aci Fall 2016 | Philadelphia

The Concrete Convention and Exposition

Program Book

October 23-27, 2016

Philadelphia Marriott Downtown | Philadelphia, PA

Convention Sponsors

Sponsors are listed as of 9/26/16

Convention Host Sponsor

Eastern Pennsylvania and Delaware Chapter – ACI

George Washington Sponsor

BAKER CONCRETE CONSTRUCTION expect more

Martha Washington Sponsor

CMT services group

Benjamin Franklin Sponsors

BASF Corporation
CVM and CVMNEXT Construction
The Euclid Chemical Company
GCP Applied Technologies
Hycrete, Inc.
Lehigh Hanson — Lanyard Sponsor
Pennoni Associates Inc.
Theodore and Debra Smulski

Abigail Adams Sponsors

Concrete Contractors Association
Great Eastern Technologies, LLC
Wiss, Janney, Elstner Associates, Inc.

Thomas Jefferson Sponsors

AECOM
Anonymous ACI Member
Applied Forensic Testing & Research
Carolinas Chapter – ACI
Delaware Valley Concrete Co., Inc.
General Building Contractors Association
Greater Michigan Chapter – ACI
The Harman Group, Inc.
Keast & Hood Structural Engineers
National Capital Chapter – ACI
New Jersey Chapter – ACI
Pittsburgh Area Chapter – ACI
Providence Engineering Corporation
Schnabel Engineering
Timothy Haahs & Associates, Inc.

Betsy Ross Sponsors

Arizona Chapter – ACI
Central Ohio Chapter – ACI
Central Texas Chapter – ACI
Concrete Industry Board, New York City Chapter – ACI
DEDC, LLC
Georgia Chapter – ACI
Greater Miami Valley Chapter – ACI
Houston Chapter – ACI
Illinois Chapter – ACI
Intermountain Chapter – ACI
Kansas Chapter – ACI
Larsen & Landis
Las Vegas Chapter – ACI
Louisiana Chapter – ACI
Maryland Chapter – ACI
Missouri Chapter – ACI
New Mexico Chapter – ACI
Northeast Ohio Chapter – ACI
O'Donnell & Naccarato, Inc.
Ontario Chapter – ACI
Pennsylvania Aggregates and Concrete Association
PKF-Mark III, Inc.
Puerto Rico Chapter – ACI
Rocky Mountain Chapter – ACI
San Diego Chapter – ACI
Sika Corporation
Silica Fume Association
Southern California Chapter – ACI
Venzie, Phillips & Warshawer

John Hancock Sponsors

Archer & Buchanan Architecture, Ltd
A.W. Lookup Corporation
Engelman Construction, Inc.
KAKS & Company, LLC
MJ Paul
Quad Construction Company
Silvi Concrete

Pier Luigi Nervi. Art and Science of Building | The traveling exhibition

Buzzi Unicem USA
Dome Technology
Domtec International
ES2, Engineering System Solutions
FabricSpan
South Industries
ZZ Consulting

Eastern Pennsylvania and Delaware Chapter Convention Committee

Committee Co-Chairs
Gary M. Horninger, Schnabel Engineering
Theodore J. Smulski, DEDC, LLC

Treasurer
Al Meyer, Harman Group

Exhibits
Jim Preskenis, Premier CPG
Krishan Saini, KAKS & Company, LLC

Sponsorship Fundraising
Michael Boyle,
Applied Forensic Testing & Research

Secretary
Debra R. Smulski, EPDACI

Publicity
Matt Marchisello

Guest Program
Linda VanOcker

Contractors' Day
Stephen Lane

Technical Program
Sun-Hee Hwang

Student Program
Vicki Brown
Anlee Orama

Social Events
Barney Heller
Carl Sparano

CC Liaison
Hani Nassif

Construction and Sustainability
Stephen Lane

At Large
Connie Horninger
William J. Lyons III
Mohamed Mahgoub
Michael Padula
Lizanne Pepin
Larry Rowland, Lehigh White Cement Company

Table of Contents

American Concrete Institute Board of Direction

President
Michael J. Schneider

Vice President
Khaled Awad
David Lange

Directors
JoAnn P. Browning
Cesar A. Constantino
Alejandro Duran-Herrera
Frances T. Griffith
Augusto H. Holmberg
Doug R. Hooton
Kimberly Kayler
Neven Krstulovic-Opara
Fred Meyer
Antonio Nanni
Michael M. Sprinkel
Roberto Stark

Past Presidents
Sharon L. Wood
William E. Rushing Jr.
Anne M. Ellis

Executive Vice President
Ron Burg

ACI President's Welcome

ACI Members and Guests:

It is with great pleasure that I welcome you to Philadelphia. Thank you for being a part of The Concrete Convention and Exposition. I hope that in attending this convention, you accomplish the goals you set forth.

We have a very exciting, jam-packed week planned for you, including over 300 committee meetings, 40+ technical sessions, and networking events. Convention highlights include the Student Mortar Workability Competition, the Excellence in Concrete Construction Awards Gala, and the International Forum. Please join me and other attendees at the Concrete Mixer on Tuesday. The Chapter planned an entertaining evening at the National Constitution Center. Mingle with convention attendees while learning about America's rich history. I urge you to make the most out of your time here and attend all of these events.

The Eastern Pennsylvania and Delaware Chapter Convention Committee has put a great deal of effort into developing a convention program that is both memorable and productive. Please join me in thanking them by stopping by the host chapter desk during your time at the ACI Convention.

It is an honor to be here and to share this week with you. I hope you enjoy the ACI Convention and all that Philadelphia has to offer. Thank you for attending the convention and for your continued involvement with ACI.

Kind Regards,

Michael J. Schneider
ACI President

ACI Sustaining Members

ACS Manufacturing Corporation

Advanced Construction Technology Service

American Society of Concrete Contractors

Ash Grove Cement Co.

Baker Concrete Construction, Inc.

Barrier-1 Inc.

BASF Corporation

Bauman Landscape & Construction

BCS

Braun Intertec Corporation

Buzzi Unicem USA

Cantera Concrete Company

CHRYSO, Inc.

Concrete Reinforcing Steel Institute

CTLGroup

Curecrete Distribution Inc.

Dayton Superior Corporation

Ductilcrete Slab Systems, LLC

The Euclid Chemical Co.

Fibercon International, Inc.

Future Tech Consultants

GCP Applied Technologies

Headwaters Resources, Inc.

KCS Construction LLC

Keystone Structural Concrete

Kleinfelder

Kryton International Inc.

LafargeHolcim (US) Inc.

Lithko Contracting, Inc.

Mapei

Meadow Burke

W. R. Meadows, Inc.

Metromont Corporation

MTL

Multiquip

Municipal Testing

North S.Tarr Concrete Consulting PC

Oztec Industries, Inc.

Pacific Structures

Penetron International Ltd.

Portland Cement Association

Precast/Prestressed Concrete Institute

Riggs Contracting

S. K. Ghosh Associates, Inc.

Saudi Building Code National Committee

Seretta Construction Inc.

Sika Corp.

Specialty Products Group, Inc.

STRUCTURAL

Structural Services, Inc.

Tekna Chem

TWC Concrete Services

Wacker Neuson

General Information

For detailed program information and program changes, download the Convention App.

Convention App

Download the ACI Convention App and have all the information you need for the week ahead at your fingertips. Updated schedules, exhibitor and sponsor information, and more are all available through the app. Search "**ACI Convention**" on your Apple or Android device. This is the same app that was used at the spring convention in Milwaukee, WI, so if you have it already, you don't have to download anything!

Schedule Changes

Cancellations, additions, and location changes to the convention schedule will be posted daily on a monitor in the exhibit area, as well as in the convention app.

Exhibit Hall Refreshments—FRANKLIN HALL

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
Sunday – Tuesday	Soda	1:00 pm – 4:00 pm

ACI Store—FRANKLIN HALL

Visit the ACI Store to receive 10% off ACI publications. To learn more about the new ACI membership benefits and how to become a member, visit the ACI Store. The ACI Store is open during the following hours:

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

ACI Resource Pavilion—FRANKLIN HALL

ACI has many resources to offer convention attendees, and now they are all available in one central location! The ACI Resource Pavilion will feature the Cyber Café, as well as an information center for ACI services such as ACI Continuing Education and the ACI Foundation. ACI's online job search engine is specifically designed to target jobs in the concrete industry. Browse the job postings or post a new job right at the convention! Companies will also have a place to drop off flyers about current job openings. Stop by the pavilion in the exhibit area to learn about all that ACI has to offer 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

Looking for Exercise?

Meet up with other ACI attendees in the MARRIOTT LOBBY before heading out for your morning run or walk. Local area maps are available at the hotel concierge desk. All are welcome.

Sunday – Wednesday	5:00 am and 6:00 am

Morning yoga classes will be offered in the GRAND BALLROOM FOYER for those who are interested in putting a little balance into a hectic week. Led by ACI Marketing Committee Chair and yoga teacher Kimberly Kayler. This intro to yoga class requires no experience. Registration is not required and a limited quantity of yoga mats will be provided.

Monday – Wednesday	6:00 am – 6:45 am

**Please consult your physician to determine if you are fit for this type of activity. Run/walk at your own risk.*

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 **www.aciconvention.org/handouts** 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.

Suitcasing

Attendees, sponsors, or exhibitors found to be "suitcasing" (soliciting business in session and committee meeting rooms, aisles, or the booth of another exhibitor) will be asked by staff to cease this practice. Should this continue, they will be asked to leave the show floor immediately and will forfeit any exhibitor points earned for that show.

Local Information—FRANKLIN HALL

The Eastern Pennsylvania and Delaware Chapter Convention Committee members will be happy to answer general convention questions and provide information about the local area. Stop by the information desk during the following hours:

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

Philadelphia Marriott Downtown Dining

13 Restaurant
Hours: Monday – Sunday: 6:30 am – 10:00 pm

Circ
Hours: Monday – Sunday: 5:00 pm – 2:00 am

Starbucks
Hours: Saturday – Sunday: 5:30 am – 11:00 pm;
Monday – Friday: 5:00 am – 11:00 pm

Room Service
Hours: Monday – Sunday: 6:00 am – 1:00 am

General Information

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.

Earn CEUs/PDHs for Session Attendance

Attend the entire duration of a session and record the codes given out during the session using the spaces provided next to the session details in the program book. In most cases, one contact hour is equal to one Professional Development Hour (PDH). Check with your state board for acceptance criteria. **Please note: ACI does not track and cannot provide documentation confirming attendee participation or attendance at any ACI session held during the convention**.

For attendance certificates:

1. Visit **concrete.org** and sign in.
2. Hover over **My ACI** and click on **My ACI CEU/PDH**.
3. Select the convention, day, and title of the session for which you are submitting session codes.
4. After successfully submitting the session codes, your certificate will be available under the session title.

If you earned a certificate for a session and would like ACI to report your CEUs/PDHs to the Florida Board of Professional Engineers or AIA, e-mail your Professional Engineer's or Architecture license number to Eva Korzeniewski at **emk@concrete.org**.

Speaker Ready Room—REGISTRATION DESK 1

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
Wednesday	7:00 am – 2:00 pm

All speakers are requested to check in at the Speaker Ready Room 1 day prior to their session to ensure that their presentations have been uploaded and work properly on the ACI computers.

The Concrete Convention and Exposition

Spring 2017 | Detroit, MI—FRANKLIN HALL

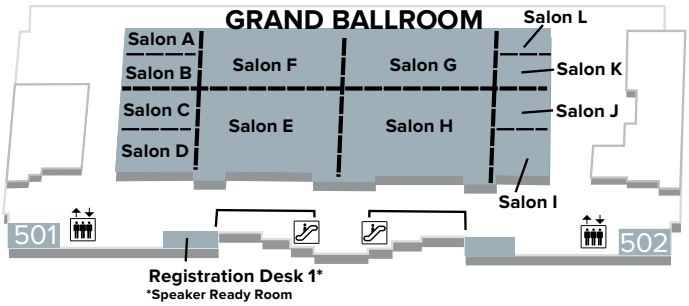
Mark your calendars for The Concrete Convention and Exposition in Detroit, MI, March 26-30, 2017, at the Detroit Marriott at the Renaissance Center. Stop by the Greater Michigan Chapter Convention Committee Desk Saturday through Tuesday to learn more about the convention!

Where's That Meeting Room?

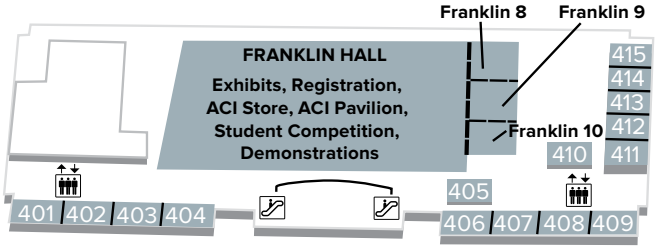
Room Name	Location
301	Level 3
302	Level 3
303	Level 3
304	Level 3
305	Level 3
306	Level 3
307	Level 3
308	Level 3
309	Level 3
310	Level 3
401	Level 4
402	Level 4
403	Level 4
404	Level 4
405	Level 4
406	Level 4
407	Level 4
408	Level 4
409	Level 4
411	Level 4
412	Level 4
414	Level 4
415	Level 4
501	Level 5
502	Level 5
CIRC LOUNGE	Lobby Level
FRANKLIN 10	Level 4
FRANKLIN 8	Level 4
FRANKLIN 9	Level 4
FRANKLIN HALL	Level 4
GRAND BALLROOM SALON A	Level 5
GRAND BALLROOM SALON B	Level 5
GRAND BALLROOM SALON C	Level 5
GRAND BALLROOM SALON D	Level 5
GRAND BALLROOM SALON E	Level 5
GRAND BALLROOM SALON F	Level 5
GRAND BALLROOM SALON G	Level 5
GRAND BALLROOM SALON H	Level 5
GRAND BALLROOM SALON I	Level 5
GRAND BALLROOM SALON J	Level 5
GRAND BALLROOM SALON K	Level 5
GRAND BALLROOM SALON L	Level 5
INDEPENDENCE BALLROOM 1	Headhouse Tower (Level 3)
INDEPENDENCE BALLROOM 2	Headhouse Tower (Level 3)
INDEPENDENCE BALLROOM 3	Headhouse Tower (Level 3)
LIBERTY BALLROOM A	Headhouse Tower (Level 3)
LIBERTY BALLROOM B	Headhouse Tower (Level 3)
LIBERTY BALLROOM C	Headhouse Tower (Level 3)
REGISTRATION DESK 1	Level 5

Hotel Maps

Level 5

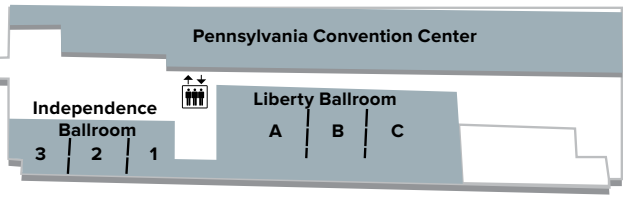


Level 4



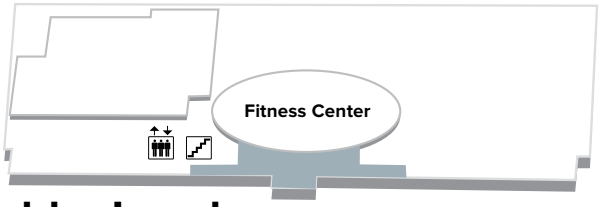
Level 3

Headhouse Tower (Level 3)

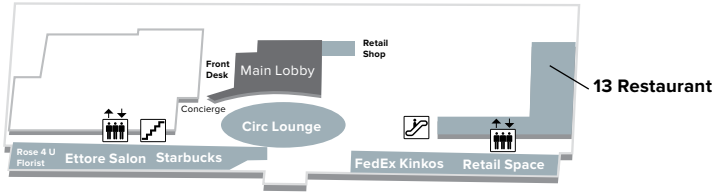


Bridge to Independence Ballroom, Liberty Ballroom & Headhouse Tower

Mezzanine



Lobby Level



Exhibitors

FRANKLIN HALL

ACI would like to thank all exhibitors for their participation in and support of The Concrete Convention and Exposition. To learn more about each of these exhibitors, stop by their booth or visit the convention app.

Exhibit Hours
Sunday – Tuesday 8:00 am – 5:00 pm

Airmatic Inc. www.airmatic.com	**Booth #28**
Aquafin, Inc. www.aquafin.net	**Booth #33**
BASF Corporation www.master-builders-solutions.basf.us	**Booth #45**
Burgess Pigment Company www.optipozz.com	**Booth #16**
Buzzi Unicem USA www.buzziunicemusa.com	**Booth #46**
Calmetrix www.calmetrix.com	**Booth #44A**
Cervenka Consulting s.r.o www.cervenka.cz	**Booth #29**
CMEC www.cmec.org	**Booth #42**
CMT Services Group www.cmtservicesgroup.com	**Booth #2**
CoGri USA Inc. www.cogriusa.com	**Booth #35**
Concrete Cares www.concretecares.com	**Booth #56**
Composite Rebar Technologies www.hollowrebar.com	**Booth #27**
Concrete Sealants www.conseal.com	**Booth #26**
Con-Cure, LLC www.concure.com	**Booth #53**
Controls Group USA, Inc. www.controls-usa.com	**Booth #34**
CRC Press/Taylor & Francis Group www.crcpress.com	**Booth #13**
CRSI www.crsi.org	**Booth #17**
Decon USA Inc. www.deconusa.com	**Booth #14**
Domtec International www.domtec.com	**Booth #8**
Echem Consultants LLC www.e2chem.com	**Booth #6**
ELE International www.ele.com	**Booth #44**
The Euclid Chemical Company www.euclidchemical.com	**Booth #36**
FlackTek, Inc. www.speedmixer.com	**Booth #37**
FORTEC STABILIZATION SYSTEMS www.fortecstabilization.com	**Booth #31**
Germann Instruments, Inc. www.germann.org	**Booths #20 & 21**
Giatec Scientific Inc. www.giatec.ca	**Booth #22**
Gilson Company Inc www.globalgilson.com	**Booth #10**
GCP Applied Technologies www.gcpat.com/construction/en-us	**Booth #12**
Headed Reinforcement Corp. (HRC) www.hrc-usa.com	**Booth #47**
HILTI www.us.hilti.com	**Booth #7**
Hughes Brothers, Inc. www.aslanfrp.com	**Booth #23**
Hycrete, Inc. www.hycrete.com	**Booth #9**
Incon www.incon.ca	**Booth #5**
International Concrete Repair Institute www.icri.org	**Booth #40**
J. Dylan Concrete www.jdylanconcrete.com	**Booth #48A**
Kryton International Inc. www.kryton.com	**Booth #25**
Lehigh Hanson www.lehighhanson.com	**Booth #24**
Myers Associates www.myerstest.com	**Booth #15**
Nickel Institute www.nickelinstitute.org	**Booth #30**
Peikko Group www.peikkousa.com	**Booth #18**
Pennoni Associates www.pennoni.com	**Booth #47A**
Pentair www.erico.pentair.com	**Booth #11**

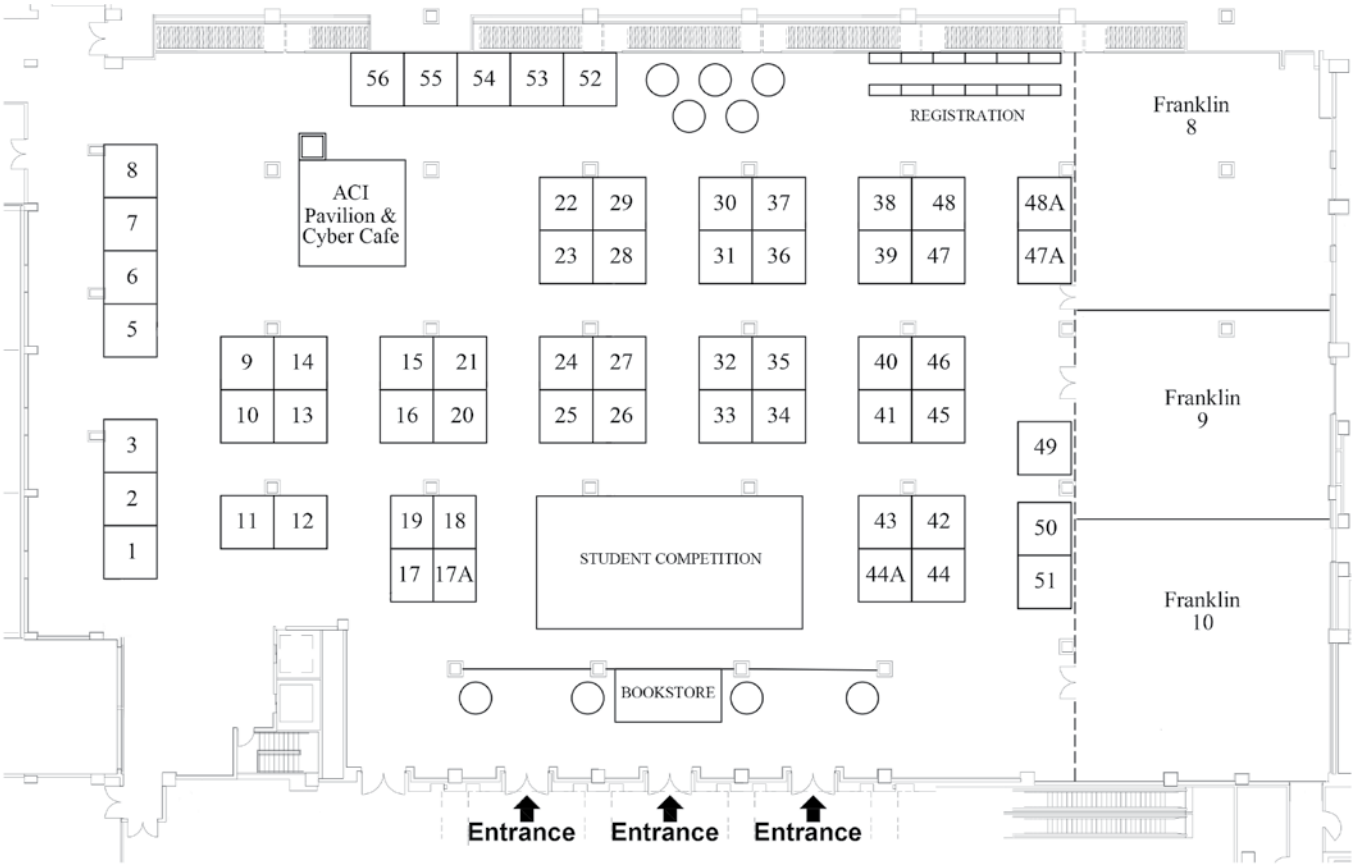
Exhibitors

Polypropylene Fiber Ind. www.polyfibers.com	**Booth #39**	**Silica Fume Association** www.silicafume.org	**Booth #41**
Portland Cement Association www.cement.org	**Booth #52**	**STRUCTURAL TECHNOLOGIES** www.structuraltechnologies.com	**Booth #43**
Premier Magnesia CPG www.premiercpg.com	**Booth #19**	**Vector Corrosion Technologies** www.vector-corrosion.com	**Booth #49**
Premier Tech Chronos www.ptchronos.com/en-us/	**Booth #17A**	**Vexcon Chemicals** www.vexcon.com	**Booth #3**
Proceq USA, Inc. www.proceq.com	**Booth #1**	**Wagners EFC** www.wagner.com.au	**Booth #32**
Radarview/UCT www.radarviewllc.com	**Booth #48**	**Xypex Chemical Corporation** www.xypex.com	**Booth #54**
Sika Corporation www.usa.sika.com	**Booths #50 & 51**	**Zircon Corporation** www.zircon.com	**Booth #38**

Exhibitors are listed as of 9/26/16.

