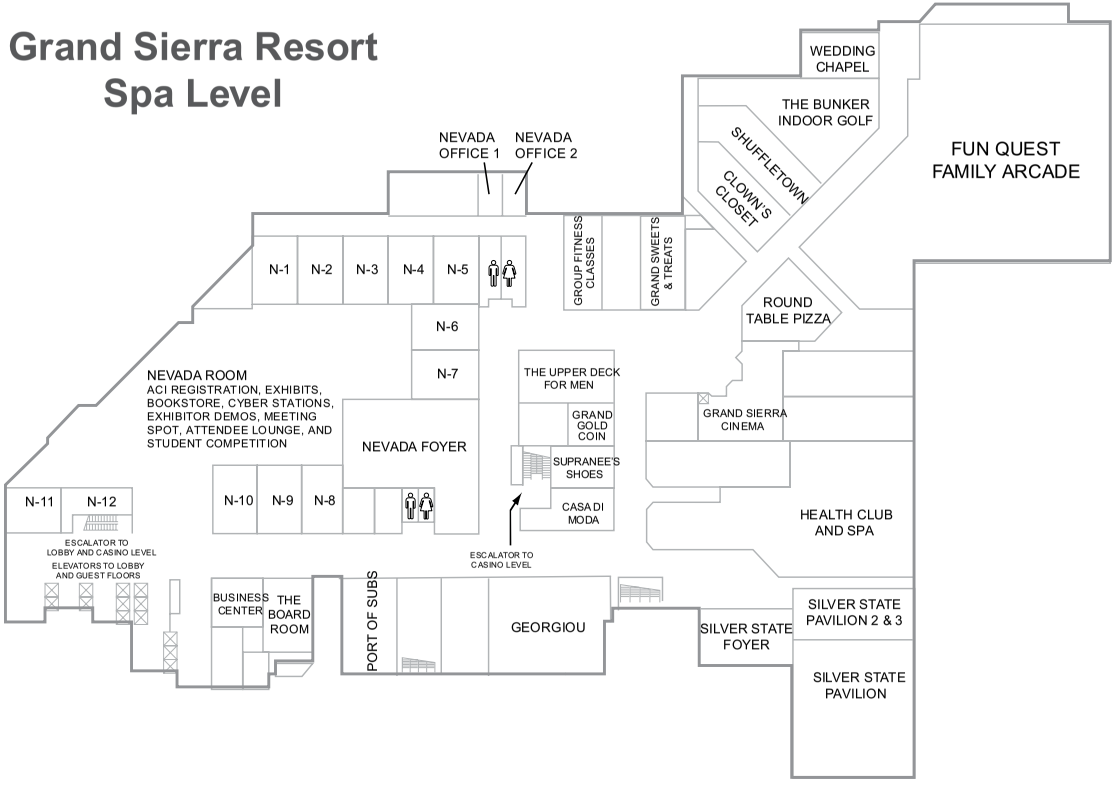
Mark your calendars for the ACI Fall 2014 Convention in Washington, DC, October 26-30, 2014, at the Washington Hilton Hotel. Stop by the ACI National Capital, Maryland, and Virginia Chapter Desk Saturday through Tuesday to learn more about the convention and Washington, DC.

Where's That Meeting Room?

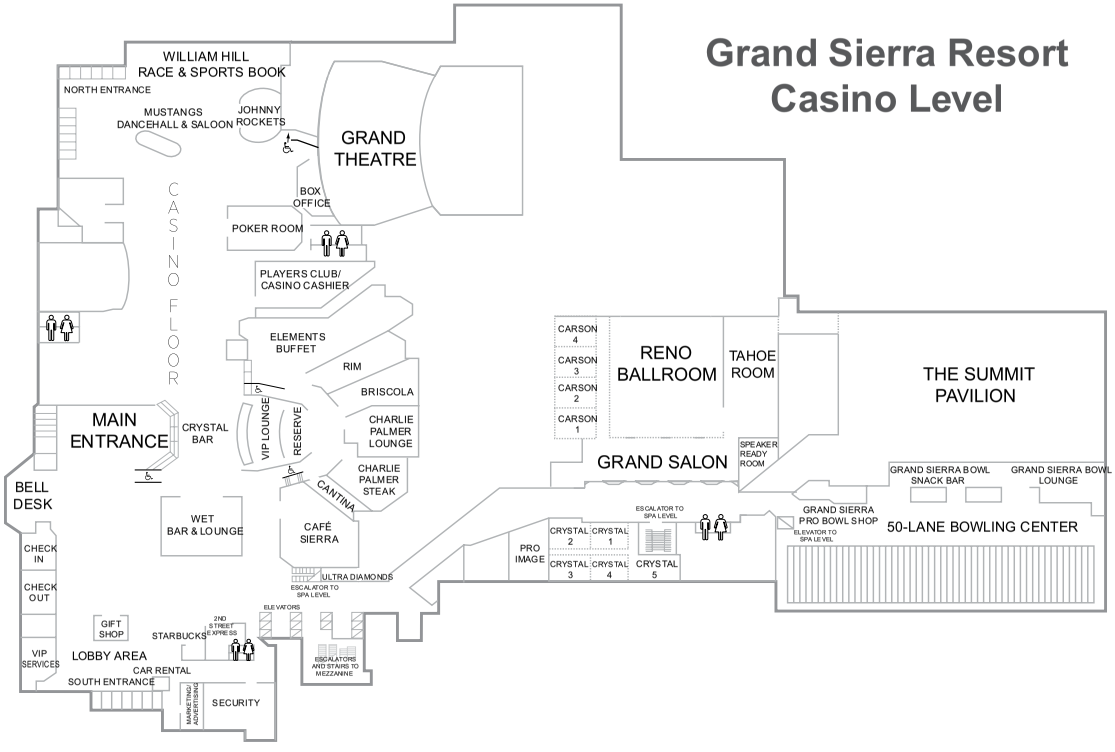
Room Name	Location
Boardroom	SPA LEVEL
Carson 1	CASINO LEVEL
Carson 2	CASINO LEVEL
Carson 3	CASINO LEVEL
Carson 4	CASINO LEVEL
Cascade 1	MEZZANINE LEVEL
Cascade 2	MEZZANINE LEVEL
Crystal 1	CASINO LEVEL
Crystal 2	CASINO LEVEL
Crystal 3	CASINO LEVEL
Crystal 4	CASINO LEVEL
Crystal 5	CASINO LEVEL
McKinley	MEZZANINE LEVEL
N-1	SPA LEVEL
N-2	SPA LEVEL
N-3	SPA LEVEL
N-4	SPA LEVEL
N-5	SPA LEVEL
N-6	SPA LEVEL
N-7	SPA LEVEL
N-8	SPA LEVEL
N-9	SPA LEVEL
N-10	SPA LEVEL
N-12	SPA LEVEL

Room Name	Location
Nevada Foyer	SPA LEVEL
Nevada Office 1	SPA LEVEL
Nevada Office 2	SPA LEVEL
Nevada Room	SPA LEVEL
Registration 3	CASINO LEVEL
Reno Ballroom	CASINO LEVEL
Ruby 1	MEZZANINE LEVEL
Ruby 2	MEZZANINE LEVEL
Shasta 1	MEZZANINE LEVEL
Shasta 2	MEZZANINE LEVEL
Sierra 1	MEZZANINE LEVEL
Sierra 2	MEZZANINE LEVEL
Silver State Foyer	SPA LEVEL
Silver State Pavilion 2 & 3	SPA LEVEL
Summit Pavilion	CASINO LEVEL
Tahoe Room	CASINO LEVEL
Teton 1	MEZZANINE LEVEL
Teton 2	MEZZANINE LEVEL
Whitney	MEZZANINE LEVEL

Grand Sierra Resort
Spa Level

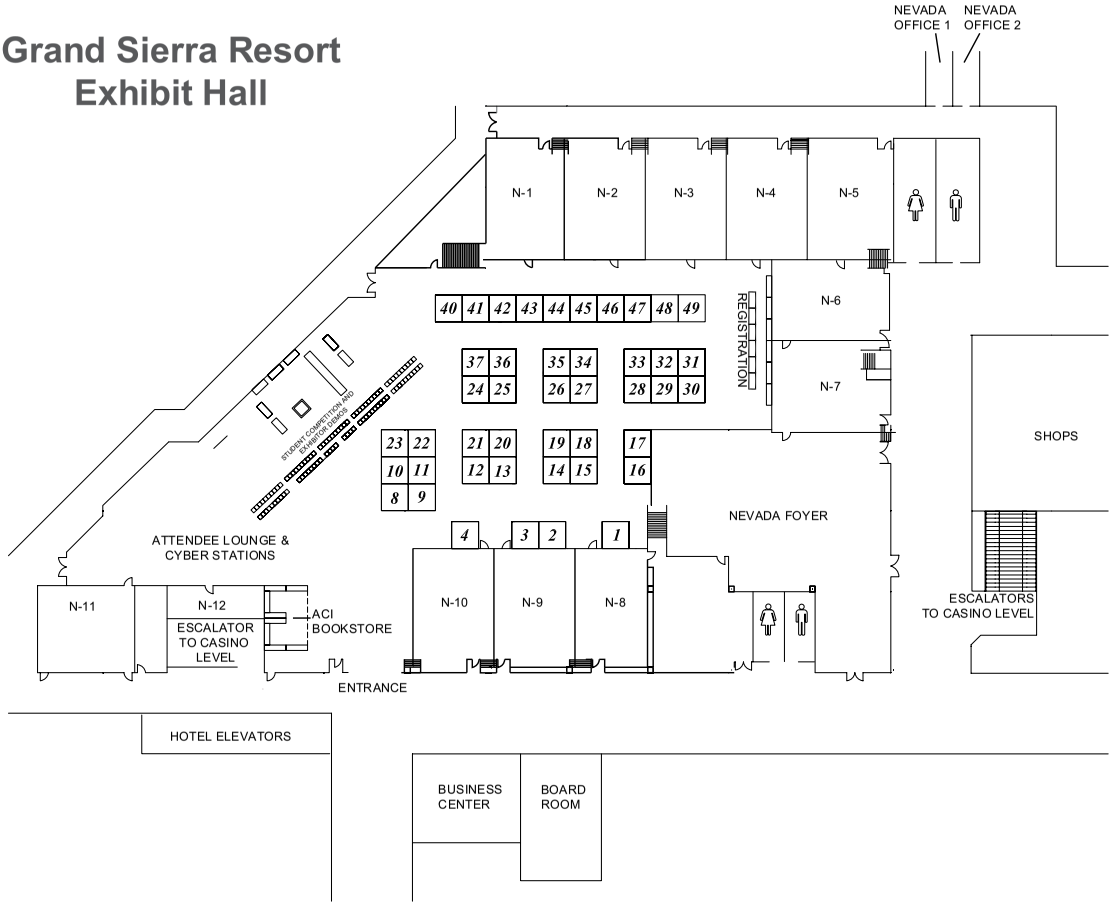


Grand Sierra Resort
Casino Level



Grand Sierra Resort
Mezzanine Level

Grand Sierra Resort
Exhibit Hall



Exhibitors

Exhibitors are listed as of 2/13/14.

Exhibits **Nevada Room**

ACI wishes to thank all exhibitors for their participation in and support of the ACI Spring 2014 Convention.

Exhibit Hours

Sunday - Tuesday 8:00 am - 5:00 pm

ACI Foundation **Booth #11**

The ACI Foundation is a 501(c)(3) nonprofit organization and a wholly owned subsidiary of the American Concrete Institute. The ACI Foundation receives, administers, and expends funds for educational, research, and scientific purposes to increase the knowledge and understanding of concrete materials and to support programs that improve concrete design and construction. It comprises three councils, including the Strategic Development Council, the Concrete Research Council, and the Scholarship Council. To learn more about the ACI Foundation, please visit **www.acifoundation.org**.

Active Minerals International **Booth #43**

Active Minerals International (AMI) is a global industrial minerals company with technical, sales, and logistical support offices around the world. AMI serves the concrete industry with Acti-Gel® 208, a low-dose rheology modifier and anti-settling agent that provides superior aggregate suspension and stabilizes mixtures. Acti-Gel 208 dramatically improves the workability, flowability, pumpability, and performance of concretes. Acti-Gel 208 is made from a highly purified Mg-aluminosilicate using a process patented by AMI. For more information, visit **www.activeminerals.com**.

Advanced Polymer Technology **Booth #34**

Qualideck Coating Systems are designed to provide optimum protection for concrete and asphalt substrates against moisture intrusion and deterioration from chloride and chemicals. APT is committed to providing innovative solutions for the synthetic coatings industry through progressive polyurethane technology. This pursuit of excellence has resulted in the development and manufacture of a broad range of Qualipur high-performance synthetic products, used in a multitude of applications worldwide. To learn more, visit **www.advpolytech.com**.

Axieom LLC **Booth #16**

Axieom offers over 20 years of corrosion consultancy experience on concrete and masonry materials serving all aspects of industry. Through investigation and testing programs, Axieom diagnoses material conditions that can lead to premature chemical or material conflicts or age-related failures. Their overall approach is to use the knowledge gained in the investigative stages to provide clients with a durable, long-term repair solution. For additional information, visit **www.axieom.com**.

BASF Corporation **Booth #9**

Through its Master Builders Solutions brand, BASF is a leading supplier of innovative and sustainable solutions to meet the diverse construction challenges of its customers. BASF offers products and solutions primarily for commercial, residential, industrial, and infrastructure construction to improve durability, water resistance, energy efficiency, safety, and aesthetics. To learn more, visit **www.basf.com.**

Burgess Pigment Company **Booth #23**

Burgess produces OPTIPOZZ highly reactive metakaolin, a white supplementary cementitious material which contributes to strength development and durability in concrete. The use of a small percentage of OPTIPOZZ in a mixture design will decrease ingress of harmful chemicals, improve finishability, reduce efflorescence, mitigate alkali-silica reaction, and assist in shrinkage resistance. For additional information, visit **www.optipozz.com**.

Buzzi Unicem USA **Booth #35**

Buzzi Unicem USA, headquartered in Bethlehem, PA, is a worldwide cement company. The company produces portland, oil-well-blended, masonry, and calcium sulfoaluminate cement. The company's cement plants can produce 8 million tons of cement annually. Buzzi Unicem USA operates 29 terminals across the United States, distributing its various cements to over 3800 concrete producers, highway and airport paving firms, concrete block companies, and concrete product firms in 29 states. Learn more at **www.buzziunicemusa.com**.

Chemco Systems **Booth #14**

ChemCo Systems makes Kemko® brand epoxy- and polyurea-based adhesives, coatings, grouts and control joint fillers applied by specialty contractors for structural concrete bonding, patching, protection, and restoration. Their complete system includes automated metering ratio pumps for epoxy crack injection, slab delamination, voids, and joints. They offer free training to their applicators in structural crack repair and epoxy injection. Challenge them with unusual applications and extreme environments. For additional information, visit **www.chemcosystems.com**.

CEMEX **Booth #2**

CEMEX is a global building materials company that provides high-quality products and reliable service to customers and communities throughout the Americas, Europe, Africa, the Middle East, and Asia. They produce, distribute, and sell cement, ready mix concrete, aggregates, and related building materials in more than 50 countries. CEMEX's U.S. network includes 13 cement plants, 46 cement distribution terminals, more than 90 aggregate quarries, and more than 380 ready mix concrete plants. For more information, visit **www.cemexusa.com**.

Construction Materials Engineers, Inc. **Booth #45**

Construction Materials Engineers, Inc., (CME) is a leading provider of materials engineering, project inspection, materials testing, and construction administration and management in northern Nevada. CME maintains one of the largest materials testing laboratories in the region and is currently accredited for the testing of soils, asphalt, and concrete by the American Association of State Highway and Transportation Officials (AASHTO), the Cement and Concrete Reference Laboratory (CCRL), the California Department of Transportation (Caltrans), and the U.S. Army Corps of Engineers (USACE), and continues to participate in proficiency sample testing and accreditation programs. With materials engineering expertise supplementing top-of-the-line facility, CME provides compressive and flexural PCC mixture designs for all of the ready mix concrete suppliers in the area. To learn more, visit **www.cmenv.com**.

Crafco, Inc. **Booth #30**

Crafco, Inc., is a quality provider of specialized preservation products to the pavement, bridge, roofing, and waterproofing industries. To learn more, visit **www.crafco.com**.

CRC Press **Booth #20**

CRC Press–Taylor & Francis Group is a premier publisher of books and electronic databases in the fields of civil and structural engineering. We invite you to peruse our latest offerings, pick up a free sample journal, and take advantage of special show discounts ranging from 20 to 50% off. For more information, visit **www.crcpress.com**.

Decon USA, Inc. **Booth #37**

Decon® is presenting Studrails® and Jordahl Anchor Channels. Decon manufactures the genuine punching shear reinforcement, commonly used in post-tensioned concrete slabs with direct loading on columns. Decon is the exclusive representative of Jordahl for North America. Anchor Channels are embedded in concrete slabs and used to securely transfer high loads. To learn more, visit **www.deconusa.com**.

ELE International **Booth #29**

ELE International is the world leader in concrete and soil testing equipment, providing products to educational facilities, concrete and cement, and private testing laboratories. Hoskin Scientific is a distributor of testing equipment in Canada. For more information, visit **www.ele.com/usa**.

The Euclid Chemical Company **Booth #3**

Euclid Chemical is a leading supplier to the concrete construction and masonry industry. We strive to be "demonstratively better" to our customers through cutting-edge research and development, technical support and service, product training, and an education-driven specification effort. Our product offerings include fibers, chemical admixtures, Vandex waterproofing, Increte color, joint fillers, repair materials, and mining and tunneling products. Visit **www.euclidchemical.com** for more information.

Fiber Matrix, Inc. **Booth #40**

Fiber Matrix, Inc. produces Tensal resilient concrete, a high-performance, fiber-reinforced concrete which features extraordinary tensile capacity, durability, and damage tolerance under severe loading. Well-proven after 9 years of seismic testing with simulated earthquake loads up to 8.0 magnitude, Tensal resilient concrete has demonstrated its superiority when ductility and tensile strength are important for extreme duty applications and corrosive environments. Available for precast, cast-in-place, and repairs. Visit **www.fibermatrixusa.com** to learn more.

Forney, LP **Booth #41**

Forney is the leading manufacturer of testing equipment for the construction industry. A new product innovator since 1916, Forney offers thousands of products for the concrete, asphalt, and soil industries. In the test labs of departments of transportation, universities, and civil engineers, Forney helps make the world a safer place. To learn more, please visit **www.forneyonline.com**.

FORTA Corporation **Booth #24**

FORTA Corporation, the oldest synthetic fiber reinforcement company for concrete in the world, is now celebrating 35 years of fiber research, development, and successful projects. The latest innovation is the FORTA-FERRO® macrofiber, which mixes uniformly without balling and provides a superior surface finish, even at high dosages. For project references and testing, visit **www.forta-ferro.com**.

Germann Instruments, Inc. **Booths #8 & 10**

Germann Instruments, Inc., is the leader in nondestructive testing (NDT) of concrete structures. Their cutting-edge, innovative product line includes advanced NDT equipment for concrete testing. For structural integrity, they provide impact-echo, mash, and MIRA/ Eyecon three-dimensional (3-D) shear wave systems. For durability, they provide service life, rheometer, PROOVE'it, chloride, and profile equipment. For freezing and thawing, they provide the EVA Analyzer and RapidAir. For fast-track construction, they produce the LOK-TEST and Coma-Meter. For corrosion surveys, they provide GalvaPulse and RapiCor. They also produce the Bond-Test and CorroEye for repair quality. For more information, visit **www.germann.org**.

Grace Construction Products **Booth #18**

Headquartered in Cambridge, MA, Grace Construction Products is a worldwide leading manufacturer of concrete admixtures and fibers; liquid pigments for colored concrete; cement processing additives; concrete masonry products; air and vapor barriers; roofing underlayments; self-adhered window, door, and deck flashings; structural waterproofing systems; and fire protection products. For more information, visit **www.grace.com**.

GST International **Booth #1**

GST International is a leader in the development and manufacture of innovative and advanced chemical products for the enhancement, protection, and maintenance of all concrete, masonry, and natural stone surfaces. To learn more, visit **www.gstinternational.com**.

Headed Reinforcement Corp. (HRC) **Booth #19**

Headed Reinforcement Corp. is known in the industry for delivering practical coupler and T-head solutions without reducing the capacity of the reinforcing steel for ultimate strength and ductility. HRC products are designed to exceed the tensile properties of the reinforcing steel used. Visit **www.hrc-usa.com** for more information.

Hoskin Scientific Limited **Booth #28**

Hoskin Scientific has been a supplier of testing equipment and monitoring instrumentation for over 60 years. Throughout North America, Hoskin exclusively offers the Concrete Specimen End Grinder and the HS-745T Air Voids System. Partners include: Nikon Instruments, which offers a full line of microscopes and imaging systems for a variety of applications; and Onset Computer Corporation, which offers a full line of data loggers, including a thermocouple data logger for concrete temperature monitoring. Find more information at **www.hoskin.ca**.

Hughes Brothers, Inc. **Booth #15**

Hughes Brothers, Inc., manufactures fiber-reinforced polymer (FRP) reinforcement under the trade name Aslan FRP. Aslan FRP products include FRP reinforcing bar for concrete reinforcement in corrosive or electrically sensitive environments, glass FRP dowel bars for load transfer between slabs, and structural strengthening materials for externally bonded and near-surface-mounted strengthening of existing structures. To learn more, visit **www.aslanfrp.com**.

Humboldt Manufacturing Co./Giatec Scientific Inc. **Booth #36**

Humboldt is a leading manufacturer and provider of material testing equipment for concrete, cement, aggregate, asphalt, and soil. Humboldt is known worldwide for their vast selection of concrete testing equipment. Humboldt will be presenting their new line of concrete testing products from Giatec Scientific, which includes the Giatec Surf™, RCON™, Perma™, and iCOR™ test devices for performance-based quality control of concrete and accurate condition assessment of concrete infrastructure. For more information, visit **www.humboldtmfg.com** or **www.giatec.ca**.

ITW Commercial Construction, N.A. **Booth #13**

As the company that invented concrete anchoring technology, ITW Commercial Construction holds a unique place in the history of construction and building. The ITW brand has become synonymous with the anchoring product category it invented. For more information, visit **www.itwredhead.com**.

Innovation Center Iceland **Booth #1**

Innovation Center Iceland encourages innovation and promotes the advancement of new ideas in Icelandic economy by providing active participation and support to entrepreneurs and businesses. Innovation is a prerequisite for diversity in the Icelandic economy and the basis of a strong competitive position of the economy. Innovation Center Iceland belongs to the Ministry of Industry, Energy and Tourism and operates according to the Act on Government Support for Technology, Research, Innovation and Industry (no. 75/2007). To learn more, visit **www.innoivation.is**.

Kryton International Inc. **Booth #4**

Kryton International Inc. takes the risk out of concrete waterproofing. Waterproofing concrete structures since 1973, Kryton has the most complete system, which has undergone more testing and received more approvals than any other of its kind. Kryton is the leader in products for waterproofing, repairing, and protecting concrete and, most notably, the inventor of the Crystalline waterproofing admixture. For more information, visit **www.kryton.com.**

Premier Construction Products Group **Booth #31**

Premier Construction Products Group manufactures the most effective technology in preventing concrete shrinkage cracks. Based on a hybrid technology, PREVent-C offers a solution to the most predominant cause of shortened life span of our infrastructure. Used in a variety of applications, PREVent-C is a user-friendly admixture that will increase the durability of our structures. To learn more, visit **www.premiercpg.com.**

Proceq USA, Inc. **Booths #26 & 27**

Proceq USA, Inc., a global leader in portable nondestructive testing (NDT) instruments for concrete structures, will be displaying its latest innovations in NDT instruments. New products include the Resipod concrete surface resistivity meter and the new portable, handheld Handy Search ground-penetrating radar. Other instruments on display will include Proceq's range of reinforcing bar detection equipment, ultrasonic testing instruments, corrosion analysis instruments, pulloff adhesion testing equipment, and uniformity/strength evaluations of structures with the complete range of Original Schmidt concrete test hammers. Visit **www.proceq.com** to learn more.

