AGENDA

Please print this agenda before the meeting or bring your electronic copy

ACI Committee 123 – Research and Current Developments
Sunday, October 25, 2020 7:00 P.M. – 8:30 P.M

Gotomeeting
Virtual Conference

Chair: Sulapha Peethamparan | Secretary: Jacob Henschen

Committee Mission: Provide updates on current research, technological trends, and contemporary topics related to concrete and facilitate dissemination of this information at ACI conventions.

Goals: Organize and carry out Open Topic Presentation, Research in Progress, 123 Concrete Research Poster session, and 123 Forum sessions at ACI conventions. Also, develop an approach to assist in evaluation and dissemination of research needs in collaboration with Concrete Research Council.

1. Welcome and Call to Order
   • Welcome to Members and Visitors, and Self-Introductions
   • Membership Roster / E-Mail Address Update: 28 voting members, 19 associate members, 2 officers, and 1 TAC contact

2. Report from TAC contact Dr. Michael Brown

3. Report on Open Topic Presentation (OTP) Session by J. Tatar / P. Okumus

4. Report on Research in Progress (RiP) Session M. O’Reilly

5. Report on Poster Session Y. Farnam/L. Lu


7. Report from subcommittee

8. Future Open Topic and Research in Progress Sessions.
   Volunteers interested in moderating future sessions:
   1. Mohammed Albahtiti (malbahttiticsuchico.edu)
   2. Mahmood R. Soltani (msoltani@bradley.edu)
   3. Ahmed H. Al-Rahmani (ahmedr@skaengineers.com)