Exhibitor Floor Plan

FRANKLIN HALL



Daily Program

For detailed program information and program changes, download the Convention App.
✓= Separate fee required ★ = Guest-only event

Friday, October 21, 2016	
6:30 pm - 9:00 pm	
Committee Meetings	See Numeric or Convention App for detailed list
Saturday, October 22, 2016	
7:00 am - 9:00 pm	
Committee Meetings	See Numeric or Convention App for detailed list
2:00 pm - 6:00 pm	
ACI Registration	FRANKLIN HALL
ACI Store & Resource Pavilion	FRANKLIN HALL
Afternoon Soda Break	FRANKLIN HALL
Speaker Ready Room	REGISTRATION DESK 1
Pier Luigi Nervi. Art and Science of Building	FRANKLIN HALL
Sunday, October 23, 2016	
5:00 am and 6:00 am	
Run/Walk Meet-Up	MARRIOTT LOBBY
7:00 am - 10:00 am	
★Guest Hospitality	INDEPENDENCE BALLROOM 2-3
Coffee Break	FRANKLIN HALL
7:00 am - 6:00 pm	
Speaker Ready Room	REGISTRATION DESK 1
7:30 am - 5:00 pm	
ACI Registration	FRANKLIN HALL
8:00 am - 9:00 am	
Convention Orientation Breakfast	GRAND BALLROOM SALON G
★Guest Overview	INDEPENDENCE BALLROOM 2-3
Student Competition Check-In	FRANKLIN HALL
8:00 am - 5:00 pm	
ACI Store & Resource Pavilion	FRANKLIN HALL
Exhibits	FRANKLIN HALL
Pier Luigi Nervi. Art and Science of Building	FRANKLIN HALL
8:00 am - 5:30 pm	
Committee Meeting	See Numeric or Convention App for detailed list
9:00 am - 4:00 pm	
ACI Mortar Workability Student Competition	FRANKLIN HALL
10:00 am - 11:30 am	
ACI International Forum	GRAND BALLROOM SALON A
10:00 am - 5:00 pm	
★Guest Lounge	SUITE #362
11:30 am - 1:30 pm	
✓International Lunch	GRAND BALLROOM SALON G
1:00 pm - 3:00 pm—*Sessions*	
Evaluation of Concrete Structures	GRAND BALLROOM SALON B
Overview and Applications of Structural Health Monitoring (SHM) Technologies for Concrete Structures	GRAND BALLROOM SALON C
Revolutionary Tilt-Up Design	GRAND BALLROOM SALON D
Sulfate Attack on Concrete: Holistic Perspective, Part 1 of 3	GRAND BALLROOM SALON A
1:00 pm - 4:00 pm	
Afternoon Soda Break	FRANKLIN HALL
3:30 pm - 5:30 pm—*Sessions*	
Early-Age Concrete Properties Measurements for Concrete Pavement Construction Operators and Traffic Opening	GRAND BALLROOM SALON C
Emerging Technologies in Civil Infrastructure Application	GRAND BALLROOM SALON B
History of Natural Cements	GRAND BALLROOM SALON D
Sulfate Attack on Concrete: Holistic Perspective, Part 2 of 3	GRAND BALLROOM SALON A
5:45 pm - 7:00 pm	
Opening Session	GRAND BALLROOM SALON E-F
7:00 pm - 8:00 pm	
Opening Reception	FRANKLIN HALL
8:00 pm - 10:00 pm—*Session*	
Hot Topic Session	GRAND BALLROOM SALON D
9:00 pm - 10:30 pm	
Student and Young Professional Networking Event	CIRC RESTAURANT
Monday, October 24, 2016	
5:00 am and 6:00 am	
Run/Walk Meet-Up	MARRIOTT LOBBY
6:00 am - 6:45 am	
Morning Yoga Class	GRAND BALLROOM FOYER
6:30 am - 8:15 am	
Workshop for Technical Committee Chairs (by invitation only)	GRAND BALLROOM SALON E-F
7:00 am - 8:30 am	
Speaker Development Breakfast	LIBERTY BALLROOM C
7:00 am - 10:00 am	
★Guest Hospitality	INDEPENDENCE BALLROOM 2-3
Coffee Break	FRANKLIN HALL
7:00 am - 6:00 pm	
Speaker Ready Room	REGISTRATION DESK 1
7:15 am - 7:00 pm	
Committee Meetings	See Numeric or Convention App for detailed list

Daily Program

For detailed program information and program changes, download the Convention App.
✓= Separate fee required ★ = Guest-only event

7:30 am - 5:00 pm	
ACI Registration	FRANKLIN HALL
8:00 am - 5:00 pm	
ACI Store & Resource Pavilion	FRANKLIN HALL
Exhibits	FRANKLIN HALL
Pier Luigi Nervi. Art and Science of Building	FRANKLIN HALL
8:30 am - 10:30 am—*Sessions*	
Chemically Activated Binders for Concrete, Part 1 of 2	GRAND BALLROOM SALON C
Research in Progress, Part 1 of 2	GRAND BALLROOM SALON B
Sulfate Attack on Concrete: Holistic Perspective, Part 3 of 3	GRAND BALLROOM SALON A
What I Wish I Knew: Transition into a Faculty Member	GRAND BALLROOM SALON D
10:00 am - 5:00 pm	
★Guest Lounge	SUITE #362
10:30 am - 11:00 am—*Exhibitor Demo*	
Fortec Stabilization Systems	FRANKLIN HALL
10:30 am - 11:00 am—*Session*	
ACI 123 Concrete Research Poster Session	GRAND BALLROOM FOYER
11:00 am - 1:00 pm—*Sessions*	
Chemically Activated Binders for Concrete, Part 2 of 2	GRAND BALLROOM SALON C
Research in Progress, Part 2 of 2	GRAND BALLROOM SALON B
Solutions to Common Problems with Pervious Concrete	GRAND BALLROOM SALON D
UHPC—Revolutionary Innovation through Fiber Reinforcement	GRAND BALLROOM SALON A
11:15 am - 11:45 am—*Exhibitor Demo*	
Aquafin, Inc.	FRANKLIN HALL
11:30 am - 1:30 pm	
✓Student Lunch	GRAND BALLROOM SALON E-F
12:00 pm - 12:30 pm—*Exhibitor Demo*	
Giatec Scientific Inc.	FRANKLIN HALL
1:00 pm - 4:00 pm	
Afternoon Soda Break	FRANKLIN HALL
1:30 pm - 3:30 pm—*Sessions*	
Career Guide to Concrete Paths	GRAND BALLROOM SALON C
High-Strength Concrete: It is Not Just for Tall Buildings	GRAND BALLROOM SALON D
Reduction of Crack Width with Fiber, Part 1 of 2	GRAND BALLROOM SALON B
Troubleshooting Self-Consolidating Concrete	GRAND BALLROOM SALON A
2:15 pm - 2:45 pm—*Exhibitor Demo*	
Calmetrix	FRANKLIN HALL
3:00 pm - 3:30 pm—*Exhibitor Demo*	
Zircon Corporation	FRANKLIN HALL
3:15 pm - 5:00 pm	
Student Tour of W+Element Hotel Construction Site	DEPART MARRIOTT LOBBY
3:30 pm - 5:00 pm	
★Guest Social (by invitation only)	INDEPENDENCE BALLROOM 3
4:00 pm - 6:00 pm—*Sessions*	
Bond of Reinforcing Steel and Prestressing Strands in Self-Consolidating Concrete	GRAND BALLROOM SALON A
Construction Documents Using ACI 301 to Comply with ACI 318 Chapter 26	GRAND BALLROOM SALON C
Emerging RCC Technologies	GRAND BALLROOM SALON D
Reduction of Crack Width with Fiber, Part 2 of 2	GRAND BALLROOM SALON B
5:30 pm - 6:30 pm	
Women in ACI Reception	FRANKLIN 9
6:30 pm - 8:30 pm—*Session*	
123 Forum: Can We Design Concrete to Survive Nuclear Environments?	GRAND BALLROOM SALON D
6:30 pm - 10:00 pm	
✓The Excellence in Concrete Construction Awards Gala (doors open at 5:30 pm)	GRAND BALLROOM E-F

Tuesday, October 25, 2016

5:00 am and 6:00 am	
Run/Walk Meet-Up	MARRIOTT LOBBY
6:00 am - 6:45 am	
Morning Yoga Class	GRAND BALLROOM FOYER
6:30 am - 6:00 pm	
Committee Meetings	See Numeric or Convention App for detailed list
7:00 am - 10:00 am	
★Guest Hospitality	INDEPENDENCE BALLROOM 2-3
Coffee Break	FRANKLIN HALL
7:00 am - 6:00 pm	
Speaker Ready Room	REGISTRATION DESK 1
7:30 am - 5:00 pm	
ACI Registration	FRANKLIN HALL
8:00 am - 5:00 pm	
ACI Store & Resource Pavilion	FRANKLIN HALL
Exhibits	FRANKLIN HALL
Pier Luigi Nervi. Art and Science of Building	FRANKLIN HALL
8:30 am - 10:30 am—*Sessions*	
Concrete Parking Structures Current and Future	GRAND BALLROOM SALON A

Daily Program

For detailed program information and program changes, download the Convention App.
✓= Separate fee required ★ = Guest-only event

Grouting for a Sustainable Future	GRAND BALLROOM SALON B
Joint ACI-*fib* International Symposium on Punching Shear of Structural Concrete Slabs—Honoring Neil Hawkins, Part 1 of 3	GRAND BALLROOM SALON C
Using Service Life in Understanding Environmental Impacts	GRAND BALLROOM SALON D
10:00 am - 5:00 pm	
★Guest Lounge	SUITE #362
11:00 am - 1:00 pm—*Sessions*	
Do We Understand the Workability of Concrete as Much as We Think?	GRAND BALLROOM SALON A
Joint ACI-*fib* International Symposium on Punching Shear of Structural Concrete Slabs—Honoring Neil Hawkins, Part 2 of 3	GRAND BALLROOM SALON C
New Developments in Chemical Admixtures: An ACI 212 Update	GRAND BALLROOM SALON D
Rational Design Methodologies: Fire Resistance of Concrete and Masonry	GRAND BALLROOM SALON B
11:30 am - 1:30 pm	
✓Contractors' Day Lunch	INDEPENDENCE BALLROOM 2-3
1:00 pm - 4:00 pm	
Afternoon Soda Break	FRANKLIN HALL
1:30 pm - 3:30 pm—*Sessions*	
Concrete with Recycled Materials, Part 1 of 2	GRAND BALLROOM SALON D
Contractors' Day Session: Take the High Road—Developing Character of Impeccable Integrity	GRAND BALLROOM SALON B
Joint ACI-*fib* International Symposium on Punching Shear of Structural Concrete Slabs—Honoring Neil Hawkins, Part 3 of 3	GRAND BALLROOM SALON C
Open Topic Session, Part 1 of 2	GRAND BALLROOM SALON A
4:00 pm - 6:00 pm—*Sessions*	
Concrete with Recycled Materials, Part 2 of 2	GRAND BALLROOM SALON D
Fiber-Reinforced Polymer (FRP) Systems for the Strengthening of Existing Masonry Structures and for Reinforcement of New Masonry Construction	GRAND BALLROOM SALON B
Open Topic Session, Part 2 of 2	GRAND BALLROOM SALON A
Repair and Rehabilitation Tech Notes	GRAND BALLROOM SALON C
5:00 pm - 6:00 pm	
✓Reception Honoring Neil Hawkins	306
5:30 pm - 6:30 pm	
Faculty Network Reception	402-403
6:30 pm - 8:30 pm	
Concrete Mixer (transportation will start departing at 6:00 pm)	NATIONAL CONSTITUTION CENTER

Wednesday, October 26, 2016

5:00 am and 6:00 am	
Run/Walk Meet-Up	MARRIOTT LOBBY
6:00 am - 6:45 am	
Morning Yoga Class	GRAND BALLROOM FOYER
7:00 am - 10:00 am	
★Guest Hospitality	INDEPENDENCE BALLROOM 2-3
Coffee Break	FRANKLIN HALL
7:00 am - 2:00 pm	
Speaker Ready Room	REGISTRATION DESK 1
7:00 am - 6:00 pm	
Committee Meetings	See Numeric or Convention App for detailed list
8:00 am - 12:00 pm	
ACI Registration	FRANKLIN HALL
ACI Store & Resource Pavilion	FRANKLIN HALL
8:00 am - 12:00 pm—*Session*	
Concrete Sustainability Forum 9	FRANKLIN 8
8:30 am - 10:30 am—*Sessions*	
Nanotechnology for Improved Concrete Performance, Part 1 of 2	GRAND BALLROOM SALON B
Responsibility in Concrete Repair, Part 1 of 2	GRAND BALLROOM SALON A
10:00 am - 5:00 pm	
★Guest Lounge	SUITE #362
11:00 am - 1:00 pm—*Sessions*	
Advanced Analysis of FRP-Strengthened Concrete Structures, Part 1 of 2	GRAND BALLROOM SALON B
Responsibility in Concrete Repair, Part 2 of 2	GRAND BALLROOM SALON A
1:30 pm - 3:30 pm—*Sessions*	
Advanced Analysis of FRP-Strengthened Concrete Structures, Part 2 of 2	GRAND BALLROOM SALON B
Nanotechnology for Improved Concrete Performance, Part 2 of 2	GRAND BALLROOM SALON A
6:30 pm - 8:00 pm	
President's Reception (by invitation only)	FRANKLIN 1-2

Thursday, October 27, 2016

10:15 am - 5:00 pm	
Board of Direction	INDEPENDENCE BALLROOM 1-2

Numerical Committee Meeting Listing

For detailed program information and program changes, download the Convention App.

Code	Committee	Day	Time	Room Name
ACIFdn	ACI Foundation	Wed	9:00 am - 11:30 am	404
BOD	Board of Direction	Thu	10:15 am - 5:00 pm	INDEPENDENCE BALLROOM 1-2
CAC	Chapter Activities	Mon	2:00 pm - 5:00 pm	GRAND BALLROOM SALON K
CC	Convention Committee	Tue	3:00 pm - 4:00 pm	FRANKLIN 9
CLC	Construction Liaison	Sun	8:00 am - 10:30 am	414-415
CPC	Certification Programs	Tue	2:00 pm - 5:00 pm	406
CRC	Concrete Research Council	Tue	11:00 am - 1:00 pm	LIBERTY BALLROOM A
CSAO	Committee on Codes and Standards Advocacy and Outreach	Mon	3:30 pm - 5:00 pm	305
C601	New Certification Program	Mon	3:00 pm - 4:30 pm	501
C601-D	Decorative Concrete Finisher	Sun	10:00 am - 11:30 am	407
C601-E	Concrete Construction Sustainability Assessor	Tue	7:30 am - 9:00 am	309
C601-F	Nondestructive Testing Technician	Mon	1:00 pm - 3:00 pm	502
C601-G	Self-Consolidating Concrete Testing	Mon	11:30 am - 1:00 pm	405
C601-H	Cement Testing	Wed	7:00 am - 8:30 am	301
C601-I	Shotcrete Inspector	Sun	1:00 pm - 3:00 pm	302
C601-J	Adhesive Anchor Installation Inspector	Mon	4:30 pm - 5:30 pm	501
C610	Field Technician Cert	Mon	8:30 am - 11:00 am	FRANKLIN 9
C620	Laboratory Tech Cert	Tue	8:00 am - 10:00 am	LIBERTY BALLROOM C
C630	Construction Inspector Cert	Mon	1:00 pm - 2:30 pm	LIBERTY BALLROOM B
C631	Conc Transportation Const Insp	Tue	10:00 am - 11:30 am	GRAND BALLROOM SALON L
C640	Craftsman Cert	Sun	11:00 am - 1:00 pm	307
C650	Tilt-Up Constructor Cert	Sun	11:00 am - 12:30 pm	305
C655	Foundation Constructor Certification	Mon	11:30 am - 1:00 pm	401
C660	Shotcrete Nozzleman Cert	Sun	10:00 am - 12:00 pm	411-412
C670	Masonry Technician Certification	Wed	8:30 am - 10:00 am	301
C680	Adhesive Anchor Installer	Tue	8:30 am - 10:00 am	414-415
C690	Concrete Quality Technical Manager Certification	Wed	10:00 am - 12:00 pm	301
EAC	Educational Activities	Tue	8:00 am - 12:00 pm	308
E701	Materials for Concrete Construction	Sun	9:00 am - 10:30 am	GRAND BALLROOM SALON J
E702	Designing Concrete Structures	Mon	5:00 pm - 6:30 pm	414-415
E703	Concrete Construction Practices	Mon	4:00 pm - 6:00 pm	404
E706	Concrete Repair Education	Sun	8:00 am - 10:00 am	GRAND BALLROOM SALON L
E707	Specification Education	Tue	11:30 am - 1:00 pm	303
E710	ACI University Programs	Sun	10:30 am - 12:00 pm	502
HTC	Hot Topic	Sun	2:30 pm - 4:00 pm	308
IAC	International Advisory Committee	Tue	9:00 am - 11:30 am	FRANKLIN 10
IC-Cert	International Certification	Sun	1:30 pm - 3:00 pm	502
IC-Conf	International Conferences	Mon	7:15 am - 8:30 am	310
IPAC	International Project Awards Committee	Tue	7:00 am - 8:30 am	305
ITG-10	ITG-10 Alternative Cementitious Materials	Sun	10:30 am - 1:30 pm	GRAND BALLROOM SALON I
MEMC	Membership	Sun	1:00 pm - 3:00 pm	306
MKTC	Marketing	Mon	2:00 pm - 5:00 pm	GRAND BALLROOM SALON L
PUBC	Publications	Tue	9:30 am - 11:00 am	304
SYPAC	Student and Young Professional Activities	Wed	8:00 am - 9:30 am	408-409
S801	Student Activities	Sun	7:30 am - 9:00 am	402-403
S802	Teaching Methods and Educational Materials	Mon	8:30 am - 9:30 am	408-409

Numerical Committee Meeting Listing

For detailed program information and program changes, download the Convention App.