QuakeWrap, Inc. **Booth #22**

QuakeWrap, Inc., is the world's leading engineering/construction company offering repair and strengthening of structures with fiber-reinforced polymer (FRP) products. While many companies replicate the technology pioneered 25 years ago by QuakeWrap's president, Professor Mo Ehsani, QuakeWrap continues to advance this field by inventing creative products for your structural retrofit needs. PileMedic™ is the only carbon FRP jacket for repair of deteriorated columns and piles that offers 360 degrees of high confining pressure. It eliminates the need for divers in repair of submerged piles. PipeMedic carbon laminates received the 2011 Trenchless Technology Project of the Year Award for repair of a high-pressure gas pipe. StifPipe™ is a honeycomb-FRP pipe that can be made to any shape and size for repair of pipes and culverts subjected to internal pressure and external gravity loads. InfinitPipe™ is a revolutionary on-site manufactured pipe that can be built to any length, eliminating leaking joints. Visit **www.quakewrap.com** to learn more.

SAS Stressteel, Inc. **Booth #44**

SAS Stressteel, Inc. provides innovative products and solutions for the construction industry. SAS hot-rolled thread bar sizes from No. 6 to No. 24 in Grades 80 and 97 and 150/160 ksi are used in a wide range of applications from rock and soil anchors to multi-bar caissons and ultra-high-strength reinforcing bars for concrete structures. Visit **http://www.stressteel.com** for more information.

Sika Corporation **Booth #25**

Sika Corporation, based out of Lyndhurst, NJ, is a global technology leader with over 100 years of experience in concrete materials and restoration technology. Sika has a long history of developing and producing a wide range of high-performance products and systems that cover, seal, bond, strengthen, reinforce, repair, and protect construction projects from roof to floor. For more information, visit **www.sika.com**.

Silica Fume Association **Booth #21**

The Silica Fume Association provides high-performance concrete information to the construction industry. Silica fume is a valuable waste material used in today's sustainable concrete mixtures. To learn more, visit **www.silicafume.org**.

STRUCTURAL TECHNOLOGIES **Booth #17**

STRUCTURAL TECHNOLOGIES was created in the early 1980s as part of STRUCTURAL Group to develop proprietary products, processes, and systems. STRUCTURAL TECHNOLOGIES comprises product development, engineering, and technical service experts supporting specialized solutions groups, such as strengthening, post-tensioning, cathodic protection, force protection, concrete repair, and waterproofing. For more information, visit **www.structural.net**.

Tekla, Inc. **Booth #46**

With its software, Tekla drives the evolution of digital information models and provides competitive advantage to the construction and infrastructure industry. The company was established in 1966, and today it has customers in 100 countries, offices in 15 countries, and a global partner network. Tekla became part of Trimble Buildings Group in 2011. Visit **www.tekla.com** for more information.

Universal Construction Testing (UCT) – Radarview **Booth #33**

Universal Construction Testing provides as-built structural concrete and condition testing, Department of Transportation and airport pavement surveys, core drilling, and underground utility/environmental investigations. In addition, UCT provides full structural and geotechnical field nondestructive testing, quality control, and laboratory services including a wide array of mechanical, chemical, petrographic, and environmental testing of concrete, masonry, metals, wood, soil, coatings, and composite materials, as well as a full-scale structural testing laboratory and short- and long-term structural monitoring. These capabilities allow for better response with a single source for services. For a complete list of field and laboratory capabilities, visit **www.radarviewllc.com**.

Vector Corrosion Technologies **Booth #12**

Vector Corrosion Technologies offers a portfolio of solutions for concrete corrosion repair and protection. Innovative solutions include electrochemical chloride extraction, cathodic protection, and an array of galvanic protection systems, including embedded galvanic anodes, galvanic jackets, and activated arc-spray zinc metalizing. Vector also provides evaluation, repair, and mitigation services for post-tension corrosion and temperature-resistant composite-strengthening systems. For more information, call +1.813.830.7566 or visit **www.vector-corrosion.com**.

Wacker Neuson **Booth #42**

Select Wacker Neuson products for your site preparation, reinforcement, placement, consolidation, curing, and finishing needs. Products include trowels, compaction equipment, hydronic and air heaters, vibrators, wet screeds, saws, skid steer loaders and compact track loaders, excavators, and dumpers. All you need is the concrete—Wacker Neuson products will handle the rest. Visit **www.wackerneuson.com** for more information.

Zircon Corporation **Booth #32**

Zircon Corporation, the leading company in electronic stud finders, also makes concrete scanners to locate embedded metal, such as reinforcing bar, before your drill or saw blade does! These easy-to-use, inexpensive metal detectors are also very good for nondestructive inspection (NDI). To learn more, visit **www.zircon.com**.

Exhibitor Demonstration Schedule

Monday, March 24, 2014

Time	Company/Organization	Presentation/Demo Title
9:45	Proceq USA	New Proceq PL-200 and PL-200 PE
10:30		
11:15		
12:00	Humboldt/Giatec	Giatec CELL™
1:30	QuakeWrap, Inc.	New FRP products for repair of columns, pipes, and culverts
2:15	Germann Instruments	MIRAd'OR: Automated 3D Impact-Echo Tomography
3:00	CEMEX	Roller-Compacted Concrete Pavement—What Engineers Need to Know
3:45	Axieom	An introduction to corrosion condition assessments
4:30	Germann Instruments	CAPO-Test: Accurate In-Place Strength for Existing Structures

Tuesday, March 25, 2014

Time	Company/Organization	Presentation/Demo Title
9:45	Proceq USA	New Proceq Performer PM-600 and PM-630
10:30		
11:15		
12:00	Zircon Corporation	Scanning Concrete to Locate Rebar with Zircon MetalliScanner MT6

Demonstration schedule listed as of 3/21/2014. For the most up-to-date list of exhibitor demonstrations, please stop by the ACI Registration Desk or check the digital monitor in the exhibit hall.

Daily Program

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Friday, March 21, 2014		
6:30 pm - 9:00 pm		
TAC	Technical Activities M1	CARSON 2
Saturday, March 22, 2014		
7:00 am - 6:00 pm		
TAC	Technical Activities M2	CARSON 2
10:00 am - 12:00 pm		
562-D	Eval, Repair & Rehab-Structural Repair Design M1	CRYSTAL 1
10:00 am - 4:00 pm		
131-TG	Building Information Modeling of Concrete Structures Subcommittee	CARSON 4
1:00 pm - 2:00 pm		
562-D	Eval, Repair & Rehab-Structural Repair Design M2	CRYSTAL 1
1:00 pm - 4:00 pm		
562-A	General	CRYSTAL 4
1:00 pm - 5:00 pm		
EAC	Educational Activities M1	CRYSTAL 2
301	Specifications M1	CARSON 1
2:00 pm - 6:00 pm		
	ACI Registration	NEVADA ROOM
	ACI Bookstore	NEVADA ROOM
	ACI Cyber Café	NEVADA ROOM
	Afternoon Soda Break	NEVADA ROOM
2:00 pm - 9:00 pm		
347	Formwork for Concrete M1	CRYSTAL 3
4:00 pm - 5:00 pm		
562-C	Evaluation M1	CRYSTAL 4
6:00 pm - 8:00 pm		
562-C	Evaluation M2	CRYSTAL 4
6:00 pm - 9:00 pm		
562-F	Durability	CRYSTAL 1

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Sunday, March 23, 2014		
7:00 am - 8:15 am		
301-SC	Spec-Steering Committee	NEVADA OFFICE 1
7:00 am - 10:00 am		
	*Guest Hospitality and Overview	NEVADA FOYER
	Coffee Break	NEVADA ROOM
7:00 am - 2:00 pm		
TAC	Technical Activities M3	RUBY 2
7:30 am - 5:00 pm		
	ACI Registration	NEVADA ROOM
8:00 am - 8:30 am		
408-A	Mech Splices	N-12
8:00 am - 9:00 am		
	Convention Orientation Breakfast	CRYSTAL 3 & 4
8:00 am - 9:30 am		
C660-TG	Examiner TG	CRYSTAL 5
341-B	Equake Res Brdgs-Pier Walls	SHASTA 2
8:00 am - 10:00 am		
E706	Concrete Repair Education	N-10
S801	Student Activities	N-8
445-B	Shear & Torsn-Seismic Shear	BOARDROOM
562-B	Loads	SIERRA 2
8:00 am - 10:30 am		
CLC	Construction Liaison	WHITNEY
8:00 am - 11:00 am		
TACRG1	TAC Review Group 1	CASCADE 1
TACRG2	TAC Review Group 2	CASCADE 2
TACRG3	TAC Review Group 3	TETON 1
TACRG4	TAC Review Group 4	TETON 2
8:00 am - 12:00 pm		
347	Formwork M2	SUMMIT PAVILION

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8:00 am - 5:00 pm		
	ACI Bookstore	NEVADA ROOM
	ACI Cyber Café	NEVADA ROOM
	Exhibits	NEVADA ROOM
8:30 am - 10:00 am		
342	Bridge Evaluation	RUBY 1
8:30 am - 11:30 am		
MEMC	Membership	NEVADA OFFICE 1
314	Simplified Design Buildings	N-7
315-B	Detailing-Constructibility	SHASTA 1
350-C	Env Str-Reinf & Devel	SIERRA 1
408	Development and Splicing	N-12
440-H	FRP-Reinforced Concrete	TAHOE ROOM
8:30 am - 12:00 pm		
301	Specifications M2	MCKINLEY
9:00 am - 10:00 am		
546-C	Repair-Guide	N-1
	ACI TweetUp	NEVADA ROOM
9:00 am - 10:30 am		
E701	Materials for Concrete Construction	N-9
9:00 am - 12:00 pm		
551	Tilt-Up	CRYSTAL 1
9:30 am - 11:00 am		
341-A	Equake Res Brdgs-Columns	SHASTA 2
9:30 am - 12:30 pm		
228	Nondestructive Testing	CARSON 4
10:00 am - 11:00 am		
343-G	Editorial	RUBY 1
10:00 am - 11:30 am		
Intl-Frm	ACI International Forum	CARSON 2
10:00 am - 12:00 pm		
C660	Shotcrete Nozzleman Cert	SIERRA 2

Daily Program

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Sunday, March 23, 2014 (cont.)		
10:00 am - 1:00 pm		
421	Reinf Slabs	N-2
10:00 am - 5:00 pm		
	*Guest Lounge	CRYSTAL 2
10:30 am - 12:00 pm		
376-01	Steering Subcommittee	N-8
10:30 am - 1:30 pm		
ITG-10	Alternative Cementitious Materials	WHITNEY
445-A	Shear & Torsn-Strut & Tie	N-9
10:30 am - 4:00 pm		
	Student FRC Bowling Ball Competition	NEVADA ROOM
11:00 am - 12:00 pm		
343-A	Design	RUBY 1
11:00 am - 12:30 pm		
341-D	Perf Based Seismic Design	SHASTA 2
11:00 am - 1:00 pm		
C640	Craftsman Cert	CASCADE 1
549	Thin Reinforced	N-10
11:00 am - 2:00 pm		
	Afternoon Soda Break	NEVADA ROOM
11:30 am - 1:00 pm		
221	Aggregates	SHASTA 1
335	Composite Hybrid	N-12
350-SC	Env Str-Steering Comm	NEVADA OFFICE 1
441-E	Columns Multi-Spiral Reinf	SIERRA 1
11:30 am - 1:30 pm		
	✓International Lunch	CRYSTAL 3 & 4
12:00 pm - 4:30 pm		
237-TG1	Self-Consolidating Concrete Task Group	SIERRA 2
12:15 pm - 5:15 pm		
	✓South Lake Tahoe Tour	DEPART MAIN LOBBY

Daily Program

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12:30 pm - 2:00 pm		
445-E	Shear & Torsn-SOA Torsion	N-8
12:30 pm - 3:30 pm		
440-K	FRP-Material Characteristics	N-1
12:30 pm - 4:30 pm		
301-B	Spec-Formwork & Reinforcement	SHASTA 2
12:30 pm - 5:30 pm		
301	Specifications M3	MCKINLEY
1:00 pm - 2:00 pm		
301-H	Spec-Tilt-Up Constr & Arch Conc	TETON 1
1:00 pm - 2:30 pm		
HTC	Hot Topic	N-2
369	Seismic Rehab M1	N-10
1:00 pm - 3:00 pm		
228-B	Visual Inspection	SHASTA 1
376-B	Materials Subcommittee	CARSON 4
423-F	Sustainable Prestressed Concrete	N-12
445-C	Shear & Torsn-Punching Shear	NEVADA OFFICE 1
1:00 pm - 3:00 pm - *Sessions*		
	Concrete Repair Guide: New Edition, Part 1 of 2	CARSON 3
	Seismic Assessment of Existing Reinforced Concrete Buildings—New Developments, Part 1 of 3	CARSON 2
	Thaumasite Sulfate Attack on Concrete, Part 1 of 2	CARSON 1
1:00 pm - 4:00 pm		
362-A	Updating Guide to Struct Maint of Pkg Struct Doc	CRYSTAL 1

Daily Program

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Sunday, March 23, 2014 (cont.)		
1:00 pm - 5:00 pm		
301-C	Spec-Placing Consolidating & Curing	CASCADE 1
301-D	Spec-Lightweight & Massive Concrete	CASCADE 2
301-G	Spec-Shrink Comp Conc & Ind Floor Slabs	TETON 2
336	Footings	NEVADA OFFICE 2
350-E	Env Str-Precast/Prestressed	SIERRA 1
562	Eval, Repair & Rehab	N-7
1:30 pm - 2:30 pm		
506-B	Shotcreting-Fiber-Reinforced	WHITNEY
1:30 pm - 3:00 pm		
Intl-Cert	International Certification	N-4
341-C	Equake Res Brdgs-Retrofit	N-9
1:30 pm - 3:30 pm		
345	Bridge Construction	N-6
1:30 pm - 5:00 pm		
355	Anchorage	TAHOE ROOM
2:00 pm - 3:00 pm		
236-TG1	Advanced Analysis Techniques for Concrete	N-8
310/308-TG2	Curing Decorative Concrete Joint TG	TETON 1
2:00 pm - 3:30 pm		
C650	Tilt-Up Constructor Cert	RUBY 2
2:00 pm - 4:00 pm		
215	Fatigue	BOARDROOM
305	Hot Weather	RUBY 1
2:00 pm - 5:00 pm		
132	Responsibility	CRYSTAL 5
315	Detailing	N-3
352	Joints	N-5
2:30 pm - 3:30 pm		
318-EA	Electronic Aids	WHITNEY

Daily Program

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2:30 pm - 5:00 pm		
133	Disaster Reconnaissance	N-10
224	Cracking	N-2
3:00 pm - 5:00 pm		
121	Quality Assurance	SHASTA 1
301-E	Spec-Post-Tensioned Concrete	TETON 1
309	Consolidation	NEVADA OFFICE 1
341	Earthquake Resistant Bridges	SUMMIT PAVILION
370	Dynamic & Vibratory Effects	N-4
376-C	Analysis Subcommittee	N-12
423-E	Prestress Losses	CRYSTAL 4
445-D	Shear & Torsn-Database	N-8
550	Precast Structures	CRYSTAL 3
3:00 pm - 5:30 pm		
310	Decorative Concrete	N-9
3:30 pm - 4:30 pm		
318-W	International Workshop Planning	RUBY 2
3:30 pm - 5:00 pm		
236-D	Material Science-Nanotechnology of Concrete M1	N-6
439-A	Steel Reinf-Wire	N-1
440-L	FRP-Durability	CARSON 4
3:30 pm - 5:30 pm		
423/445	Adhoc Grp on Shear in Prestress Conc	WHITNEY
3:30 pm - 5:30 pm - *Sessions*		
	Seismic Assessment of Existing Reinforced Concrete Buildings—New Developments, Part 2 of 3	CARSON 2
	Structural Safety and Reliability	CARSON 3
	Thaumasite Sulfate Attack on Concrete, Part 2 of 2	CARSON 1
4:00 pm - 5:00 pm		
S805	ACI Collegiate Concrete Council	CRYSTAL 1
423-D	Bond & Dev Pretnsn Membrs	BOARDROOM

Daily Program

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Sunday, March 23, 2014 (cont.)		
4:00 pm - 5:30 pm		
123	Research	RUBY 1
5:45 pm - 7:00 pm		
	Opening Session and Awards Program	RENO BALLROOM
7:00 pm - 8:00 pm		
	Opening Reception	NEVADA ROOM
8:00 pm - 10:00 pm		
	Hot Topic Session: Moisture in Concrete Slabs	CARSON 1
9:00 pm - 10:30 pm		
	Student and Young Professional Networking Event	GRAND SIERRA RESORT BOWLING CENTER
Monday, March 24, 2014		
6:30 am - 8:00 am		
	Workshop for Technical Committee Chairs (invitation only)	RENO BALLROOM
7:00 am - 8:30 am		
C601-A	Adhesive Anchor Installer	SHASTA 1
	Speaker Development Breakfast	CARSON 4
7:00 am - 10:00 am		
	*Guest Hospitality	NEVADA FOYER
	Coffee Break	NEVADA ROOM
7:15 am - 8:30 am		
IC-Conf	International Conferences	NEVADA OFFICE 2
7:30 am - 5:00 pm		
	ACI Registration	NEVADA ROOM
8:00 am - 8:30 am		
	Meeting Spot	NEVADA ROOM
8:00 am - 9:00 am		
441-A	High-Strength Conc	N-12

Daily Program

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8:00 am - 10:00 am		
376-D	Design & Construction Subcommittee	CASCADE 1
439	Steel Reinforcement	CRYSTAL 3 & 4
562-E	Education	TETON 1
8:00 am - 11:30 am		
301-A	Spec-Gen Req, Definitions, & Tolerances	BOARDROOM
8:00 am - 12:00 pm		
349-AB	Nuclear Structures-Design & Materials	N-1
8:15 am - 9:00 am		
343-B	Bridge Deck	SHASTA 2
8:15 am - 11:00 am		
237	Self-Consolidating Concrete	SILVER STATE PAVILION 2 & 3
548-A	Polymers-Overlays	CASCADE 2
8:15 am - 12:00 pm		
374	Seismic Design	N-3
8:00 am - 5:00 pm		
	ACI Bookstore	NEVADA ROOM
	ACI Cyber Café	NEVADA ROOM
	Exhibits	NEVADA ROOM
8:30 am - 9:30 am		
S802	Teaching Methods and Educational Materials	MCKINLEY
8:30 am - 10:00 am		
130-A	Materials	N-7
440-G	FRP-Student	N-10
524	Plastering	NEVADA OFFICE 2
533	Precast Panels	RUBY 2
544-SC	FRC-Steering Committee	N-8
8:30 am - 10:30 am		
506-C	Shotcreting-Guide	SHASTA 1
546	Repair	N-4

Daily Program

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Monday, March 24, 2014 (cont.)		
8:30 am - 10:30 am - *Sessions*		
	Hydration of Low Portland Cement Binders: Industry Experience and Needs, Part 1 of 2	CARSON 3
	Research in Progress, Part 1 of 2	CARSON 1
	Unconventional Reinforced Concrete Bridge Columns, Part 1 of 2	CARSON 2
8:30 am - 11:00 am		
C610	Field Technician Cert	N-5
355-TG	Anchorage TG	N-6
8:30 am - 11:30 am		
543	Piles	WHITNEY
8:30 am - 12:30 pm		
423	Prestressed	CARSON 4
8:30 am - 1:00 pm		
302	Floor Construction	TAHOE ROOM
350-B	Env Str-Durability	SIERRA 2
8:30 am - 5:00 pm		
313	Bins & Silos	CRYSTAL 1
8:30 am - 6:30 pm		
350-D	Env Str-Structural	TETON 2
9:00 am - 10:00 am		
343-H	Detailing and Constructibility	SHASTA 2
441-B	Lateral Reinf	N-12
9:00 am – 10:00 am – *Session*		
	The Reorganized ACI 318-14: Benefits, Rationale, and Availability	SUMMIT PAVILION
9:00 am - 11:00 am		
365	Service Life	N-9
9:00 am - 12:00 pm		
301-F	Spec-Precast Concrete Panels	NEVADA OFFICE 1

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9:30 am - 11:00 am		
318-L	International Liaison	RUBY 1
364-A	Rehabilitation Editorial Subcommittee	SIERRA 1
9:30 am - 12:30 pm		
318-B	Reinforcement & Development M1	MCKINLEY
9:30 am - 2:30 pm		
	✓Historical Virginia City Tour & Scavenger Hunt	DEPART MAIN LOBBY
10:00 am - 11:30 am		
235	Electronic Data Exchange	SHASTA 2
440-I	FRP-Prestressed Concrete	CRYSTAL 3 & 4
10:00 am - 12:00 pm		
216	Fire Resistance	N-10
343	Bridge Design	N-8
376-A	Code, Education & Publication Subcommittee	TETON 1
10:00 am - 12:30 pm		
377-FM	Performance-Based Structural Integrity & Resilience of Concrete Structures	NEVADA OFFICE 2
10:00 am - 1:00 pm		
207	Mass Concrete	N-7
209	Creep & Shrinkage	CASCADE 1
232-A	Natural and Processed Pozzolans	RUBY 2
10:00 am - 5:00 pm		
	*Guest Lounge	CRYSTAL 2
10:30 am - 12:30 pm		
437	Strength Evaluation	N-4
506-E	Shotcreting-Specifications	SHASTA 1
11:00 am - 12:00 pm		
364-TG1	Rehab Guide	SIERRA 1
	IPAC Guide Subcomittee	N-9

Daily Program

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Monday, March 24, 2014 (cont.)		
11:00 am - 12:30 pm		
318-S	Spanish Translation	N-5
548-C	Structural Polymer Design	SILVER STATE PAVILION 2 & 3
11:00 am - 1:00 pm		
C655	Foundation Constructor Certification	RUBY 1
11:00 am - 1:00 pm - *Sessions*		
	Hydration of Low Portland Cement Binders: Recent Advances in Experiments and Modeling, Part 2 of 2	CARSON 3
	Monitoring for Cold Weather Concreting	CARSON 2
	Research in Progress, Part 2 of 2	CARSON 1
11:00 am - 1:30 pm		
447	Finite Element Analysis M1	CASCADE 2
11:00 am - 2:00 pm		
	Afternoon Soda Break	NEVADA ROOM
11:30 am - 1:00 pm		
201-D	Durability-Oversight Committee	N-12
304	Measuring/Mix/Trans/Placing	BOARDROOM
346	CIP Pipe	WHITNEY
544-A	FRC-Production & Applications	CRYSTAL 3 & 4
11:30 am - 1:30 pm		
	✓Student Lunch	RENO BALLROOM
11:30 am - 2:00 pm		
441	Columns	N-6
12:00 pm - 1:00 pm		
	Meeting Spot	NEVADA ROOM
12:00 pm - 2:00 pm		
214-A	Document Preparation	TETON 1
12:30 pm - 1:30 pm		
130-B	Production/Transport/Construction	N-2

Daily Program

Program changes are available at ACI Registration in the Nevada Room.