Code	Committee	Day	Time	Room Name
S805	ACI Collegiate Concrete Council CLGE	Sun	4:00 pm - 5:30 pm	FRANKLIN 8
S806	Young Professional Activities	Mon	2:00 pm - 3:30 pm	407
TAC	Technical Activities	Fri	6:30 pm - 9:00 pm	FRANKLIN 10
TAC	Technical Activities	Sat	7:00 am - 6:30 pm	FRANKLIN 10
TAC-RG1	TAC Review Group 1	Sat	2:30 pm - 5:30 pm	404
TAC-RG2	TAC Review Group 2	Sat	2:30 pm - 5:30 pm	405
TAC-RG3	TAC Review Group 3	Sat	2:30 pm - 5:30 pm	406
TCSC	TAC Construction Standards	Wed	7:30 am - 10:00 am	405
TRRC	TAC Repair & Rehab	Tue	7:00 am - 8:30 am	408-409
TTAG	Technology Transfer Advisory Group	Tue	6:30 am - 8:00 am	411-412
117	Tolerances	Tue	8:00 am - 11:30 am	GRAND BALLROOM SALON I
118	Use of Digital Technology	Tue	2:00 pm - 3:30 pm	307
120	History	Tue	1:30 pm - 3:00 pm	INDEPENDENCE BALLROOM 1
121	Quality Assurance	Sun	3:00 pm - 5:00 pm	404
122	Energy Efficiency	Mon	1:00 pm - 3:00 pm	304
123	Research	Sun	4:00 pm - 5:30 pm	GRAND BALLROOM SALON K
124	Aesthetics	Mon	12:30 pm - 1:30 pm	306
130	Sustainability	Mon	2:00 pm - 5:00 pm	414-415
130	Sustainability	Tue	11:00 am - 1:00 pm	GRAND BALLROOM SALON H
130-F	Social Issues	Sun	12:30 pm - 2:00 pm	305
130-G	Education/Certification	Tue	8:30 am - 9:00 am	306
131	BIM	Sat	8:00 am - 5:00 pm	411-412
131	BIM	Tue	2:30 pm - 4:30 pm	LIBERTY BALLROOM A
132	Responsibility	Sun	2:00 pm - 5:00 pm	411-412
133	Disaster Reconnaissance	Sun	12:30 pm - 3:30 pm	414-415
201	Durability	Tue	8:00 am - 11:00 am	GRAND BALLROOM SALON H
201-D	Durability-Oversight Committee	Mon	11:30 am - 1:00 pm	304
201-TG1	Aggressive Chemicals	Mon	3:00 pm - 4:00 pm	302
201-TG2	Physical Salt Attack	Sun	11:00 am - 12:00 pm	GRAND BALLROOM SALON J
201-TG3	Alkali-Aggregate Reactivity	Sun	12:00 pm - 2:00 pm	411-412
207	Mass Concrete	Mon	10:00 am - 12:30 pm	GRAND BALLROOM SALON I
209	Creep & Shrinkage	Mon	10:00 am - 1:00 pm	402-403
209-C	Models Applicability and Uncertainty	Sun	11:30 am - 12:30 pm	309
209-D	Numerical Methods and 3D Analyses	Sun	4:30 pm - 5:30 pm	303
211	Proportioning	Wed	8:00 am - 10:00 am	GRAND BALLROOM SALON I
211-A	Proportioning-Editorial	Tue	10:00 am - 12:00 pm	301
211-I	Assessing Aggregate Gradation	Tue	1:00 pm - 3:00 pm	308
211-M	Aggregate-Packing	Mon	10:00 am - 11:00 am	309
211-P	Guide for Selecting Proportions for Pumpable Concrete	Mon	3:00 pm - 4:30 pm	304
211-TG1	Proportioning Concrete with Non Clinker Based Cements	Tue	1:00 pm - 3:00 pm	302
211-TG2	Developing & Using a Three Point Curve Task Group	Tue	11:30 am - 1:00 pm	302
212	Chemical Admixtures	Mon	2:00 pm - 5:00 pm	406
213	Lightweight	Tue	1:30 pm - 3:30 pm	LIBERTY BALLROOM B
213-TG1	Lightweight - Editorial TG	Tue	11:00 am - 12:30 pm	309
214	Strength Tests	Mon	4:00 pm - 5:30 pm	408-409
214-A	Document Preparation	Mon	12:30 pm - 2:00 pm	303

Numerical Committee Meeting Listing

For detailed program information and program changes, download the Convention App.

Code	Committee	Day	Time	Room Name
215	Fatigue	Sun	12:00 pm - 2:00 pm	301
216	Fire Resistance	Mon	10:00 am - 12:00 pm	INDEPENDENCE BALLROOM 1
221	Aggregates	Sun	11:30 am - 1:00 pm	302
221-TG1	Task Group on AAR	Mon	4:30 pm - 6:30 pm	304
222	Corrosion	Tue	2:00 pm - 5:00 pm	GRAND BALLROOM SALON H
223	Shrinkage Compensating	Tue	2:00 pm - 5:00 pm	GRAND BALLROOM SALON L
224	Cracking	Sun	2:30 pm - 5:00 pm	305
225	Hydraulic Cements	Mon	1:00 pm - 5:00 pm	INDEPENDENCE BALLROOM 2
228	Nondestructive Testing	Sun	9:30 am - 12:30 pm	GRAND BALLROOM SALON H
228-B	Visual Inspection	Sun	1:00 pm - 3:00 pm	404
229	Controlled Low Strength	Tue	2:00 pm - 5:00 pm	GRAND BALLROOM SALON I
230	Soil Cement	Tue	8:00 am - 9:30 am	302
231	Early Age	Mon	12:30 pm - 2:30 pm	LIBERTY BALLROOM C
232	Fly Ash in Concrete	Mon	1:00 pm - 4:00 pm	FRANKLIN 10
233	Slag Cement	Tue	2:00 pm - 5:00 pm	GRAND BALLROOM SALON K
234	Silica Fume	Tue	2:00 pm - 4:30 pm	LIBERTY BALLROOM C
236	Material Science	Mon	4:30 pm - 5:30 pm	FRANKLIN 8
236-TG1	Advanced Analysis Techniques for Concrete	Sun	3:00 pm - 4:00 pm	GRAND BALLROOM SALON G
237	Self-Consolidating Concrete	Mon	8:15 am - 11:00 am	GRAND BALLROOM SALON H
238	Workability of Fresh Concrete	Tue	8:00 am - 10:00 am	310
238-A	Student Workability	Tue	10:00 am - 11:30 am	310
239	Ultra-High Performance Concrete	Mon	3:30 pm - 5:30 pm	GRAND BALLROOM SALON J
239-A	Emerging Technology Report	Sun	1:00 pm - 3:00 pm	501
239-C	Structural Design on UHPC	Mon	10:30 am - 12:30 pm	LIBERTY BALLROOM B
240	Natural Pozzolans	Mon	10:00 am - 1:00 pm	GRAND BALLROOM SALON K
241	Nanotechnology of Concrete	Sun	4:00 pm - 5:30 pm	414-415
241-A	The Application and Implementation of Nano-Engineered Concrete	Tue	1:00 pm - 3:00 pm	FRANKLIN 8
301	Specifications	Sat	1:00 pm - 4:00 pm	FRANKLIN 8
301	Specifications	Sun	1:00 pm - 4:00 pm	FRANKLIN 8
301	Specifications	Mon	1:00 pm - 4:00 pm	FRANKLIN 9
301-A	General Requirements, Definitions, and Tolerances – Section 1	Sun	8:00 am - 9:30 am	304
301-B	Formwork and Formwork Accessories – Section 2	Sun	8:00 am - 9:30 am	302
301-C	Reinforcement and Reinforcement Supports – Section 3	Sun	10:00 am - 11:30 am	309
301-D	Concrete Mixtures – Section 4	Sun	8:00 am - 9:30 am	FRANKLIN 8
301-E	Handling, Placing, and Constructing – Section 5	Sun	9:30 am - 11:00 am	306
301-F	Architectural Concrete – Section 6	Sun	10:30 am - 12:30 pm	414-415
301-G	Lightweight Concrete – Section 7	Sun	8:00 am - 9:00 am	309
301-H	Mass Concrete – Section 8	Sun	9:30 am - 11:00 am	305
301-I	Post-Tensioned Concrete – Section 9	Sun	8:00 am - 9:30 am	310
301-J	Shrinkage Compensating Concrete – Section 10	Sun	8:00 am - 9:30 am	307
301-K	Industrial Floor Slabs – Section 11	Sun	9:30 am - 11:00 am	310
301-L	Tilt-Up Construction – Section 12	Sun	7:30 am - 9:30 am	INDEPENDENCE BALLROOM 1
301-M	Precast Structural Concrete – Section 13	Sun	8:00 am - 9:30 am	306
301-N	Precast Architectural Concrete – Section 14	Sun	9:30 am - 11:00 am	307
301-SC	Steering Committee	Sat	11:30 am - 1:00 pm	FRANKLIN 8

Numerical Committee Meeting Listing

For detailed program information and program changes, download the Convention App.

Code	Committee	Day	Time	Room Name
302	Floor Construction	Mon	8:30 am - 1:00 pm	GRAND BALLROOM SALON G
303	Architectural CIP	Mon	8:30 am - 10:30 am	414-415
304	Measuring/Mix/Trans/Placing	Mon	11:30 am - 1:00 pm	GRAND BALLROOM SALON H
305	Hot Weather	Sun	2:00 pm - 4:00 pm	GRAND BALLROOM SALON K
306	Cold Weather	Tue	8:30 am - 11:30 am	408-409
307	Chimneys	Mon	2:00 pm - 5:00 pm	303
308	Curing	Wed	10:00 am - 1:00 pm	411-412
308-A	Curing-Guide	Wed	8:00 am - 10:00 am	411-412
308-B	Curing-Specifications	Tue	4:00 pm - 5:30 pm	302
309	Consolidation	Sun	3:00 pm - 4:30 pm	303
310	Decorative Concrete	Sun	3:00 pm - 5:30 pm	GRAND BALLROOM SALON J
310/308-TG2	Curing Decorative Concrete Joint TG	Sun	2:00 pm - 3:00 pm	GRAND BALLROOM SALON J
310-J	Polished Finishes	Tue	10:00 am - 11:30 am	414-415
311	Inspection	Tue	12:30 pm - 2:30 pm	305
314	Simplified Design Buildings	Sun	8:30 am - 10:30 am	501
315	Detailing	Sun	2:00 pm - 5:00 pm	INDEPENDENCE BALLROOM 1
318	Building Code	Wed	8:00 am - 6:00 pm	GRAND BALLROOM SALON C-D
318-A	General Concrete Construction	Tue	1:30 pm - 6:00 pm	405
318-B	Anchorage and Reinforcement	Mon	2:00 pm - 5:00 pm	GRAND BALLROOM SALON I
318-B	Anchorage and Reinforcement	Tue	8:00 am - 12:30 pm	GRAND BALLROOM SALON G
318-C	Serviceability/Safety	Tue	8:00 am - 12:30 pm	GRAND BALLROOM SALON K
318-D	Members	Tue	1:30 pm - 6:00 pm	FRANKLIN 10
318-E	Section and Member Strength	Mon	10:00 am - 1:00 pm	411-412
318-E	Section and Member Strength	Tue	7:30 am - 12:30 pm	GRAND BALLROOM SALON J
318-F	Foundations	Tue	8:00 am - 12:30 pm	406
318-G	Precast and Prestressed Concrete	Tue	8:00 am - 12:30 pm	FRANKLIN 9
318-H	Seismic Provisions	Tue	1:30 pm - 6:00 pm	GRAND BALLROOM SALON G
318-J	Joints and Connections	Tue	1:30 pm - 6:00 pm	414-415
318-L	International Liaison	Mon	2:30 pm - 4:00 pm	404
318-R	High Strength Reinforcement	Tue	1:30 pm - 6:00 pm	408-409
318-S	Spanish Translation	Mon	11:00 am - 12:30 pm	FRANKLIN 9
325	Pavements	Tue	3:30 pm - 5:30 pm	FRANKLIN 8
325-A	Pavements-Design	Tue	9:00 am - 10:00 am	306
325-C	Pavements-Prestressed and Precast	Tue	10:30 am - 12:00 pm	305
325-E	Accelerated Paving	Tue	2:00 pm - 3:30 pm	306
325-F	Concrete Pavement Overlays	Tue	12:00 pm - 1:00 pm	308
327	RCC Pavements	Tue	11:00 am - 1:00 pm	304
329	Perf. Ready Mixed	Wed	9:30 am - 11:30 am	408-409
330	Parking Lots & Site Paving	Wed	8:00 am - 12:00 pm	414-415
332	Residential Concrete	Tue	1:30 pm - 5:00 pm	GRAND BALLROOM SALON J
332-B	Conc Mtrls and Plcmnt	Wed	4:00 pm - 5:30 pm	405
332-D	Residential Conc Footings & Foundation Walls	Tue	10:00 am - 11:30 am	306
332-E	Residential Concrete Above Grade Walls	Tue	11:30 am - 1:00 pm	402-403
332-F	Residential Concrete Slabs	Tue	10:30 am - 12:00 pm	307
334	Shells	Mon	5:00 pm - 7:00 pm	305
335	Composite and Hybrid Structures	Sun	11:30 am - 1:00 pm	310

Numerical Committee Meeting Listing

For detailed program information and program changes, download the Convention App.

Code	Committee	Day	Time	Room Name
336	Footings	Sun	1:00 pm - 5:00 pm	401
341	Earthquake-Resistant Bridges	Sun	3:00 pm - 5:00 pm	GRAND BALLROOM SALON I
341-A	Equake Res Brdgs-Columns	Sun	1:30 pm - 3:00 pm	303
341-B	Equake Res Brdgs-Pier Walls	Sun	8:00 am - 9:30 am	303
341-C	Equake Res Brdgs-Retrofit	Sun	9:30 am - 11:00 am	303
341-D	Perf Based Seismic Design	Sun	11:00 am - 12:30 pm	303
342	Bridge Evaluation	Sun	8:30 am - 10:30 am	GRAND BALLROOM SALON I
343	Bridge Design	Mon	10:00 am - 12:00 pm	408-409
343-G	Editorial	Sun	3:00 pm - 4:00 pm	302
345	Bridge Construction	Sun	1:30 pm - 3:30 pm	407
347	Formwork	Sat	2:00 pm - 9:00 pm	402-403
347	Formwork	Sun	8:00 am - 12:00 pm	408-409
348	Safety	Mon	2:00 pm - 3:30 pm	GRAND BALLROOM SALON J
349	Nuclear Structures	Tue	1:30 pm - 5:00 pm	GRAND BALLROOM SALON E
349/359/370	349/359/370 Joint Committee Task Group	Tue	10:00 am - 12:30 pm	LIBERTY BALLROOM B
349-A&B	Nuclear Structures-Design & Materials	Mon	8:00 am - 11:00 am	FRANKLIN 8
349-C	Nuclear Str-Anchorage	Mon	1:00 pm - 4:30 pm	FRANKLIN 8
350	Environmental Structures	Mon	1:00 pm - 6:00 pm	GRAND BALLROOM SALON H
350	Environmental Structures	Tue	8:00 am - 12:00 pm	GRAND BALLROOM SALON F
350	Environmental Structures	Wed	8:00 am - 4:00 pm	FRANKLIN 9-10
350-A	Env Str-General & Concrete	Tue	1:00 pm - 5:00 pm	304
350-B	Env Str-Durability	Mon	8:30 am - 1:00 pm	305
350-C	Env Str-Reinf & Devel	Sun	8:30 am - 11:30 am	406
350-D	Env Str-Structural	Mon	8:30 am - 6:30 pm	310
350-E	Env Str-Precast/Prestressed	Sun	1:00 pm - 5:00 pm	INDEPENDENCE BALLROOM 2
350-F	Env Str-Seismic	Tue	1:00 pm - 5:00 pm	303
350-H	Env Str-Editorial	Mon	12:30 pm - 2:00 pm	302
350-J	Env Str-Education	Mon	1:00 pm - 3:00 pm	501
350-L	Env Str-Specification	Tue	5:00 pm - 6:00 pm	309
350-SC	Env Str-Steering Comm	Sun	11:30 am - 1:00 pm	406
351	Equip Foundations	Tue	10:00 am - 12:00 pm	LIBERTY BALLROOM C
351-C	Equip Fdns - Dynamic Fdns	Mon	4:30 pm - 6:30 pm	FRANKLIN 10
352	Joints	Sun	2:00 pm - 5:00 pm	408-409
352-TG1	Slab-Column Joints & Connections	Mon	3:00 pm - 4:30 pm	301
352-TG2	Beam-Column Joints & Connections	Mon	1:30 pm - 3:00 pm	301
355	Anchorage	Sun	1:30 pm - 5:00 pm	FRANKLIN 10
357	Offshore & Marine	Tue	9:30 am - 11:30 am	302
360	Slabs on Ground	Mon	2:00 pm - 6:30 pm	GRAND BALLROOM SALON G
362	Parking Structures	Mon	1:00 pm - 5:00 pm	411-412
362-A	Updating Guide to Struct Maint of Pkg Struct Doc	Sun	1:00 pm - 4:00 pm	406
363	High-Strength	Sun	2:30 pm - 5:00 pm	INDEPENDENCE BALLROOM 3
363-A	High Strength Lightweight Concrete	Tue	3:30 pm - 5:00 pm	308
364	Rehabilitation	Mon	1:00 pm - 4:00 pm	408-409
364-A	Editorial Subcommittee	Mon	9:30 am - 11:00 am	301
364-TG1	Rehab Guide	Mon	11:00 am - 12:00 pm	309
365	Service Life	Mon	9:00 am - 11:00 am	GRAND BALLROOM SALON J
369	Seismic Rehab	Sun	10:00 am - 12:00 pm	GRAND BALLROOM SALON L

Numerical Committee Meeting Listing

For detailed program information and program changes, download the Convention App.

Code	Committee	Day	Time	Room Name
369	Seismic Rehab	Sun	1:00 pm - 5:30 pm	GRAND BALLROOM SALON L
369	Seismic Rehab	Mon	2:00 pm - 6:00 pm	402-403
370	Blast and Impact Load Effects	Sun	3:00 pm - 5:00 pm	402-403
371	Elevated Tanks with Concrete Pedestals	Mon	3:00 pm - 5:00 pm	309
372	Tanks Wrapped Wire/Strand	Tue	3:00 pm - 5:00 pm	309
374	Seismic Design	Mon	8:30 am - 12:00 pm	LIBERTY BALLROOM C
375	Design for Wind Loads	Mon	1:00 pm - 3:30 pm	305
376	RLG Containment Structures	Mon	1:00 pm - 4:00 pm	405
376-01	Steering Subcommittee	Sun	10:30 am - 12:00 pm	501
376-A	Code, Education & Publication Subcommittee	Mon	10:00 am - 12:00 pm	302
376-B	Materials Subcommittee	Sun	1:00 pm - 3:00 pm	310
376-C	Analysis Subcommittee	Sun	3:00 pm - 5:00 pm	310
376-D	Design & Construction Subcommittee	Mon	8:00 am - 10:00 am	INDEPENDENCE BALLROOM 1
377	Performance-Based Structural Integrity & Resilience of Concrete Structures	Mon	10:00 am - 12:30 pm	303
408	Bond and Development of Steel Reinforcement	Sun	8:30 am - 11:30 am	FRANKLIN 9
408-A	Mech Splices	Sun	8:00 am - 8:30 am	FRANKLIN 9
421	Reinf Slabs	Sun	10:00 am - 1:00 pm	FRANKLIN 10
423	Prestressed	Mon	8:30 am - 12:30 pm	FRANKLIN 10
423/445	Adhoc Grp on Shear in Prestress Conc	Sun	4:00 pm - 5:30 pm	302
423-C	Corrsn & Repr Grtd Tendons	Sun	3:00 pm - 5:00 pm	307
423-F	Sustainable Prestressed Concrete	Sun	1:00 pm - 3:00 pm	309
423-G	Specification for Unbonded Single-Strand Tendon Materials	Mon	4:00 pm - 6:00 pm	302
423-TG1	Unbonded Tendons Task Group	Sun	1:00 pm - 3:00 pm	307
423-TG2	Anchorage Zone Task Group	Sun	4:00 pm - 5:30 pm	308
435	Deflection	Mon	3:00 pm - 6:00 pm	306
437	Strength Evaluation	Mon	10:30 am - 12:30 pm	406
439	Steel Reinforcement	Mon	8:30 am - 10:30 am	LIBERTY BALLROOM B
439-A	Steel Reinf-Wire	Sun	3:30 pm - 5:00 pm	502
440	Fiber-Reinforced Polymer	Tue	8:00 am - 11:00 am	GRAND BALLROOM SALON E
440-E	FRP-Prof Education	Sun	8:30 am - 10:00 am	FRANKLIN 10
440-F	FRP-Repair Strengthening	Mon	1:00 pm - 4:00 pm	GRAND BALLROOM SALON E
440-H	FRP-Reinforced Concrete	Sun	12:30 pm - 3:30 pm	GRAND BALLROOM SALON H
440-H	FRP-Reinforced Concrete	Mon	8:00 am - 10:00 am	GRAND BALLROOM SALON E
440-J	FRP-Stay in Place Forms	Sun	3:30 pm - 5:00 pm	GRAND BALLROOM SALON H
440-M	FRP-Repair of Masonry Str	Mon	10:00 am - 12:00 pm	GRAND BALLROOM SALON E
441	Columns	Mon	11:30 am - 2:00 pm	407
441-B	Lateral Reinf	Mon	9:00 am - 10:00 am	303
444	Structural Health Monitoring and Instrumentation	Tue	8:00 am - 10:00 am	303
445	Shear & Torsion	Mon	2:00 pm - 6:00 pm	308
445-A	Shear & Torsion-Strut & Tie	Sun	9:30 am - 12:30 pm	304
445-B	Shear & Torsion-Seismic Shear	Sun	9:30 am - 11:30 am	302
445-C	Shear & Torsion-Punching Shear	Sun	1:00 pm - 3:00 pm	402-403
445-D	Shear & Torsion-Shear Databases	Sun	2:00 pm - 5:00 pm	304
445-E	Shear & Torsion-Torsion	Sun	12:30 pm - 2:00 pm	304
446	Fracture Mechanics	Mon	8:30 am - 10:00 am	GRAND BALLROOM SALON K

Numerical Committee Meeting Listing

For detailed program information and program changes, download the Convention App.

Code	Committee	Day	Time	Room Name
447	Finite Element Analysis	Mon	11:00 am - 1:30 pm	GRAND BALLROOM SALON J
447	Finite Element Analysis	Mon	5:00 pm - 6:30 pm	309
506	Shotcreting	Tue	8:30 am - 11:30 am	FRANKLIN 8
506-A	Shotcreting-Evaluation	Mon	1:30 pm - 3:00 pm	306
506-B	Shotcreting-Fiber Reinforced	Mon	4:00 pm - 5:00 pm	405
506-C	Shotcreting-Guide	Mon	8:30 am - 10:30 am	406
506-E	Shotcreting-Specifications	Mon	10:30 am - 12:30 pm	502
506-F	Shotcreting-Underground	Mon	5:00 pm - 6:00 pm	502
515	Protective Systems	Tue	9:00 am - 11:00 am	309
522	Pervious Concrete	Tue	8:00 am - 11:00 am	LIBERTY BALLROOM A
523	Cellular Concrete	Tue	8:30 am - 10:30 am	411-412
524	Plastering	Mon	8:30 am - 10:00 am	GRAND BALLROOM SALON L
526	Autoclaved Aerated Concrete	Mon	8:30 am - 12:30 pm	308
526	Autoclaved Aerated Concrete	Tue	10:30 am - 1:00 pm	411-412
533	Precast Panels	Mon	8:30 am - 10:00 am	309
543	Piles	Mon	8:30 am - 11:30 am	304
544	Fiber-Reinforced Concrete	Tue	3:00 pm - 5:30 pm	GRAND BALLROOM SALON F
544-A	FRC-Education Production Application	Mon	10:00 am - 1:00 pm	GRAND BALLROOM SALON L
544-C	FRC-Testing	Tue	1:30 pm - 3:00 pm	GRAND BALLROOM SALON F
544-D	FRC-Structural Uses	Tue	11:30 am - 1:00 pm	501
544-E	FRC-Mechanical Properties	Mon	5:00 pm - 6:30 pm	303
544-F	FRC-Durability	Tue	10:30 am - 12:00 pm	INDEPENDENCE BALLROOM 1
544-SC	FRC-Steering Committee	Mon	8:30 am - 10:00 am	GRAND BALLROOM SALON I
546	Repair	Mon	9:00 am - 11:00 am	LIBERTY BALLROOM A
546-D	Packaged Repair Materials	Mon	8:00 am - 9:00 am	GRAND BALLROOM SALON J
546-E	Corrosion Studies	Sun	10:00 am - 11:30 am	405
548	Polymers	Tue	8:30 am - 11:30 am	402-403
548-A	Polymers-Overlays	Mon	8:15 am - 11:00 am	404
548-B	Polymers-Adhesives	Mon	3:00 pm - 5:00 pm	502
548-C	Structural Polymer Design	Mon	11:00 am - 12:30 pm	404
549	Thin Reinforced	Sun	11:00 am - 1:00 pm	GRAND BALLROOM SALON K
550	Precast Structures	Sun	3:00 pm - 5:00 pm	306
551	Tilt-up	Sun	9:00 am - 11:00 am	GRAND BALLROOM SALON K
552	Cementitious Grouting	Tue	4:00 pm - 5:30 pm	307
555	Recycled	Mon	5:00 pm - 6:30 pm	GRAND BALLROOM SALON I
560	Design & Constr ICFs	Tue	8:30 am - 10:30 am	307
562	Eval, Repair & Rehab	Sun	1:00 pm - 5:00 pm	FRANKLIN 9
562-A	General	Sat	12:00 pm - 4:00 pm	407
562-B	Loads	Sun	8:00 am - 10:00 am	301
562-C	Evaluation	Sat	4:00 pm - 5:00 pm	407
562-C	Evaluation	Sat	6:00 pm - 8:00 pm	407
562-D	Design	Sat	9:00 am - 12:00 pm	402-403
562-E	Education	Mon	8:00 am - 10:00 am	302
562-F	Durability	Sat	6:00 pm - 9:00 pm	404
563	Specs for Repair of Struct Conc in Bldgs	Tue	1:00 pm - 5:00 pm	411-412

Sessions & Events

For detailed program information and program changes, download the Convention App.
✓= Separate fee required ★ = Guest-only event

Sunday, October 23, 2016

8:00 am – 9:00 am

Convention Orientation Breakfast—GRAND BALLROOM SALON G

Moderated by Lawrence H. Taber, Black & Veatch

First-time convention attendees are invited to join Lawrence H. Taber, 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 first-time convention attendees, connect with convention mentors, and learn about what The Concrete Convention and Exposition has to offer.

8:00 am – 5:00 pm

Pier Luigi Nervi. Art and Science of Building—FRANKLIN HALL

With his masterpieces scattered the world over, Pier Luigi Nervi (ACI Honorary Member 1969) contributed to a glorious period for structural architecture. Nervi shared the cultures of architects and engineers, operating at the very intersection between the art, science, and technology of building. He was a designer, builder, researcher, creator of new construction techniques, professor, and author. Some of his greatest works are described in the context of his philosophy and technique. Visit FRANKLIN HALL Sunday through Tuesday to view the exhibit.

9:00 am – 4:00 pm

ACI Mortar Workability Student Competition—FRANKLIN HALL

Sponsored by ACI Committees S801 and 238
Moderated by Walter H. Flood, Flood Testing Labs

While past ACI competitions have focused mainly on strength or hardened concrete performance, this competition is changing it up and will focus on workability and rheological properties of concrete. Teams are challenged to create a mortar mixture with optimum flowability and stability. Students will mix their custom mortars at the convention competition site. To determine which mixture stands above the others, each mixture will be forced to flow through a tortuous mold in the shape of the letters "ACI" and will be subjected to segregation testing. Both flowability and mixture stability will be evaluated. Come join in with the always-exciting student competition—cheer on the student teams, learn about their unique mixtures, and interact with the future of the concrete industry! Check-in for this competition begins at 8:00 am.

10:00 am – 11:30 am

ACI International Forum—GRAND BALLROOM SALON A

Chaired by ACI Vice President Khaled Awad, ACTS

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.

Speakers include: Dr. Harald S. Müller, President, *fib*; Prof. Alejandro Durán Herrera, Director, Northeast Mexico Chapter – ACI; Mr. Robert Taylor, President, Manitoba Chapter – ACI; Mr. Michael van Koeverden, President, Concrete Institute of Australia (CIA); Prof. Shih-Jian Hwang, Taiwan Chapter – ACI; Mr. Andres Lee, Executive Director, INCYC-Nicaragua; representative reporting on Costa Rica and Guatemala; Dr. Francois Toutlemonde, Paris Chapter – ACI; and others.

11:30 am – 1:30 pm

✓International Lunch—GRAND BALLROOM SALON G

$30 U.S. per person
Topic: Engineering the Impossible—Sustainable Concrete Solutions for Day-to-Day Applications to Supertall and Slender Skyscrapers
Sponsored by the ACI International Advisory Committee
Speaker: Andreas Tselebidis, BASF

Special guest speaker Andreas Tselebidis will give a presentation on "Engineering the Impossible—Sustainable Concrete Solutions for Day-to-Day Applications to Supertall and Slender Skyscrapers." We are building more than ever before, and the sky seems to be the limit. The challenges of a growing population and the change in urban living, as well as environmental risks, are key variables that determine how we are going to build. Concrete has been evolving over the past centuries and has given humankind the ability to build more efficient and safe resources. Nevertheless, natural resources are depleting; whenever we build, we have to ensure we create something that lasts longer than what was built in the past. In the future, we will live predominately in cities, which will require environmentally focused construction with long-lasting structures—structures that will be able to resist deterioration and improve on impacts such as alkali-silica reaction, chloride penetration, abrasion, sulfate attack, and carbonation. The emphasis of this presentation will be on ecologically efficient, sustainable, and durable concrete for day-to-day application as well as concrete designed for superstructures.

PREREGISTRATION IS REQUIRED TO ATTEND. *This lunch is expected to sell out. A very limited number of tickets will be available for purchase on-site. Please notify the ACI Registration Desk if you have any dietary restrictions.*

1:00 pm – 3:00 pm

Evaluation of Concrete Structures—GRAND BALLROOM SALON B

Sponsored by ACI Committee 348
Moderated by Nakin Suksawang, Florida Institute of Technology; and Mahmoud Maamouri, Computerized Structural Design SC

The structural evaluation process of existing concrete structures involves the understanding of existing capacity, safety, and future expected life. Although there are some codes and guidelines to help engineers to obtain this information, the acceptable criterion is the target reliability index, which is rarely used or defined in current codes. The objective of the proposed session is to present the challenges and solutions using more rational reliability approaches in evaluating concrete structures. Papers on evaluation methods, prediction models, reliability analysis, and code calibration will be presented.

1:00 pm: Concrete Repairs: Tasks and Responsibilities
Benjamin Lavon, GEI Consultants, Inc.; and Pericles C. Stivaros, GEI Consultants, Inc.

1:20 pm: Condition Evaluation and Repair of 100+ Year Old Buildings
Ashok M. Kakade, Concrete Science Inc.

1:40 pm: Evaluation and Repair of Two RC Parking Structures
James Labelle, Computerized Structural Design; and Mahmoud Maamouri, Computerized Structural Design SC

2:00 pm: Reliability Evaluation of Circular RC Columns Strengthened by FRP
Sofia Maria C. Diniz, Federal University of Minas Gerais; and Juscelina Rosiane Ferreira, Federal University of Minas Gerais

2:20 pm: Removing Polychlorinated Biphenyls (PCBs) from a Concrete Building
Donald G. McLaughlin, Burns & McDonnell

2:40 pm: Risk Acceptance Criteria in Safety Evaluation and Design of Existing Concrete Structures
Ming Liu, Naval Facilities Engineers and Expeditionary Warfare Center

2 AIA/CES LU

PDH Codes: _____ _____ _____

1:00 pm – 3:00 pm

Overview and Applications of Structural Health Monitoring (SHM) Technologies for Concrete Structures—GRAND BALLROOM SALON C

Sponsored by ACI Committee 444
Moderated by Mohammad Pour Ghaz, North Carolina State University; and Mohamed El-Batanouny, Wiss, Janney, Elstner Associates, Inc.

The objective of these sessions is to provide an overview of the emerging and traditional structural health monitoring (SHM) technologies with an emphasis on their application to concrete structures. The presentations will include: 1) brief descriptions of technologies with emphasis on advantages and limitations; 2) successful implementation to concrete structure in real-life or laboratory settings; and 3) condensed data analysis and examples of outcomes. These sessions will be of interest to engineers, researchers, and infrastructure owners and operators.

1:00 pm: Structural Health Monitoring (SHM) of Corrosion Potential in Concrete Bridge Decks
Hani H. Nassif, Rutgers, The State University of New Jersey; and Hasan S. Al-Nawadi and Adi Abu-Obeidah, Rutgers

1:20 pm: Evaluation of Prestressing Forces and Pre-Release Cracks Using Fiber-Optic Sensors
Branko Glisic, Princeton University; and Hiba Abdel-Jaber, Princeton University

1:40 pm: Monitoring and Evaluation of Concrete Haunch Deterioration
John E. Pearson, Wiss, Janney, Elstner Associates, Inc.; and Richard Lindenberg, Wiss, Janney, Elstner Associates, Inc.

2:00 pm: Monitoring of Concrete Bridges Using Digital Videos and Imagery
Thomas Schumacher, Portland State University; and Devin K. Harris, University of Virginia

2:20 pm: Monitoring of Distress in Concrete Structures Using Acoustic Emission
Mohamed El-Batanouny, Wiss, Janney, Elstner Associates, Inc.; and Paul H. Ziehl, University of South Carolina

2:40 pm: A Functionally Layered Sensing Skin for Structural Health Monitoring of Concrete Structures
Mohammad Pour-Ghaz, North Carolina State University; Aku Seppanen, University of Eastern Finland; and Milad Hallaji, Thornton Tomasetti

2 AIA/CES LU

PDH Codes: _____ _____ _____

1:00 pm – 3:00 pm

Revolutionary Tilt-Up Design—GRAND BALLROOM SALON D

Sponsored by the ACI Educational Activities Committee (EAC) and ACI Committee 551
Moderated by Kimberly Waggle Kramer, Kansas State University

Recently, tilt-up concrete has been used in new building types which has advanced the industry's technology and has provided unique solutions to building programs. This has been achieved through innovative engineering and construction. This session will disseminate information related to slender reinforced concrete, known as "tilt-up" or "site-cast tilt-up concrete."

1:00 pm: A Structural Engineer's Hacks to Tilt-Up Construction in Big-Box Warehouses
Doug Antholz, KPFF Consulting

1:30 pm: Modeling Tilt-Up Panels
Jeff Griffin, LJB Inc.

2:00 pm: Crane Selection
Scott Hosking, Seretta Construction, Inc.

2:30 pm: Updated and Clarifying Wind Bracing Guidelines
Joseph J. Steinbicker, Steinbicker & Co., LLC

2 AIA/CES LU

PDH Codes: _____ _____ _____

1:00 pm – 3:00 pm

Sulfate Attack on Concrete: Holistic Perspective, Part 1 of 3—GRAND BALLROOM SALON A

Sponsored by ACI Committee 201
Moderated by Thano Drimalas, University of Texas at Austin; and Mohamed Bassuoni, University of Manitoba

This session will be on the deterioration of concrete due to sulfate attack, which is a complex process characterized by multiple manifestations, including volumetric expansion, cracking, spalling, softening, and in some cases, mushiness. Sulfate attack can generally be classified as internal or external to the cementitious matrix, and the underlying damage modes can be chemical or physical. The scope involves theoretical and experimental aspects of different forms of sulfate attack 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 developments in research and standards, and educate the audience about this durability issue and its underlying mechanisms.

1:00 pm: Development of Test Methods to Address the Various Mechanisms of Sulfate Attack
R. Doug Hooton, University of Toronto

1:25 pm: Criteria for Concrete Mixtures Resistant to Chemical Sulfate Attack
Colin L. Lobo, NRMCA; and Karthik H. Obla, NRMCA

1:50 pm: Sulfate Resistance of Mortar Bars in Calcium, Magnesium, and Sodium Sulfate Using a Vacuum Impregnation Technique
Federico M. Aguayo, University of Texas at Austin; and Thano Drimalas, University of Texas at Austin

2:15 pm: Sulfate Resistance of Ternary Blend Concretes: Influence of Binder Composition on Performance
Robert B. Holland, Simpson Gumpertz & Heger, Inc.; and Lawrence F. Kahn and Kimberly E. Kurtis, Georgia Institute of Technology

2:40 pm: Characterization of Damage Evolution in Concrete Due to External Sulfate Attack
Amir Bonakdar, Euclid Chemical

2 AIA/CES LU

PDH Codes: _____ _____ _____

Sunday, October 23, 2016

3:30 pm – 5:30 pm

Early-Age Concrete Properties Measurements for Concrete Pavement Construction Operations and Traffic Opening—GRAND BALLROOM SALON C

Sponsored by ACI Committees 231 and 325
Moderated by Wayne M. Wilson, Holcim (US) Inc.; and Jussara Tanesi, SES Group & Associates

This session will promote best practices for obtaining the early-age concrete properties desirable for good concrete pavement performance based on reliable measurements instead of empirical evaluation, guessing estimates, or personnel experience.

3:30 pm: Accuracy of Maturity-Based Predictions as Influenced by Method, Datum Temperature, and Activation Energy
Chang Hoon Lee, Cornell University; and Kenneth C. Hover, Cornell University

3:48 pm: Contactless Ultrasonic System for Continuous Monitoring of Concrete Setting and Hardening
Hajin Choi, University of Illinois at Urbana-Champaign; and John S. Popovics, Quang Ngoc Vinh Tran, and Homin Song, University of Illinois at Urbana-Champaign

4:04 pm: Effect of Early Opening to Traffic on the Fracture Mechanics Parameters of IDOT Concrete Pavement and Patches
Mohsen A. Issa, University of Illinois; and Mustapha Ibrahim, Maen Farhat, and Raymond Bassim, University of Illinois at Chicago

4:22 pm: Maturity and Dynamic Modulus Tests for the Strength Prediction of IDOT Concrete Pavement and Patches at Early Opening to Traffic
Mohsen A. Issa, University of Illinois; and Mustapha Ibrahim, Maen Farhat, and Raymond Bassim, University of Illinois at Chicago

4:40 pm: Monitoring Early-Age Stiffening of Paste, Mortar, and Concrete in the Lab and in the Field
Kenneth C. Hover, Cornell University; and Chang Hoon Lee, Cornell University

4:58 pm: Workability and Setting Time
Peter C. Taylor, CP Technology Center

2 AIA/CES LU

PDH Codes: _____ _____ _____

3:30 pm – 5:30 pm

Emerging Technologies in Civil Infrastructure Application—GRAND BALLROOM SALON B

Sponsored by the ACI Foundation Strategic Development Council (SDC)
Moderated by Steven H. Kosmatka, Portland Cement Association; and Anik Delagrave, LafargeHolcim

This session is sponsored by the Strategic Development Council (SDC), which collaborates across the concrete industry to address challenges and creates a forum for the introduction and nurturing of new technologies. The session will shed light on new developments in preliminary design guidelines and construction of concrete wind turbine towers. Concrete provides a cost-effective means to increase the height of towers, enabling capture of more wind energy. Benefits include on-site or off-site component fabrication, site assembly with fewer fatigue critical joints, enhanced dynamic performance, reduction of foundation volume, lower maintenance costs inherent, increased service life due to high fatigue resistance of concrete, and a more robust tower base to accommodate greater capacity turbines in the future.

3:30 pm: ITG-9 Report on Design of Concrete Wind Turbine Towers
Charles Hanskat, American Shotcrete Association

4:00 pm: Design of Construction of the Tallest Concrete Wind Turbine
James Lockwood, Wind Tower Technologies, LLC; and Matthew Chase, Wind Tower Technologies, LLC

4:30 pm: Hexcrete Technology for Taller Wind Turbine Towers
Sri Sritharan, Iowa State University

5:00 pm: Opportunies for Concrete in Offshore Wind Energy Plants
Daniel A. Kuchma, Tufts University

2 AIA/CES LU

PDH Codes: _____ _____ _____

3:30 pm – 5:30 pm

History of Natural Cements—GRAND BALLROOM SALON D

Sponsored by ACI Committee 120
Moderated by Ryan M. Scott, GCP Applied Technologies; and Rick H. Yelton, World of Concrete

The session focuses on local projects in the Philadelphia region. Presentations cover small architectural to large projects over 80 years old. Also, with the centennial of the Portland Cement Association (PCA), the history of the cement industry and PCA's involvement will be highlighted.

3:30 pm: Yankee Dollars and Engineers
Matthew K. Swenty, Virginia Military Institute

3:50 pm: Concrete Play Structures
Scott D. Schroeder, Kansas State University

4:10 pm: Concrete Chuck
Anthony J. Lamanna, Eastern Kentucky University

4:30 pm: New Jersey's First Concrete Road
Kurt D. Smith, Applied Pavement Technology, Inc.

4:50 pm: Eighty Years of a Palace for Chocolate Town
Sam McConnell, Kansas State University

5:10 pm: 100 Years of Concrete Knowledge
Michelle L. Wilson, Portland Cement Association

2 AIA/CES LU

PDH Codes: _____ _____ _____

3:30 pm – 5:30 pm

Sulfate Attack on Concrete: Holistic Perspective, Part 2 of 3—GRAND BALLROOM SALON A

Sponsored by ACI Committee 201
Moderated by R. Doug Hooton, University of Toronto; and Mohamed Bassuoni, University of Manitoba

The session description for this session may be found in the Part 1 listing; refer to page 21.

3:30 pm: Lessons Learned from the Canadian PFRA Long-Term Studies on Sulfate Resistance
R. Doug Hooton, University of Toronto; Scott T. Roy, PFRA/Agriculture Canada; Michael D. A. Thomas, University of New Brunswick; and Lisa R. Feldman, University of Saskatchewan

3:55 pm: Criteria for Selecting Mixtures Resistant to Physical Salt Attack
Karthik Obla, NRMCA; and Robert C. O'Neil, Micro-Chemical Labs

4:20 pm: Laboratory and Field Evaluations on Physical Salt Attack
Thano Drimalas, University of Texas at Austin; Travis Lowe, Paul Koehler Brown Consulting Structural Engineers, LLC; and Kevin J. Folliard and Federico M. Aguayo, University of Texas at Austin

4:45 pm: Efficacy of Ultrasonic Pulse Velocity Testing to Assess Sulfate-Degraded Concrete
Julie Ann Hartell, Oklahoma State University; and Andrew J. Boyd, McGill University

5:10 pm: The Effects of Supplementary Cementitious Materials and Exposure Temperature on External Sulfate Attack
Ashlee Allison, GEMTEC Limited; and Michael D. A. Thomas, University of New Brunswick

2 AIA/CES LU

PDH Codes: _____ _____ _____

5:45 pm – 7:00 pm

Opening Session—GRAND BALLROOM SALON E-F

The Opening Session is the official start to The Concrete Convention and Exposition and will begin with a welcome address by ACI President Michael Schneider. ACI's Emcee for the night, Pat Ciarrocchi, former CBS 3 news anchor, will recognize several individuals for their contributions to the concrete industry. The Opening Session will conclude with a keynote presentation by futurist Jim Carroll. Carroll will provide an overview of the key trends impacting your organization and invaluable leadership lessons that provide a clear path for going forward. We live in a time of massive challenge, and yet one of massive opportunity, with every industry and organization impacted by business model disruption, the emergence of new competitors, the impact of technology, the collapse of product lifecycle, political volatility, and ever-more challenging customers. Those very things which might have worked for us in the past might be the very anchors that could now hold us back as the future rushes at us with ever increasing speed. In the era of Uber, Tesla, and Amazon, leaders must have the insight into unique opportunities for innovation and change. Don't miss this special presentation titled, "Think Big, Start Small, Scale Fast: Innovating in the Age of Acceleration."

8:00 pm – 10:00 pm

Hot Topic Session—GRAND BALLROOM SALON D

Sponsored by Hot Topics Committee
Moderated by Jacob L. Borgerson, Paradigm Consultants, Inc.

The use of alternative cementitious materials (ACMs) in construction is a developing technology. Currently, specifications and design codes are based on the use of portland cement as the primary binding ingredient. The use of ACMs is rapidly advancing, requiring owners, contractors, and engineers to address specifying, testing, and performance of ACMs. This session will offer perspectives on the challenges of ACMs and how specifications, building codes, and construction practices are adapting to new ACM technology.

8:00 pm: Alternative Cementitious Materials (ACMs) State-of-the-Art Summary
Lawrence L. Sutter, Michigan Technological University

8:25 pm: Alkali-Activated and Geopolymer Cements: Design from Atoms to Applications
John L. Provis, University of Sheffield

8:50 pm: Upscaling the Use of Alternative Cements
Kimberly E. Kurtis, Georgia Institute of Technology

9:15 pm: The Challenge of Assuring ACM Performance for Highway Concrete
Richard C. Meininger, Federal Highway Administration

9:40 pm: Panel Discussion
Jacob L. Borgerson, Paradigm Consultants, Inc.