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12:30 pm - 2:00 pm		
124	Aesthetics	SILVER STATE PAVILION 2 & 3
350-H	Env Str-Editorial	NEVADA OFFICE 2
12:30 pm - 4:30 pm		
349-C	Nuclear Str-Anchorage	CARSON 4
12:30 pm - 6:00 pm		
301	Specifications M4	MCKINLEY
1:00 pm - 2:30 pm		
C630	Construction Inspector Cert	SIERRA 1
1:00 pm - 3:00 pm		
C601-F	Nondestructive Testing Technician	N-12
122	Energy Efficiency	SHASTA 1
239-A	Emerging Technology Report	SHASTA 2
351-D	Design Provisions for Heavy Industrial Equipment and Machinery Concrete Support Structures	RUBY 2
364	Rehabilitation	SIERRA 2
1:00 pm - 3:30 pm		
375	Design for Wind Loads	WHITNEY
1:00 pm - 4:00 pm		
232	Fly Ash, Natural and Processed Pozzolans	N-7
376	RLG Containment Structures	N-3
1:00 pm - 5:00 pm		
225	Hydraulic Cements	N-4
362	Parking Structures	N-5
1:30 pm - 3:00 pm		
440-M	FRP-Repair of Masonry Str	CRYSTAL 3 & 4
506-A	Shotcreting-Evaluation	CASCADE 2

Daily Program

Program changes are available at ACI Registration in the Nevada Room.

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Monday, March 24, 2014 (cont.)		
1:30 pm - 3:30 pm - *Sessions*		
	Concrete Repair Guide: New Edition, Part 2 of 2	CARSON 1
	Current Practices in Online Learning	CARSON 3
	Unconventional Reinforced Concrete Bridge Columns, Part 2 of 2	CARSON 2
1:30 pm - 6:00 pm		
318	Building Code M1	SUMMIT PAVILION
1:45 pm - 4:00 pm		
	✓UNR Earthquake Engineering Laboratory Tour	DEPART MAIN LOBBY
2:00 pm - 3:30 pm		
S806	Young Professional Activities Committee	NEVADA OFFICE 1
2:00 pm - 4:00 pm		
231	Early Age	CASCADE 1
2:00 pm - 5:00 pm		
CAC	Chapter Activities	N-2
MKTC	Marketing	NEVADA OFFICE 2
130	Sustainability M1	SILVER STATE PAVILION 2 & 3
212	Chemical Admixtures	TETON 1
2:00 pm - 6:00 pm		
369	Seismic Rehab M2	N-6
445	Shear & Torsion	CRYSTAL 5
2:00 pm - 6:30 pm		
360	Slabs on Ground	TAHOE ROOM
2:30 pm - 5:30 pm		
307	Chimneys	SIERRA 1

Daily Program

Program changes are available at ACI Registration in the Nevada Room.

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3:00 pm - 4:30 pm		
348	Safety	N-12
506-G	Qualifications for Projects	CASCADE 2
564-M	Evaluation, Repair & Rehabilitation of Nuclear Concrete Structures	CRYSTAL 3 & 4
3:00 pm - 5:00 pm		
201-TG1	Aggressive Chemicals	RUBY 1
351-C	Equip Fdns-Dynamic Fdns	SHASTA 1
371	Elevated Tanks with Concrete Pedestals	SHASTA 2
548-B	Polymers-Adhesives	RUBY 2
3:00 pm - 6:00 pm		
440-F	FRP-Repair-Strengthening	N- 8-10
3:30 pm - 5:00 pm		
211-P	Prptns Pump Conc	BOARDROOM
214	Strength Tests	WHITNEY
	*Guest Social	THE RESERVE
3:30 pm - 5:30 pm		
239	Ultra-High Performance Concrete	SIERRA 2
3:30 pm - 6:30 pm		
350-J	Env Str-Education	NEVADA OFFICE 1
4:00 pm - 5:30 pm		
435	Deflection	N-7
446	Fracture Mechanics	CASCADE 1
4:00 pm - 6:00 pm		
117-TG	Tolerances Task Group	N-3
4:00 pm - 6:00 pm - *Sessions*		
	Delayed Ettringite: Causes, Evaluation of Existing Structures, and Prevention	CARSON 3
	Proportioning of Mixtures for Concrete Pavements	CARSON 1
	Segregation: Can't We All Just Get Along?	CARSON 2

Daily Program

Program changes are available at ACI Registration in the Nevada Room.

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Monday, March 24, 2014 (cont.)		
4:30 pm - 5:30 pm		
236	Material Science	CRYSTAL 3 & 4
506-F	Shotcreting-Underground	CASCADE 2
4:30 pm - 6:30 pm		
221-TG	Task Group on Aggregates	N-12
5:00 pm - 6:00 pm		
334	Shells	SHASTA 2
5:00 pm - 6:30 pm		
E702	Designing Concrete Structures	RUBY 2
447-TG	Finite Element Analysis M2	NEVADA OFFICE 2
544-E	FRC-Mechanical Properties	WHITNEY
555	Recycled	CRYSTAL 1
5:00 pm - 7:00 pm		
E703	Concrete Construction Practices	TETON 1
201-TG2	Physical Salt Attack	RUBY 1
5:30 pm - 6:30 pm		
	Women in ACI Reception	NEVADA FOYER
6:00 pm - 7:30 pm		
TDSC	TAC Design Standards Committee	SHASTA 2
6:30 pm - 8:30 pm		
	123 Forum: Non-Destructive Testing of Concrete—Capabilities and Limitations	CARSON 1
	✓Tribute to the Fellowship Founders	RENO BALLROOM
Tuesday, March 25, 2014		
6:30 am - 8:30 am		
TTAG	Technology Transfer Advisory Group	N-8
7:00 am - 8:00 am		
NESCC	Nuclear Energy Standards Coordination Collaborative	N-12
7:00 am - 8:30 am		
TRRC	TAC Repair & Rehab	SHASTA 2

Daily Program

Program changes are available at ACI Registration in the Nevada Room.

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7:00 am - 10:00 am		
IPAC	International Project Awards Committee	CRYSTAL 5
	*Guest Hospitality	NEVADA FOYER
	Coffee Break	NEVADA ROOM
7:30 am - 9:00 am		
130-G	Education/Certification	NEVADA OFFICE 1
7:30 am - 5:00 pm		
	ACI Registration	NEVADA ROOM
8:00 am - 8:30 am		
	Meeting Spot	NEVADA ROOM
8:00 am - 9:00 am		
IJBRC	Joints & Bearings Research	SHASTA 1
8:00 am - 9:30 am		
C601	New Certification Program	TETON 2
C620	Laboratory Tech Cert	N-10
230	Soil Cement	CASCADE 1
8:00 am - 10:00 am		
211-C	Proportioning-No Slump	N-12
238	Workability of Fresh Concrete	CASCADE 2
359-B	Working Group on Materials, Fabrication & Examination	RUBY 1
359-C	Working Group on Modernization	RUBY 2
444	Structural Health Monitoring and Instrumentation	BOARDROOM
544-B	FRC-Education	N-9
8:00 am - 11:00 am		
201	Durability M1	SUMMIT PAVILION
440	Fiber-Reinforced Polymer	TAHOE ROOM
522	Pervious Concrete	MCKINLEY
8:00 am - 12:00 pm		
EAC	Educational Activities M2	WHITNEY

Daily Program

Program changes are available at ACI Registration in the Nevada Room.

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Tuesday, March 25, 2014 (cont.)		
8:00 am - 12:30 pm		
318-B	Reinforcement & Development M2	N-1
318-D	Flexure & Axial Loads	N-4
318-E	Shear & Torsion M2	N-2
318-G	Prestressed Precast	N-3
8:00 am - 5:00 pm		
	ACI Bookstore	NEVADA ROOM
	ACI Cyber Café	NEVADA ROOM
	Exhibits	NEVADA ROOM
8:30 am - 10:30 am		
523	Cellular Concrete	SIERRA 1
560	Design & Constr ICFs	SIERRA 2
8:30 am - 10:30 am - *Sessions*		
	Contractors' Day Session: Concrete Pavements that Endure	CARSON 1
	Repair Material Selection Guide: New Edition, Part 1 of 2	CARSON 3
	Seismic Assessment of Existing Reinforced Concrete Buildings—New Developments, Part 3 of 3	CARSON 2
8:30 am - 11:00 am		
306	Cold Weather	CRYSTAL 4
357	Offshore & Marine	SHASTA 2
8:30 am - 11:30 am		
117	Tolerances	N-6
350-G&K	Env Str-Tightness Testing/Haz Mat	N-8
506	Shotcreting	N-5
548	Polymers	CRYSTAL 3
8:30 am - 1:30 pm		
	✓Pyramid Lake and Paiute Tribal Museum Tour	DEPART MAIN LOBBY
8:30 am - 3:30 pm		
350-F	Env Str-Seismic	TETON 1

Daily Program

Program changes are available at ACI Registration in the Nevada Room.

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9:00 am - 10:00 am - *Session*		
	The Reorganized ACI 318-14: Benefits, Rationale, and Availability	CARSON 4
9:00 am - 10:30 am		
332-B	Conc Mtrls and Plcmnt	NEVADA OFFICE 1
332-D	Residential Conc-Footings & Foundation Walls	NEVADA OFFICE 2
9:00 am - 11:00 am		
515	Protective Systems	N-7
9:00 am - 11:30 am		
IAC	International Advisory Committee	SHASTA 1
9:30 am - 10:30 am		
325-A	Pavements-Design	N-10
9:30 am - 11:00 am		
PUBC	Publications	CASCADE 1
10:00 am - 11:00 am		
349/359	ACI 349 and ACI 359 Joint Committee TG	N-9
10:00 am - 11:30 am		
C631	Conc Transportation Const Insp	RUBY 2
310-J	Polish Finishes	BOARDROOM
10:00 am - 12:00 pm		
211-A	Proportioning-Editorial	N-12
10:00 am - 5:00 pm		
	*Guest Lounge	CRYSTAL 2
10:30 am - 12:00 pm		
325-C	Pavements-Prestressed and Precast	CASCADE 2
332-E	Residential Concrete-Above Grade Walls	NEVADA OFFICE 2
332-F	Residential Concrete-Slabs	NEVADA OFFICE 1
544-F	FRC-Durability	N-10
10:30 am - 1:00 pm		
526	Autoclaved Aerated Concrete	SIERRA 1

Daily Program

Program changes are available at ACI Registration in the Nevada Room.

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Tuesday, March 25, 2014 (cont.)		
11:00 am - 12:30 pm		
213-TG1	Lightweight-Editorial TG	TAHOE ROOM
11:00 am - 1:00 pm		
CRC	Concrete Research Council	MCKINLEY
130	Sustainability M2	SUMMIT PAVILION
327	RCC Pavements	SIERRA 2
351	Equip Foundations	N-7
11:00 am - 1:00 pm - *Sessions*		
	An Overview on Specifications for Environmental Concrete Structures	CARSON 2
	Mobile Technology: A Sure Winner	CARSON 1
	Repair Material Selection Guide: New Edition, Part 2 of 2	CARSON 3
11:00 am - 2:00 pm		
	Afternoon Soda Break	NEVADA ROOM
11:30 am - 1:00 pm		
E707	Specification Education	CRYSTAL 3
211-E	Proportioning-Evaluation	CASCADE 1
544-D	FRC-Structural Uses	CRYSTAL 5
11:30 am - 1:30 pm		
	✓Contractors' Day Lunch	NEVADA FOYER
201-TG	Durability M2	SHASTA 2
11:30 am - 5:00 pm		
350-A	Env Str-General & Concrete	TETON 2
12:00 pm - 1:00 pm		
	Meeting Spot	NEVADA ROOM
12:30 pm - 2:00 pm		
C680	Adhesive Anchor Installer	WHITNEY
12:30 pm - 2:30 pm		
311	Inspection	NEVADA OFFICE 2

Daily Program

Program changes are available at ACI Registration in the Nevada Room.

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1:00 pm - 3:00 pm		
211-F	Proportioning-Submittal	N-12
211-I	Assessing Aggregate Gradation	NEVADA OFFICE 1
236-D	Material Science-Nanotechnology of Concrete M2	SIERRA 2
325-D	Proportioning for Pavements	CASCADE 2
1:00 pm - 5:00 pm		
563	Specs for Repair of Sruct Conc in Buildings M2	SIERRA 1
1:30 pm - 3:00 pm		
120	History	CASCADE 1
544-C	FRC-Testing	TAHOE ROOM
1:30 pm - 3:30 pm		
213	Lightweight	N-9
1:30 pm - 3:30 pm - *Sessions*		
	Contractors' Day Session: Bridges that Endure	CARSON 1
	Open Paper Session, Part 1 of 2	CARSON 2
	The ACI 562 Code, Part 1 of 2	CARSON 3
1:30 pm - 5:00 pm		
332	Residential Concrete	N-7
349	Nuclear Structures	MCKINLEY
1:30 pm - 6:00 pm		
318-A	General Concrete Constr	N-1
318-C	Serviceability/Safety	N-2
318-H	Seismic Provisions	N-4
318-R	Code Reorganization	N-3
2:00 pm - 3:00 pm		
223-C	Design Considerations	RUBY 1
2:00 pm - 3:00 pm - *Session*		
	The Reorganized ACI 318-14: Benefits, Rationale, and Availability	CARSON 4

Daily Program

Program changes are available at ACI Registration in the Nevada Room.

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Tuesday, March 25, 2014 (cont.)		
2:00 pm - 3:30 pm		
118	Use of Information Technology	SHASTA 2
325-E	Accelerated Paving	RUBY 2
2:00 pm - 4:00 pm		
130-D	Rating Systems/Sustainability Tools	N-8
234	Silica Fume	BOARDROOM
2:00 pm - 5:00 pm		
CPC	Certification Programs	SHASTA 1
222	Corrosion	N-5
229	Controlled Low Strength	N-6
233	Slag Cement	CRYSTAL 3
3:00 pm - 5:00 pm		
131	BIM M2	CRYSTAL 5
211-N	Proportioning-Limestone	SIERRA 2
372	Tanks Wrapped Wire/Strand	N-12
3:00 pm - 5:30 pm		
544	Fiber-Reinforced Concrete	TAHOE ROOM
3:00 pm - 6:00 pm		
223	Shrinkage Compensating	RUBY 1
3:30 pm - 5:00 pm		
CC	Convention Committee M2	N-10
363-A	High-Strength Lightweight Concrete	NEVADA OFFICE 1
3:30 pm - 5:30 pm		
325	Pavements	CRYSTAL 4
4:00 pm - 5:30 pm		
308-B	Curing-Specifications	SHASTA 2
4:00 pm - 6:00 pm		
350-L	Env Str-Specification	NEVADA OFFICE 2
4:00 pm - 6:00 pm - *Sessions*		
	Contractors' Day Session: Concrete for Challenging Applications	CARSON 1
	Open Paper Session, Part 2 of 2	CARSON 2

Daily Program

Program changes are available at ACI Registration in the Nevada Room.

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	The ACI 562 Code, Part 2 of 2	CARSON 3
	UHPC Innovation in Seismic Performance	CARSON 4
5:30 pm - 6:30 pm		
	Faculty Network Reception	NEVADA FOYER
6:30 pm - 8:00 pm		
	Concrete Mixer	SILVER STATE PAVILION
Wednesday, March 26, 2014		
7:00 am - 9:00 am		
SYPAC	Student and Young Professional Activities Committee	N-7
7:00 am - 10:00 am		
	*Guest Hospitality	NEVADA FOYER
	Coffee Break	NEVADA ROOM
7:30 am - 10:00 am		
TCSC	TAC Construction Standards Committee	CRYSTAL 4
8:00 am - 6:00 pm		
318	Building Code M2	SUMMIT PAVILION
8:00 am - 9:30 am		
552	Cementitious Grouting	CRYSTAL 3
8:00 am - 10:00 am		
308-A	Curing-Guide	N-5
359-A	Working Group on Design	N-3
8:00 am - 11:00 am		
211	Proportioning	N-2
8:00 am - 12:00 pm		
	ACI Registration	NEVADA ROOM
	ACI Bookstore	NEVADA ROOM
8:00 am - 2:00 pm		
	ACI Cyber Café	NEVADA ROOM
8:00 am - 4:00 pm		
330	Parking Lots & Site Paving	N-8

Daily Program

Program changes are available at ACI Registration in the Nevada Room.

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8:00 am - 5:00 pm		
350	Environmental Structures	CARSON 4
8:30 am - 10:00 am		
C601-C	Masonry Testing Technician	N-10
8:30 am - 10:30 am		
303	Architectural CIP	CRYSTAL 5
8:30 am - 11:30 am		
330-TG1	Parking Lots & Site Paving TG	N-4
363	High-Strength	N-6
9:00 am - 12:00 pm		
ACIFdn	ACI Foundation	N-12
9:00 am - 12:30 pm		
	✓Reno City Tour 1	DEPARTS MAIN LOBBY
9:30 am - 11:30 am		
329	Perf. Ready Mixed	CRYSTAL 3
10:00 am - 12:30 pm		
C601-B	Concrete Quality Technical Mgr	CRYSTAL 4
10:00 am - 1:00 pm		
308	Curing	N-5
10:00 am - 1:30 pm		
	✓Reno City Tour 2	DEPARTS MAIN LOBBY
10:00 am - 5:00 pm		
359	Nuclear Reactors	N-3
	*Guest Lounge	CRYSTAL 2
11:30 am - 1:00 pm		
C601-D	Decorative Concrete Finisher	CRYSTAL 3
11:30 am - 7:00 pm		
	Certification Pilot	N-7
Thursday, March 27, 2014		
1:00 pm - 5:00 pm		
BOD	Board of Direction	CARSON 4

Numerical Committee Meeting Listing

Program changes are available at ACI Registration in the Nevada Room.

Code	Committee	Day	Time	Room Name
ACIFdn	ACI Foundation	Wed	9:00 am - 12:00 pm	N-12
BOD	Board of Direction	Thu	1:00 pm - 5:00 pm	CARSON 4
C601	New Certification Programs	Tue	8:00 am - 9:30 am	TETON 2
C601-A	Adhesive Anchor Installer	Mon	7:00 am - 8:30 am	SHASTA 1
C601-B	Concrete Quality Technical Mgr	Wed	10:00 am - 12:30 pm	CRYSTAL 4
C601-C	Masonry Testing Technician	Wed	8:30 am - 10:00 am	N-10
C601-D	Decorative Concrete Finisher	Wed	11:30 am - 1:00 pm	CRYSTAL 3
C601-F	Nondestructive Testing Technician	Mon	1:00 pm - 3:00 pm	N-12
C610	Field Technician Cert	Mon	8:30 am - 11:00 am	N-5
C620	Laboratory Tech Cert	Tue	8:00 am - 9:30 am	N-10
C630	Construction Inspector Cert	Mon	1:00 pm - 2:30 pm	SIERRA 1
C631	Conc Transportation Const Insp	Tue	10:00 am - 11:30 am	RUBY 2
C640	Craftsman Cert	Sun	11:00 am - 1:00 pm	CASCADE 1
C650	Tilt-Up Constructor Cert	Sun	2:00 pm - 3:30 pm	RUBY 2
C655	Foundation Constructor Certification	Mon	11:00 am - 1:00 pm	RUBY 1
C660	Shotcrete Nozzleman Cert	Sun	10:00 am - 12:00 pm	SIERRA 2
C660-TG	Examiner TG	Sun	8:00 am – 9:30 am	CRYSTAL 5
C680	Adhesive Anchor Installer	Tue	12:30 pm - 2:00 pm	WHITNEY
CAC	Chapter Activities	Mon	2:00 pm - 5:00 pm	N-2
CC	Convention Committee M2	Tue	3:30 pm - 5:00 pm	N-10
CLC	Construction Liaison	Sun	8:00 am - 10:30 am	WHITNEY
CPC	Certification Programs	Tue	2:00 pm - 5:00 pm	SHASTA 1
CRC	Concrete Research Council	Tue	11:00 am - 1:00 pm	MCKINLEY
E701	Materials for Concrete Construction	Sun	9:00 am - 10:30 am	N-9
E702	Designing Concrete Structures	Mon	5:00 pm - 6:30 pm	RUBY 2
E703	Concrete Construction Practices	Mon	5:00 pm - 7:00 pm	TETON 1
E706	Concrete Repair Education	Sun	8:00 am - 10:00 am	N-10

Numerical Committee Meeting Listing

Program changes are available at ACI Registration in the Nevada Room.

Code	Committee	Day	Time	Room Name
E707	Specification Education	Tue	11:30 am - 1:00 pm	CRYSTAL 3
EAC	Educational Activities M1	Sat	1:00 pm - 5:00 pm	CRYSTAL 2
EAC	Educational Activities M2	Tue	8:00 am - 12:00 pm	WHITNEY
HTC	Hot Topic	Sun	1:00 pm - 2:30 pm	N-2
IAC	International Advisory Committee	Tue	9:00 am - 11:30 am	SHASTA 1
IC-Conf	International Conferences	Mon	7:15 am - 8:30 am	NEVADA OFFICE 2
IJBRC	Joints & Bearings Research	Tue	8:00 am - 9:00 am	SHASTA 1
Intl-Cert	International Certification	Sun	1:30 pm - 3:00 pm	N-4
Intl-Frm	International Forum	Sun	10:00 am – 11:30 am	CARSON 2
IPAC	International Project Awards Committee	Tue	7:00 am - 10:00 am	CRYSTAL 5
ITG-10	Alternative Cementitious Materials	Sun	10:30 am - 1:30 pm	WHITNEY
MEMC	Membership	Sun	8:30 am - 11:30 am	NEVADA OFFICE 1
MKTC	Marketing	Mon	2:00 pm - 5:00 pm	NEVADA OFFICE 2
NESCC	Nuclear Energy Standards Coordination Collaborative	Tue	7:00 am – 8:00 am	N-12
NPCPA	NPCPA	Mon	12:00 pm – 2:00 pm	NEVADA OFFICE 1
PUBC	Publications	Tue	9:30 am - 11:00 am	CASCADE 1
S801	Student Activities	Sun	8:00 am - 10:00 am	N-8
S802	Teaching Methods and Educational Materials	Mon	8:30 am - 9:30 am	MCKINLEY
S805	ACI Collegiate Concrete Council	Sun	4:00 pm - 5:00 pm	CRYSTAL 1
S806	Young Professional Activities	Mon	2:00 pm - 3:30 pm	NEVADA OFFICE 1
SYPAC	Student and Young Professional Activities	Wed	7:00 am - 9:00 am	N-7
TAC	Technical Activities M1	Fri	6:30 pm - 9:00 pm	CARSON 2
TAC	Technical Activities M2	Sat	7:00 am - 6:00 pm	CARSON 2
TAC	Technical Activities M3	Sun	7:00 am - 2:00 pm	RUBY 2
TACRG1	TAC Review Group 1	Sun	8:00 am - 11:00 am	CASCADE 1
TACRG2	TAC Review Group 2	Sun	8:00 am - 11:00 am	CASCADE 2

Numerical Committee Meeting Listing

Program changes are available at ACI Registration in the Nevada Room.

Code	Committee	Day	Time	Room Name
TACRG3	TAC Review Group 3	Sun	8:00 am - 11:00 am	TETON 1
TACRG4	TAC Review Group 4	Sun	8:00 am - 11:00 am	TETON 2
TCSC	TAC Construction Stnds	Wed	7:30 am - 10:00 am	CRYSTAL 4
TDSC	TAC Design Standards Committee	Mon	6:00 pm - 7:30 pm	SHASTA 2
TRRC	TAC Repair & Rehab	Tue	7:00 am - 8:30 am	SHASTA 2
TTAG	Technology Transfer Advisory Group	Tue	6:30 am - 8:30 am	N-8
117	Tolerances	Tue	8:30 am - 11:30 am	N-6
117-TG	Tolerances Task Group	Mon	4:00 pm - 6:00 pm	N-3
118	Use of Information Technology	Tue	2:00 pm - 3:30 pm	SHASTA 2
120	History	Tue	1:30 pm - 3:00 pm	CASCADE 1
121	Quality Assurance	Sun	3:00 pm - 5:00 pm	SHASTA 1
122	Energy Efficiency	Mon	1:00 pm - 3:00 pm	SHASTA 1
123	Research	Sun	4:00 pm - 5:30 pm	RUBY 1
124	Aesthetics	Mon	12:30 pm - 2:00 pm	SILVER STATE PAVILION 2 & 4
130	Sustainability M1	Mon	2:00 pm - 5:00 pm	SILVER STATE PAVILION 2 & 4
130	Sustainability M2	Tue	11:00 am - 1:00 pm	SUMMIT PAVILION
130-A	Materials	Mon	8:30 am - 10:00 am	N-7
130-B	Production/Transport/Construction	Mon	12:30 pm - 1:30 pm	N-2
130-D	Rating Systems/Sustainability Tools	Tue	2:00 pm - 4:00 pm	N-8
130-G	Education/Certification	Tue	7:30 am - 9:00 am	NEVADA OFFICE 1
131-TG	BIM M1	Sat	10:00 am - 4:00 pm	CARSON 4
131	BIM M2	Tue	3:00 pm - 5:00 pm	CRYSTAL 5
132	Responsibility	Sun	2:00 pm - 5:00 pm	CRYSTAL 5
133	Disaster Reconnaissance	Sun	2:30 pm - 5:00 pm	N-10
201	Durability M1	Tue	8:00 am - 11:00 am	SUMMIT PAVILION
201-D	Durability-Oversight Committee	Mon	11:30 am - 1:00 pm	N-12

Numerical Committee Meeting Listing

Program changes are available at ACI Registration in the Nevada Room.

Code	Committee	Day	Time	Room Name
201-TG	Task Group on Chemical Attack	Tue	11:30 am - 1:30 pm	SHASTA 2
201-TG1	Aggressive Chemicals	Mon	3:00 pm - 5:00 pm	RUBY 1
201-TG2	Physical Salt Attack	Mon	5:00 pm - 7:00 pm	RUBY 1
207	Mass Concrete	Mon	10:00 am - 1:00 pm	N-7
209	Creep & Shrinkage	Mon	10:00 am - 1:00 pm	CASCADE 1
211	Proportioning	Wed	8:00 am - 11:00 am	N-2
211-A	Proportioning-Editorial	Tue	10:00 am - 12:00 pm	N-12
211-C	Proportioning-No Slump	Tue	8:00 am - 10:00 am	N-12
211-E	Proportioning-Evaluation	Tue	11:30 am - 1:00 pm	CASCADE 1
211-F	Proportioning-Submittal	Tue	1:00 pm - 3:00 pm	N-12
211-I	Assessing Aggregate Gradation	Tue	1:00 pm - 3:00 pm	NEVADA OFFICE 1
211-N	Proportioning with Ground Limestone and Materials Fillers	Tue	3:00 pm - 5:00 pm	SIERRA 2
211-P	Guide for Selecting Proportions for Pumpable Concrete	Mon	3:30 pm - 5:00 pm	BOARDROOM
212	Chemical Admixtures	Mon	2:00 pm - 5:00 pm	TETON 1
213	Lightweight	Tue	1:30 pm - 3:30 pm	N-9
213-TG1	Lightweight-Editorial TG	Tue	11:00 am - 12:30 pm	TAHOE ROOM
214	Strength Tests	Mon	3:30 pm - 5:00 pm	WHITNEY
214-A	Document Preparation	Mon	12:00 pm - 2:00 pm	TETON 1
215	Fatigue	Sun	2:00 pm - 4:00 pm	BOARDROOM
216	Fire Resistance	Mon	10:00 am - 12:00 pm	N-10
221	Aggregates	Sun	11:30 am - 1:00 pm	SHASTA 1
221-TG	Aggregates	Mon	4:30 pm - 6:30 pm	N-12
222	Corrosion	Tue	2:00 pm - 5:00 pm	N-5
223	Shrinkage Compensating	Tue	3:00 pm - 6:00 pm	RUBY 1
223-C	Design Considerations	Tue	2:00 pm - 3:00 pm	RUBY 1
224	Cracking	Sun	2:30 pm - 5:00 pm	N-2

Numerical Committee Meeting Listing

Program changes are available at ACI Registration in the Nevada Room.

Code	Committee	Day	Time	Room Name
225	Hydraulic Cements	Mon	1:00 pm - 5:00 pm	N-4
228	Nondestructive Testing	Sun	9:30 am - 12:30 pm	CARSON 4
228-B	Visual Inspection	Sun	1:00 pm - 3:00 pm	SHASTA 1
229	Controlled Low Strength	Tue	2:00 pm - 5:00 pm	N-6
230	Soil Cement	Tue	8:00 am - 9:30 am	CASCADE 1
231	Early Age	Mon	2:00 pm - 4:00 pm	CASCADE 1
232	Fly Ash, Natural and Processed Pozzolans	Mon	1:00 pm - 4:00 pm	N-7
232-A	Natural and Processed Pozzolans	Mon	10:00 am - 1:00 pm	RUBY 2
233	Slag Cement	Tue	2:00 pm - 5:00 pm	CRYSTAL 3
234	Silica Fume	Tue	2:00 pm - 4:00 pm	BOARDROOM
235	Electronic Data Exchange	Mon	10:00 am - 11:30 am	SHASTA 2
236	Material Science	Mon	4:30 pm - 5:30 pm	CRYSTAL 3 & 4
236-D	Material Science-Nanotechnology of Concrete M1	Sun	3:30 pm - 5:00 pm	N-6
236-D	Material Science-Nanotechnology of Concrete M2	Tue	1:00 pm - 3:00 pm	SIERRA 2
236-TG1	Advanced Analysis Techniques for Concrete	Sun	2:00 pm - 3:00 pm	N-8
237	Self-Consolidating Concrete	Mon	8:15 am - 11:00 am	SILVER STATE PAVILION 2 & 3
237-TG1	Self-Consolidating Concrete Task Group	Sun	12:00 pm - 4:30 pm	SIERRA 2
238	Workability of Fresh Concrete	Tue	8:00 am - 10:00 am	CASCADE 2
239	Ultra-High Performance Concrete	Mon	3:30 pm - 5:30 pm	SIERRA 2
239-A	Emerging Technology Report	Mon	1:00 pm - 3:00 pm	SHASTA 2
301	Specifications M1	Sat	1:00 pm - 5:00 pm	CARSON 1
301	Specifications M2	Sun	8:30 am - 12:00 pm	MCKINLEY
301	Specifications M3	Sun	12:30 pm - 5:30 pm	MCKINLEY
301	Specifications M4	Mon	12:30 pm - 6:00 pm	MCKINLEY
301-A	Spec-Gen Req, Definitions, & Tolerances	Mon	8:00 am - 11:30 am	BOARDROOM
301-B	Spec-Formwork & Reinforcement	Sun	12:30 pm - 4:30 pm	SHASTA 2

Numerical Committee Meeting Listing

Program changes are available at ACI Registration in the Nevada Room.

Code	Committee	Day	Time	Room Name
301-C	Spec-Placing Consolidating & Curing	Sun	1:00 pm - 5:00 pm	CASCADE 1
301-D	Spec-Lightweight & Massive Concrete	Sun	1:00 pm - 5:00 pm	CASCADE 2
301-E	Spec-Post-Tensioned Concrete	Sun	3:00 pm - 5:00 pm	TETON 1
301-F	Spec-Precast Concrete Panels	Mon	9:00 am - 12:00 pm	NEVADA OFFICE 1
301-G	Spec-Shrink Comp Conc & Ind Floor Slabs	Sun	1:00 pm - 5:00 pm	TETON 2
301-H	Spec-Tilt-Up Constr & Arch Conc	Sun	1:00 pm - 2:00 pm	TETON 1
301-SC	Spec-Steering Committee	Sun	7:00 am - 8:15 am	NEVADA OFFICE 1
302	Floor Construction	Mon	8:30 am - 1:00 pm	TAHOE ROOM
303	Architectural CIP	Wed	8:30 am - 10:30 am	CRYSTAL 5
304	Measuring/Mix/Trans/Placing	Mon	11:30 am - 1:00 pm	BOARDROOM
305	Hot Weather	Sun	2:00 pm - 4:00 pm	RUBY 1
306	Cold Weather	Tue	8:30 am - 11:00 am	CRYSTAL 4
307	Chimneys	Mon	2:30 pm - 5:30 pm	SIERRA 1
308	Curing	Wed	10:00 am - 1:00 pm	N-5
308-A	Curing-Guide	Wed	8:00 am - 10:00 am	N-5
308-B	Curing-Specifications	Tue	4:00 pm - 5:30 pm	SHASTA 2
309	Consolidation	Sun	3:00 pm - 5:00 pm	NEVADA OFFICE 1
310	Decorative Concrete	Sun	3:00 pm - 5:30 pm	N-9
310-J	Polish Finishes	Tue	10:00 am - 11:30 am	BOARDROOM
310/308-TG2	Curing Decorative Concrete Joint TG	Sun	2:00 pm - 3:00 pm	TETON 1
311	Inspection	Tue	12:30 pm - 2:30 pm	NEVADA OFFICE 2
313	Bins & Silos	Mon	8:30 am - 5:00 pm	CRYSTAL 1
314	Simplified Design Buildings	Sun	8:30 am - 11:30 am	N-7
315	Detailing	Sun	2:00 pm - 5:00 pm	N-3
315-B	Detailing-Constructibility	Sun	8:30 am - 11:30 am	SHASTA 1
318	Building Code M1	Mon	1:30 pm - 6:00 pm	SUMMIT PAVILION

Numerical Committee Meeting Listing

Program changes are available at ACI Registration in the Nevada Room.

Code	Committee	Day	Time	Room Name
318	Building Code M2	Wed	8:00 am - 6:00 pm	SUMMIT PAVILION
318-A	General Concrete Constr	Tue	1:30 pm - 6:00 pm	N-1
318-B	Reinforcement & Development M1	Mon	9:30 am - 12:30 pm	MCKINLEY
318-B	Reinforcement & Development M2	Tue	8:00 am - 12:30 pm	N-1
318-C	Serviceability/Safety	Tue	1:30 pm - 6:00 pm	N-2
318-D	Flexure & Axial Loads	Tue	8:00 am - 12:30 pm	N-4
318-E	Shear & Torsion M2	Tue	8:00 am - 12:30 pm	N-2
318-EA	Electronic Aids	Sun	2:30 pm - 3:30 pm	WHITNEY
318-G	Prestressed Precast	Tue	8:00 am - 12:30 pm	N-3
318-H	Seismic Provisions	Tue	1:30 pm - 6:00 pm	N-4
318-L	International Liaison	Mon	9:30 am - 11:00 am	RUBY 1
318-R	Code Reorganization	Tue	1:30 pm - 6:00 pm	N-3
318-S	Spanish Translation	Mon	11:00 am - 12:30 pm	N-5
318-W	Intl Workshop Planning	Sun	3:30 pm – 4:30 pm	RUBY 2
325	Pavements	Tue	3:30 pm - 5:30 pm	CRYSTAL 4
325-A	Pavements-Design	Tue	9:30 am - 10:30 am	N-10
325-C	Pavements-Prestressed and Precast	Tue	10:30 am - 12:00 pm	CASCADE 2
325-D	Proportioning for Pavements	Tue	1:00 pm - 3:00 pm	CASCADE 2
325-E	Pavements-Design	Tue	2:00 pm - 3:30 pm	RUBY 2
327	RCC Pavements	Tue	11:00 am - 1:00 pm	SIERRA 2
329	Perf. Ready Mixed	Wed	9:30 am - 11:30 am	CRYSTAL 3
330	Parking Lots & Site Paving	Wed	8:00 am - 4:00 pm	N-8
330-TG1	Parking Lots & Site Paving TG	Wed	8:30 am - 11:30 am	N-4
332	Residential Concrete	Tue	1:30 pm - 5:00 pm	N-7
332-B	Conc Mtrls and Plcmnt	Tue	9:00 am - 10:30 am	NEVADA OFFICE 1
332-D	Residential Conc-Footings & Foundation Walls	Tue	9:00 am - 10:30 am	NEVADA OFFICE 2
332-E	Residential Concrete-Above Grade Walls	Tue	10:30 am - 12:00 pm	NEVADA OFFICE 2

Numerical Committee Meeting Listing

Program changes are available at ACI Registration in the Nevada Room.

Code	Committee	Day	Time	Room Name
332-F	Residential Concrete-Slabs	Tue	10:30 am - 12:00 pm	NEVADA OFFICE 1
334	Shells	Mon	5:00 pm - 6:00 pm	SHASTA 2
335	Composite Hybrid	Sun	11:30 am - 1:00 pm	N-12
336	Footings	Sun	1:00 pm - 5:00 pm	NEVADA OFFICE 2
341	Earthquake Resistant Bridges	Sun	3:00 pm - 5:00 pm	SUMMIT PAVILION
341-A	Equake Res Brdgs-Columns	Sun	9:30 am - 11:00 am	SHASTA 2
341-B	Equake Res Brdgs-Pier Walls	Sun	8:00 am - 9:30 am	SHASTA 2
341-C	Equake Res Brdgs-Retrofit	Sun	1:30 pm - 3:00 pm	N-9
341-D	Perf Based Seismic Design	Sun	11:00 am - 12:30 pm	SHASTA 2
342	Bridge Evaluation	Sun	8:30 am - 10:00 am	RUBY 1
343	Bridge Design	Mon	10:00 am - 12:00 pm	N-8
343-A	Design	Sun	11:00 am - 12:00 pm	RUBY 1
343-B	Bridge Deck Design	Mon	8:15 am - 9:00 am	SHASTA 2
343-G	Editorial	Sun	10:00 am - 11:00 am	RUBY 1
343-H	Detailing and Constructibility	Mon	9:00 am - 10:00 am	SHASTA 2
345	Bridge Construction	Sun	1:30 pm - 3:30 pm	N-6
346	CIP Pipe	Mon	11:30 am - 1:00 pm	WHITNEY
347	Formwork M1	Sat	2:00 pm - 9:00 pm	CRYSTAL 3
347	Formwork M2	Sun	8:00 am - 12:00 pm	SUMMIT PAVILION
348	Safety	Mon	3:00 pm - 4:30 pm	N-12
349	Nuclear Structures	Tue	1:30 pm - 5:00 pm	MCKINLEY
349/359	ACI 349 and ACI 359 Joint Committee TG	Tue	10:00 am - 11:00 am	N-9
349-AB	Nuclear Str-Design & Materials	Mon	8:00 am - 12:00 pm	N-1
349-C	Nuclear Str-Anchorage	Mon	12:30 pm - 4:30 pm	CARSON 4
350	Environmental Structures	Wed	8:00 am - 5:00 pm	CARSON 4
350-A	Env Str-General & Concrete	Tue	11:30 am - 5:00 pm	TETON 2

Numerical Committee Meeting Listing

Program changes are available at ACI Registration in the Nevada Room.

Code	Committee	Day	Time	Room Name
350-B	Env Str-Durability	Mon	8:30 am - 1:00 pm	SIERRA 2
350-C	Env Str-Reinf & Devel	Sun	8:30 am - 11:30 am	SIERRA 1
350-D	Env Str-Structural	Mon	8:30 am - 6:30 pm	TETON 2
350-E	Env Str-Precast/Prestressed	Sun	1:00 pm - 5:00 pm	SIERRA 1
350-F	Env Str-Seismic	Tue	8:30 am - 3:30 pm	TETON 1
350-G&K	Env Str-Tightness Testing/Haz Mat	Tue	8:30 am - 11:30 am	N-8
350-H	Env Str-Editorial	Mon	12:30 pm - 2:00 pm	NEVADA OFFICE 2
350-J	Env Str-Education	Mon	3:30 pm - 6:30 pm	NEVADA OFFICE 1
350-L	Env Str-Specification	Tue	4:00 pm - 6:00 pm	NEVADA OFFICE 2
350-SC	Env Str-Steering Comm	Sun	11:30 am - 1:00 pm	NEVADA OFFICE 1
351	Equip Foundations	Tue	11:00 am - 1:00 pm	N-7
351-C	Equip Fdns-Dynamic Foundations	Mon	3:00 pm - 5:00 pm	SHASTA 1
351-D	Design Provisions for Heavy Industrial Equipment and Machinery Concrete Support Structures	Mon	1:00 pm - 3:00 pm	RUBY 2
352	Joints	Sun	2:00 pm - 5:00 pm	N-5
355	Anchorage	Sun	1:30 pm - 5:00 pm	TAHOE ROOM
355-TG	Anchorage TG	Mon	8:30 am - 11:00 am	N-6
357	Offshore & Marine	Tue	8:30 am - 11:00 am	SHASTA 2
359	Nuclear Reactors	Wed	10:00 am - 5:00 pm	N-3
359-A	Working Group on Design	Wed	8:00 am - 10:00 am	N-3
359-B	Working Group on Materials, Fabrication & Examination	Tue	8:00 am - 10:00 am	RUBY 1
359-C	Working Group on Modernization	Tue	8:00 am - 10:00 am	RUBY 2
360	Slabs on Ground	Mon	2:00 pm - 6:30 pm	TAHOE ROOM
362	Parking Structures	Mon	1:00 pm - 5:00 pm	N-5
362-A	Updating Guide to Structal Maintenance of Parking Structures Documents	Sun	1:00 pm - 4:00 pm	CRYSTAL 1
363	High-Strength	Wed	8:30 am - 11:30 am	N-6
363-A	High Strength Lightweight Concrete	Tue	3:30 pm - 5:00 pm	NEVADA OFFICE 1

Numerical Committee Meeting Listing

Program changes are available at ACI Registration in the Nevada Room.

Code	Committee	Day	Time	Room Name
364	Rehabilitation	Mon	1:00 pm - 3:00 pm	SIERRA 2
364-A	Rehabilitation Editorial Subcommittee	Mon	9:30 am - 11:00 am	SIERRA 1
364-TG1	Rehabilitation Guide	Mon	11:00 am - 12:00 pm	SIERRA 1
365	Service Life	Mon	9:00 am - 11:00 am	N-9
369	Seismic Rehab M1	Sun	1:00 pm - 2:30 pm	N-10
369	Seismic Rehab M2	Mon	2:00 pm - 6:00 pm	N-6
370	Blast and Impact Load Effects	Sun	3:00 pm - 5:00 pm	N-4
371	Elevated Tanks with Concrete Pedestals	Mon	3:00 pm - 5:00 pm	SHASTA 2
372	Tanks Wrapped Wire/Strand	Tue	3:00 pm - 5:00 pm	N-12
374	Seismic Design	Mon	8:15 am - 12:00 pm	N-3
375	Design for Wind Loads	Mon	1:00 pm - 3:30 pm	WHITNEY
376	RLG Containment Structures	Mon	1:00 pm - 4:00 pm	N-3
376-01	Steering Subcommittee	Sun	10:30 am - 12:00 pm	N-8
376-A	Code, Education & Publication Subcommittee	Mon	10:00 am - 12:00 pm	TETON 1
376-B	Materials Subcommittee	Sun	1:00 pm - 3:00 pm	CARSON 4
376-C	Analysis Subcommittee	Sun	3:00 pm - 5:00 pm	N-12
376-D	Design & Construction Subcommittee	Mon	8:00 am - 10:00 am	CASCADE 1
377-FM	Performance-Based Structural Integrity & Resilience of Concrete Structures	Mon	10:00 am - 12:30 pm	NEVADA OFFICE 2
408	Development and Splicing	Sun	8:30 am - 11:30 am	N-12
408-A	Mech Splices	Sun	8:00 am - 8:30 am	N-12
421	Reinf Slabs	Sun	10:00 am - 1:00 pm	N-2
423	Prestressed	Mon	8:30 am - 12:30 pm	CARSON 4
423/445	Adhoc Grp on Shear in Prestress Conc	Sun	3:30 pm - 5:30 pm	WHITNEY
423-D	Bond & Dev Pretnsn Membrs	Sun	4:00 pm - 5:00 pm	BOARDROOM
423-E	Prestress-Losses	Sun	3:00 pm - 5:00 pm	CRYSTAL 4
423-F	Sustainable Prestressed Concrete	Sun	1:00 pm - 3:00 pm	N-12

Numerical Committee Meeting Listing

Program changes are available at ACI Registration in the Nevada Room.

Code	Committee	Day	Time	Room Name
435	Deflection	Mon	4:00 pm - 5:30 pm	N-7
437	Strength Evaluation	Mon	10:30 am - 12:30 pm	N-4
439	Steel Reinforcement	Mon	8:00 am - 10:00 am	CRYSTAL 3 & 4
439-A	Steel Reinforcement-Wire	Sun	3:30 pm - 5:00 pm	N-1
440	Fiber-Reinforced Polymer	Tue	8:00 am - 11:00 am	TAHOE ROOM
440-F	FRP-Repair-Strengthening	Mon	3:00 pm - 6:00 pm	N-8-10
440-G	FRP-Student	Mon	8:30 am - 10:00 am	N-10
440-H	FRP-Reinforced Concrete	Sun	8:30 am - 11:30 am	TAHOE ROOM
440-I	FRP-Prestressed Concrete	Mon	10:00 am - 11:30 am	CRYSTAL 3 & 4
440-K	FRP-Material Characteristics	Sun	12:30 pm - 3:30 pm	N-1
440-L	FRP-Durability	Sun	3:30 pm - 5:00 pm	CARSON 4
440-M	FRP-Repair of Masonry Str	Mon	1:30 pm - 3:00 pm	CRYSTAL 3 & 4
441	Columns	Mon	11:30 am - 2:00 pm	N-6
441-A	High-Strength Conc	Mon	8:00 am - 9:00 am	N-12
441-B	Lateral Reinf	Mon	9:00 am - 10:00 am	N-12
441-E	Columns Multi-Spiral Reinforcement	Sun	11:30 am - 1:00 pm	SIERRA 1
444	Structural Health Monitoring and Instrumentation	Tue	8:00 am - 10:00 am	BOARDROOM
445	Shear & Torsion	Mon	2:00 pm - 6:00 pm	CRYSTAL 5
445-A	Shear & Torsion-Strut & Tie	Sun	10:30 am - 1:30 pm	N-9
445-B	Shear & Torsn-Seismic Shear	Sun	8:00 am - 10:00 am	BOARDROOM
445-C	Shear & Torsn-Punching Shear	Sun	1:00 pm - 3:00 pm	NEVADA OFFICE 1
445-D	Shear & Torsn-Database	Sun	3:00 pm - 5:00 pm	N-8
445-E	Shear & Torsn-SOA Torsion	Sun	12:30 pm - 2:00 pm	N-8
446	Fracture Mechanics	Mon	4:00 pm - 5:30 pm	CASCADE 1
447	Finite Element Analysis M1	Mon	11:00 am - 1:30 pm	CASCADE 2
447-TG	Finite Element Analysis M2	Mon	5:00 pm - 6:30 pm	NEVADA OFFICE 2

Numerical Committee Meeting Listing

Program changes are available at ACI Registration in the Nevada Room.