2 AIA/CES LU

PDH Codes: _____ _____ _____

9:00 pm – 10:30 pm

Student and Young Professional Networking Event—CIRC RESTAURANT

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

The ACI Student and Young Professional Activities Committee and the ACI Collegiate Concrete Council 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.

Sessions & Events

For detailed program information and program changes, download the Convention App.
✓= Separate fee required ★ = Guest-only event

Monday, October 24, 2016

6:30 am – 8:15 am

Workshop for Technical Committee Chairs—GRAND BALLROOM SALON E-F

Sponsored by the ACI Technical Activities Committee (TAC)
Moderated by H. R. Trey Hamilton, University of Florida

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.**

7:00 am – 8:30 am

Speaker Development Breakfast—LIBERTY BALLROOM C

Sponsored by ACI Committee S802
Moderated by Arsenio Caceres Fernandez, University of Puerto Rico
Speaker: Fred Meyer, United States Military Academy at West Point

Topic: What's Your Story? A Way to Close the Gap between Teaching and Learning

It is the goal of this breakfast to provide an informal venue for attendees to learn how to become better presenters. The breakfast format promotes interaction between attendees.

In his book *The Global Achievement Gap*, Tony Wagner describes the growing gap between how students are taught versus how they desire to learn. The problem manifests itself in even the best schools and can result in graduates who are ill-prepared for college or for eventually entering the workforce. This presentation will discuss shortcomings in some of the ways teachers and speakers present information and demonstrate an alternative approach using a concrete-centered historical vignette.

8:30 am – 10:30 am

Chemically Activated Binders for Concrete, Part 1 of 2—GRAND BALLROOM SALON C

Sponsored by ACI Committee 236 and RILEM TC 247-DTA
Moderated by Maria C. G. Juenger, University of Texas at Austin; and Gaurav N. Sant, University of California, Los Angeles

Chemically activated binders typically consist of a material that is not cementitious by nature and a solution containing alkalis that activates the material (that is, turns it into a cementitious material). Precursor materials may include coal fly ash, slags, volcanic glasses, and calcined natural pozzolans, among others. The activator solution may include the silicates, hydroxides, and/or carbonates of sodium and potassium, among others.

8:30 am: The Composition-Solubility-Structure Relationships in Sodium Aluminosilicate Hydrate
Trevor Williamson, University of Texas at Austin; Maria C. G. Juenger, Lynn Katz, Philip Bennet and Joonkyoung Han, University of Texas at Austin; Howard Dobbs, Bradley Chmelka, and Jacob Israelachvili, University of California at Santa Barbara; and Gaurav N. Sant, University of California at Los Angeles

8:45 am: Tailoring Sodium-Carbonate-Activated Slag Cements with a Smart Chemical Addition
Xinyuan Ke, University of Sheffield; and Susan A. Bernal and John L. Provis, University of Sheffield

9:00 am: Rheological and NMR Spectroscopic Studies on the Influence of Activator Chemistry on Fly Ash Activation
Kirk E. Vance, Arizona State University; Akash Dakhane, Robert Marzke, and Narayanan Neithalath, Arizona State University; and Gaurav N. Sant, University of California, Los Angeles

9:15 am: The Effects of Nano Particle Addition on the Reaction Mechanism of Alkali-Activated Fly Ash-Slag Binders
Sravanthi Puligilla, University of Illinois at Urbana-Champaign; and Diprobato Sarbapalli and Paramita Mondal, University of Illinois at Urbana-Champaign

9:30 am: A New Tool for Analyzing Chemically Activated Binders: Microwave Materials Characterization
Christopher R. Shearer, South Dakota School of Mines and Technology; Nicole L. Thompson, Oregon State University; and Mahboobeh Mahmoodi, Ali Foudazi, Ashkan Hashemi, and Kristen M. Donnell, Missouri S&T

9:45 am: Permeability and Gel Stability of Alkali-Activated Materials
Claire E. White, Princeton University; and Anna C. Blyth, V. Ongun Ozcelik, Catherine A. Eiben, and George W. Scherer, Princeton University

10:00 am: Discussion
Maria C. G. Juenger, University of Texas at Austin; and Gaurav N. Sant, University of California, Los Angeles

2 AIA/CES LU

PDH Codes: _____ _____ _____

8:30 am – 10:30 am

Research in Progress, Part 1 of 2—GRAND BALLROOM SALON B

Sponsored by ACI Committee 123
Moderated by Chris Carroll, Saint Louis University; and Matthew O'Reilly, University of Kansas

This session will feature presentations of original, unpublished results from ongoing research projects and leading-edge concrete technology and research throughout the world.

8:30 am: Improving the Seismic Performance of Precast Bridge Columns with Grouted Sleeve Connections
Zachary B. Haber, FHWA-TFHRC; and Kevin R. Mackie and Haider Al-Jelawy, University of Central Florida

8:45 am: Mechanism of Autogenous Shrinkage in Alkali-Activated Slag Mortars and Validating the Efficiency of Various Shrinkage Mitigation Methods
Darshan B. Kumarappa, Clarkson University; and Sulapha Peethamparan, Clarkson University

9:00 am: Establishing a Minimum Air Content Limit for Concretes Containing SRAs by Evaluating the Combined Effect of Air-Void System Parameters and SRA Dosage on Durability
Benjamin Pendergrass, Genesis Structures, Inc.; and David Darwin, Muzai Feng, Rouzbeh Khajehdehi, James Lafikes, and Eman Ibrahim, University of Kansas

For detailed program information and program changes, download the Convention App.
✓= Separate fee required ★ = Guest-only event

9:15 am: Use of Toxic Waste from Caustic Washing of Hydrocarbons as an Activating Solution for Alkali-Activated Construction Materials
Sarah L. Williams, U.S. Army Engineering Research and Development Center; Christian Negron McFarlane, The University of Puerto Rico at Mayaguez; and Charles A. Weiss Jr., U.S. Army Engineering Research and Development Center

9:30 am: Nanosilica Coated Aggregates: Effects on Strength, Microstructure, and Transport Properties of Hydraulic Cement Mortars
Parth Panchmatia, Purdue University; and Ehsan Ghafari, Seyedali Ghahari, Jan Olek, and Na Lu, Purdue University

9:45 am: Benefiting from the Absorption Capacity of Flax Fibers to Enhance the Fresh and Hardened Properties of Concrete
Mothareh Rahimi, Université de Sherbrooke; and Arezki Tagnit-Hamou and Mathieu Robert, Université de Sherbrooke

10:00 am: Nucleation and Growth Models for Alkali-Activated Fly-Ash Cement
K. C. Chandrasiria, Clarkson University; and S. Peethamparan Clarkson, University

10:15 am: Micro-Chemo-Mechanical Investigations of Cement Pastes Incorporating Supplementary Cementitious Materials by Statistical Nanoindentation Coupled to SEMEDS Chemical Analyses
William Wilson, Université de Sherbrooke; Luca Sorelli, Laval University; and Arezki Tagnit-Hamou, Université de Sherbrooke

2 AIA/CES LU

PDH Codes: _____ _____ _____

8:30 am – 10:30 am

Sulfate Attack on Concrete: Holistic Perspective, Part 3 of 3—GRAND BALLROOM SALON A

Sponsored by ACI Committee 201
Moderated by Thano Drimalas, University of Texas at Austin; and Mohamed Bassuoni, University of Manitoba

The session description for this session may be found in the Part 1 listing; refer to page 21.

8:30 am: Avoiding Sulfate Degradation in Field Structures
Theodore Chappex, Swiss Federal Institute of Technology; and Karen Scrivener, Swiss Federal Institute of Technology

8:50 am: Effects of Cement Type, Fly Ash, and Nanoparticles on Mortars under Conventional and Thaumasite Sulfate Exposure
Mohamed Bassuoni, University of Manitoba; and Md Mahbubur Rahman, University of Manitoba

9:10 am: Performance of Alternative Binders in Sulfate Environments
Lisa E. Burris, Georgia Institute of Technology

9:30 am: Durability of Two-Stage (Pre-Placed Aggregate) Concrete to Sulfate Attack
Manal Faruk Najjar, University of Western Ontario; Moncef L. Nehdi, Western University; and Ahmed Mohamed Soliman, University of Western Ontario

9:50 am: Efficacy of Composite Strengthening on Axial Capacity of Concrete Subjected to Sulfate-Induced Damage
Yail Jimmy Kim, University of Colorado at Denver; and Yongcheng Ji, University of Colorado at Denver

10:10 am: Delayed Ettringite Formation: Current Knowledge from the Laboratory and the Field
Anthony F. Bentivegna, CTLGroup

2 AIA/CES LU

PDH Codes: _____ _____ _____

8:30 am – 10:30 am

What I Wish I Knew: Transition into a Faculty Member—GRAND BALLROOM SALON D

Sponsored by ACI Committee S806
Moderated by Tyler Ley, Oklahoma State University

"Transition into a Faculty Member" is a panel discussion on topics such as putting together a faculty application package, the interview process, timelines, the first year, and the tenure application process. The moderator and panelists are young and more seasoned faculty members who have been through the process as applicants (and as reviewers) and are available to share their experiences with those facing this step ahead of them. The session will begin with a brief biography of the panel members, a few general questions from the moderator, and then the floor will be opened for questions from the audience. The session is geared toward graduate students, postdoctoral students, and professionals looking to apply or in the process of applying for faculty positions. Young faculty looking to attain tenure are also welcome to attend.

Panel Discussion
Tyler Ley, Oklahoma State University; Mary Christianson, University of Minnesota Duluth; Eric R. Giannini, University of Alabama; Devin K. Harris, University of Virginia; Matthew P. Adams, New Jersey Institute of Technology; and Tara Cavalline, University of North Carolina at Charlotte

2 AIA/CES LU

PDH Codes: _____ _____ _____

10:30 am – 11:00 am

ACI 123 Concrete Research Poster Session—GRAND BALLROOM FOYER

Sponsored by ACI Committee 123
Moderated by Jan Vosahlik, CTLGroup

The ACI 123 Concrete Research Poster Session complements the existing Research in Progress and Open Topic sessions and provides further opportunity for the presentation of original, unpublished results from ongoing research projects and leading-edge concrete technology throughout the world.

Mitigating Shrinkage in Metakaolin Limestone Blended Cements
Behnaz Zaribaf, Georgia Institute of Technology; and Kimberly E. Kurtis, Georgia Institute of Technology

The Influence of Alkalinity of the Cementitious System on the Absorption Capacity of Superabsorbent Polymers for Internally Cured Concrete
Juan D. Tabares, Purdue University; Jan Olek, Purdue University; and Jason Weiss, Oregon State University

New Test Method for the Determination of Susceptibility of Aggregates to ASR
Michael Laskey, University of New Brunswick

Performance of Hydraulic-Lime CMU Walls and Components
Michael Berry, Montana State University; and Tucker Haunt, Montana State University

Reliability of the Thermogravimetric Analysis for Determining the Unburned Carbon Content in Fly Ash
Mina Mohebbi, Pennsylvania State University; and Farshad Rajabipour, and Barry E. Scheetz, Pennsylvania State University

Effectiveness of Ground Glass Fiber as a Cementitious Material, in Mitigation of Alkali-Silica Reaction of Concrete Containing Recycled Glass Aggregates
Hassan Rashidian-Dezfouli, Clemson University; and Kaveh Afshinnia and Prasad Rao Rangaraju, Clemson University

A Sustainable Masonry from Biomass Ash
Piyush Chaunsali, Massachusetts Institute of Technology; and Hugo Uvegi, Rachel Osmundsen, John Ochsendorf, and Elsa Olivetti, Massachusetts Institute of Technology

Leveraging Thermal Storage in Heavy Concrete Structures for Integrated Structural Resilience and Energy Efficiency
Zhenglai Shen, University of Alabama in Huntsville; and Hongyu Zhou, University of Alabama in Huntsville

Alkali-Silica Reaction (ASR) Susceptibility of Alkali-Activated Cement Free Binders
Zihui Li, Clarkson University; Robert J. Thomas, Utah State University; and Sulapha Peethamparan, Clarkson University

Investigating Shear Friction Behavior in Externally Reinforced Steel Composite Structures
Giovanni Loreto, Georgia Institute of Technology; and Russell T. Gentry, Kimberly E. Kurtis, and Lawrence F. Kahn, Georgia Institute of Technology

Nondestructive Evaluation by Surface Wave Transmission for Repairing Crack in Concrete
Myoungsu Shin, Ulsan National Institute of Science and Technology; and Eunjong Ahn and Seongwoo Gwon, Ulsan National Institute of Science and Technology

Confinement of Concrete Columns with Steel-FRP Composite
Christian Carlonia, University of Bologna; Imohamed Ali Omar Imohamedb, Mattia Santandreac, and Faezeh Ravazhezhd, University of Bologna; and Lesley H. Sneede, Missouri University of Science and Technology

Retrofit of Reinforced Concrete Columns with Partial or No Internal Steel Reinforcement Using Near Surface Mounted Fiber-Reinforced Polymers
Rafael A. Salgado, University of Toledo; and Serhan Guner, University of Toledo

Effect of Nano-Cellulose Filaments on the Rheological Properties of Cementitious Matrices
Nevena Basic, University of Sherbrooke; and Hisseine Ousmane, Ahmed Omaran, and Arezki Tagnit-Hamou, University of Sherbrooke

Monday, October 24, 2016

11:00 am – 1:00 pm

Chemically Activated Binders for Concrete, Part 2 of 2—GRAND BALLROOM SALON C

Sponsored by ACI Committee 236 and RILEM TC 247-DTA
Moderated by Maria C. G. Juenger, University of Texas at Austin; and Ivan Diaz-Loya, Headwaters Resources

The session description for this session may be found in the Part 1 listing; refer to page 24.

11:00 am: Alkali-Activated Cements and Concretes—Durability and Standardization
John L. Provis, University of Sheffield; and Susan A. Bernal, University of Sheffield

11:15 am: Test Methods and Specifications for Chemically Activated Binders
R. Doug Hooton, University of Toronto; Lawrence L. Sutter, Michigan Technological University; and Mary U. Christiansen, University of Minnesota Duluth

11:30 am: Exploring the ASR Performance of Alkali-Activated Fly Ash Concrete
Juliana Neves, Pennsylvania State University; and Farshad Rajabipour, Pennsylvania State University

11:45 am: Carbonation Shrinkage of Alkali-Activated Slag and Portland Cement Containing Alkalis
Hailong Ye, Pennsylvania State University; and Aleksandra Radlinska, Pennsylvania State University

12:00 pm: Modified Test Methods for Evaluating the Chloride Penetrability of Alkali-Activated Concrete
Robert J. Thomas, Utah State University; and Sulapha Peethamparan, Clarkson University

12:15 pm: Suitability of Accelerated Chloride Penetration Tests for Evaluating Alkali-Activated Slag Concretes in Chloride Environments
Dali Bondar, Queen's University Belfast; Muhammed P. A. Basheer, University of Leeds; Sreejith Nanukuttan, University of Belfast; and John L. Provis, University of Sheffield

12:30 pm: Carbonation of a Low-Calcium Fly Ash Geopolymer Concrete
M. S. H. Khan, The University of New South Wales; and A. Castle, and A. Noushini, The University of New South Wales

2 AIA/CES LU

PDH Codes: _____ _____ _____

11:00 am – 1:00 pm

Research in Progress, Part 2 of 2—GRAND BALLROOM SALON B

Sponsored by ACI Committee 123
Moderated by Chris Carroll, Saint Louis University; and Matthew O'Reilly, University of Kansas

The session description for this session may be found in the Part 1 listing; refer to page 24.

11:00 am: Calcium Sulfoaluminate Cement Concrete for Precast, Prestressed Concrete Components
Troy Bowser, University of Oklahoma; and Royce Floyd, University of Oklahoma

11:15 am: Reinforcement Limits in Beams with High-Strength Steel
Aishwarya Y. Puranam, Purdue University; and Santiago Pujol, Purdue University

11:30 am: Characterization of the Restrained Swelling Pressure of Synthetic Alkali-Silicate Gels
Asghar Gholizadeh, Pennsylvania State University; and Farshad Rajabipour, Pennsylvania State University

11:45 am: Behavior of High-Volume Synthetic Fiber-Reinforced Shotcrete with Varying Fiber Lengths
Nicholas Claggett, South Dakota School of Mines and Technology; and Chris Shearer, South Dakota School of Mines and Technology

12:00 pm: Bond Behavior of GFRP Bar-Concrete Interface: From Prediction, Damage Evolution Assessment to Durability
Zhibin Lin, North Dakota State University; and Fei Yan, North Dakota State University

12:15 pm: VCCTL Inputs Made Easy
B. E. Watts, University of Florida; C. C. Ferraro, University of Florida; and A. Snyder and C. M. Hefferan, RJ Lee Group

12:30 pm: Flexural Behavior RC Beams Strengthened and Repaired with Steel-FRP Composite Strips
Lesley H. Sneed, Missouri S&T; Christian Carloni, University of Bologna; and Salvatore Verre and Luciano Ombres, University of Calabria

12:45 pm: Prediction of the Environmental Burdens Associated with Increased Concrete Pavement Construction: a Case Study in Quebec
Hessam AzariJafari, Université de Sherbrooke; and Ammar Yahia and Ben Amor, Université de Sherbrooke

2 AIA/CES LU

PDH Codes: _____ _____ _____

11:00 am – 1:00 pm

Solutions to Common Problems with Pervious Concrete—GRAND BALLROOM SALON D

Sponsored by ACI Committee 522
Moderated by Scott J. Erickson, Evolution Pervious Paving Resources

This session covers solutions to common problems associated with designing, building, and maintaining pervious concrete pavement. Important innovations will be presented by industry leaders in research, education, and field training. Included in our session: results from testing chemicals that fight deicer damage; state-of-the-art pervious mixture designs that make dry, unworkable concrete mixtures obsolete; important site design information critical to the long-term performance of pervious pavements; results from multiple cleaning techniques; and field results from ASTM standards designed for testing pervious concrete. This session should be very informative for everyone involved in the design, manufacture, installation, and maintenance of pervious pavements.

11:00 am: Pervious Concrete Mixture Proportioning: Mixture Design Reality Check—Is Your Mixture Obsolete?
John T. Kevern, University of Missouri at Kansas City

11:30 am: Using Vinyl Acetate Ethylene (VAE) Co-Polymers to Improve Pervious Concrete Performance
Ranjini Murthy, Wacker Chemical Corporation; and Andrew J. Wise, Wacker Chemical Corporation

12:00 pm: The Critical Importance of Site Design for Pervious Pavements
Scott J. Erickson, Evolution Pervious Paving Resources

12:30 pm: Pervious Concrete Maintenance and Cleaning
Alan Sparkman, Tennessee Concrete Association

12:45 pm: Pervious Concrete Research on Current ASTM Testing Standards
Alan Sparkman, Tennessee Concrete Association

2 AIA/CES LU

PDH Codes: _____ _____ _____

11:00 am – 1:00 pm

UHPC—Revolutionary Innovation through Fiber Reinforcement—GRAND BALLROOM SALON A

Sponsored by ACI Committees 239 and 544
Moderated by Kay Wille, University of Connecticut

Ultra-high-performance concrete (UHPC) offers excellent ductility and crack width limitations due to tailored matrix fiber bond properties. UHPC can be designed to show deflection hardening or even strain hardening under uniaxial tensile load, enabling innovative structural solutions. This session will report on various testing methods, types of fibers, mixtures, and applications that employ UHPC's composite behavior to deliver innovative practical applications. The session provides an ideal platform for input on this groundbreaking material and should be of high interest among researchers and practitioners. Sharing academic knowledge about fiber-reinforced UHPC might inspire material scientists and facilitate wider worldwide use of the material.

11:00 am: Influence of Steel Fiber Size, Shape, and Strength on Quasi-Static and Dynamic Mechanical Properties of Ultra-High-Performance
Dylan A. Scott, Engineer Research and Development Center; Brian H. Green, U.S. Army Corps of Engineers; and Wendy Long, Mississippi State University

11:30 am: Mechanical Characterization and Correlation of Dynamic Tensile and Flexural Behaviors of UHPC
Barzin Mobasher, Arizona State University; Flavio de Andrade Silva, Pontifical Catholic University of Rio de Janeiro; and Yiming Yao, Arizona State University

12:00 pm: Natural Fibers as Promoters of Autogenous Healing HPFRCCs
Liberato Ferarra, Polytechnic University of Milan; and Flavio de Andrade Silva, Pontifical Catholic University of Rio de Janeiro

12:30 pm: Ultra-High-Performance Glass Concrete
Arezki Tagnit Hamou, University of Sherbrooke; and Nancy Ahmed Soliman, University of Sherbrooke

12:40 pm: UHPFRC Direct Shear Characterization and Application to Web-Flange Shear Design of T-Shaped Girders
Francois Toutlemonde, University of Paris-Est; and Amaury Herrera, Florent Baby, and Pierre Marchand, University of Paris-Est

2 AIA/CES LU

PDH Codes: _____ _____ _____

Sessions & Events

For detailed program information and program changes, download the Convention App.
✓= Separate fee required ★ = Guest-only event

Monday, October 24, 2016

11:30 am – 1:30 pm

✓Student Lunch—GRAND BALLROOM SALON E-F

$53 U.S. per person
Topic: Revolutionize your Student Teams
Sponsored by Baker Concrete Construction Company, Inc.

Coordinated by the Eastern Pennsylvania and Delaware Chapter – ACI and ACI Committee S801
Speaker: Kenneth C. Hover, Cornell University

Join students and other ACI attendees for the Student Lunch. Speaker Kenneth C. Hover will give a presentation titled "Revolutionary Leadership." All are welcome to register for the lunch. Following the lecture, the results of the student competition will be announced.