Code	Committee	Day	Time	Room Name
506	Shotcreting	Tue	8:30 am - 11:30 am	N-5
506-A	Shotcreting-Evaluation	Mon	1:30 pm - 3:00 pm	CASCADE 2
506-B	Shotcreting-Fiber-Reinforced	Sun	1:30 pm - 2:30 pm	WHITNEY
506-C	Shotcreting-Guide	Mon	8:30 am - 10:30 am	SHASTA 1
506-E	Shotcreting-Specifications	Mon	10:30 am - 12:30 pm	SHASTA 1
506-F	Shotcreting-Underground	Mon	4:30 pm - 5:30 pm	CASCADE 2
506-G	Qualifications for Projects	Mon	3:00 pm - 4:30 pm	CASCADE 2
515	Protective Systems	Tue	9:00 am - 11:00 am	N-7
522	Pervious Concrete	Tue	8:00 am - 11:00 am	MCKINLEY
523	Cellular Concrete	Tue	8:30 am - 10:30 am	SIERRA 1
524	Plastering	Mon	8:30 am - 10:00 am	NEVADA OFFICE 2
526	Autoclaved Aerated Concrete	Tue	10:30 am - 1:00 pm	SIERRA 1
533	Precast Panels	Mon	8:30 am - 10:00 am	RUBY 2
543	Piles	Mon	8:30 am - 11:30 am	WHITNEY
544	Fiber-Reinforced Concrete	Tue	3:00 pm - 5:30 pm	TAHOE ROOM
544-A	FRC-Production & Applications	Mon	11:30 am - 1:00 pm	CRYSTAL 3 & 4
544-B	FRC-Education	Tue	8:00 am - 10:00 am	N-9
544-C	FRC-Testing	Tue	1:30 pm - 3:00 pm	TAHOE ROOM
544-D	FRC-Structural Uses	Tue	11:30 am - 1:00 pm	CRYSTAL 5
544-E	FRC-Mechanical Properties	Mon	5:00 pm - 6:30 pm	WHITNEY
544-F	FRC-Durability	Tue	10:30 am - 12:00 pm	N-10
544-SC	FRC-Steering Committee	Mon	8:30 am - 10:00 am	N-8
546	Repair	Mon	8:30 am - 10:30 am	N-4
546-C	Repair-Guide	Sun	9:00 am - 10:00 am	N-1
548	Polymers	Tue	8:30 am - 11:30 am	CRYSTAL 3
548-A	Polymers-Overlays	Mon	8:15 am - 11:00 am	CASCADE 2

Numerical Committee Meeting Listing

Program changes are available at ACI Registration in the Nevada Room.

Code	Committee	Day	Time	Room Name
548-B	Polymers-Adhesives	Mon	3:00 pm - 5:00 pm	RUBY 2
548-C	Structural Polymer Design	Mon	11:00 am - 12:30 pm	SILVER STATE PAVILION 2 & 3
549	Thin Reinforced	Sun	11:00 am - 1:00 pm	N-10
550	Precast Structures	Sun	3:00 pm - 5:00 pm	CRYSTAL 3
551	Tilt-Up	Sun	9:00 am - 12:00 pm	CRYSTAL 1
552	Cementitious Grouting	Wed	8:00 am - 9:30 am	CRYSTAL 3
555	Recycled	Mon	5:00 pm - 6:30 pm	CRYSTAL 1
560	Design & Constr ICFs	Tue	8:30 am - 10:30 am	SIERRA 2
562	Eval, Repair & Rehab	Sun	1:00 pm - 5:00 pm	N-7
562-A	General	Sat	1:00 pm - 4:00 pm	CRYSTAL 4
562-B	Loads	Sun	8:00 am - 10:00 am	SIERRA 2
562-C	Evaluation M1	Sat	4:00 pm - 5:00 pm	CRYSTAL 4
562-C	Evaluation M2	Sat	6:00 pm - 8:00 pm	CRYSTAL 4
562-D	Design M1	Sat	10:00 am - 12:00 pm	CRYSTAL 1
562-D	Design M2	Sat	1:00 pm - 2:00 pm	CRYSTAL 1
562-E	Education	Mon	8:00 am - 10:00 am	TETON 1
562-F	Durability	Sat	6:00 pm - 9:00 pm	CRYSTAL 1
563	Specs for Repair of Struct Conc in Bldgs	Tue	1:00 pm - 5:00 pm	SIERRA 1
564-M	Evaluation, Repair & Rehabilitation of Nuclear Concrete Structures	Mon	3:00 pm - 4:30 pm	CRYSTAL 3 & 4
	Certification Pilot	Wed	11:30 am - 7:00 pm	N-7
	IPAC Guide Subcomittee	Mon	11:00 am - 12:00 pm	N-9

JOIN A COMMITTEE!

ACI committees are recognized for providing widely accepted standards of practice for nearly every facet of the concrete industry thanks to the participation of professionals across the concrete industry.

ACI's technical committees are classified as follows:
100's – General
200's – Materials
300's – Design and Construction
400's – Concrete Reinforcement and Structural Analysis
500's – Specialized Applications and Repair

Help shape the codes and standards of the concrete industry and JOIN A COMMITTEE!

If you are interested in joining a committee, visit http://www.concrete.org/Committees/JoinACommittee.aspx and fill out the online application or ask the committee chair for an application!

Event Details

Program changes are available at ACI Registration in the Nevada Room.

Sunday, March 23, 2014

***Guest Hospitality—NEVADA FOYER**

7:00 am – 10:00 am

A continental breakfast will be available to registered guests each morning (Sunday-Wednesday). Use the ticket behind your name badge to gain entry to the Guest Hospitality. You must be a registered guest to attend.

***Guest Overview—NEVADA FOYER**

8:00 am – 9:00 am

Acquaint yourself with the week ahead, and get a preview of the guest program for the ACI Fall 2014 Convention in Washington, DC, and the ACI Spring 2015 Convention in Kansas City, MO.

***Guest Lounge—CRYSTAL 2**

10:00 am – 5:00 pm

Stop by the Guest Lounge to relax and meet other ACI guests. Guests can enjoy the Guest Lounge Sunday-Wednesday.

* = Guest-only event

Sunday, March 23, 2014 8:00 am – 9:00 am

Convention Orientation Breakfast—CRYSTAL 3 & 4

Sponsored by the ACI Convention Committee

Speaker: William J. Lyons III
National Business Development Manager – Northeast Region
The Euclid Chemical Company
New Windsor, NY

First-time convention attendees are invited to join William J. Lyons III, Chair of the ACI Convention Committee, for a continental breakfast and brief session to orient you to the week ahead. Attendees will have the opportunity to meet other convention attendees and learn about what an ACI convention has to offer.

Sunday, March 23, 2014 10:00 am – 11:30 am

ACI International Forum—CARSON 2

Chaired by ACI Vice President William E. Rushing

The ACI International Forum provides an opportunity for convention attendees to meet and learn from ACI international partners, ACI chapter representatives, and ACI leadership about worldwide events, activities, initiatives, and common themes of interest to the concrete materials, design, and construction industry.

Sunday, March 23, 2014 10:30 am – 4:00 pm

Student FRC Bowling Ball Competition—NEVADA ROOM

Sponsored by ACI Committees S801, Student Activities, and 544-B, FRC-Education

Competition Co-Moderators: Walter H. Flood IV
Manager – Engineer
Flood Testing Labs, Inc.
Chicago, IL

Clifford N. MacDonald
Director of Engineering
FORTA Corporation
Inver Grove Heights, MN

During the FRC Bowling Ball Competition, students will design and construct a fiber-reinforced concrete bowling ball that will achieve optimal performance under specified failure criteria and develop a fabrication process that produces a radial uniform density while maximizing volume. Convention attendees are invited to stop by to witness the students' evaluations—cheer them on while they chase an elusive turkey and see their fiber-reinforced handiwork crushed to a full 25 mm of deflection.

Look for the ACI Social Team at the ACI Social TweetUp. Attendees are encouraged to network with fellow Tweeters and learn more about ACI's social media efforts.

Sunday, March 23, 2014 11:30 am – 1:30 pm

✓International Lunch—CRYSTAL 3 & 4
$30.00 U.S. per person

Sponsored by the ACI International Advisory Committee

Speaker: Gordon Clark
President
fib
London, UK

Topic: Making Our Concrete Structures Last Longer—A Global Challenge

Join other ACI attendees for the International Lunch where special guest Gordon Clark will give a presentation titled "Making Our Concrete Structures Last Longer—A Global Challenge."

Clark will explain how we can approach the design of new concrete structures and the repair of old ones to achieve endurance through the twenty-first century and beyond.

PREREGISTRATION IS REQUIRED TO ATTEND*. Tickets may be purchased at the ACI Registration Desk up to 24 hours prior to the event, based on availability. Please notify the ACI Registration Desk if you have any dietary restrictions.*
✓ **= Separate fee required**

Sunday, March 23, 2014 12:15 pm – 5:15 pm

✓ *South Lake Tahoe Tour—Depart Main Lobby*
$45.00 U.S. per person

Guests will travel on US-395 to Carson City, learning about the rich history of Northern Nevada, and will then travel along Highway 50 over Spooner Summit to explore Lake Tahoe. The bus will make several stops along the shore of Lake Tahoe for photos and exploration. The trip will then go to historic Tallac Center, featuring homes and lifestyles of the rich and famous of the 1920s. The end of the trip will take guests to Emerald Bay lookout, one of the most picturesque scenes of Lake Tahoe. This tour departs right after lunch and will have guests back in time for the Opening Session. The entire tour will be fully narrated by a private tour guide. It is recommended that participants wear warm clothing and comfortable walking shoes for this tour.

Tour tickets may be purchased up to 24 hours prior to the event, based on availability. ***Tours are nonrefundable****. All tours depart from the main lobby doors.*
✓ **= Separate fee required**

Sunday, March 23, 2014 1:00 pm – 3:00 pm

Concrete Repair Guide: New Edition, Part 1 of 2—CARSON 3
Sponsored by ACI Committees 546, Repair of Concrete, and 546-C, Repair-Guide

Session Co-Moderators:
John S. Lund
Principal/Investigative Engineering
Martin-Martin Inc.
Lakewood, CO

David A. VanOcker
Principal
CVM
King Of Prussia, PA

The *Guide to Concrete Repair* has been updated to reflect the latest in repair technology with broadened information on removal and repair techniques, protection systems, and strengthening.
By attending this session, attendees will be able to:
1. Learn appropriate removal and substrate preparation techniques that are key to achieving

successful, long-lasting repair;
2. Understand the broad categories of repair materials and their advantages and disadvantages in differing applications;
3. Learn about the variety of application techniques used by repair specialists; and
4. Develop durable repairs with long service lives.

Repair Guide Development & Evolution—1:00 pm
David A. VanOcker, Principal, CVM, King Of Prussia, PA

Introduction & Use of the Guide—1:10 pm
Kenneth M. Lozen, Technical Director, ICRI, Farmington Hills, MI

Removal & Preparation—1:30 pm
Robert F. Joyce, President, Quality Restorations Inc., Wood Dale, IL

Repair Materials—2:00 pm
Timothy R. W. Gillespie, Director of Marketing, Sika Corporation, Lyndhurst, NJ;
Chris White, JE Tomes & Associates

Concrete & Reinforcing Repair—2:30 pm
James Peter Barlow, President, Contech Group Inc., Seattle, WA

2 AIA/CES LU

Sunday, March 23, 2014 1:00 pm – 3:00 pm

Seismic Assessment of Existing Reinforced Concrete Buildings—New Developments, Part 1 of 3—CARSON 2

Sponsored by ACI Committee 369, Seismic Repair and Rehabilitation
Session Co-Moderators: Jeffrey J. Dragovich
Structural Engineer
Shoreline, WA

Insung Kim
Structural Engineer
Degenkolb Engineers
San Francisco, CA

ACI Committee 369 is working with ASCE Committee 41 on the state of the art of seismic assessment of reinforced concrete buildings. These sessions will present potential updates for ASCE 41 and summarize work done by committee members on modeling parameters and acceptance criteria for concrete components, including columns, joints, and walls. Example applications of ASCE 41-13 to existing concrete buildings will also be presented. This session will be of value to practicing engineers engaged in seismic retrofit projects using ASCE 41.
By attending this session, attendees will be able to:
1. Learn about new developments in ASCE 41 and ACI 369R and how these documents are used for the seismic assessment of existing concrete buildings;

2. Understand the factors influencing the selection of acceptance criteria for concrete components of existing buildings, including columns, joints, slab-column connection, and walls;
3. Learn about different modeling techniques for existing concrete elements; and
4. Learn about the application of ASCE 41 to the retrofit of existing concrete buildings.

Overview of ASCE 41-13—1:00 pm
Robert G. Pekelnicky, Associate Principal, Degenkolb Engineers, San Francisco, CA

Nonlinear Modeling Parameters and Acceptance Criteria for Concrete Columns—1:20 pm
Wassim M. Ghannoum, Assistant Professor, University of Texas at Austin, Austin, TX

Assessment of Concrete Column Provisions of ASCE 41 Using a Shaking Table Test Database—1:45 pm
Kenneth J. Elwood, Professor, University of British Columbia, Vancouver, BC, Canada

Modeling Parameters for Reinforced Concrete Slab-Column Connections—2:10 pm
Thomas Kang, Associate Professor, Seoul National University, Seoul, Korea

Evaluation of ASCE 41 Modeling Parameters for Slender RC Structural Walls—2:35 pm
Anna C. Birely, Assistant Professor, Texas A&M University, College Station, TX

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Sunday, March 23, 2014 1:00 pm – 3:00 pm

Thaumasite Sulfate Attack on Concrete, Part 1 of 2—CARSON 1

Sponsored by ACI Committee 201, Durability of Concrete

Session Co-Moderators: Mohamed Bassuoni
Assistant Professor
University of Manitoba
Winnipeg, MB, Canada

Michelle R. Nokken
Associate Professor
Concordia University
Montreal, QC, Canada

The focal subject of the presentations will be on the deterioration of concrete due to thaumasite sulfate attack (TSA), which is a special form of sulfate attack typically occurring due to the availability of carbonates/bicarbonates in the cementitious matrix with abundance of moisture and a prevailing low temperature. Incidental thaumasite formation (TF) in fissures and voids of cementitious systems does not necessarily imply deterioration of the matrix; however, excessive formation of thaumasite within the microstructure of cementitious systems is an indication for TSA, which transforms concrete into a non-cohesive mass without any binding or load-carrying capacity. The scope involves theoretical and experimental aspects of TSA as well as field case studies. The session should be of particular interest to concrete practitioners and researchers. It is an effort to compile current research and field experiences on TSA, and

educate the audience about this durability issue and its underlying mechanisms.
By attending this session, attendees will be able to:
1. Analyze damage manifestations related to TSA on concrete;
2. Understand the underlying mechanisms of TSA on concrete and the influential factors related to constituent materials and exposure conditions;
3. Identify the current changes in North American standards and specifications for cement and concrete concerning portland limestone cement (PLC), which comprises 6 to 15% interground limestone; and
4. Examine the role of supplementary cementitious materials (SCMs) in mitigating TSA on concrete.

Thaumasite Sulfate Attack: History and Perspective—1:00 pm
R. Doug Hooton, Professor, University of Toronto, Toronto, ON, Canada

Concrete and Mortar Testing for Resistance to Thaumasite Sulfate Attack—1:20 pm
R. Doug Hooton, Professor, University of Toronto, Toronto, ON, Canada; **Reza Ahani**, University of Toronto

Some Observations on the Thaumasite Form of Sulfate Attack (TSA) and Thaumasite Formation (TF) in Laboratory and Field Studies—1:40 pm
Michael D. A. Thomas, Professor, University of New Brunswick, Fredericton, NB, Canada; **Ashlee Hossack**, University of New Brunswick

Identification of Thaumasite Attack by UPV, DSC, and XRD—2:00 pm
Michelle R. Nokken, Associate Professor, Concordia University, Montreal, QC, Canada; **Seyed Sajjad Mirvalad**, Concordia University

Is CSA A3004-C8 Procedure B Relevant to the Potential Risk of the Thaumasite Form of Sulfate Attack?—2:20 pm
Laurent Barcelo, Manager, Strategic Projects & Scientific Network, Lafarge Research Center, France and Lafarge Canada Inc., Pointe Claire, QC, Canada; **R. Doug Hooton** and **Reza Ahani**, University of Toronto; **Michael D. A. Thomas** and **Ashlee Hossack**, University of New Brunswick; **Remi Barbarulo, Eric Brouard**, and **Ellis Gartner**, Lafarge Research Center, France and Lafarge Canada Inc.; **Bruce Blair** and **Anik Delagrave**, Lafarge North America

Mitigation Measures for Portland-Limestone Cements to Control Thaumasite Sulfate Attack—2:40 pm
Thano Drimalas, Research Associate, University of Texas at Austin, Austin, TX; **Kevin J. Folliard**, University of Texas at Austin

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Seismic Assessment of Existing Reinforced Concrete Buildings—New Developments, Part 2 of 3—CARSON 2

Sponsored by ACI Committee 369, Seismic Repair and Rehabilitation

Session Co-Moderators: Jeffrey J. Dragovich
Structural Engineer
Shoreline, WA

Insung Kim
Structural Engineer
Degenkolb Engineers
San Francisco, CA

The session description and learning objectives for this session may be found in the Part 1 listing; see page 70.

Proposed Changes to Material Strength Assessment Procedures in ASCE 41—3:30 pm
Halil Sezen, Associate Professor, The Ohio State University, Columbus, OH

Numerical Models for Beam-Column Joints in Reinforced Concrete Building Frames—3:50 pm
Laura N. Lowes, Associate Professor, University of Washington, Seattle, WA

Analysis of Seismic Response Masonry-Infilled RC Frames through Collapse—4:15 pm
P. Benson Shing, Professor, University of California, San Diego, La Jolla, CA

Towards an Accurate Determination of Collapse Vulnerable Concrete Buildings—4:40 pm
Khalid M. Mosalam, Professor, University of California, Berkeley, Berkeley, CA

Identifying Buildings with High Seismic Risk under Urban Renewal Law in Turkey—5:05 pm
Ahmet Yakut, Professor, Middle East Technical University, Ankara, Turkey

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Structural Safety and Reliability—CARSON 3

Sponsored by ACI Committees 343, Concrete Bridge Design, and 348, Structural Reliability and Safety

Session Co-Moderators: Hani H. Nassif
Professor
Rutgers, The State University of New Jersey
Piscataway, NJ

Andrzej S. Nowak
Professor of civil engineering
Auburn University
Auburn, AL

There is a growing interest in the new generation of design codes and guides for evaluation of existing structures. Load and resistance are now recognized and treated as random variables. The acceptability criterion is the target reliability index, as reliability is considered as a rational measure of structural performance. The objective of the proposed session is to present the new developments in the new statistical basis for load and resistance, reliability analysis, and code calibration. Therefore, the presentations include the timely topics of serviceability limit state, statistical database, shear limit state, and errors in design and construction.
By attending this session, attendees will be able to:
1. Understand structural reliability basics and their application on quantifying structural performance;
2. Recognize the impact of statistical database on the safety and reliability of concrete structures;
3. Learn the importance of other limit states that may impact the long-term performance of the concrete structures; and
4. Identify the potential source of design and construction errors that should be avoided.

Statistical Database for Reinforced Concrete Design—3:30 pm
Andrzej S. Nowak, Professor of civil engineering, Auburn University, Auburn University, AL; **Anna Rakoczy**, The University of Nebraska – Lincoln

Serviceability Limit States in Concrete Structures—3:55 pm
Hani H. Nassif, Professor, Rutgers, The State University of New Jersey, Piscataway, NJ; **Dan Su,** Rutgers, The State University of New Jersey

Assessment of Model Uncertainties in the Shear Strength of RC Beams—4:20 pm
Sofia Maria C. Diniz, Associate Professor, Federal University of Minas Gerais, Belo Horizonte, Brazil; **Adriana Ribeiro** and **Jose Marcio Calixto**, Federal University of Minas Gerais

Risk Based Procedure for Tendon Grout Sampling and Assessment of Post-Tensioned Bridges with Grout Deficiencies—4:45 pm
Piotr Paczkowski, Structural Engineer, Parsons Brinckerhoff, Tampa, FL; **Teddy S. Theryo**, Parsons Brinckerhoff

Errors in Design and Construction—5:10 pm
Mahmoud Maamouri, Vice President, Computerized Structural Design SC, Milwaukee, WI

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Sunday, March 23, 2014 3:30 pm – 5:30 pm

Thaumasite Sulfate Attack on Concrete, Part 2 of 2—CARSON 1

Sponsored by ACI Committee 201, Durability of Concrete
Session Co-Moderators: Mohamed Bassuoni
Assistant Professor
University of Manitoba
Winnipeg, MB, Canada

Michelle R. Nokken
Associate Professor
Concordia University
Montreal, QC, Canada

The session description and learning objectives for this session may be found in the Part 1 listing; see page 71.

Thaumasite and Ettringite Sulfate Attack: Similarities and Distinctions—3:30 pm
Rahil Khoshnazar, Visiting Researcher and PhD Candidate, National Research Council, Ottawa, ON, Canada; **James Joseph Beaudoin** and **Laila Raki**, National Research Council; **Rouhollah Alizadeh**, Giatec Scientific Inc.

Improving the Resistance to Thaumasite Sulfate Attack by Early Carbonation—3:50 pm
Yixin Shao, Associate Professor, McGill University, Montreal, QC, Canada; **Alain Azar**, McGill University

Thaumasite Sulfate Attack on Concrete: Reproducing the Damage in Laboratory—4:10 pm
Mohamed Bassuoni, Assistant Professor, University of Manitoba, Winnipeg, MB, Canada

Thaumasite Formation in Field Structures—4:30 pm
James M. Aldred, Technical Director, AECOM, Sydney, NSW, Australia; **F. Mittermayr**, Institute of Technology and Testing of Building Materials; **A. Leis**, Institute for Water, Energy and Sustainability; **M. Dietzel**, Institute of Applied Geosciences

Thaumasite Sulfate Attack of Precast Concrete Retaining Wall Units—4:50 pm
Victoria Jennings, Concrete Petrographer, CTLGroup, Skokie, IL; **Terry J. Willems**, CTLGroup

The Cause, Effect, Result, and Aftermath of Internal Sulfate Attack—Case History of a Building Façade Failure—5:10 pm
Bernard Erlin, President, The Erlin Company, Latrobe, PA

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Sunday, March 23, 2014 5:45 pm – 7:00 pm

Opening Session and Awards Program—RENO BALLROOM

The ACI Spring 2014 Convention officially begins during the Opening Session and Awards Program. ACI President Anne Ellis will welcome attendees, and over 100 individuals and groups will be recognized for their contributions to the concrete industry.

Sunday, March 23, 2014 7:00 pm – 8:00 pm

Opening Reception—NEVADA ROOM

Sponsored by ACI and Somero Enterprises, Inc.

Make your way through the exhibit area after the Opening Session. Reunite with colleagues, network with new acquaintances, and learn about the products and services offered by the exhibitors. A cash bar and light refreshments will be available.

Sunday, March 23, 2014 8:00 pm – 10:00 pm

Hot Topic Session: Moisture in Concrete Slabs—CARSON 1

Sponsored by the Hot Topics Committee

Session Moderator: Ryan A. Henkensiefken
Business Development Engineer
Central Concrete Supply
San Jose, CA

Due to several changes in the construction market, including EPA regulation changes to the allowable VOC content in adhesives and the rise of fast-track construction projects, moisture-related flooring failures have become more prevalent in concrete slab construction. In response, contractors have been seeking ways to combat these problems without impacting construction schedules. The panelists, including a general contractor, vapor-barrier manufacturer, national consulting firm specializing in moisture testing, and a national flooring consultant, will provide a 360-degree view of this important topic. The general contractor will discuss how moisture-related flooring failures negatively impact construction schedules and costs. The vapor-barrier manufacturer will outline techniques used to take the ground out of play by using moisture-vapor barriers. A representative from the consulting firm will share the pros and cons of different testing methods used to assess risk. The flooring consultant will discuss new remedies used, not only to prevent moisture-related flooring covering failure but also those which do not negatively impact the schedule. This session will also encourage attendees to direct questions to the panelists.

By attending this session, attendees will be able to:
1. Recognize the changes in the construction market, including EPA regulations on the allowable VOC content in adhesives;
2. Understand why moisture-related flooring failures have become more prevalent in concrete slab construction;
3. Identify the impact of moisture-related flooring issues on construction schedules and costs; and
4. Discuss the different test methods used to assess the moisture content of concrete floor slabs.