In addition to learning concrete technology, the long-term payoff from student competitions comes from experiencing how to effectively work together in teams, and how to motivate, manage, and lead those teams to success. So don't just settle for being competitive here at the ACI convention; carry the Philadelphia theme back home and revolutionize your teams! Start by recognizing that your newest member is your most important member, and that the leader's job is to support member success and satisfaction. Then recognize that your toughest competition is not here at Convention, but back home in the form of all the demands on members' limited time. What can you do to make each member willing to spend that valuable time by actively contributing to team success? Bring a motivated team to competition, with everybody's head in the game, and you will take home more than a prize! Join the Revolution!

PREREGISTRATION IS REQUIRED TO ATTEND*. This lunch is expected to sell out. A very limited number of tickets will be available for purchase on-site. Please notify the ACI Registration Desk if you have any dietary restrictions.*

1:30 pm – 3:30 pm

Career Guide to Concrete Paths—GRAND BALLROOM SALON C

Sponsored by ACI Committee S806
Moderated by Allyn C. Luke, Rutgers University and Mohamed A. Mahgoub, New Jersey Institute of Technology

This session will provide practical information on various employment sectors of the concrete industry, with advice on how one might go about securing employment in those sectors. Speakers from construction, consulting, cement, admixtures, testing, government, and research will talk about the challenges and rewards of working their respective sectors, and what is required of persons seeking employment in these sectors. Get information on getting a job from people who often offer jobs. It is intended for newly graduated job seekers, but may be useful for anyone seeking employment in the concrete industry.

1:30 pm: The Concrete Gateway to Construction Industry
Michael J. Schneider, Baker Concrete Construction Inc.

1:48 pm: Admixtures Can Make Your Career Flow
G. Terry Harris, GCP Applied Technologies

2:04 pm: The Consulting Engineer—"I can do that!"
William E. Rushing, Waldemar S. Nelson and Company Inc.

2:22 pm: Testing Labs—How Else Would you Know? Working for Small Companies
Walter H. Flood, Flood Testing Labs

2:40 pm: Research—We've Got Problems Out There. Working for the Government
Jussara Tanesi, SES Group & Associates; and Ahmad A. Ardani, FHWA Transportation

2:58 pm: Panel Discussion—Finding a Concrete Path
Allyn C. Luke, Rutgers University

2 AIA/CES LU

PDH Codes: _____ _____ _____

1:30 pm – 3:30 pm

High-Strength Concrete: It is Not Just for Tall Buildings—GRAND BALLROOM SALON D

Sponsored by ACI Committee 363
Moderated by William M. Hale, University of Arkansas; and Seamus F. Freyne, Mississippi State University

This session focuses on highlighting the use of high strength concrete in structures other than tall buildings. This session is a follow up to our previous session in Kansas City that focused on using high-strength concrete in tall buildings. The session will benefit practicing engineers, producers, and researchers who are interested in the many possibilities and uses of high-strength concrete.

1:30 pm: Use and Benefits of HSC in the Design of Hexcrete Wind Turbine Towers
Sri Sritharan, Iowa State University

2:00 pm: Use of High-Strength Concrete in Low-Rise RC Shear Walls
Robert Devine, University of Notre Dame; and Ashley Thrall, Yahya C. Kurama, and Steven Barbachyn, University of Notre Dame

2:30 pm: Ultra-High-Performance Fiber-Reinforced Concrete: From Lab to Living Room
Geert De Schutter, Ghent University

3:00 pm: High-Strength Lightweight Concrete Bridges
Robert B. Holland, Simpson Gumpertz & Heger, Inc.; and Matthew R. Sherman, Simpson Gumpertz & Heger, Inc.

2 AIA/CES LU

PDH Codes: _____ _____ _____

1:30 pm – 3:30 pm

Reduction of Crack Width with Fiber, Part 1 of 2—GRAND BALLROOM SALON B

Sponsored by ACI Committee 544 and ACI Subcommittee 544-F
Moderated by Corina Maria Aldea, Amec Foster Wheeler; and Mahmut Ekenel, ICC ES

Fiber reinforcement is the most effective way of improving the resistance of concrete to cracking, but little is known of the extent of the reduction of crack width with fiber. The purpose of this session is to bring together experts from around the world

to discuss the role of fiber reinforcement in reduction of crack width, to learn from real-life situations, and to lay the foundation for life cycle engineering analysis with fiber-reinforced concrete. Presentation topics should be related to the benefits of using fibers to reduce crack width of concrete with and without conventional reinforcement. The session will provide insight on the state of the art of the topic in academia, in the industry, and in real-life applications. Contractors, material suppliers, engineers, researchers, and scientists will benefit from this session. Subject to TAC approval, the committee is planning to print a symposium publication for sale at the convention.

1:30 pm: Reduction of Crack Widths in Steel-Reinforced Concrete Bridge Decks with Fiber
Anil K. Patnaik, University of Akron

1:45 pm: A Model to Predict the Crack Width of FRC Members Reinforced with Longitudinal Bars
Joaquim Oliveira Barros, University of Minho; and Mahsa Taheri and Hamidreza Salehian, University of Minho

2:00 pm: Crack Width Reduction Using Synthetic Fibers
Kevin A. MacDonald, Beton Consulting Engineers, LLC; and Clifford N. MacDonald, FORTA Corporation

2:15 pm: SFRC Slabs Crack Width Prediction and Causes—How to Eliminate Cracks?
Xavier Destree, Xavier Destree Ltd.

2:30 pm: Effectiveness of Macrosynthetic Fibers to Control Cracking in Composite Metal Decks
Salah Ahmed Altoubat, University of Sharjah; and Klaus Alexander Rieder, Grace Bauprodukte GmbH

2:45 pm: Conventional and Unconventional Approaches for the Evaluation of Crack Width in FRC Structures
Alessandro P. Fantilli, Polytechnic University of Turin; and Bernardino Chiaia, Polytechnic University of Turin

3:00 pm: Tailoring a New Restrained Shrinkage Test for Fiber-Reinforced Concrete
Giovanni A. Plizzari, University of Brescia; and Fausto Minelli and Adriano Reggia, University of Brescia

2 AIA/CES LU

PDH Codes: _____ _____ _____

1:30 pm – 3:30 pm

Troubleshooting Self-Consolidating Concrete—GRAND BALLROOM SALON A

Sponsored by ACI Committee 237
Moderated by Joseph A. Daczko, BASF Corporation

This session is meant to provide all concrete practitioners with the basic understanding of how to troubleshoot the performance of self-consolidating concrete (SCC). Performance items covered will include surface finish defects, variable slump flow, segregation, and robustness. Each presentation will provide action items that a practitioner can take for understanding what is happening in their SCC mixture and potential pathways to corrective action.

1:30 pm: Analyzing Results of SCC Test Methods and In-Place Quality
Joseph A. Daczko, BASF Corporation

1:50 pm: Fiber-Reinforced and Self-Consolidating Concrete: A Value-Added Synergy
Liberato Ferrara, Polytechnic University of Milan

2:10 pm: Mixture Adjustments to Produce Stable SCC Mixtures
Ketan R. Sompura, Sika Corporation

2:30 pm: SCC—Why Mockups Matter: Using Rheological Measurements as a Benchmarking Tool
Stacia Van Zetten, EllisDon Corporation; and Lloyd J. Keller, EllisDon Corporation

2:50 pm: SCC Air Quality after Pumping
Dimitri Feys, Missouri S&T

3:10 pm: Troubleshooting SCC in Hot Weather
G. Terry Harris, GCP Applied Technologies; and Nathan A. Tregger, GCP Applied Technologies Inc.

2 AIA/CES LU

PDH Codes: _____ _____ _____

3:15 pm – 5:00 pm

Student Tour of W+Element Hotel Construction Site—DEPART MARRIOTT LOBBY

Students can visit the W+Element Hotel construction site where Tutor Perini Building Corporation is constructing a 50-story, 755-room "double" (Element and W brands) hotel. On July 10, the construction set a record with the largest continuous mat foundation pour in the history of Philadelphia.

Students who pre-register will be given a tour of the construction site, courtesy of Tutor Perini. Please wear long pants and closed-toe shoes. This is a walking tour, with the site within a 10-minute walk of the Downtown Marriott. There are a limited number of spaces available for the tour.

For a time lapse video of the mat foundation pour, please see **https://youtu.be/3nlJ6zb5mJw**.

***PREREGISTRATION IS REQUIRED TO ATTEND**. All tours depart from the Marriott lobby.*

4:00 pm – 6:00 pm

Bond of Reinforcing Steel and Prestressing Strands in Self-Consolidating Concrete—GRAND BALLROOM SALON A

Sponsored by ACI Committee 237
Moderated by George Morcous, University of Nebraska–Lincoln; and Dimitri Feys, Ghent University

ACI Committee 237 has made great advances in assembling data on the bond of reinforcing steel and prestressing strands in cast-in-place and precast self-consolidating concrete (SCC) components. During different recent committee meetings and other gatherings, bond strength in SCC was extensively discussed. The requested session will contain presentations on the bond mechanisms in SCC and in comparison to conventionally vibrated concrete (CVC). Discussion will include the effect of bar orientation; top bar effect; and influence of mixture design, rheology, and workability on bond strength. These theoretical aspects will be complemented with multiple practical experiences and recommendations for possible changes in design specification (ACI and AASHTO) when SCC is used.

4:00 pm: Assessment of Bond Behavior between Prestressing Reinforcement and SCC
Samuel Keske, Wiss, Janney, Elstner Associates; and Anton K. Schindler and Robert W. Barnes, Auburn University

4:20 pm: Bond Behavior of High-Performance Self-Consolidating Eco-Concrete
Hayder H. Alghazali, Missouri S&T; and John J. Myers, Missouri S&T

4:40 pm: Bond of Reinforcement of SCC Using the Bottle Bond Test
Mohammed Sonebi, Queen's University Belfast; Emillo Taengua, Polytechnic University of Valencia; and S. Wana, Queen's University Belfast

5:00 pm: Bond Performance of Top Strands Cast in Lightweight Self-Consolidating Concrete
Royce W. Floyd, University of Oklahoma; and Cameron D. Murray, University of Oklahoma

5:20 pm: Influence of Casting Process and Fresh Properties of SCC on Bond with Reinforcement
G. De Schutter, Ghent University

5:40 pm: Pullout Behavior of Reinforcing Bars with Short Bond Length in Lightweight Self-Compacting Concrete
Giovanni Muciaccia, Polytechnic University of Milan; and Gianpaolo Rosati, Polytechnic University of Milan

2 AIA/CES LU

PDH Codes: _____ _____ _____

Monday, October 24, 2016

4:00 pm – 6:00 pm

Construction Documents Using ACI 301 to Comply with ACI 318 Chapter 26—GRAND BALLROOM SALON C

Sponsored by The ACI Educational Activities Committee (EAC), ACI Committee 301, and ACI Subcommittee 318-A
Moderated by Aimee Pergalsky, Euclid Chemical

This session addresses how to use ACI 301, "Specifications for Structural Concrete," to comply with ACI 318, Chapter 26, "Construction Documents."

4:00 pm: Welcome and Introduction
Aimee Pergalsky, Euclid Chemical

4:05 pm: Review of the Development of Chapter 26
Terence C. Holland, Concrete Terry LLC

4:30 pm: Overview of ACI 301
Michelle L. Wilson, Portland Cement Association

4:55 pm: Incorporating ACI 301 into Construction Documents
Nicholas J. Carino, Consultant

5:20 pm: Using ACI 301 to Meet the Standard of Care
Frank Stephen Malits, Cagley and Associates

2 AIA/CES LU

PDH Codes: _____ _____ _____

4:00 pm – 6:00 pm

Emerging RCC Technologies—GRAND BALLROOM SALON D

Sponsored by ACI Committee 207
Moderated by Lawrence H. Taber, Black & Veatch; and Gary M. Horninger, Schnabel Engineering, Inc.

The session will describe roller-compacted concrete (RCC) in water resources, including new dam construction, overtopping protection for existing dams, and aprons for spillways. Focus will be on new directions, such as grout-enriched RCC and innovative batching and placement techniques. There will also be case histories to describe historical, present-day, and future uses primarily related to water resources.

4:00 pm: A Contractor's Perspective on RCC Placement in Water Environments
Del Shannon, ASI Constructors Inc.

4:20 pm: Design Details for RCC Construction
Randall P. Bass, Schnabel Engineering, Inc.

4:40 pm: Set-Retarded RCC Mixtures Pose Unique Challenges and Benefits
Timothy P. Dolen, Dolen and Associates LLC

5:00 pm: Improving Lake Laura Dam: A Look at RCC Overtopping Protection
Aaron Collins, Schnabel Engineering; and Jonathan Pittman, Schnabel Engineering

5:20 pm: Evaluation of Material Formulation and Construction Techniques to Produce Air-Entrained, Grout-Enriched, Roller-Compacted Concrete
Eric S. Musselman, Villanova University; and Jeremy Young, Schnabel Engineering

2 AIA/CES LU

PDH Codes: _____ _____ _____

4:00 pm – 6:00 pm

Reduction of Crack Width with Fiber, Part 2 of 2—GRAND BALLROOM SALON B

Sponsored by ACI Committee 544 and ACI Subcommittee 544-F
Moderated by Corina Maria Aldea, Amec Foster Wheeler; and Mahmut Ekenel, ICC ES

The session description for this session may be found in the Part 1 listing; refer to page 28.

4:00 pm: Reduction of Water Inflow by Controlling Cracks in Tunnel Linings Using Fiber Reinforcement
Mehdi Bakhshi, AECOM; and Verya Nasri, DMJM & Harris

4:15 pm: Design Guidelines for Hybrid Reinforced Concrete Using a Crack Width or Maximum Curvature Approach
Barzin Mobasher, Arizona State University; and Xinmeng Wang, Vikram Dey, and Yiming Yao, Arizona State University

4:30 pm: Engineered Cementitious Composites for Improved Crack Width Control of FRC Beams—A Review
Salah Ahmed Altoubat, University of Sharjah; and Mohammed Maalej and Samer Barakat Moussa Leblouba, University of Sharjah

4:45 pm: From Theory to Practice—15 Years of Applying SFRC to Crack Control in Design
Andreas Haus, Bekaert GmbH

5:00 pm: A Probabilistic Explicit Cracking Model for Analyzing the Cracking Process of Fiber-Reinforced Concrete Structures
Pierre Rossi, IFSTTAR

5:15 pm: Self-Healing of Fiber-Reinforced Concrete: A New Value of "Crack Width"-Based Design
Liberato Ferrara, Polytechnic University of Milan

5:30 pm: Effect of TSMR (Twisted Steel Micro Reinforcement) on Concrete Cracking Behavior
Samhar S. Hoz, Helix Fibers

2 AIA/CES LU

PDH Codes: _____ _____ _____

5:30 pm – 6:30 pm

Women in ACI Reception—FRANKLIN 9

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. All are welcome at this reception! A cash bar and light hors d'oeuvres will be served.

6:30 pm – 8:30 pm

123 Forum: Can We Design Concrete to Survive Nuclear Environments?—GRAND BALLROOM SALON D

Sponsored by ACI Committee 123
Moderated by Tengfei Fu, Oregon State University; and Eric R. Giannini, University of Alabama

Concretes used in nuclear power plant structures and nuclear waste storage/encapsulation applications are exposed to elevated temperatures and levels of radiation for extended periods of time. Potential effects can include dehydration, thermal cracking, reduction in radiation shielding properties, changes in mechanical properties (for example, increased creep), and alterations to the crystalline structure of aggregates. These effects are not well understood, complicating efforts to design for longer service lives. In long-term waste storage applications, the desired service life is effectively indefinite, yet engineers lack the tools to predict long-term performance. This Forum will explore the challenges associated with concrete nuclear structure design as well as what may constitute viable design philosophies for future structures.

This Forum will focus on the following:
- Current state of concrete reactors in the United States
- Changes in engineering properties of concrete under radiation effect (temperature, moisture content, and irradiation)
- Challenges to assessing performance of reactors beyond 40 years of operation
- What are the research gaps?
- What are the codification and standardization needs for new construction and repair?

A panel of experts will provide the audience information regarding the current state of knowledge on the effect of radiation on concrete in nuclear power production. The forum will start with short presentations by each panelist, followed by an interactive discussion with the audience.

6:30 pm: Introduction of Panelists and Forum Topic
Tengfei Fu, Oregon State University

6:32 pm: Nuclear Infrastructure: Second License Renewal and Need for Condition Assessment
Kimberly E. Kurtis, Georgia Institute of Technology

6:44 pm: Aging of Concrete under Nuclear Environment—What We Know, and What We Do Not Know
Yunping Xi, University of Colorado

6:56 pm: Concrete Impermeability as the Principal Criterion for Durability Design of Containment Structures
Michal Glinicki, Institute of Fundamental Technological Research Polish Academy of Sciences

7:08 pm: Gamma Irradiation Resistance of Slag-Rich Wasteform Grouts
John L. Provis, University of Sheffield

2 AIA/CES LU

PDH Codes: _____ _____ _____

6:30 pm – 10:00 pm

✓The Excellence in Concrete Construction Awards Gala—GRAND BALLROOM SALON E-F

$85 U.S. per person
Doors open at 5:30 pm
Awards Dinner: 6:30 pm – 8:30 pm
Reception: 8:30 pm – 10:00 pm

The ACI Excellence in Concrete Construction Awards will honor some of the most creative projects the concrete world has to offer. Chapter- and International Partner-sponsored concrete projects of all types are eligible to receive an award. Entries will be juried by an independent panel of industry professionals uniquely qualified and representing a diverse background, with technical expertise in all award categories. First- and second-place awards may be given in each category. An overall "Excellence" award will be revealed the evening of the Gala. Following the Awards Dinner, celebrate the accomplishments of those recognized at the post-reception. A cash bar will be available.

Tuesday, October 25, 2016

8:30 am – 10:30 am

Concrete Parking Structures Current and Future—GRAND BALLROOM SALON A

Sponsored by ACI Committee 362
Moderated by Sun Hee Hwang, Timothy Haahs and Associates; and Erich L. Martz, HNTB Corporation

The presentations in this session will cover topics regarding how a concrete parking structure's performance and durability can be impacted by decisions made during design and construction. The mechanisms of degradation that a concrete parking structure can be exposed to that adversely affect durability and performance, and the measures and repairs that can be employed to mitigate these degradation mechanisms, are presented. The session will also cover design of moment frames in high seismic areas and barrier wall systems. Engineers, contractors, and owners should attend that are involved with the design, construction, maintenance, and ownership of concrete parking structures.

8:30 am: Current Restoration Strategies Implemented in Concrete Parking Structures
Kevin W. Carrigan, Timothy Haahs & Associates, Inc.

8:47 am: Design of Durable Concrete Parking Structures
Erich L. Martz, HNTB Corporation

9:02 am: Design of Moment Frame Parking in High Seismic Zones
Paul J. Brienen, Brienen Structural Engineers, PS

9:19 am: Lessons Learned in Design and Construction of Precast Parking Structures
Thomas J. D'Arcy, The Consulting Engineers Group

9:36 am: PCI MNL 129 Parking Structures: Recommended Design and Construction
Ned M. Cleland, Blue Ridge Design, Inc.

9:53 am: Vehicular Edge Barrier Systems in Parking Structures
Mohammad S. Iqbal, KTU Joint Venture

2 AIA/CES LU

PDH Codes: _____ _____ _____

Tuesday, October 25, 2016

8:30 am – 10:30 am

Grouting for a Sustainable Future—GRAND BALLROOM SALON B

Sponsored by ACI Committee 552
Moderated by Jon S. Belkowitz, Intelligent Concrete, LLC

Grouting applications have been at the forefront of construction for the last few decades. The following session will identify case studies on new applications, additives, and admixtures for grouts that ensure a sustainable future. Pros and cons will be discussed in the case studies to facilitate a realistic view for new solutions to ongoing issues. The special session will emphasize grouting applications have been at the forefront of construction for the last few decades.

8:30 am: Application of Internal Curing in Cementitious Grouts for Prefabricated Concrete Elements Connections
Igor De la Varga, SES Group at Turner-Fairbank Highway Research Center

8:50 am: Dispersion Properties and Performance Evaluation of Colloidal Silica in Cementitious Composites
Jon S. Belkowitz, Intelligent Concrete, LLC

9:10 am: Segregation of Cementitious Post-Tensioning Grouts after Exposure to Humidity and Heat
H. R. Trey Hamilton, University of Florida

9:30 am: VDOT Experience with Grouted Post-Tensioned Tendons
Michael M. Sprinkel, Virginia Center for Transportation Innovation & Research

2 AIA/CES LU

PDH Codes: _____ _____ _____

8:30 am – 10:30 am

Joint ACI-fib International Symposium on Punching Shear of Structural Concrete Slabs—Honoring Neil Hawkins, Part 1 of 3—GRAND BALLROOM SALON C

Sponsored by Joint ACI-ASCE Committee 445
Moderated by Carlos E. Ospina, BergerABAM Inc.

This joint ACI-*fib* international symposium presents recent advances on the punching shear design of structural concrete slabs. The symposium intends to follow up on two previous efforts by the International Federation for Structural Concrete (*fib*) through their 2001 state-of-the-art report and an international symposium sponsored by Joint ACI-ASCE Subcommittee 445-C, Punching Shear, in Kansas City in 2005 to disseminate knowledge on punching shear of structural concrete slabs. The main objective of this symposium is to present to researchers and practitioners the latest information available on the analysis and design of slabs for punching under different loading conditions, the evaluation of current design provisions in modern codes based on recent experimental evidence, and an overview of the combined efforts by ACI and *fib* to generate test result data banks for the evaluation and calibration of punching shear design provisions in U.S. and international codes of practice. The symposium will be held honoring Neil Hawkins, whose contributions in the field of structural concrete slab punching design have been paramount. It will be of interest to researchers, practicing engineers, contractors, and students.

8:30 am: Shear and Moment Transfer at Column-Slab Connections
Scott D. B. Alexander, COWI Bridge North America

8:45 am: Size Effect on Punching Shear Strength of RC Slabs without and with Shear Reinforcement
Zdeněk P. Bažant, Northwestern University; and Abdullah Donmez, Istanbul Technical University

9:00 am: Behavior and Performance Levels of Reinforced Concrete Slab-Column Connections
Marvin E. Criswell, Colorado State University; Neil M. Hawkins, University of Illinois at Urbana-Champaign; and Carlos E. Ospina, BergerABAM Inc.

9:15 am: Size Effect on Punching Shear Strength and Differences with Shear in One-Way Slabs
Miguel Fernandez Ruiz, Swiss Federal Institute of Technology in Lausanne; and Aurelio Muttoni, Swiss Federal Institute of Technology in Lausanne

9:30 am: Flexure-Induced Punching of Concrete Flat Plates
Ramez Botros Gayed, ThyssenKrupp Industrial Solutions Inc.; Amin Ghali, University of Calgary; and Chandana Peries, FCI (BD) Ltd

9:45 am: 3-D Finite Element Analysis of Punching Shear of RC Flat Slabs Using ABAQUS
Aikaterini Genikomsou, University of Waterloo; and Maria A. Polak, University of Waterloo

2 AIA/CES LU

PDH Codes: _____ _____ _____

8:30 am – 10:30 am

Using Service Life in Understanding Environmental Impacts—GRAND BALLROOM SALON D

Sponsored by ACI Committees 130, 222, 236, and 241
Moderated by Sabbie Miller, University of California, Davis; and Jeremy Gregory, Massachusetts Institute of Technology

This session will highlight the role of using service life in understanding overall environmental impacts during a structure's life cycle. Presentations will include a variety of technical aspects, including durability of concrete members, performance modeling techniques, and evaluation frameworks that encapsulate both service life and environmental impact assessment. The session will bring forward state-of-the-art methodologies to be applied in the emerging field of the intersection between resilience and sustainability. Critical information is given to those

who will lead future design of concrete including engineers and scientists interested in conducting robust life-cycle assessments, as well as students and researchers.

8:30 am: Chloride Ingress and Service-Life Predictions for Low-Clinker Concrete Containing Portland Limestone Cement and Supplementary Ce
Michael D. A. Thomas, University of New Brunswick

8:55 am: Economic and Environmental Benefits of Durability in Concrete Pavements
Mehdi Akbarian, Massachusetts Institute of Technology; and Jeremy Gregory, Massachusetts Institute of Technology

9:20 am: How Concrete Design and Durability Can Be Used in Life-Cycle Assessments to Provide More Robust Quantification of Environment
Sabbie Miller, University of California, Davis

9:40 am: Multi-Objective, Multi-Hazard Design Optimization of Sustainable and Durable Concrete Mixtures
Wil V. Srubar, University of Colorado Boulder; and Joseph R. Kasprzyk, University of Colorado Boulder

10:05 am: Performance-Based Assessment of Sustainability of Repairs for a Corroding Reinforced Concrete Coastal Bridge
Madeleine M. Flint, Virginia Polytechnic Institute and State University; Mette Geiker, Norwegian University of Science and Technology; and Sarah L. Billington, Stanford University

2 AIA/CES LU/HSW

PDH Codes: _____ _____ _____

11:00 am – 1:00 pm

Do We Understand the Workability of Concrete as Much as We Think?—GRAND BALLROOM SALON A

Sponsored by ACI Committees 238 and 325
Moderated by Kamal H. Khayat, Missouri S&T; and Joseph A. Daczko, BASF Corporation

The concrete industry still relies primarily on slump measurement to describe concrete workability. However, slump does not fully describe the differences between how various concrete mixtures pump, finish, and respond to vibration, among other things. This session will highlight how fully characterizing a concrete mixture's workability will help us better understand how different mixtures perform in different applications.

11:00 am: Effect of Fine Aggregate Gradation, Shape, Texture, and Microfines Content on the Workability of Pavement Concrete
Sarwar Md. Siddiqui, Smislova, Kehnemui & Associates; and David W. Fowler, University of Texas at Austin

11:20 am: How Does Rheology Relate to Hardened Properties?
Samir E. Chidiac, McMaster University

11:40 am: How Dynamic Segregation Influences Performance of Self-Consolidating Concrete Prestressed Beams
Dimitri Feys, Missouri S&T

12:00 pm: How Workabilty Affects Aspect of Concrete Pavements
Tom Yu, Federal Highway Administration

12:20 pm: To What Degree Does Slump Affect the Performance of Underwater Concrete?
Kamal H. Khayat, Missouri S&T

12:40 pm: Workabilty of Fiber-Reinforced Concrete
Liberato Ferrara, Polytechnic University of Milan

2 AIA/CES LU

PDH Codes: _____ _____ _____

11:00 am – 1:00 pm

Joint ACI-fib International Symposium on Punching Shear of Structural Concrete Slabs—Honoring Neil Hawkins, Part 2 of 3—GRAND BALLROOM SALON C

Sponsored by Joint ACI-ASCE Committee 445
Moderated by Denis Mitchell, McGill University; and Carlos E. Ospina, BergerABAM Inc.

The session description for this session may be found in the Part 1 listing; refer to page 32.

11:00 am: Effect of Slab Flexural Reinforcement on Punching Strength
Neil M. Hawkins, University of Illinois at Urbana-Champaign; and Carlos E. Ospina, BergerABAM Inc.

11:15 am: Evaluation of Experimental Data for Combined Lateral and Gravity Shear Demands on Slab-Column Connections with and without Post-Tensioning
Mary Beth D. Hueste, Texas A&M University; and Yan Zhou, Texas A&M University

11:30 am: Maximum Punching Shear Capacity of Footings with a New Punching Shear Reinforcement System
Dominik Kueres, RWTH Aachen University; Josef Hegger, RWTH Aachen University; and Marcus Ricker, Biberach University of Applied Sciences

11:45 am: Bridging the Gap between One-Way and Two-Way Shear in Slabs
Eva Olivia Leontien Lantsoght, Universidad San Francisco de Quito; Cor Van Der Veen, Delft University of Technology; Ane de Boer, Rijkswaterstaat, Ministry of Infrastructure and the Environment; and Scott D. B. Alexander, COWI Bridge North America

12:00 pm: Punching and Post-Punching Response of Slabs
Denis Mitchell, McGill University; and William Digby Cook, McGill University

12:15 pm: The Critical Shear Crack Theory for Punching Design: From a Mechanical Model to Closed-Form Design Expressions
Aurelio Muttoni, Swiss Federal Institute of Technology in Lausanne; and Miguel Fernandez Ruiz, Swiss Federal Institute of Technology in Lausanne

2 AIA/CES LU

PDH Codes: _____ _____ _____

11:00 am – 1:00 pm

New Developments in Chemical Admixtures: An ACI 212 Update—GRAND BALLROOM SALON D

Sponsored by ACI Committee 212
Moderated by Kari L. Yuers, Kryton International Inc.

ACI Committee 212, Chemical Admixtures, has published a new state-of-the-art document, ACI 212.3R-16. As the immediate past Chair of ACI Committee 212, this presenter will discuss the overall revisions to the document. The new document has expanded its coverage to include four new chapters,

including Sustainability, Workability-Retaining Admixtures, Rheology and Viscosity-Modifying Admixtures, and Admixtures for Pervious Concrete.

11:00 am: Introduction to the New State-of-the-Art Report on Chemical Admixtures
Bradley K. Violetta, BASF Admixtures

11:10 am: Sustainability of Concrete Admixtures
Arthur T. Winters, Capitol Aggregates, Inc.

11:35 pm: Workability-Retaining Admixtures: A New Class of Admixtures that Provides Consistency Control of Concrete
Joseph A. Daczko, BASF Corporation

12:00 pm: Viscosity and Rheology-Modifying Admixtures
Ketan R. Sompura, Sika Corporation

12:25 am: Admixtures for Pervious Concrete
Dale Fisher, ProCure

2 AIA/CES LU

PDH Codes: _____ _____ _____

Tuesday, October 25, 2016

11:00 am – 1:00 pm

Rational Design Methodologies: Fire Resistance of Concrete and Masonry—GRAND BALLROOM SALON B

Sponsored by ACI Committee 216
Moderated by Nicholas R. Lang, National Concrete Masonry Association

This session will review the current methodologies for fire resistance design, including the ACI/TMS 216.1 requirements for determining fire resistance of concrete and masonry assemblies. Looking forward, rational design approaches will be discussed, as well as the current knowledge gaps that must be addressed before such methodologies could be standardized. A review of current research in fire performance of concrete and masonry will also be reviewed, especially as that research relates to promoting rational design methods.

11:00 am: Provisions of ACI/TMS 216.1—Concrete and Masonry Fire Resistance Calculation
Nicholas R. Lang, National Concrete Masonry Association

11:15 pm: Structural Fire Engineering of Concrete—Performance Based Design Methods and Research Needs
Luke A. Bisby, University of Edinburgh

11:35 pm: Towards Rational Design Approaches for FRP Reinforced Concrete Structures in Fire
Mark F. Green, Queens University; Hamzeh Hajiloo, Queens University; and Noureddine Benechou and Mohamed Sultan, NRC Construction

11:55 am: Rational Design Methodology for Evaluating Fire Resistance of FRP-Strengthened Concrete Structures
Venkatesh Kumar R. Kodur, Michigan State University

12:15 am: Implementation of Performance-Based Fire Design Methodologies for Reinforced Concrete Structures
Maged A. Youssef, University of Western Ontario

12:35 am: Post-Fire Evaluation of Residual Seismic Resistance of Concrete Structures
Hossein Mostafaei, FM Global

2 AIA/CES LU

PDH Codes: _____ _____ _____

11:30 am – 1:30 pm

✓Contractors' Day Lunch—INDEPENDENCE BALLROOM 2-3

$54 U.S. per person
Coordinated by Eastern Pennsylvania and Delaware Chapter – ACI
Speakers: Mike Ricchezza, B. Pietrini and Sons; and Valerie Giangiulio Moody, CMT Service Group

Topic: Comcast Center Mat Foundation Concrete Placement—One of the Largest Concrete Placements in Philadelphia History

Join other ACI attendees and contractors for the Contractors' Day Lunch. Enjoy a special presentation by Mike Ricchezza and Valerie Giangiulio-Moody as they discuss the concrete construction of the tallest building in Philadelphia, the Comcast Innovation & Technology Center, coming in 2017. Learn about the trials and triumphs of laying a 10 ft thick foundation mat, one of the largest concrete pours in Philadelphia history.

PREREGISTRATION IS REQUIRED TO ATTEND. *This lunch is expected to sell out. A very limited number of tickets will be available for purchase on-site. Please notify the ACI Registration Desk if you have any dietary restrictions.*

1:30 pm – 3:30 pm

Concrete with Recycled Materials, Part 1 of 2—GRAND BALLROOM SALON D

Sponsored by ACI Committee 555
Moderated by Mohamed A. Mahgoub, New Jersey Institute of Technology; and Jiong Hu, University of Nebraska-Lincoln

Concrete is one of the most widely used construction materials in the world. However, the production of portland cement, an essential constituent of concrete, leads to the release of a significant amount of CO_2, a greenhouse gas. One ton of portland cement clinker production is said to create approximately 1 ton of CO_2 and other greenhouse gases. Environmental issues are playing an important role in the sustainable development of the cement and concrete industry. This reduces energy use in the CO_2 emissions from calcinations. A sustainable concrete structure is one that is constructed so that the total environmental impact during its entire life cycle, including during its use, is minimum. Concrete is considered a sustainable material because it has a very low inherent energy requirement, is produced to order as needed with very little waste, is made from some of the most plentiful resources on earth, can be made with recycled materials, and is completely recyclable. High-performance cements and concrete can reduce the amount of cementitious materials and total volume of concrete required. All recycled materials, starting from recycled water and recycled waste by-product materials, could be implemented in the concrete industry.

1:30 pm: An Experimental Study on Structural Performance of Sustainable Reinforced Concrete Beams
Seyedhamed Sadati, Missouri S&T; Jeffery S. Volz, University of Oklahoma; and Kamal H. Khayat and Mahdi Arezoumandi, Missouri S&T

1:50 pm: Effect of Recycled Materials and Compaction Methods on the Mechanical Properties and Solar Reflectance Index of Pervious Concrete
Mario Cristian Gaedicke Hornung, California State University, East Bay; Armando Marines Munoz, Concrete Technology Center; and Luis A. Mata, University of Toledo

2:10 pm: Influence of Adhered Mortar on Recycled Concrete Aggregate Shrinkage through Numerical Simulations
Matthew J. Bandelt, New Jersey Institute of Technology; and Matthew P. Adams, New Jersey Institute of Technology

2:30 pm: Mechanical Properties of Cementitious Composites Containing Recycled Glass Powder (RGP) as a Partial Replacement of Cement
Anantray Parghi, University of British Columbia; and Shahria Alam, University of British Columbia

2:50 pm: Use of Recyled FRP Rebar Waste in Concrete as Coarse Aggregate and Discrete Needles
Ardavan Yazdanbakhsh, City College of New York; Chen Chen and Lawrence C. Bank, City College of New York; and Yuan Tian, City University of New York at City College

3:10 pm: Flexural Properties of Recycled Concrete
Mohamed A. Mahgoub, New Jersey Institute of Technology

2 AIA/CES LU/HSW

PDH Codes: _____ _____ _____

1:30 pm – 3:30 pm

Contractors' Day Session: Take the High Road—Developing Character of Impeccable Integrity—GRAND BALLROOM SALON B

Sponsored by Eastern Pennsylvania and Delaware Chapter – ACI
Moderated by Chris S. Zweifel, ZZ Consulting

For millennia, the world's greatest master builders have successfully designed and built extraordinary works to serve mankind and improve the quality of life, risking their reputations and their very lives in the process. Suddenly, after unprecedented advancements in knowledge and productivity, these professionals must demonstrate a regular study of ethics to comply with the law. In this session, the speakers will explore common ethical standards and philosophies, and illustrate the revolutionary approach that strong character frames appropriate responses, transcending the usual know- and play-by-the-rules methods. This session will be beneficial for contractors, architects, engineers, and anyone conducting business in the construction arena.

1:30 pm: Defining, Developing, and Excelling in Ethical Professional Practice
Theodore J. Smulski, DEDC, LLC

2:30 pm: The Moral of the Story: Ethical Challenges and Solutions in Business and Government
P. Edward McKelvey, Ed McKelvey Custom Cabinetry

2 AIA/CES LU

PDH Codes: _____ _____ _____

1:30 pm – 3:30 pm

Joint ACI-fib International Symposium on Punching Shear of Structural Concrete Slabs—Honoring Neil Hawkins, Part 3 of 3—GRAND BALLROOM SALON C

Sponsored by Joint ACI-ASCE Committee 445
Moderated by Carlos E. Ospina, BergerABAM Inc.; and Aurelio Muttoni, EPFL

The session description for this session may be found in the Part 1 listing; refer to page 32.

1:30 pm: Punching of Flat Slabs under Reversed Horizontal Cyclic Loading
Antonio Pinho Ramos, Faculty of Science and Technology; Rui Marreiros and Andreia Almeida, Faculty of Science and Technology; and Brisid Isufi and Micael Inacio, Nova University of Lisbon

1:50 pm: Structural Robustness of RC Flat Slab Structures
Juan Sagaseta, University of Surrey; Justin Russell, University of Warwick; and Nsikak Ulaeto, University of Uyo

2:10 pm: Influence of Flexural Continuity on Punching Resistance at Edge Columns
Robert Vollum, Department of Civil and Environmental Engineering; and Luis Fernando Sampaio Soares, Imperial College London

2:30 pm: Seismic Retrofit of Concrete Slabs against Punching Shear: Testing and Modeling
Dritan Topuzi, Fiberline Composites; and Maria A. Polak and Sriram Narasimhan, University of Waterloo

2:50 pm: A New Method for Post-Installed Shear and Punching Shear Reinforcement
Matthias Spiegl, McKinsey and Company; and Jurgen Feix, University of Innsbruck

3:10 pm: Shear Strength and Behavior of Slab-Column Connections with Headed Shear Studs under Concentric Gravity Loading
James K. Wight, University of Michigan; Gustavo J. Parra-Montesinos, University of Wisconsin – Madison; Alexander Dacosta, University of Michigan; and Thai X. Dam, Wiss, Janney, Elstner Associates, Inc.

2 AIA/CES LU

PDH Codes: _____ _____ _____

1:30 pm – 3:30 pm

Open Topic Session, Part 1 of 2—GRAND BALLROOM SALON A

Sponsored by ACI Committee 123
Moderated by Lisa E. Burris, Georgia Institute of Technology; and Paramita Mondal, University of Illinois at Urbana-Champaign

The Open Topic Presentations is a forum for presenting recent technical information that could not be scheduled into other convention sessions.

1:30 pm: Incorporating Phase Change Materials in Concrete Pavement to Melt Ice and Snow
Yaghoob Farnam, Drexel University; Hadi S. Esmaeeli, Pablo D. Zavattieri, and John Haddock, Purdue University; and Jason Weiss, Oregon State University

1:50 pm: Mitigation of Alkali-Silica Reaction by $Al(OH)_3$
Tiffany Szeles, The Pennsylvania State University; and Jared Wright, Farshad Rajabipour, and Shelley Stoffels, The Pennsylvania State University

2:10 pm: Evaluation of Particle Effects in Portland Cement Systems
Jerry M. Paris, University of Florida; and Christopher C. Ferraro, University of Florida

2:30 pm: Effects of Silane Surface Functionalization on Interfacial Fracture Energy and Durability of Adhesive Bond between Cement Paste and Epoxy
Jovan Tatar, University of Louisiana at Lafayette; Christa E. Torrence, Texas A&M University; and John J. Mecholsky, Curtis R. Taylor, and H. R. Hamilton, University of Florida

2:50 pm: Characterization of Distributed Cracking in Concrete Using Contactless Ultrasonic Scanning
Homin Song, University of Illinois at Urbana-Champaign; and John S. Popovics, University of Illinois at Urbana-Champaign

3:10 pm: Effect of Structure Type and Concrete Mixes on Crack Width and Density of Concrete Bridge Decks
James Lafikes, University of Kansas; and Rouzbeh Khajedehi, Muzai Feng, Eman Ibrahim, Matthew O'Reilly, and David Darwin, University of Kansas

2 AIA/CES LU

PDH Codes: _____ _____ _____

Tuesday, October 25, 2016

4:00 pm – 6:00 pm

Concrete with Recycled Materials, Part 2 of 2—GRAND BALLROOM SALON D

Sponsored by ACI Committee 555
Moderated by Mohamed A. Mahgoub, New Jersey Institute of Technology; and Ahmed Ibrahim, University of Idaho

The session description for this session may be found in the Part 1 listing; refer to page 34.

4:00 pm: Alkali-Silica Reactivity of Recycled Concrete Aggregate: Lessons Learned
Medhat H. Shehata, Ryerson University

4:20 pm: Evaluation of Recycled Aggregate Concrete Using the Stiffness Damage Test
Meika Ardenne Hayles, University of Ottawa; and Leandro Francisco Moretti Sanchez and Martin Noel, University of Ottawa

4:40 pm: Low-Cycle Fatigue Behavior of Concretes with Recycled Aggregates
Paul Gordon, Gordon Engineering, LLC; and Daniel C. Jansen, California Polytechnic State University

5:00 pm: Mechanical Properties of Concrete Made with Fluff
Alessandro P. Fantilli, Polytechnic University of Turin; and Bernardino Chiaia, Polytechnic University of Turin

5:20 pm: Quantitative Model for Transfer Length of Prestressing Strand in Concrete with Recycled Concrete Aggregates
Michael Brandes, University of Notre Dame; and Yahya C. Kurama, University of Notre Dame

5:40 pm: The Influence of Glass Powder on the Durability Properties of Concrete
Kaveh Afshinnia, Clemson University; and Prasad R. Rangaraju, Clemson University

2 AIA/CES LU/HSW

PDH Codes: _____ _____ _____

4:00 pm – 6:00 pm

Fiber-Reinforced Polymer (FRP) Systems for the Strengthening of Existing Masonry Structures and for Reinforcement of New Masonry Construction—GRAND BALLROOM SALON B

Sponsored by ACI Committees 440 and ACI Subcommittee 440-M
Moderated by Rudolf Seracino, North Carolina State University

ACI Subcommittee 440-M, FRP-Repair of Masonry Structures, is sponsoring this technical session focusing on various applications of fiber-reinforced polymer (FRP) systems for masonry structures. Presentations relate to the FRP strengthening of existing masonry elements, and the use of FRP bars as internal reinforcement in new masonry construction. Current developments in design guides are presented, including international coverage of research and application. The goal of this session is to present the current state of the art in research and practice on the use of FRP systems to strengthen existing masonry structures, and to reinforce new masonry construction.

4:00 pm: Overview of ACI 440.7R Design Guide for Strengthening of Masonry with FRP Systems
J. Gustavo Tumialan, Simpson Gumpertz & Heger Inc.

4:20 pm: Behavior, Modeling, and Design of Infill Masonry Walls Strengthened with FRP Using Various End Anchorage
Dillon Lunn, Fluhrer Reed; and Sami H. Rizkalla, North Carolina State University

4:40 pm: Long-Term Performance of CFRP CMU Bond
Mostfa Al Azzawi, University of South Florida; and Philip Hopkins, Joseph Ross, Gray Mullins, and Rajan Sen, University of South Florida

5:00 pm: Experimental Study on Flexural Behavior of Reinforced Masonry Walls Strengthened with FRCM Composite or NSM with Cementitious Adhesive
Zuhair Al-Jaberi, Missouri S&T; and John J. Myers and Mohamed A. ElGawady, Missouri S&T

5:20 pm: Flexural Behavior of Structural Masonry Walls Reinforced with FRP Bars
Nancy Torres, Escuela Colombiana de Ingenieria; and Antonio Nanni, University of Miami

5:40 pm: CNR-DT 200 R1 Guidelines for Strengthening of Masonry Structures with FRP in Italy
Elio Sacco, University of Cassino and Southern Lazio

2 AIA/CES LU

PDH Codes: _____ _____ _____

4:00 pm – 6:00 pm

Open Topic Session, Part 2 of 2—GRAND BALLROOM SALON A

Sponsored by ACI Committee 123
Moderated by Lisa E. Burris, Georgia Institute of Technology; and Paramita Mondal, University of Illinois at Urbana-Champaign

The session description for this session may be found in the Part 1 listing; refer to page 35.