Eric Upchurch, Northern California Regional Manager, Stego Industries, LLC, San Francisco, CA

Ned Lyon, Engineer in Business Application, Simpson Gumpertz & Heger, Waltham, MA

Peter Craig, Concrete Floor Specialist, Concrete Constructives, Greene, ME

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Sunday, March 23, 2014 9:00 pm – 10:30 pm

Student and Young Professional Networking Event—GRAND SIERRA RESORT BOWLING CENTER

Sponsored by the ACI Collegiate Concrete Council and the ACI Student and Young Professional Activities Committee

The ACI Collegiate Concrete Council and ACI Student and Young Professional Activities Committee invite all convention attendees to the Student and Young Professional Networking Event. Meet fellow students and young professionals while networking with ACI members in a fun and casual environment. Attendees to the event will be entered into a drawing for door prizes. In addition, attendees will be able to purchase food and beverages.

Monday, March 24, 2014 6:30 am – 8:00 am

Workshop for Technical Committee Chairs—RENO BALLROOM

Sponsored by the ACI Technical Activities Committee (TAC)

Session Moderator: Ronald J. Janowiak
Senior Engineer
Exelon Nuclear
Warrenville, IL

ACI technical committee Chairs are expected to attend this breakfast workshop to meet with fellow Chairs, TAC members, and ACI staff to hear updates on important recent developments of interest to ACI technical committee Chairs. There will be table discussions and short presentations. If you are unable to attend, please ask the Secretary of your committee or another committee member to represent you in your absence. **Attendance is by invitation only**.

Monday, March 24, 2014 7:00 am – 8:30 am

Speaker Development Breakfast—CARSON 4

Sponsored by ACI Committee S802, Teaching Methods and Educational Materials

Moderator: Colonel Fred Meyer
Deputy Head, Department of Civil and Mechanical Engineering
United States Military Academy
West Point, NY

Speaker: Chris Ramseyer
Associate Professor, Director Donald G. Fears Structural Engineering Laboratory
University of Oklahoma
Norman, OK

Topic: Knowing Your Audience—Adjusting Your Presentation on the Fly

This session provides an informal venue for attendees to learn how to become better presenters. The breakfast format promotes interaction among attendees and with the presenter, who models the skills he is teaching in the presentation.

This presentation will provide methods for identifying the characteristics of your audience, then provide an example of how content and presentation style in a recent presentation were adjusted accordingly.

Monday, March 24, 2014 8:30 am – 10:30 am

Hydration of Low Portland Cement Binders: Industry Experience and Needs, Part 1 of 2—CARSON 3

Sponsored by ACI Committees 231, Properties of Concrete at Early Ages; 232, Fly Ash and Natural Pozzolans in Concrete; 233, Ground Slag in Concrete; and 236, Material Science of Concrete

Session Co-Moderators: Jeffrey W. Bullard
Materials Research Engineer
NIST
Gaithersburg, MD

Gaurav N. Sant
Assistant Professor and Rice Chair
University of California – Los Angeles
Los Angeles, CA

A dominant theme in the quest for a sustainable civil infrastructure is the replacement of part of the portland cement in concrete with industrial by-products (IBPs), such as fly ash or blast-furnace slag and naturally occurring minerals, such as limestone. Yet, as the construction industry pushes to higher volumes of cement replacement by alternate materials, undesirable interactions between binder components can lead to performance problems, such as delayed setting and slow/reduced strength gain at early ages—critical impediments to the constructibility and commercialization of these materials. Removing the technical barriers to low and reduced cement content concretes will require improved standard test methods for

characterizing cement replacement materials and their interactions with portland cement, which in turn must be informed by a better understanding of the chemical/microstructural interactions among these components. This session will showcase new advances in experimental, theoretical, and computational tools for characterizing cements, IBPs, natural minerals, and hydration and microstructure development in low-cement-content concrete binders. The technical content should be of great interest to both the academic and industrial community and of special interest to those involved in sustainable materials design and development, those who specify binder materials to be used in construction, and those who promulgate standards and codes for using low-cement-content concretes.
By attending this session, attendees will be able to:
1. Identify current and potential applications of concrete using low-portland-cement binders;
2. Enumerate the merits and challenges of different strategies for reducing portland cement content in concrete;
3. Recognize the technical challenges involved in using low-portland-cement concrete binders; and
4. Describe current approaches used in the industry to assure the performance of these materials.

How Much SCMs Do Concrete Producers Use and How Can It Be Increased?—8:30 am
Karthik H. Obla, Managing Director of Research & Materials Engineering, NRMCA, Silver Spring, MD

The Development and Commercialization of Low-Portland-Cement Concrete in the San Francisco Bay Area—9:00 am
Ryan A. Henkensiefken, Technical Services Supervisor, USC Technologies, San Jose, CA; **Mike Donovan**, Central Concrete Supply

Understanding Sulfate Balance When Using Fly Ash—9:30 am
Mark D. Niemuth, Senior Product Specialist, Lafarge North America, Franklin, TN

Current Practice on the Use of Admixtures to Enable Successful Manufacture of Concrete with Low Portland Cement Content—9:00 am
Josephine H. Cheung, Principal Scientist, WR Grace, Cambridge, MA; **Ara A. Jeknavorian**, Jeknavorian Consulting Services

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Research in Progress, Part 1 of 2—CARSON 1

Sponsored by ACI Committee 123, Research and Current Developments

Session Co-Moderators: Kerry S. Hall
Assistant Professor
University of Southern Indiana
Evansville, IN

Jeffery S. Volz
Associate Professor
University of Oklahoma
Norman, OK

This session will feature presentations of original, unpublished results from ongoing research projects and leading-edge concrete technology and research throughout the world.
By attending this session, attendees will be able to:
1. Recognize ongoing concrete research projects from a wide range of research topics;
2. Discuss recent techniques, research methods, and procedures related to structural and material aspects of concrete research;
3. Describe emerging ideas in concrete research; and
4. Summarize recent technical information related to concrete structures and materials research.

Activation of Low-Energy Cement Made Solely from Waste Materials with Carbonation—8:30 am
Mehrdad Mahoutian, Graduate Student, McGill University, Montreal, QC, Canada; **Zaid Ghouleh** and **Yixin Shao**, McGill University

The Potential of Natural Pozzolans to Be a Class F Fly Ash Replacement in Concrete—8:45 am
Saamiya Seraj, Graduate Student, University of Texas at Austin, Austin, TX; **Rachel Cano**, Texas Department of Transportation; **Raissa Ferron** and **Maria Juenger**, University of Texas at Austin

Assessment of Alkali Activation to Improve the Performance of Recycled Glass Powder in Different Cementitious Systems—9:00 am
Hamed Maraghechi, PhD Candidate, Penn State University, University Park, PA; **Stephen Salwocki** and **Farshad Rajabipour**, Penn State University

Synergistic Effect of Internal Curing Combined with SRA on Cracking Potential of HPC—9:15 am
Tengfei Fu, Postdoctoral Scholar, Oregon State University, Corvallis, OR; **Tyler Deboodt** and **Jason H. Ideker**, Oregon State University

Quantifying the Degree of Saturation in Air-Entrained Cement Based Mortars Exposed to Water Via Neutron Radiography—9:30 am
Catherine L. Lucero, Graduate Student, Purdue University, West Lafayette, IN; **Timothy J.**

Barrett and **W. Jason Weiss**, Purdue University; **Daniel S. Hussey**, **David L. Jacobsen**, and **Dale P. Bentz**, National Institute of Standards and Technology

Flexural Strength of Reinforced Concrete Beams with 100% Recycled Concrete Aggregate—9:45 am
Mahdi Arezoumandi, Graduate Student, Missouri S&T, Rolla, MO; **Adam Smith** and **Kamal H. Khayat**, Missouri S&T; **Jeffery S. Volz**, University of Oklahoma

Effect of Length-to-Diameter Ratio on the Apparent Strength of High-Strength Concrete—10:00 am
Adam C. Carroll, Graduate Student, Auburn University, Auburn, AL; **Aaron R. Grubbs**, **Anton K. Schindler**, and **Robert W. Barnes**, Auburn University

High Strain-Rate Behavior of Cement-Based Materials: A Multiscale Experimental and Modeling Effort—10:15 am
Nathan P. Mayercsik, Graduate Student, Georgia Institute of Technology, Atlanta, GA; **Cynthia Katcoff** and **Lori Graham-Brady**, Johns Hopkins University; **Kimberly E. Kurtis**, Georgia Institute of Technology

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Monday, March 24, 2014 8:30 am – 10:30 am

Unconventional Reinforced Concrete Bridge Columns, Part 1 of 2—CARSON 2
Sponsored by ACI Committees 343, Concrete Bridge Design, and 441, Reinforced Concrete Columns

Session Co-Moderators: Riyadh A. Hindi
Associate Professor
Saint Louis University
Saint Louis, MO

Ahmed Ibrahim
Assistant Professor
Saint Louis University
Saint Louis, MO

New trends in innovative design and construction of unconventional concrete columns will be presented to promote advancement in this important application. The sessions will include the use of innovative materials, new confinement techniques, and fiber-reinforced concrete. It also includes varying the loading patterns and the geometry of the columns.
By attending this session, attendees will be able to:
1. Share and discuss the design and performance of unconventional reinforced concrete columns;
2. Understand the advantages and disadvantages of such columns compared to conventional columns;
3. Recognize current practice on the design, detailing, and performance issues related to unconventional concrete columns; and
4. Interact with practitioners, researchers, and students.

Experimental Study on the Seismic Response of L-Shaped Reinforced Concrete Columns—8:30 am
Bing Li, Professor, Nanyang Technological University, Singapore

Seismic Response of Shape Memory Alloy (SMA) Reinforced Concrete (RC) Bridge Bents under Long-Duration Ground Motion—8:50 am
M. Shahria Alam, Graduate Student, University of British Colombia, Kelowna, BC, Canada

An Innovative Method for Strengthening Column Base Joint—9:10 am
Mohamed A. Mahgoub, Assistant Professor, New Jersey Institute of Technology, Newark, NJ

Square SCC Bridge Columns under High Lateral Drifts—9:30 am
Nadim I. Wehbe, Assistant Professor, South Dakota State University, Brookings, SD

Analytical Investigation of Cross-Spiral Reinforced Concrete Columns under the Combined Effects of Axial and Blast Loads—9:50 am
Ahmed Ibrahim, Assistant Professor, Saint Louis University, Saint Louis, MO; **Riyadh A. Hindi** and **Will D. Lindquist**, Saint Louis University

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Monday, March 24, 2014 9:00 am – 10:00 am

The Reorganized ACI 318-14: Benefits, Rationale, and Availability—SUMMIT PAVILION

Session Moderator: Michael L. Tholen
Managing Director, Professional Development
American Concrete Institute
Farmington Hills, MI

ACI's 318, "Building Code Requirements for Structural Concrete," covers the materials, design, and detailing of structural concrete. This reorganization will benefit the entire design and construction community by making the code more intuitive and easier to use, thus providing increased confidence that a design satisfies all code requirements.

Join us for an hour presentation titled "The Reorganized ACI 318-14: Benefits, Rationale, and Availability," to better understand how the updated code will benefit you professionally; the rationale behind the improvements; and when it will be available for public comment and purchase. Following the presentation, the ACI Staff Engineer will open the floor for a question-and-answer portion, during which they will elaborate on certain topics as they pertain to the audience.

Monday, March 24, 2014 9:30 am – 2:30 pm

✓Historical Virginia City Tour & Scavenger Hunt—Depart Main Lobby
$60.00 U.S. per person

Guests will be greeted by period-dressed greeters and transported from Reno to beautiful Virginia City. A guide will narrate and point out interesting sights along the way. Upon arrival in Virginia City, teams will be given their week's wages in silver coins and go in search of goods and services around the city, as defined in the scavenger hunt instructions. Don't be afraid to barter with the vendors to get the best deal you can. Prizes will be awarded to the winning team! Participants will be given a ticket for the trolley on which they can receive a narrated tour of Virginia City. Guests will have time for a nice lunch, shopping, sightseeing, and peoplewatching on their own. Restaurants will be pointed out as guests are transported through town.

All participants will receive an official Scavenger Hunt Award Certificate. It is recommended that participants wear warm clothing and comfortable walking shoes for this tour.

Tour tickets may be purchased up to 24 hours prior to the event, based on availability. ***Tours are nonrefundable****. All tours depart from the main lobby doors.*
✓ = Separate fee required

Monday, March 24, 2014 11:00 am – 1:00 pm

Hydration of Low Portland Cement Binders: Recent Advances in Experiments and Modeling, Part 2 of 2—CARSON 3

Sponsored by ACI Committees 231, Properties of Concrete at Early Ages; 232, Fly Ash and Natural Pozzolans in Concrete; and 236, Material Science of Concrete

Session Co-Moderators: Karthik H. Obla
Managing Director of Research & Materials Engineering
NRMCA
Silver Spring, MD

Jeffrey W. Bullard
Materials Research Engineer
NIST
Gaithersburg, MD

The session description and learning objectives for this session may be found in the Part 1 listing; see page 78.

Direct Phase Analysis of Supplementary Cementitious Materials, Cements, and the Hydration Processes—11:00 am

Paul E. Stutzman, Physical Scientist, National Institute of Standards & Technology, Gaithersburg, MD

The Filler Effect: The Influence of Filler Content, Surface Area and Blending Methodologies on Cementitious Reaction Rates—11:30 am
Gaurav N. Sant, Assistant Professor and Rice Chair, University of California, Los Angeles, Los Angeles, CA; **Narayanan Neithalath**, Arizona State University; **Tandre Oey** and **Aditya Kumar**, University of California, Los Angeles

Concrete of the Future: Overcoming the Challenges of Using Low Portland Cement Mixtures—12:00 pm
Jussara Tanesi, Concrete Materials Engineer/Lab Manager, FHWASES & Associates, Vienna, VA; **Dale P. Bentz**, National Institute of Standards and Technology; **Jose F. Muñoz** and **Ahmad Allen Ardani**, Federal Highway Administration

In-Place Temperature, Setting, and Strength Behavior of High-Volume Fly Ash Concrete—12:30 pm
Anton Karel Schindler, Professor and HRC Director, Auburn University, Auburn, AL; **Kevin Keith**, Tennessee Valley Authority

2 AIA/CES LU

Monday, March 24, 2014 11:00 am – 1:00 pm

Monitoring for Cold Weather Concreting—CARSON 2

Sponsored by ACI Committee 306, Cold Weather Concreting

Session Co-Moderators: William J. Lyons
National Business Development Manager – Northeast Region
The Euclid Chemical Company
New Windsor, NY

Erik Holck
Construction Engineering Manager
Denver Water
Denver, CO

The current model for cold weather concreting operations is based on the Thermos Concept—make the concrete hot and then keep it hot. The bulk of the technical aspects of the current ACI 306 document are based on work done over 30 years ago. The practice of cold weather concreting has changed significantly since that time.
The changes in cement chemistry and fineness, the widespread use of slower-reacting materials in the interest of sustainability, as well as the ubiquity of the Internet and electronic sensors needs to be incorporated into the revisions to the guide to cold weather concreting as well as to the specification currently under development. The speakers have distinct, different backgrounds and come from academia, association, ready mixed concrete, and consulting backgrounds.
By attending this session, attendees will be able to:
1. Learn about new developments in cold weather concreting through field testing;
2. Recognize the effect of how internal and external electronic sensors can be incorporated into future revisions of the cold weather concreting guide;

3. Learn how the widespread use of slower-reacting materials in the interest of sustainability can be used in cold weather concreting; and
4. Understand the reasoning and need for a revised cold weather specification.

Use and Misuse of Non-Contact Infrared Temperature Sensors for Concrete Construction—11:00 am
Kenneth C. Hover, Professor of structural engineering, Cornell University, Ithaca, NY

Cold Weather Research Findings for Residential Concrete Foundation Walls—11:25 am
James R. Baty, Technical Director, Sauter Baty Associates, Mount Vernon, IA

Effect of Cold Rebar on Surrounding Concrete During Weather Placement—11:50 pm
Ronald L. Kozikowski, Materials Engineer, Northstarr Concrete Consulting, Dover, NH

Field Performance of Different Temperature Concrete in Cold Weather Environments—12:15
Dennis Purinton, Owner, Purinton Builders, East Granby, CT

Insulation for Protection of New Concrete in Winter—12:40 pm
Kevin A. MacDonald, Vice President of Engineering Services, Beton Consulting Engineers LLC, Prior Lake, MN

2 AIA/CES LU

Monday, March 24, 2014 11:00 am – 1:00 pm

Research in Progress, Part 2 of 2—CARSON 1

Sponsored by ACI Committee 123, Research and Current Developments
Session Co-Moderators: Kerry S. Hall
Assistant Professor
University of Southern Indiana
Evansville, IN

Jeffery S. Volz
Associate Professor
University of Oklahoma
Norman, OK

The session description and learning objectives for this session may be found in the Part 1 listing; see page 80.

Full-Field Visualization Techniques for High Density Ultrasound Measurements—11:00 am
Jordan D. Nelson, NDE and Programming Specialist, Lynch & Ferraro, Gainesville, FL

A Methodology for Monitoring of Fracture Processes in Concrete Using Quantitative Acoustic Emission Techniques—11:15 am
Lassaad Mhamdi, Graduate Student, University of Delaware, Newark, DE; **Thomas Schumacher**, University of Delaware

Using Acoustic Emission to Detect ASR Growth—11:30 am
Jeremiah Fasl, Associate II, Wiss, Janney, Elstner Associates, Inc., Austin, TX; **Mohamed El-Batanouny**, **Matthew Jones**, and **Paul Ziehl**, University of South Carolina; **Carl J. Larosche**, Wiss, Janney, Elstner Associates, Inc.

Field Investigation of Shear Distribution in Prestressed Concrete Girder Bridges—11:45 am
Ben Dymond, PhD Candidate, University of Minnesota, Minneapolis, MN; **Catherine French** and **Carol Shield**, University of Minnesota

Behavior of Steel Fiber-Reinforced Concrete under Reversed Cyclic Loading—12:00 pm
Jun Wei Luo, Graduate Student, University of Toronto, Toronto, ON, Canada; **Frank Vecchio**, University of Toronto

Seismic Performance of Column to Pile-Shaft Connections—12:15 pm
Mehrdad Mehraein, PhD Candidate, University of Nevada, Reno, Reno, NV; **M. Saiid Saiidi**, University of Nevada, Reno

Unbonded Tendons with Alternative Post-Tensioning Filler Materials—12:30 pm
Natassia R. Brenkus, Graduate Student, University of Florida, Gainesville, FL; **H. R. Hamilton**, **Jennifer Rice**, **Rahul Bahatia**, and **A. B. M Adullah**, University of Florida

Green Walls with Pervious Concrete—12:45 pm
Anne Werner, Assistant Professor, Southern Illinois University Edwardsville, Edwardsville, IL

2 AIA/CES LU

Monday, March 24, 2014 11:30 am – 1:30 pm

✓Student Lunch—RENO BALLROOM
$37.00 U.S. per person
FREE to students who preregistered
Sponsored by Baker Concrete Construction Company, Inc.

BAKER CONCRETE CONSTRUCTION expect more

Coordinated by the ACI Western Nevada and Northern California Chapter and ACI Committee S801, Student Activities

Speaker: Scott M. Andereson
Vice President-Regional Manager
Pankow
Oakland, CA

Topic: Employment Outlook in the Concrete Construction Industry

Join students and other ACI attendees for the Student Lunch. Scott Anderson of Pankow will give a presentation titled "Employment Outlook in the Concrete Construction Industry." Following the lecture, the results of the student competition will be announced.

PREREGISTRATION IS REQUIRED TO ATTEND*. Tickets may be purchased at the ACI Registration Desk up to 24 hours prior to the event, based on availability. Please notify the ACI Registration Desk if you have any dietary restrictions.*
✓ = Separate fee required

Monday, March 24, 2014 1:30 pm – 3:30 pm

Concrete Repair Guide: New Edition, Part 2 of 2—CARSON 1
Sponsored by ACI Committee 546, Repair of Concrete

Session Co-Moderators: John S. Lund
Principal/Investigative Engineering
Martin-Martin Inc.
Lakewood, CO

David A. VanOcker
Principal
CVM
King Of Prussia, PA

The session description and learning objectives for this session may be found in the Part 1 listing; see page 69.

Protective Systems-Part 1—1:30 pm
David W. Whitmore, Vice President, Vector Construction Ltd, Winnipeg, MB, Canada

Protective Systems-Part 2—2:00 pm
Jorge Costa, Vice President, Structural Technologies, Pompano Beach, FL

Structural Repair & Strengthening – Part 1—2:30 pm
John S. Lund, Principal/Investigative Engineering, Martin-Martin Inc., Lakewood, CO

Structural Repair & Strengthening – Part 2—3:00 pm
James Peter Barlow, President, Contech Group Inc., Seattle, WA

2 AIA/CES LU

Monday, March 24, 2014 1:30 pm – 3:30 pm

Current Practices in Online Learning—CARSON 3

Sponsored by ACI Committee S802, Teaching Methods and Educational Materials

Session Co-Moderators: Colonel Fred Meyer
Deputy Head, Department of Civil and Mechanical Engineering
United States Military Academy
West Point, NY

Douglas B. Cleary
Associate Professor
Rowan University
Glassboro, NJ

This session will provide information on the most current practices related to online learning to include webinars; online courses for credit; and hybrid courses where students view course material online, then work on problems during class.
By attending this session, attendees will be able to:
1. Understand and implement strategies to strengthen their online course offerings;
2. Use online education strategies to strengthen their traditional courses;
3. Become aware of the continuing educational opportunities provided by ACI; and
4. Learn future trends in online education.

Effectiveness of Elementary Engineering Outreach with Personal Instruction and Videos—1:30 pm
Tyler Ley, Assistant Professor, Oklahoma State University, Stillwater, OK; **Julie Thomas**, University of Nebraska; **Nicole Colston**, **Toni Ivey**, and **Juliana Utley**, Oklahoma State University

Lessons from an Inverted Classroom—2:10 pm
Shawn P. Gross, Associate Professor, Villanova University, Villanova, PA

ACI's Online Programs for Education of the Concrete Professional—2:30 pm
Michael L. Tholen, Managing Director, Professional Development, American Concrete Institute, Farmington Hills, MI

Teaching Engineering Online—2:50 pm
Ruth Wertz, Assistant Professor of Civil Engineering, Valparaiso University, Valparaiso, IN; **Kenneth Lamb**, California State Polytechnic University

Strategies to Strengthen Online Course Instruction—3:10 pm
Michael Ciocco, Director of Online Services, Rowan University, Glassboro, NJ

2 AIA/CES LU

Monday, March 24, 2014 1:30 pm – 3:30 pm

Unconventional Reinforced Concrete Bridge Columns, Part 2 of 2—CARSON 2
Sponsored by Joint ACI-ASCE Committees 343, Concrete Bridge Design, and 441, Reinforced Concrete Columns
Session Co-Moderators: Riyadh A. Hindi
Associate Professor
Saint Louis University
Saint Louis, MO

Ahmed Ibrahim
Assistant Professor
Saint Louis University
Saint Louis, MO

The session description and learning objectives for this session may be found in the Part 1 listing; see page 81.