4:00 pm: The Behavior of Curved Post-Tensioned Concrete Structures without Out-of-Plane Reinforcement
Jongkwon Choi, The University of Texas at Austin; and Clint R. Woods, Trevor D. Hrynyk, and Oguzhan Bayrak, The University of Texas at Austin

4:20 pm: Seismic Strengthening/Retrofitting of RC Floor Diaphragms with Openings using CFRP, and GFRP Sheets
Rouzbeh Khajehdehi, University of Kansas; and Mehrsa Ghaffari and Nader Panahshahi, Southern Illinois University, Edwardsville

4:40 pm: Structural Safety Assessment of Deep Beams
Rafael Salgado, University of Toledo; and Serhan Guner, University of Toledo

5:00 pm: A Statistical Approach to Refine Design Codes for Interface Shear Transfer in Reinforced Concrete Structures
Mahmoodreza Soltani, Clemson University; and Brandon Ross and Amin Khademi, Clemson University

5:20 pm: Probabilistic Analysis of Concrete Strains for the Assessment of Prestressing Loss in Nuclear Containment Segments
Georgios P. Balomenos, University of Waterloo; and Mahesh D. Pandey, University of Waterloo

5:40 pm: Interface Shear Transfer of Lightweight Aggregate Concretes
Lesley Sneed, Missouri S&T

2 AIA/CES LU

PDH Codes: _____ _____ _____

4:00 pm – 6:00 pm

Repair and Rehabilitation Tech Notes—GRAND BALLROOM SALON C

Sponsored by ACI Committee 364
Moderated by David A. VanOcker, CVM

The Tech Notes produced by ACI Committee 364, Rehabilitation, cover important aspects of a concrete rehabilitation program, ranging from the initial stages of evaluation to strengthening and to conducting repairs so as to ensure a long service life.

4:00 pm: Cracks in Repair (364.9T-03(11))
Pawan K. Gupta, Walter P Moore

4:18 pm: Importance of Modulus of Elasticity in Surface Repairs (364.5T-10)
Benoit Bissonnette, Laval University

4:36 pm: Concrete Removal in Repairs Involving Correded Reinforcing Steel (364.6T-02(11)) Use of Hydrodemolition for Removal in Unbonded Post Tensioned Systems (354.8T-02(11))
Racheal D. Lute, University of Texas

4:54 pm: Evaluation and Minimization of Bruising (Microcracking) in Concrete Repair (364.7T-02(11))
Michael M. Sprinkel, Virginia Center for Transportation Innovation and Research

5:12 pm: Determining the Load Capacity of a Structure When As-Built Drawings are Unavailable (364.4T-10)
Clyde Porter, Clyde Porter Jr. Consulting Engineers

5:30 pm: Rehabilitation of Structure with Reinforcement Section Loss (364.10T-14)
Noran Abdel Wahab, Walter P Moore

2 AIA/CES LU

PDH Codes: _____ _____ _____

5:00 pm – 6:00 pm

Reception Honoring Neil Hawkins–306

$45 U.S. per person

This reception is the final event of the ACI-*fib* International Symposium on Punching Shear in Structural Concrete Slabs, honoring Professor Emeritus Neil Hawkins for his outstanding contributions in this field of knowledge.

Hawkins retired in 2002 after being on the faculty at the University of Illinois since 1991, serving as Head of Civil and Environmental Engineering (1991-1996) and Acting Head (2001-2002). Before that, he was on the faculty at the University of Washington (1968-1991) and at the University of Sydney in Australia (1961-1968). It was during a sabbatical leave at PCA in 1966 that he first became involved in research on punching shear and subsequently he became more deeply involved during his tenure at Washington. His emphasis was on the behavior of slabs under concentrated loads and unbalanced moment transfer simulating seismic loads. Under his leadership, ASCE/ACI published in 1974 a State of the Art document on punching shear in slabs, which served as a mandatory reference to researchers and practitioners worldwide. In recent years, he has led efforts for refining punching shear design provisions in ACI 318.

Hawkins is an Honorary Member and Past Director of ACI, where he has participated on multiple ACI committees over the years including ACI 318, Structural Building Code. He is a Distinguished Member of ASCE, a past Vice-President, past Governor and Fellow of SEI. He is a Titan of the Precast/Prestressed Concrete Industry, a Legend of the Post-Tensioning Industry and a past Director of EERI and PTI.

The 3-part session of Joint ACI-*fib* International Symposium on Punching Shear of Structural Concrete Slabs – Honoring Neil Hawkins will take place on Tuesday, October 25. The reception will feature a cash bar and light hors d'oeuvres.

PREREGISTRATION IS REQUIRED TO ATTEND*. Tickets for this reception will not be available on-site.*

5:30 pm – 6:30 pm

Faculty Network Reception—402-403

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

6:30 pm – 8:30 pm

Concrete Mixer—NATIONAL CONSTITUTION CENTER

Join ACI attendees and guests for an evening of networking, entertainment, and great food during the Concrete Mixer, held at the National Constitution Center. Stroll through the museum and exhibition to learn about the U.S. Constitution and Bill of Rights. An assortment of food and beverages will be available. Transportation will depart from the 12th Street entrance of the Marriott beginning at 6:00 pm.

For detailed program information and program changes, download the Convention App.
✓= Separate fee required ★ = Guest-only event

Wednesday, October 26, 2016

8:00 am – 12:00 pm

Concrete Sustainability Forum 9—FRANKLIN 8

Sponsored by ACI Committees 130, 201, 236, and 349 and ISO/TC71/SC8
Moderated by Koji Sakai, Japan Sustainability Institute; and Julie K. Buffenbarger, National Ready Mixed Concrete Association

ACI's ninth annual Concrete Sustainability Forum will feature presentations from experts on new technologies, sustainability assessment systems, and sustainable design from countries around the world. The forum is free to all registered convention attendees.

8:00 am: Introduction and Welcome
Koji Sakai, Japan Sustainability Institute; and Julie K. Buffenbarger, National Ready Mixed Concrete Association

8:15 am: Roadmap Toward Realization of Sustainable Concrete Structure
Koji Sakai, Japan Sustainability Institute

8:40 am: The Envision Rating System for Sustainable Infrastructure
Denise Nelson, Institute for Sustainable Infrastructure

9:05 am: The Direct Carbonation of $Ca(OH)_2$ Using Liquid and Supercritical CO_2: Implications on Carbon-Neutral Cementation
Gaurav N. Sant, University of California, Los Angeles

9:30 am: Efforts of Japanese Construction Industry to Use Low-Carbon Concrete
Mamoru Yamada, Obavashi Company

9:55 am: Break

10:10 am: Low-CO_2 Eco Efficiency Cement-Based Materials—A Report from UNEP SBCI Working Group
Vanderley John, University of São Paulo

10:35 am: Sustainable Consequences of Weakened Fire Codes
Donn C. Thompson, Portland Cement Association

11:10 am: The MIT Concrete Sustainability Hub: Transforming Innovation into Implementation
Jeremy Gregory, Massachusetts Institute of Technology

11:35 am: Toward the Sustainable Built Environment in Philadelphia
Alex Dews, U.S. Green Building Council Delaware Valley Chapter

12:00 pm: Wrap-UP
Koji Sakai, Japan Sustainability Institute; and Julie K. Buffenbarger, National Ready Mixed Concrete Association

4 AIA/CES LU/HSW
GBCI course number 920010493

PDH Codes: _____ _____ _____

8:30 am – 10:30 am

Nanotechnology for Improved Concrete Performance, Part 1 of 2—GRAND BALLROOM SALON B

Sponsored by ACI Committees 236, 241, and ACI Subcommittee 548-C
Moderated by Mahmoud M. Reda Taha, University of New Mexico

There has been considerable research aiming to improve the mechanical and durability performance characteristics of concrete using nanotechnology. Example work includes the use of nanoparticles to improve the hydration of cement and using nanomaterials to alter the mechanical and durability characteristics of cement and polymer concretes. Presentations in these two sessions will cover experimental research investigations examining the use of nanotechnology to improve concrete materials and structural performance. The audience will include participants from the government, industry, and academia with interest to look at the potential of using nanotechnology to improve performance of concrete.

8:30 am: Effect of Nanoparticles on Fresh Concrete Properties
Kejin Wang, Iowa State University; Surendra P. Shah, Northwestern University; and Xin Wang, Iowa State University

8:50 am: Direct Experimental Evidence for Differing Reactivity Alterations of Minerals Following Irradiation: The Case of Calcite and Quartz
Gaurav N. Sant, University of California, Los Angeles

9:10 am: Hydration and Volume Stability of Nano-Modified Fly Ash Concrete for Repair of Concrete Pavements
Mohamed Bassuoni, University of Manitoba

9:30 am: Investigating Pozzolanic Reaction in Nanosilica-Cement Blended Pastes
Jung Joong Kim, University New Mexico

9:50 am: Self-Sensing Concrete for Real-Time Strain and Damage Assessment in Smart Structures
Maria S. Konsta-Gdoutos, ACBM, Northwestern University; and Surendra P. Shah, Northwestern University

10:10 am: Evolution of Compressive Strength of Cement with Multi-Walled CNTs under High-Pressure and High-Temperature Conditions
Muhammad Kalimur Rahman, King Fahd University of Petroleum and Minerals

2 AIA/CES LU

PDH Codes: _____ _____ _____

Sessions & Events

For detailed program information and program changes, download the Convention App.
✓= Separate fee required ★ = Guest-only event

8:30 am – 10:30 am

Responsibility in Concrete Repair, Part 1 of 2—GRAND BALLROOM SALON A

Sponsored by ACI Committee 132
Moderated by Kevin A. MacDonald, Beton Consulting Engineers, LLC; and David A. VanOcker, CVM

The responsibilities for parties involved in a repair project may be significantly different than those traditionally encountered in new concrete construction. The new ACI 562 Code Requirements for Assessment, Repair, and Rehabilitation of Concrete Buildings and anticipated ACI 563 Specification identify requirements for the Licensed Design Professional and the contractors' specialty engineer during repair programs. Differing lines of authority are presented through industry practice recommendations and case studies, along with identification of industry needs, informing parties engaged in concrete evaluation and repair projects.

8:30 am: Need to Initiate Responsibility Concept in the Largest Repair Industry—India Perspective
Surendra K. Manjrekar, SUNANDA Specialty Coatings Pvt LTD

8:50 am: Owner Participation in Innovative Engineering Solutions
Avanti C. Shroff, Invisible Innovations, Inc.

9:10 am: Are We Taking Concrete Repair Seriously—An Industry Point of View
Sarwar Siddiqui, Smislova, Kehnemui & Associates; and David J. Rodler, Smislova Kehnemui & Associates

9:30 am: Establishing a Standard of Care for Evaluation of Existing Structures
Keith E. Kesner, CVM Engineers

9:50 am: Responsibility for Safety in Building Assessments—Personnel and Property
John S. Lund, Martin/Martin, Inc.

2 AIA/CES LU

PDH Codes: _____ _____ _____

11:00 am – 1:00 pm

Advanced Analysis of FRP-Strengthened Concrete Structures, Part 1 of 2—GRAND BALLROOM SALON B

Sponsored by ACI Committees 345 and 440, and Joint ACI-ASCE Committee 447
Moderated by Scott Thomas Smith, Southern Cross University; and Pedro F. Silva, George Washington University

This session targets the application of advanced analytical techniques for the analysis and design of fiber-reinforced polymer (FRP) strengthened concrete structures, with an emphasis on structure and member behavior, as well as debonding and anchorage devices. It will be suitable to designers of FRP strengthening measures as well as researchers and manufacturers.

11:00 am: A Guideline and Review on the Modeling Techniques Used in Finite Element Simulations of Concrete Structures Strengthened Using FRP
Robin Kalfat, Swinburne University of Technology; and Riadh Al-Mahaidi, Swinburne University of Technology

11:25 am: The Use of Hybrid Simulation in Assessment of CFRP-Repaired Earthquake-Damaged RC Columns
Riadh Al-Mahaidi, Swinburne University of Technology; and Javad Hashemi, Yassamin Al-Ogaidi, Robin Kalfat, and John Wilson, Swinburne University of Technology

11:50 am: Post-Repair Seismic Assessment of RC Bridges with CFRP-Repaired Columns
Lesley H. Sneed, Missouri S&T; Ruili He, Garver; and Yang Yang, Constructive Engineering Design

12:15 pm: Incremental Dynamic Analysis of CFRP-Strengthened RC Frames with Masonry Infills
Scott Thomas Smith, Southern Cross University; and Xiaolan Pan, Zhenyu Wang, and Daiyu Wang, Harbin Institute of Technology

12:40 pm: Permissible Moment Redistribution Limits for Continuous FRP-Strengthened RC Beams
Pedro Silvia, George Washington University; R.K. Singh, George Washington University; and T.J. Ibell, University of Bath

2 AIA/CES LU

PDH Codes: _____ _____ _____

11:00 am – 1:00 pm

Responsibility in Concrete Repair, Part 2 of 2—GRAND BALLROOM SALON A

Sponsored by ACI Committee 132
Moderated by Kevin A. MacDonald, Beton Consulting Engineers, LLC; and David A. VanOcker, CVM

The session description for this session may be found in the Part 1 listing; refer to page 39.

11:00 am: Case Studies on Repair—Shifting Responsibility Lines for the Engineer of Record
David A. VanOcker, CVM Engineers

11:20 am: Conflicting Responsibilities in a Parking Garage Collapse—Maintenance versus Repair
K. Nam Shiu, Walker Restoration Consultants

11:40 am: Education Initiatives by ASCE Technical Council on Forensic Engineering—The Role of the Investigating Engineer
Norbert J. Delatte, Oklahoma State University

12:00 pm: Is this the Concrete Mixture You Really Want?
Ashok M. Kakade, Concrete Science, Inc.

12:20 pm: Responsibility for Mixed Performance/Prescriptive Concrete Mix Designs
Kevin A. MacDonald, Beton Consulting Engineers

2 AIA/CES LU

PDH Codes: _____ _____ _____

For detailed program information and program changes, download the Convention App.
✓= Separate fee required ★ = Guest-only event

Wednesday, October 26, 2016

1:30 pm – 3:30 pm

Advanced Analysis of FRP-Strengthened Concrete Structures, Part 2 of 2—GRAND BALLROOM SALON B

Sponsored by ACI Committees 345 and 440, and Joint ACI-ASCE Committee 447
Moderated by Scott Thomas Smith, Southern Cross University; and Pedro F. Silva, George Washington University

The session description for this session may be found in the Part 1 listing; refer to page 39.

1:30 pm: Modeling of Concrete Members Retrofitted with Post-Tensioned Near-Surface Mounted CFRP Strips
Yail Jimmy Kim; University of Colorado Denver; and Jae-Yoon Kang, Jong-Sup Park, and Woo-Tail Jung, Korea Institute of Civil Engineering and Building Technology

1:55 pm: Exploring the Potential of a New Type of CFRP Laminate and Technique for the Strengthening of RC Structures
Joaquim A. O. Barros, University of Minho; and Mohammadali Rezazadeh and Honey Ramezansefat, University of Minho

2:20 pm: Development of a Frictional Bond-Slip Model for FRP U-Wrap Anchors
Maraia M. Lopez, Modjeski and Masters, Inc.; and Jaeha Lee, Korea Maritime and Ocean University

2:45 pm: The Use of U-Wrap Anchors to Improve the Effective Intermediate Crack Debonding Strain in FRP-Strengthened Beams
Hayder A. Rasheed, Kansas State University

3:10 pm: Modeling the Improvement in the Effective Intermediate Crack Debonding Strain in FRP Strengthened Beams Using Spike Anchors
Ahmed Al-Rahmani, Smislova, Kehnemui and Associates; and Hayder Rasheed, Kansas State University

2 AIA/CES LU

PDH Codes: _____ _____ _____

1:30 pm – 3:30 pm

Nanotechnology for Improved Concrete Performance, Part 2 of 2—GRAND BALLROOM SALON A

Sponsored by ACI Committees 236, 241, and ACI Subcommittee 548-C
Moderated by Mahmoud M. Reda Taha, University of New Mexico

The session description for this session may be found in the Part 1 listing; refer to page 38.

1:30 pm: Synergistic Application of X-Ray Synchrotron Tomography, Nanoindentation, and Homogenization Models Toward Property Prediction of Geopolymers
Narayanan Neithalath, Arizona State University

1:50 pm: Two Phases of C-S-H (I), Chemical, Physical, and Mechanical Differences
Aali R. Alizadeh, Giatec Scientific Inc.

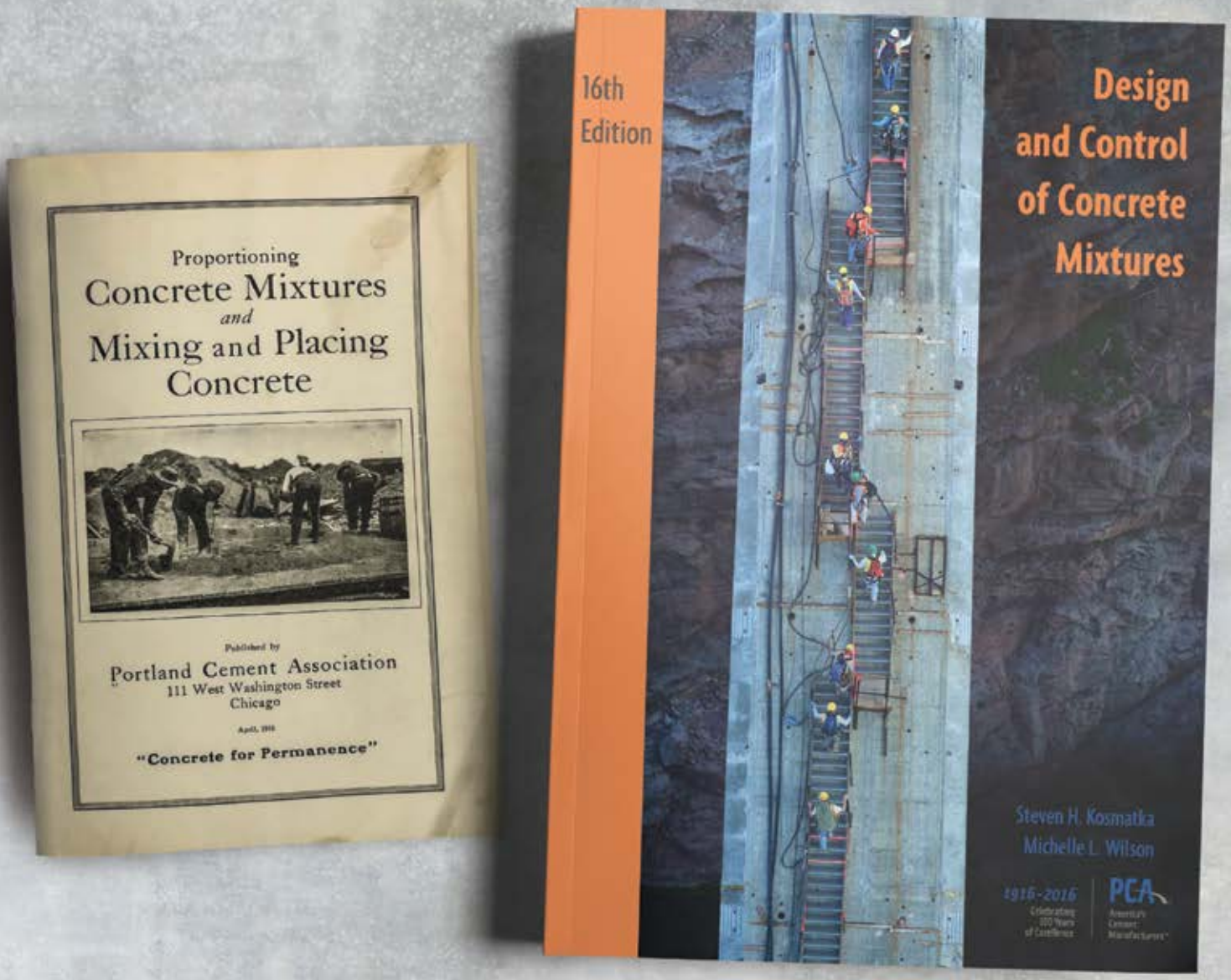
2:10 pm: In-Situ Development of Nano-Calcium Carbonate to Improved Ready-Mixed Concrete
Sean Monkman, CarbonCure Technologies; and Mark MacDonald, CarbonCure Technologies

2:50 pm: Nano-Amended Cement Composites for Nuclear Waste Storage
Fabio Matta, University of South Carolina

3:10 pm: A New Class of GFRP Reinforcement with Improved Mechanical and Durability Characteristics Using Carbon Nanotubes
Mahmoud M. Reda Taha, University of New Mexico

2 AIA/CES LU

PDH Codes: _____ _____ _____



100 Years of Concrete Knowledge

Much has changed since PCA first published a book on concrete mixtures in 1916. Concrete is the foundation for urban development and economic growth of our nation. Purchase your copy today at www.cement.org/DesignandControl

1916-2016
Celebrating 100 Years of Excellence

PCA
America's Cement Manufacturers™

concrete makes good

The Concrete Convention and Exposition

Spring 2017 | Detroit

SAVE THE DATE

March 26-30, 2017

Detroit Marriott at the Renaissance Center

photo courtesy of Vito Palmisano

Be sure to visit the Detroit Information Desk in the exhibit hall.
For a complete listing of all future conventions, visit **aciconvention.org**.