Use of Post-Tensioning in Columns to Mitigate Earthquake Damage—1:30 pm
David H. Sanders, Professor, University of Nevada, Reno, Reno, NV

Concentric and Eccentric Behavior of Rectangular Columns Confined by Steel Ties and FRP Wrapping—1:50 pm
Ahmed Al-Rahmani, Student, Kansas State University, Manhattan, KS; **Hayder A. Rasheed**, Kansas State University

Replacement of the Sellwood Bridge—2:10 pm
Mike Lopez, Design Engineer, TYLin International, Salem, OR

Confinement Model for Bridge Columns Using Cross Spirals—2:30 pm
Riyadh A. Hindi, Associate Professor, Saint Louis University, Saint Louis, MO

2 AIA/CES LU

Monday, March 24, 2014 1:45 pm – 4:00 pm

✓UNR Earthquake Engineering Laboratory Tour—Depart Main Lobby
$10.00 U.S. per person

The University of Nevada – Reno Earthquake Engineering Laboratory (UNR EEL) recently expanded from 7500 to 17,100ft^2. The expansion will house the UNR shake-table array, which consists of three 50-ton capacity bidirectional shake tables and one 6 degree-of-freedom 50-ton shake table. The laboratory is currently part of the Network for Earthquake Engineering Research (NEES). The tour will provide information on recent project and capabilities of the laboratory.

Tour tickets may be purchased up to 24 hours prior to the event, based on availability. ***Tours are nonrefundable.*** *All tours depart from the main lobby doors.*
✓= **Separate fee required**

Monday, March 24, 2014 3:30 pm – 5:00 pm

****Guest Social—The Reserve***

Marc Lubin invites all convention guests to join him for the Guest Social. You don't want to miss an opportunity to catch up with old friends, get to know other convention guests, and enjoy light refreshments. A guest name badge is required to attend this event.
* = **Guest-only event**

Monday, March 24, 2014 4:00 pm – 6:00 pm

Delayed Ettringite: Causes, Evaluation of Existing Structures, and Prevention—CARSON 3

Sponsored by ACI Committee 201, Durability of Concrete, and 231, Properties of Concrete at Early Ages

Session Co-Moderators:
Oscar R. Antommattei
Senior Concrete Engineer
Kiewit Corporation
Omaha, NE

Kyle Austin Riding
Assistant Professor
Kansas State University
Manhattan, KS

Delayed ettringite formation (DEF) has been suspected of causing premature deterioration of concrete structures that reach elevated temperatures during curing. DEF can cause very large expansion and cracking of concrete in service. The mechanisms that cause ettringite to form in hardened concrete without exposure to environmental sources of sulfates will be discussed. Comparisons of laboratory and field investigations will be given, highlighting the

material, construction, and environmental conditions necessary to have DEF occur in service. Case studies of DEF occurring in concrete members will be given, including precast concrete and structural members not often considered because they are not steam cured, such as mass concrete. Finally, methods to diagnose problems in the field and mitigation techniques previously used will be discussed.
By attending this session, attendees will be able to:
1. Identify ways to evaluate potential for continued expansion due to DEF;
2. Understand the conditions necessary for expansion due to DEF and the methods to minimize the risk of DEF;
3. Recognize the different mechanisms associated to formation of ettringite at a later age; and
4. Describe the various methods and techniques to mitigate DEF.

DEF: Internal Sulfate Distress without Heat Curing—4:00 pm
Ramon L. Carrasquillo, President, Carrasquillo Associates Ltd., Austin, TX

Delayed Ettringite Formation: A Consultant's Perspective—4:25 pm
Anthony F. Bentivegna, Materials Consultant, CTLGroup, Skokie, IL

DEF: Laboratory versus Field—4:50 pm
Michael D. A. Thomas, Professor, University of New Brunswick, Fredericton, NB, Canada

DEF: Field Case Study—5:15 pm
W. Calvin McCall, Partner, Concrete Engineering Consultants, Inc., Charlotte, NC

Laboratory and Field Investigations of Delayed Ettringite Formation—5:40 pm
Thano Drimalas, Research Associate, University of Texas at Austin, Austin, TX

2 AIA/CES LU

Monday, March 24, 2014 4:00 pm – 6:00 pm

Proportioning of Mixtures for Concrete Pavements—CARSON 1

Sponsored by ACI Committees 211, Proportioning Concrete Mixture, and 325, Concrete Pavements
Session Moderator: David Newton Richardson
Associate Professor
Missouri S&T
Rolla, MO

This session will provide insight into current developments regarding mixture design and proportioning, specifically for concrete pavements. The session will include discussions of current issues and innovations related to mixture design, including use of self-consolidating mixtures, optimization of aggregate gradation, handling of various durability situations, and mixture component incompatibilities. The speakers have different backgrounds and come from material suppliers, associations, consulting, and academia.
By attending this session, attendees will be able to:
1. Understand current concrete pavement mixture design methods;
2. Recognize how current methods are being improved;

3. Identify design methods being developed for the near-future and future; and
4. Understand new methods in sand gradation characterization and evaluation of mixtures to prevent unwanted performance problems.

ACI 325, Guide for Design and Proportioning of Concrete Mixtures for Pavements—4:00 pm
David Newton Richardson, Associate Professor, Missouri S&T, Rolla, MO

Proportioning Mixtures for Concrete Pavements—4:30 pm
Peter C. Taylor, Associate Director, National Concrete Pavement Technology Center, Ames, IA; **Ezgi Yurdakul**, Verifi, LLC

Alternative Testing Strategies for Support of Concrete Pavement Mixture Development—5:00 pm
Tim Cost, Senior Technical Service Engineer, Holcim (US) Inc., Canton, MS

Impact of Sand Gradation on Optimized Graded Concrete for Concrete Pavements—5:30 pm
Tyler Ley, Assistant Professor, Oklahoma State University, Stillwater, OK

2 AIA/CES LU

Monday, March 24, 2014 4:00 pm – 6:00 pm

Segregation: Can't We All Just Get Along?—CARSON 2

Sponsored by ACI Committees 237, Self-Consolidating Concret, and 238, Workability of Fresh Concrete

Session Co-Moderators:

Raissa P. Ferron
Assistant Professor
University of Texas at Austin
Austin, TX

Kejin Wang
Professor
Iowa State University
Ames, IA

Both conventional and self-consolidating concrete mixtures often tend to segregate during their production processes, such as transporting, placing, and consolidation. Segregation, or separation of some constituents from suspending phases, makes concrete products become macroscopically anisotropic and heterogeneous, lose their original quality and characteristics, and display poor performance and reduced serviceability. Proper examination and quantification of concrete segregation is essential for effective control of the problem. This technical session is to discuss the recent research and advances in evaluation and control of concrete segregation.
By attending this session, attendees will be able to:
1. Further understand mechanisms of concrete segregation as well as the effects of segregation on concrete performance;

2. Identify the key factors that affect concrete segregation;
3. Recognize recent advances in test methods for evaluating concrete segregation; and
4. Select effective methods and techniques for control of segregation in concrete practice.

Introduction—4:00 pm

Electrical Conductivity to Evaluate Homogeneity of Concrete—4:10 pm
Kamal H. Khayat, Professor, Missouri S&T, Rolla, MO

Correlation among Resistance-to-Segregation Test Methods of Self-Consolidating Concrete—4:20 pm
George Morcous, Associate Professor, University of Nebraska-Lincoln, Lincoln, NE

The Use of Rheological Methods to Develop Non-Bleeding SCC Mixtures Containing High Slag Content for Architectural Columns—4:40 pm
Philip S. Zacarias, Senior Scientist, Canada Building Materials CBM, Mississauga, ON, Canada; **Lloyd Keller,** Director, EllisDon Corporation, Mississauga, ON, Canada

Dynamic Segregation of Self-Consolidating Concrete—5:00 pm
Dimitri Feys, Assistant Professor, Missouri S&T, Rolla, MO

Assessment of Dynamic Segregation of SCC Using the Settlement Column Test—5:20 pm
Mohamed Sonebi, Associate Professor, Queen's University Belfast, Belfast, UK

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Monday, March 24, 2014 5:30 pm – 6:30 pm

Women in ACI Reception—NEVADA FOYER

All registered convention attendees are invited to attend the Women in ACI Reception. This long-standing ACI tradition is a great opportunity to get to know other women in the concrete industry. A cash bar and light hors d'oeuvres will be served.

123 Forum: Non-Destructive Testing of Concrete—Capabilities and Limitations—CARSON 1

Sponsored by ACI Committee 123, Research and Current Developments

Session Co-Moderators: Thomas Schumacher
Assistant Professor
University of Delaware
Newark, DE

Farshad Rajabipour
Assistant Professor
Pennsylvania State University
University Park, PA

Evaluations and assessments of concrete structures are, despite the availability of advanced non-destructive testing (NDT) techniques, still commonly performed using rather basic methods, such as visual inspection and chain drag. Although these methods are well established, they may be considered subjective as they depend largely on the operator's experience. Reasons for resistance from agencies to adapt high-technology NDT techniques may be related to perceived low reliability and accuracy, and the high expertise required to take measurements and interpret results.

This forum will discuss the most important questions related to NDT techniques for concrete structures, such as:

- What is the current state of the art in NDT?
- Which NDT techniques are most commonly used?
- What types of defects/conditions can be detected and by which technique?
- What are the capabilities and limitations of NDT techniques?
- What are the industry/agency needs and concerns?
- Do we need certification for NDT personnel?
- How does structural health monitoring (SHM) relate to NDT and can the two be used in complimentary fashion?
- What are the most promising developments in NDT/SHM?

A panel of experts will debate these questions, and more, to provide the audience information regarding the current state of the art and practice, strengths and limitations, and latest developments in NDT. The forum will start with short presentations by each panelist, followed by an interactive discussion with the audience.

By attending this session, attendees will be able to:

1. List common NDT techniques and their application;
2. Explain the limitations of commonly used NDT techniques;
3. Recognize the needs of the industry and agencies; and
4. Identify areas of further research to improve current NDT techniques.

Step 1: Understanding the Fundamentals—6:30 pm

Nicholas J. Carino, Consultant, Chagrin Falls, OH

Why Can't We Do More?—6:42 pm
John S. Popovics, Associate Professor, University of Illinois at Urbana-Champaign, Champaign, IL

Balancing Expectations and Reality in NDE of Existing Structures—6:54 pm
Keith Kesner, Senior Associate, Whitlock Dalrymple Poston & Associates, P.C., New York, NY

Applying NDE and SHM to Transportation Infrastructure: Opportunities and Challenges—7:06 pm
Michael C. Brown, Associate Director for Structural, Pavement, and Geotechnical Engineering, Virginia Center for Transportation Innovation & Research, Charlottesville, VA

Creating the Next Generation of Smart Instruments—7:08 pm
Malcolm Lim, General Manager, Proceq Technical and Application Services, Gumee, IL

2 AIA/CES LU

Monday, March 24, 2014 6:30 pm – 8:30 pm

✓Tribute to the Fellowship Founders—RENO BALLROOM
$75.00 U.S. per person; $600 U.S. per table of 8

A dinner event, "Tribute to the Fellowship Founders," will thank the Fellowship Program founders and all who have generously helped fund the Scholarship and Fellowship Program of the ACI Foundation. ACI Past President Ken Hover will serve as the evening's master of ceremonies. The ACI Foundation wants to salute the major founders of the Fellowship Program: Jim and Sharon Cagley and Cagley & Associates, Inc.; Tom Verti of Pankow Builders and the Charles Pankow Foundation; and Dan Baker and Baker Concrete Construction, Inc.

PREREGISTRATION IS REQUIRED TO ATTEND*. Tickets may be purchased at the ACI Registration Desk up to 24 hours prior to the event, based on availability. Please notify the ACI Registration Desk if you have any dietary restrictions.*
✓ = Separate fee required

Tuesday, March 25, 2014 8:30 am – 10:30 am

Contractors' Day Session: Concrete Pavements that Endure—CARSON 1
Sponsored by the ACI Northern California and Western Nevada Chapter
Session Moderator: Craig Hennings
Executive Director
Southwest Concrete Pavement Association
Modesto, CA

Concrete pavements in this region are designed to endure in a multitude of climates. Concrete pavement materials, design, construction, and maintenance will be discussed.

By attending this session, attendees will be able to:
1. Identify long-lasting concrete pavement designs, durable repair options, and quick project delivery options;
2. Recognize opportunities for using design build, alternate pavement types, and new materials;
3. Explain the advantages of using design build and alternate materials for construction; and
4. Specify emerging technologies for rapid pavement repair and long-lasting design.

I-80 Design Build—8:30 am
Samuel A. Lompa, Resident Engineer, Nevada Department of Transportation, Reno, NV

Long Life CRCP—9:00 am
Florante Bautista, Senior Transportation Engineer, California Department of Transportation, Sacramento, CA

Rapid Strength Concrete: Uses, Specifications, and Pitfalls—9:30 am
Cornelis Hakim, Senior Transportation Engineer, California Department of Transportation, Sacramento, CA

Precast Pavement Panels—10:00 am
Tinu Mishra, Senior Transportation Engineer, California Department of Transportation, Sacramento, CA

2 AIA/CES LU

Tuesday, March 25, 2014 8:30 am – 10:30 am

Repair Material Selection Guide: New Edition, Part 1 of 2—CARSON 3

Sponsored by ACI Committee 546-B, Repair-Material Selection Guide
Session Moderator: Richard C. Reed
Associate Principal
Wiss, Janney, Elstner Associates, Inc.
Northbrook, IL

This second edition of the Guide for Materials Selection for Concrete Repair has been expanded from three chapters discussing concrete replacement and overlay materials and crack repair materials to 10 chapters with expanded discussion of crack repair materials and new discussion of surface sealers; anticarbonation coatings; traffic-bearing elastomeric coatings; reinforcing steel coatings; embedded galvanic electrodes; concrete bonding materials and methods; crystalline pore blockers; and surface-applied, penetrating corrosion inhibitors. Session 1 will include talks on the properties of concrete replacement and overlay materials and their importance; the selection of concrete replacement and overlay materials; and the properties of crack repair materials, including rigid, elastomeric, and flexible materials and their importance.
By attending this session, attendees will be able to:
1. Develop a basic understanding of available tests for concrete replacement materials, and applicability of the tests for replacement materials;

2. Develop a basic understanding of available tests for concrete overlay materials, and applicability of the tests for overlay materials;
3. Develop a basic understanding of the types of concrete replacement materials and properties important to the selection of concrete replacement materials; and
4. Develop a basic understanding of materials for overlaying concrete members and properties important to the selection of overlay materials.

Introduction, Notations, and Definitions—8:30 am
Richard C. Reed, Associate Principal, Wiss, Janney, Elstner Associates, Inc., Northbrook, IL

Properties of Concrete Replacement and Overlay Materials and Their Importance—8:50 am
David W. Scott, Associate Professor, Georgia Institute of Technology, Atlanta, GA

Selection of Concrete Replacement and Overlay Materials—9:20 am
Johan L. Silfwerbrand, Professor, KTH Royal Institute of Technology, Stockholm, Sweden

Properties of Crack Repair Materials and Their Importance: Rigid, Elastomeric, and Flexible Materials—9:50 am
Aamer H. Syed, Senior Product Marketing Manager, Sika Corporation, Lyndhurst, NJ;
Scott DiStefano, Product Engineer, Sika Corporation

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Tuesday, March 25, 2014 8:30 am – 10:30 am

Seismic Assessment of Existing Reinforced Concrete Buildings—New Developments, Part 3 of 3—CARSON 2

Sponsored by ACI Committee 369, Seismic Repair and Rehabilitation
Session Co-Moderators: Jeffrey J. Dragovich
Structural Engineer
Shoreline, WA

Insung Kim
Structural Engineer
Degenkolb Engineers
San Francisco, CA

The session description and learning objectives for this session may be found in the Part 1 listing; see page 70.

Collapse Assessment of Non-Ductile, Retrofitted, and Ductile Reinforced Concrete Frames—8:30 am
Majid Baradaran Shoraka, Postdoctoral Fellow, University of British Columbia, Vancouver, BC, Canada

Nonlinear Modeling Parameters for Jacketed Columns Used in Seismic Rehabilitation of RC Buildings—8:50 am
Jose Alvarez, PhD Candidate, University of Massachusetts Amherst, Amherst, MA

Seismic Assessment and Retrofit of Existing RC Buildings: Case Studies from Degenkolb Engineers—9:15 am
Insung Kim, Project Engineer, Degenkolb Engineers, San Francisco, CA; **Garrett Hagen**, Designer, Degenkolb Engineers, Los Angeles, CA

Seismic Assessment and Retrofit of a Concrete Building—9:40 am
Arne Halterman, Project Manager, Holmes Culley, San Francisco, CA

Structural Evaluation and Code Compliance: Sacred Heart University 1904 Original Building and Addition Complex—10:05 am
Jose M. Izquierdo-Encarnación, Owner, PORTICUS, San Juan, PR

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Tuesday, March 25, 2014 8:30 am – 1:30 pm

✓Pyramid Lake and Paiute Tribal Museum Tour —Depart Main Lobby
$65.00 U.S. per person

Please don't forget your cameras for this one! This tour starts with a drive through Sparks to the Pyramid Lake Highway (State Route 445), traveling north through the beautiful Nevada desert. The history and sights will be pointed out by a professional guide. Pyramid Lake is located on the Paiute Indian reservation. When you reach the reservation, you will know it by the spectacular moment when you see the deep sapphire color of Pyramid Lake. Lunch will be provided at Crosby's, the oldest establishment on the lake. A special guest will join you for lunch and entertain you with great storytelling about the Chautauqua tribe. After lunch, guests will have time to visit the gift store attached to Crosby's to purchase memorabilia and Indian cultural gifts. It is recommended that participants wear warm clothing and comfortable walking shoes for this tour.

Tour tickets may be purchased up to 24 hours prior to the event, based on availability. ***Tours are nonrefundable****. All tours depart from the main lobby doors.*
✓ = Separate fee required

Tuesday, March 25, 2014 9:00 am – 10:00 am

The Reorganized ACI 318-14: Benefits, Rationale, and Availability—CARSON 4

Session Moderator: Basile G. Rabbat
Engineer Consultant
Mt. Prospect, IL

ACI's 318, "Building Code Requirements for Structural Concrete," covers the materials, design, and detailing of structural concrete. This reorganization will benefit the entire design and construction community by making the code more intuitive and easier to use, thus providing increased confidence that a design satisfies all code requirements.

Join us for an hour presentation titled "The Reorganized ACI 318-14: Benefits, Rationale, and Availability" to better understand how the updated code will benefit you professionally, the rationale behind the improvements, and when it will be available for public comment and purchase. Following the presentation, the ACI Staff Engineer will open the floor for a question-and-answer portion, during which they will elaborate on certain topics as they pertain to the audience.

Tuesday, March 25, 2014 11:00 am – 1:00 pm

An Overview on Specifications for Environmental Concrete Structures—CARSON 2

Sponsored by ACI Committee 350, Environmental Engineering Concrete Structures

Session Moderator: M. Reza Kianoush
Professor
Ryerson University
Toronto, ON, Canada

ACI 350.5-12, "Specifications for Environmental Concrete Structures," has recently been published. The objective of this session is to provide an overview of this specification and discuss the details. This specification is a reference specification that the Architect/Engineer can make applicable to a construction project by citing it in the project specifications.
The presentations, which involve four speakers, cover subjects related to materials and proportioning of concrete; reinforcement and prestressing; production, placing, finishing, and curing of concrete; formwork design and construction; and shotcrete. Methods of treatment of joints, repair of surface defects, and finishing of surfaces will be discussed.
By attending this session, attendees will be able to:
1. Gain an overall understanding of this specification for environmental engineering concrete structures and the differences between ACI 301 and 350 Specifications;
2. Demonstrate the methods of treatment of joints, repair of surface defects, and finishing of formed and unformed surfaces;
3. Explain provisions governing testing, evaluation, and acceptance of concrete as well as acceptance of the structure; and
4. Specify the design and construction requirements for internal post-tensioned structural concrete members as well as wrapped, circular, prestressed concrete structures as designated in contract documents.

Introduction—11:00
M. Reza Kianoush, Professor, Ryerson University, Toronto, ON, Canada

Overview—11:05 am
Charles S. Hanskat, Managing Principal, Hanskat Consulting Group, LLC, Northbrook, IL

Durability and Joints—11:30 am
Kyle S. Loyd, Vice President - Waterproofing, Sika Greenstreak, Saint Louis, MO

Internal Post-Tensioned Concrete—12:00 pm
Steven R. Close, Principal, Close Associates, LLC, Lakewood, CO

External Prestressed Wrapped Tanks—12:30 pm
Daniel J. McCarthy, VP Engineering & Construction Performance, Preload Inc., Hauppauge, NY

2 AIA/CES LU

Tuesday, March 25, 2014 11:00 am – 1:00 pm

Mobile Technology: A Sure Winner—CARSON 1

Sponsored by ACI Committee 118, Use of Computers

Session Co-Moderators: Ronald L. O'Kane
Partner
Leigh & O'Kane LLC
Kansas City, MO

James M. Shilstone Jr.
Concrete Technologist
Command Alkon, Inc.
Frisco, TX

Attendees will have the opportunity to see how concrete-related industries are using mobile applications in the various workplaces through case studies:
a) Case study mobile applications in the workplace: ready mixed concrete
b) Case study mobile applications in the workplace: reinforcing bar
c) Case study mobile application in workplace: renovation of an airport terminal
By attending this session, attendees will be able to:
1. Use the new ACI website in both the desktop and mobile formats;
2. Use the ACI convention mobile application;
3. Learn how ACI uses Twitter to stay in touch with convention attendees;
4. See mobile technology in action. A case study will be presented on one company's solution for reinforcing bar fabrication; and
5. Learn how mobile technology can be used in the workplace in a case study of an airport terminal renovation.

Tour New ACI Website—11:00 am
Christopher J. Darnell, Director, Website Strategy and Content, American Concrete Institute, Farmington Hills, MI

Tour New ACI App, ACI Convention App, Program Book on Your Mobile Device—11:25 am
Danielle R. Harris, Marketing Assistant, American Concrete Institute, Farmington Hills, MI

Case Study Mobile Applications in the Workplace: Electronic Ticketing for Ready Mixed Concrete Delivery—11:50 am
James M. Shilstone Jr., Concrete Technologist, Command Alkon, Inc., Frisco, TX

iPad: 24 Hour Tool for the Designer/Engineer—12:15 pm
Jose M. Izquierdo-Encarnación, Owner, PORTICUS, San Juan, PR

Technology in Resteel—12:40 pm
Mario Garza, Preconstruction Manager, Barton Malow Co., Southfield, MI

2 AIA/CES LU

Tuesday, March 25, 2014 11:00 am – 1:00 pm

Repair Material Selection Guide: New Edition, Part 2 of 2—CARSON 3
Sponsored by ACI Committee 546, Repair of Concrete
Session Moderator: Richard C. Reed
Associate Principal
Wiss, Janney, Elstner Associates, Inc.
Northbrook, IL

The session description and learning objectives for this session may be found in the Part 1 listing; see page 96.

Selection of Crack Repair Materials—11:00 am
George I. Taylor, Associate Principal, Wiss, Janney, Elstner Associates, Inc., Chicago, IL

Properties of Surface Sealers, Anti-Carbonation Coatings, and Traffic-Bearing Elastomeric Membranes—11:30 am
Michael M. Sprinkel, Associate Director, Virginia Center for Transportation Innovation and Research, Charlottesville, VA

Selection of Surface Sealers, Anti-Carbonation Coatings, and Traffic-Bearing Elastomeric Coatings—12:00 pm
Kevin R. Krawiec, Senior Structural Engineer, Corrosion Probe Inc., Scituate, MA

Reinforcing Steel Coatings, Embedded Galvanic Anodes, Concrete Bonding Materials and Procedures, Crystalline Pore Blockers, and Surface-Applied Penetrating Corrosion Inhibitors—12:20 pm
John S. Lund, Principal/Investigative Engineering, Martin/Martin, Inc., Lakewood, CO

Current Industry Issues and Concerns—12:40 pm
Richard C. Arnold, Associate Principal, Wiss, Janney, Elstner Associates, Inc., Northbrook, IL

2 AIA/CES LU

Tuesday, March 25, 2014 11:30 am – 1:30 pm

✓*Contractors' Day Lunch—NEVADA FOYER*

Coordinated by the Northern California and Western Nevada Chapter and the Construction Liaison Committee

Speakers: Daniel Payne
Construction Manager
Webcor Concrete
Sonoma, CA

Leo Panian
Principal Structural Engineer
Tipping Mar Structural Engineering
Berkeley, CA

Topic: Sustainable Concrete and a Tight Construction Schedule: Can It Be Done?

Join other ACI attendees and contractors for the Contractors' Day Lunch. Enjoy a special presentation by Dan Payne and Leo Panian, who will answer the question about Sustainable Concrete and a Tight Construction Schedule: Can It Be Done?

PREREGISTRATION IS REQUIRED TO ATTEND*. Tickets may be purchased at the ACI Registration Desk up to 24 hours prior to the event, based on availability. Please notify the ACI Registration Desk if you have any dietary restrictions.*
✓ = **Separate fee required**

Tuesday, March 25, 2014 1:30 pm – 3:30 pm

Contractors' Day Session: Bridges that Endure—CARSON 1

Sponsored by the ACI Northern California and Western Nevada Chapter

Session Moderator: David H. Sanders
Professor, Department Graduate Director
University of Nevada, Reno
Reno, NV

Concrete Bridges in the region face numerous obstacles to endure: seismic loading, severe climatic conditions, marine environments, and high wind loading. Learners will hear how each of these obstacles was overcome for two signature bridge projects in Nevada and California.

By attending this session, attendees will be able to:
1. Understand the durability requirements that severe loading conditions and extreme environments place on bridges;
2. Understand the basic design of a self-anchored suspension bridge;
3. Understand how to design concrete bridge decks for minimal cracking due to drying shrinkage; and
4. Interact with practitioners, reseachers, and students.

Concrete Elements of the SAS San Francisco-Oakland Bay Bridge—1:30 pm
Marwan Nader, Vice President, TY Lin International, San Francisco, CA; **James Duxbury**, Senior Associate, TY Lin International, San Francisco, CA

Controlling Shrinkage Cracking in Bridge Decks—2:00 pm
Ric Maggenti, Senior Materials and Research Engineer, California Department of Transportation, Sacramento, CA; **Craig Knapp**, Senior Bridge Engineer, California Department of Transportation; Sacramento, CA; **Sonny A. Fereira**, Senior Bridge Engineer, California Department of Transportation, Sacramento, CA

Durability Considerations for the Galena Creek Bridge—3:00 pm
Troy Martin, Senior Bridge Design Engineer, Nevada Department of Transportation, Carson City, NV

2 AIA/CES LU

Tuesday, March 25, 2014 1:30 pm – 3:30 pm

Open Paper Session, Part 1 of 2—CARSON 2
Sponsored by ACI Committee 123, Research and Current Developments
Session Co-Moderators: Piotr Paczkowski
Structural Engineer
Parsons Brinckerhoff
Tampa, FL

Eric R. Giannini
Assistant Professor
The University of Alabama
Tuscaloosa, AL

The Open Paper Session is a forum for presenting recent technical information that could not be scheduled into other convention sessions.
By attending this session, attendees will be able to:
1. Recognize new and emerging materials for civil infrastructures;
2. Demonstrate the various methods to assess the current conditions of structures and how to repair them;
3. Identify recent techniques, research methods, and procedures related to the structural and material aspects of concrete; and
4. Explain the behavior of various high-performance cementitious composites.

A New Model for Load-Deflection Prediction of Beams Reinforced with FRP Bars—1:30 pm
Slamah Krem, Postdoctoral Researcher, University of Waterloo, Waterloo, ON, Canada; **Khaled Soudki**, University of Waterloo

Bond Behavior of Reinforcing Bars in Ultra-High-Performance Concrete—1:50 pm
Jiqiu Yuan, Project Engineer, Professional Service Industries, Turner-Fairbank Highway Research Center, McLean, VA; **Benjamin Graybeal**, Turner-Fairbank Highway Research Center

Capturing Out-of-Plane Shear Failures in the Analysis of Reinforced Concrete Shell Structures—2:10 pm
Trevor D. Hrynyk, Assistant Professor, University of Texas at Austin, Austin, TX; **Frank J. Vecchio**, University of Toronto

Experimental Research on Seismic Behavior of a Novel Composite RCS Frame System—2:30 pm
Jinjie Men, Associate Professor, Xi'an University of Architecture and Technology, Xi'an, China

Strengthening Shear-Deficient Reinforced Concrete Beams with Flexural CFRP Plates—2:50 pm
Jamal Abdalla, Professor, American University of Sharjah, Sharjah, UAE; **Waleed Nawaz** and **Rami Hawileh**, American University of Sharjah; **Elias Seqan**, American University of of Dubai

Reliability-Based Probabilistic Damange Control Approach for Seismic Deisgn of Bridge Columns—3:10 pm
Amarjeet Saini, PhD Candidate, University of Nevada, Reno, Reno, NV; **M. Saiid Saiidi**, Professor, University of Nevada, Reno, Reno, NV

2 AIA/CES LU

Tuesday, March 25, 2014 1:30 pm – 3:30 pm

The ACI 562 Code, Part 1 of 2—CARSON 3

Sponsored by ACI Committee 562, Evaluation, Repair, and Rehabilitation of Concrete Buildings

Session Co-Moderators:
Marjorie M. Lynch
President
Lynch & Ferraro Engineering, Inc.
Oviedo, FL

Keith Kesner
Senior Associate
Whitlock Dalrymple Poston & Associates, P.C.
New York, NY

The development, approval, and adoption of the ACI 562 Code for Evaluation, Repair and Rehabilitation of Existing Concrete Structures represents a milestone in the concrete repair industry. For the first time, a code has been developed to specifically address and provide code requirements for the repair of existing concrete structures. The session will describe key features of ACI 562, describe the process for adoption of ACI 562 into general building codes, and present the process for ongoing development of ACI 562.
By attending this session, attendees will be able to:
1. Recognize the reasons for the development of a concrete repair code;
2. Understand how the ACI 562 works with general building codes and other ACI codes;
3. Understand the basic process of using the ACI 562 code on a repair project; and
4. Explain how the ACI 562 code will change repair practice.

History and Background of the ACI 562 Code—1:30 pm
Lawrence F. Kahn, Professor, Georgia Institute of Technology, Atlanta, GA

Chapter 1-The ACI 562 Code—2:00 pm
Gene R. Stevens, Principal, JR Harris & Co Structural Engineers, Denver, CO

The Building Official's Perspective—2:30 pm
Constadino (Gus) Sirakis, Executive Director of Technical Affairs, NYC Buildings, New York, NY

Evaluation of Existing Concrete Structures—3:00 pm
Carl J. Larosche, Principal, Wiss, Janney, Elstner Associates, Inc., Austin, TX

2 AIA/CES LU

Tuesday, March 25, 2014 2:00 pm – 3:00 pm

The Reorganized ACI 318-14: Benefits, Rationale, and Availability—CARSON 4

Session Moderator: Randall W. Poston
Principal
Whitlock Dalrymple Poston & Associates, P.C.
Austin, TX

ACI's 318, "Building Code Requirements for Structural Concrete," covers the materials, design, and detailing of structural concrete. This reorganization will benefit the entire design and construction community by making the code more intuitive and easier to use, thus providing increased confidence that a design satisfies all code requirements.

Join us for an hour presentation titled "The Reorganized ACI 318-14: Benefits, Rationale, and Availability" to better understand how the updated code will benefit you professionally, the rationale behind the improvements, and when it will be available for public comment and purchase. Following the presentation, the ACI Staff Engineer will open the floor for a question-and-answer portion, during which they will elaborate on certain topics as they pertain to the audience.

Contractors' Day Session: Concrete for Challenging Applications—CARSON 1

Sponsored by the ACI Northern California and Western Nevada Chapter

Session Moderator: Daniel L. Gotta
Project Manager
Wood Rodgers, Inc.
Reno, NV

Tunnels and bridges present unique construction challenges to contractors and designers. These challenges are magnified when the project is in a scenic area, an environmentally sensitive area or wildlife habitat. Architectural concrete presents unique challenges to contractors, especially with regard to formwork design and construction to achieve a "perfect look." Hear from construction managers and contractors how they overcame these challenges. By attending this session, attendees will be able to:

1. Understand the durability requirements for concrete in tunnels and a unique bridge in California;
2. Understand the use of shotcrete as an element of the initial ground support for the excavation of the new Caldecott Tunnel;
3. Describe the precautions necessary for tunnel construction on an environmentally sensitive project site; and
4. Understand how the formwork was planned, developed, and implemented for an intricate, complicated, multi-story concrete frame building.

Shotcrete in the New Caldecott Tunnel—4:00 pm
Lawrence J. Totten, President, Superior Gunite Companies, San Leandro, CA

Devil's Slide Tunnel on California's Scenic Highway 1—4:30 pm
Roberto Luena, Area Construction Manager, Office of Structure Construction, California Department of Transportation, Sacramento, CA

Antler's Crossing Bridge—5:00 pm
Mark Darnall, Senior Bridge Engineer, California Department of Transportation, Shasta Lake, CA

Architectural Formwork for the Guam Naval Hospital—5:30 pm
Eric Peterson, Construction Manager, Webcor Concrete, Alameda, CA

2 AIA/CES LU

Open Paper Session, Part 2 of 2—CARSON 2

Sponsored by ACI Committee 123, Research and Current Developments

Session Co-Moderators: Piotr Paczkowski
Structural Engineer
Parsons Brinckerhoff
Tampa, FL

Eric R. Giannini
Assistant Professor
The University of Alabama
Tuscaloosa, AL

The session description and learning objectives for this session may be found in the Part 1 listing; see page 103.

Statistical Approach for Characterizing Individual and Interaction Effect of Multiple Chemical Admixtures on Pervious Concrete Paste—4:00 pm
Betiglu E. Jimma, PhD Candidate, Clemson University, Clemson, SC; **Prasad Rangaraju**, Clemson University

The Effect of Calcination on the Reactivity of Natural Seolites Used as Supplementary Cementitious Materials—4:20 pm
Lisa E. Burris, Graduate Student, University of Texas at Austin, Austin, TX; **Maria C. G. Juenger**, University of Texas at Austin

Investigating the Causes of ASR in an Interstate Barrier Wall—4:40 pm
Richard A. Deschenes, Graduate Research Assistant, University of Arkansas, Fayetteville, AR; **Cameron D. Murray** and **W. Micah Hale**, University of Arkansas

Study of the Feasibility of Using Combined Glass Particle Sizes and Types in Concrete as Partial Cement Replacement—5:00 pm
Kyle A. Riding, Associate Professor, Kansas State University, Manhattan, KS; **Mohammedreza Mirzahosseini**, Kansas State University

Effect of Wet Curing Durations on Mechanical Properties and Pore Structure of High Performance Concrete—5:20 pm
David Rodriguez, Graduate Student, Oregon State University, Corvallis, OR; **Tengfei Fu** and **Jason H. Ideker**, Oregon State University

Petrographic Analysis of the Aggregate Particles Used in the Accelerated Mortar Bar Test for Evaluating the Potential Reactivity of Recycled Concrete Aggregate—5:40 pm
Sean Beauchemin, Graduate Student, Laval University, Quebec, QC, Canada; **Benoit Fornier**, Laval University

2 AIA/CES LU

Tuesday, March 25, 2014 4:00 pm – 6:00 pm

The ACI 562 Code, Part 2 of 2—CARSON 3

Sponsored by ACI Committee 562, Evaluation, Repair, and Rehabilitation of Concrete Buildings

Session Co-Moderators: Marjorie M. Lynch
President
Lynch & Ferraro Engineering, Inc.
Oviedo, FL

Keith Kesner
Senior Associate
Whitlock Dalrymple Poston & Associates, P.C.
New York, NY

The session description and learning objectives for this session may be found in the Part 1 listing; see page 104.

Structural Design Requirements for Concrete Repair—4:00 pm
Eric L. Edelson, Vice President, Edelson Consulting Group, LLC, Potomac, MD

Durability Requirements in ACI 562—4:30 pm
Fred R. Goodwin, Fellow Scientist, BASF Construction Chemicals, Beachwood, OH

Chapters 9 and 10-Construction and Quality Assurance—5:00 pm
Jay H. Paul, Senior Principal, Klein & Hoffman Inc., Chicago, IL

ACI 563-Specifications for Repair—5:30 pm
Tracy D. Marcotte, Principal, CVM, King Of Prussia, PA

2 AIA/CES LU

Tuesday, March 25, 2014 4:00 pm – 6:00 pm

UHPC Innovation in Seismic Performance—CARSON 4

Sponsored by ACI Committees 239, Ultra-High Performance Concrete, and 341, Earthquake-Resistant Concrete Bridges

Session Moderator: Kay Wille
Assistant Professor
University of Connecticut
Storrs, CT

Ultra-high-performance concrete (UHPC) is currently seen as the most valuable material innovation in the construction industry in the twenty-first century. Although research groups overseas—such as in Germany, France, and Japan—have extensively studied the behavior of UHPC material and its structural performances, this knowledge has not been transferred to the United States. One of the most critical knowledge gaps that needs to be filled in the United States is the seismic performance of structures made, strengthened, or retrofitted

with UHPC. UHPC is a preferable construction material to sustain seismic loading due to its superior strength, durability, ductility, and energy dissipation capacity. The urgent need for strengthening and retrofitting the aging U.S. infrastructure will potentially be addressed by using UHPC in structural elements or for structural element connections—the weakest and most susceptible points in modular structures exposed to seismic loading. The session will invite national and international research groups to share their knowledge in UHPC material and structural performances under seismic loading.

Sharing academic knowledge and practical experiences about UHPC and spreading the information will facilitate the acceptance and application of the material in U.S. construction. This session fits naturally into the theme "Concrete Endures." Speakers have been selected to cover academic research, on-site experiences, material properties, and structural performances from the United States and countries overseas.

By attending this session, attendees will be able to:

1. Learn about UHPC material properties under seismic loading;
2. Recognize the seismic performance and resiliency of UHPC structures;
3. Learn about innovations to enhance the seismic performance and link laboratory investigations with on-site applications; and
4. Realize the importance of seismic resistance of construction materials for the nation's infrastructure.

UHPC-Filled Duct Connections for Accelerated Bridge Construction of Bridge Columns in High Seismic Regions—4:00 pm
Mostafa Tazarv, PhD Student, University of Nevada, Reno, Reno, NV; **M. Saiid Saiidi**, University of Nevada, Reno

Seismic Behavior of UHPC: Flexural Tensile Strength of UHPC Subjected to Cyclic and Reversed Loading—4:17 pm
Dominique Corvez, Head of UHPC/Ductal North America, LaFarge North America, Mississauga, ON, Canada; **Karl-Heinz Reineck**, University of Stuttgart

Crack Control and Ductility of Reinforced UHPFRC Structures Answering to the Demand in Seismic Engineering—4:34 pm
Francois Toutlemonde, IFSTTAR, Champs sur Marne, France

Development Lengths of Reinforcing bar in UHPC Field-Cast Connections—4:51 pm
Benjamin Graybeal, Research Structural Engineer, Federal Highway Administration, McLean, VA

UHPFRCC for Seismic Upgrading/Retrofitting of Coupling Beams—5:08 pm
Liberato Ferrara, Assistant Professor, Politecnico di Milano, Milano, Italy; **Marco Di Prisco**, Politecnico di Milano

Seismic Response of Ultra-High-Performance Concrete-Filled FRP Tube Columns—5:25 pm
Pedram Zohrevand, Student, Florida International University, Miami, FL; **Amir Mirmiran**, Florida International University

Strengthening Bridge Piers Using Ultra-High-Performance Fiber-Reinforced Concrete—5:42 pm
Bruno Massicotte, Professor, École Polytechnique Montréal, Montreal, QC, Canada

2 AIA/CES LU

Tuesday, March 25, 2014 5:30 pm – 6:30 pm

Faculty Network Reception—NEVADA FOYER

Faculty members and students are invited to attend this informal reception. During this time, you will have an opportunity to exchange ideas and network. Light hors d'oeuvres and a cash bar will be available.

Tuesday, March 25, 2014 6:30 pm – 8:00 pm

Concrete Mixer—SILVER STATE PAVILION

Join ACI attendees and guests for an evening of networking, entertainment, and great food during the Concrete Mixer. Heavy hors d'oeuvers will be served and your drink tickets for the evening will be with your attendee badge.

✓Reno City Tour and Shuttle—Depart Main Lobby
$25.00 U.S. per person
9:00 am departure; 12:30 pm return
10:00 am departure; 1:30 pm return

On the way to downtown Reno, guests will be given a narrated tour highlighting San Rafael Park, UNR, the Virginia Street "Reno" arch, old churches, the downtown park/kayak run, Lear Theatre, the court house, Pioneer Theatre Auditorium, and the "old" Reno arch. Guests will be dropped off at Harrah's Casino Hotel and picked up for their return to the Grand Sierra Resort. Guests will have approximately 2.5 hours on their own to enjoy the sights of Reno. It is recommended that participants wear warm clothing and comfortable walking shoes for this tour.

Tour tickets may be purchased up to 24 hours prior to the event, based on availability. ***Tours are nonrefundable****. All tours depart from the main lobby doors.*
✓ = Separate fee required

Notes

Session Attendance Tracking Form for the ACI Spring 2014 Convention

Reno, NV
March 23-27, 2014

Use this form to track your attendance at ACI sessions. This form may be accepted by state boards that allow self-reporting of continuing education activities as evidence of participation. In most cases, 1 contact hour is equal to 1 Professional Development Hour (PDH). Check with your state board for acceptance criteria.

Instructions: Fill in your name, e-mail address, and telephone number below. Check off each session you attend. If a state where you are licensed requires a certificate of attendance, please record the three PDH codes given throughout each session in the boxes provided. After you have attended your final session, submit this form to the registration desk located in the Nevada Room at the Grand Sierra Resort. You may also fax this form to ACI at +1.248.848.3792, or e-mail it to Mike Tholen (mike.tholen@concrete.org). You must attend the entire session and sign this form to receive your certificate(s). Total the number of PDH credits you earned for each day at the end of this form.

Name (please print): _____
By my signature, I attest that I have attended the entire duration of each of the sessions indicated on this form: _____(signature)
E-mail address (please print): _____
Telephone number: _____

If you are a licensed Professional Engineer in Florida and would like ACI to report your hours to the Florida state board or you are an Architect and would like ACI to report your hours to AIA, please provide your license number below.

Florida PE No.: _____
Architecture license No.: _____

Sunday, March 23, 2014

		Three PDH Codes for the selected session:
1:00 PM-3:00 PM (Select one session)	**2 PDH**	
❑ Concrete Repair Guide: New Edition, Part 1 of 2 (546/546-C)		_____
❑ Seismic Assessment of Existing Reinforced Concrete Buildings – New Developments, Part 1 of 3 (369)		_____
❑ Thaumasite Sulfate Attack on Concrete, Part 1 of 2 (201)		_____
3:30 PM-5:30 PM (Select one session)	**2 PDH**	_____
❑ Seismic Assessment of Existing Reinforced Concrete Buildings – New Developments, Part 2 of 3 (369)		_____
❑ Structural Safety and Reliability (343/348)		
❑ Thaumasite Sulfate Attack on Concrete, Part 2 of 2 (201)		_____

Sunday, March 23, 2014 cont.

8:00 PM-10:00 PM **2 PDH**

- ❑ Hot Topic Session: Moisture in Concrete Slabs (HTC)

Three PDH Codes for the selected session:

Monday, March 24, 2014

8:30 AM-10:30 AM (Select <u>one</u> session) **2 PDH**

- ❑ Hydration of Low Portland Cement Binders: Industry Experience and Needs, Part 1 of 2 (231/232/233/236)
- ❑ Research in Progress, Part 1 of 2 (123)
- ❑ Unconventional Reinforced Concrete Bridge Columns, Part 1 of 2 (343/441)

11:00 AM-1:00 PM (Select <u>one</u> session) **2 PDH**

- ❑ Hydration of Low Portland Cement Binders: Recent Advances in Experiments and Modeling, Part 2 of 2 (231/232/236)
- ❑ Monitoring for Cold Weather Concreting (306)
- ❑ Research in Progress, Part 2 of 2 (123)

1:30 PM-3:30 PM (Select <u>one</u> session) **2 PDH**

- ❑ Concrete Repair Guide: New Edition, Part 2 of 2 (546)
- ❑ Current Practices in Online Learning (S802)
- ❑ Unconventional Reinforced Concrete Bridge Columns, Part 2 of 2 (343/441)

4:00 PM-6:00 PM (Select <u>one</u> session) **2 PDH**

- ❑ Delayed Ettringite: Causes, Evaluation of Existing Structures, and Prevention (201/231)
- ❑ Proportioning of Mixtures for Concrete Pavements (211/325)
- ❑ Segregation: Can't We All Just Get Along? (237/238)

6:30 PM-8:30 PM (Select <u>one</u> session) **2 PDH**

- ❑ 123 Forum: Non-Destructive Testing of Concrete—Capabilities and Limitations (123)

Tuesday, March 25, 2014

Three PDH Codes for the selected session:

8:30 AM-10:30 AM (Select <u>one</u> session) 2 PDH

- ❑ Contractors' Day Session: Concrete Pavements that Endure (Northern California and Western Nevada Chapter) _____
- ❑ Repair Material Selection Guide: New Edition, Part 1 of 2 (546-B) _____
- ❑ Seismic Assessment of Existing Reinforced Concrete Buildings – New Developments, Part 3 of 3 (369) _____

11:00 AM-1:00 PM (Select <u>one</u> session) 2 PDH

- ❑ An Overview on Specifications for Environmental Concrete Structures (350) _____
- ❑ Mobile Technology: A Sure Winner (118) _____
- ❑ Repair Material Selection Guide: New Edition, Part 2 of 2 (546) _____

_____

1:30 PM-3:30 PM (Select <u>one</u> session) 2 PDH

- ❑ Contractors' Day Session: Bridges that Endure (Northern California and Western Nevada Chapter) _____
- ❑ Open Paper Session, Part 1 of 2 (123) _____
- ❑ The ACI 562 Code, Part 1 of 2 (562)

4:00 PM-6:00 PM (Select <u>one</u> session) 2 PDH _____

- ❑ Contractors' Day Session: Concrete for Challenging Applications (Northern California and Western Nevada Chapter) _____
- ❑ Open Paper Session, Part 2 of 2 (123) _____
- ❑ The ACI 562 Code, Part 2 of 2 (562)
- ❑ UHPC Innovation in Seismic Performance (239/341)

Daily PDH Totals:

Total Completed on Sunday, 3/23/14 _____
Total Completed on Monday, 3/24/14 _____
Total Completed on Tuesday, 3/25/14 _____
Total Number of PDHs Completed _____

Please submit this form to the registration desk, located in the Nevada Room at the Grand Sierra Resort, at the conclusion of the final session you attend. You may also fax this form to ACI at +1.248.848.3792, or e-mail to Mike Tholen (mike.tholen@concrete.org).

The deadline to submit this form to ACI is April 14, 2014. You will receive your certificate(s) by April 28, 2014. Please ensure you have filled out the correct e-mail address on this form, as that is where your certificate(s) will be sent.

Notes

SAVE THE DATE

FALL 2014 CONVENTION
OCTOBER 26-30, 2014

Washington Hilton • Washington, DC

Thank you for attending the ACI Spring 2014 Convention

Future ACI Conventions

Fall 2014
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Washington, DC

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April 12-15, 2015
Marriott & Kansas City
Convention Center
Kansas City, MO

Fall 2015
Constructability
November 8-12, 2015
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