9. Future Forum Topics

10. New Business

11. Mini Session Presentations:

Previously suggested Forum topics:
<table>
<thead>
<tr>
<th>Suggested Topic</th>
<th>Potential Speakers</th>
<th>Champion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allowing nonlinear behavior under wind loading; Is it safe to consider nonlinear behavior? Wind affects due to climate change?</td>
<td>Structural firms (SOM, TT), Larry Novak, SDC</td>
<td></td>
</tr>
<tr>
<td><strong>Climate change and Sustainability:</strong> Climate change effect on buildings? <strong>Carbon capture and storage,</strong> what role does the concrete play in the climate change, do we have to make concrete structure stronger expecting more hurricanes and flooding. <strong>Water retaining structures ; Testing information, ownership issues, inspection and maintenance issues, service life of the total water infrastructure</strong>, <strong>Accelerated construction, rapid repair, traffic ready for 4 hours and the related topic</strong></td>
<td>M.S. Khan</td>
<td>L. Silfwerbrand</td>
</tr>
<tr>
<td>Can we replace steel with FRP technology? Prof. A. Nanni has just completed a project co-funded by ACI and the European agencies on alternative material for steel and the topic could get some attention</td>
<td>P. Suraneni</td>
<td></td>
</tr>
</tbody>
</table>
| Repair materials  
Water reuse in ready mix plants  
Accelerated Bridge Construction  
Can we do unmanned inspection of concrete, how well it is in line with manned inspection. If we focus on big data and machine learning it will be okay and can be co-sponsored by SHM committee? Potential speakers; Kim Kurtis and Marc Maguire (Utah State), Where do big data, machine learning and Artificial Intelligence fit in the concrete community (J. Popovics). Nevada, DOT may be able to contribute.  
Autonomous cars; what are the impacts on the pavement structure? Higher load and traffic? Is our concrete ready for autonomous vehicles? Have Transportation people open up the session  
Issues related to dams in place  
Is there a life after fly ash (may be for Cincinnati) | R. Thomas  
L. Burris  
Guner  
Kim Kurtis  
Marc Maguire  
J. Popovics  
R. Thomas  
J. Silfwerbrand  
R. Thomas  
E. Giannini |                   |
| **CODES and TALL WOOD STRUCTURES.** Wood now up to 12 stories! (Forum Spring 2018) Potential Panelists: Johan Silfwerbrand (KTH Royal Institute of Technology, Sweden), someone from SOM, someone from a leading architecture firm, someone from an engineering firm, wood industry representative. Touch base with Steve for potential speakers. Jason Weiss. Sri Aaleti | Jason Weiss. Sri Aaleti  
Steve Kosmatka: |                   |
<table>
<thead>
<tr>
<th>Topic</th>
<th>Presenter(s)</th>
<th>Speaker(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>How can we make concrete more competitive with wood?</td>
<td>Johaan Silwerbrand. Karen Scrivener as possible speaker?</td>
<td></td>
</tr>
<tr>
<td>Carbon dioxide sequestration?? “Is Carbon Capture in Concrete Really Meaningful?” 15-20% of carbon dioxide absorbed by the concrete.</td>
<td></td>
<td>Eric Giannini</td>
</tr>
<tr>
<td>Is there life after fly ash? workability, corrosion? Fly Ash industry input? Coal industry input?</td>
<td><a href="mailto:vfelixftf@gmail.com">vfelixftf@gmail.com</a>, <a href="mailto:kmacdonald@betonconsultingeng.com">kmacdonald@betonconsultingeng.com</a>, <a href="mailto:dennisr.wheeler@cemex.com">dennisr.wheeler@cemex.com</a> &quot;<a href="mailto:todd@coloradocaa.org">todd@coloradocaa.org</a>&quot; &quot;<a href="mailto:fakoz123@gmail.com">fakoz123@gmail.com</a>&quot; Colín Lobo <a href="mailto:clobo@nrmca.org">clobo@nrmca.org</a></td>
<td>Karthik Obla, <a href="mailto:kobla@nrmca.org">kobla@nrmca.org</a></td>
</tr>
<tr>
<td>Proper curing of jobsite concrete cylinders made for acceptance testing. According to ACI, ASTM standards these cylinders should be cured between 60-80F, and without any loss of moisture, up to 48 hours at the jobsite. Colorado ready mix association found in an audit that in 70% of the cases these curing requirements are not being complied with. This situation is similar all over the country. The reasons provided are many – lack of power, who is responsible for the curing box etc etc. The end result is producers have to over design the concrete mixes by 1000 psi to address poor jobsite curing which leads to more performance issues (cracking), sustainability issues and higher costs. Perhaps a future 123 Forum can be on something along the lines of “How can we cure cylinders according to ACI/ASTM standards at the jobsite?” You can call a owner, A/E, concrete contractor, concrete producer, and a test lab. I predict that this will be one of your best attended forums.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Downside of nanotechnology, health hazards of nanotechnologoy, nanomaterials</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BIM. how to make different software work? 131 CMTE. Legal change, culture change needed</td>
<td>Mark Pernicorni from Charles Pankow Foundation <a href="mailto:mpernicorni@pankowfoundation.org">mpernicorni@pankowfoundation.org</a> ACI Fnd can help</td>
<td></td>
</tr>
<tr>
<td>Performance-based design: how to transition from code-based design</td>
<td>Fatmir Menkulasi</td>
<td></td>
</tr>
<tr>
<td>Electrical test methods: have they found their place in field? Shockingly unreliable?</td>
<td>Lisa Burris</td>
<td></td>
</tr>
<tr>
<td>Corrosion: can we monitor it well? Should we be setting chloride thresholds?</td>
<td>Mohammad</td>
<td></td>
</tr>
<tr>
<td>How big of a crack of a crack is really a crack? There was a Forum 20 years ago</td>
<td>Matt O'Reilly (KU)</td>
<td></td>
</tr>
<tr>
<td>Who should decide about the material selection? Str or materials engineer? Are structural, material and construction engineers talking to each other?</td>
<td>Fatmil Menkulasi</td>
<td></td>
</tr>
<tr>
<td>How much moisture there really is in your mixture?</td>
<td>Eric Giannini</td>
<td></td>
</tr>
<tr>
<td>Can we cure concrete problems with Internal Curing?</td>
<td>John Popovics, Prasad Rangaraju</td>
<td></td>
</tr>
<tr>
<td>---------------------------------------------------</td>
<td>---------------------------------</td>
<td></td>
</tr>
<tr>
<td>Rapid repair materials - are they good enough? Is that a solution to patching?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is moisture transport/ingress the most important aspect of concrete durability? Is designing around moisture ingress the most important thing?</td>
<td>Denny</td>
<td></td>
</tr>
</tbody>
</table>

### History of 123 Forum:

<table>
<thead>
<tr>
<th>Date and Place</th>
<th>Forum Topic</th>
<th>Moderators</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sp 20, Rosemont/Chicago, IL</td>
<td>Concrete Sustainability: Integrating Structures and Materials</td>
<td>Robert Thomas Jan Vosahlik</td>
</tr>
<tr>
<td>Fa19 Cincinnati, OH</td>
<td>Is Ultra High Performance Concrete Necessary?</td>
<td>Jacob Henschen Mohammad Pour-Ghaz</td>
</tr>
<tr>
<td>Sp19 Quebec City, QC</td>
<td>The Gap Between Research and Practice-Always Advancing?</td>
<td>Jacob Henschen Jan Vosahlik</td>
</tr>
<tr>
<td>Fa18 Las Vegas, NV</td>
<td>Life After Fly Ash: What is the Alternative?</td>
<td>Jacob Henschen Jan Vosahlik</td>
</tr>
<tr>
<td>Sp18 Salt Lake City, UT</td>
<td>How Can Current Research Make Concrete a More Competitive Construction Material?</td>
<td>Jacob Henschen Jan Vosahlik</td>
</tr>
<tr>
<td>Fa17 Anaheim, CA</td>
<td>Can Structural Health Monitoring Provide Actionable Information?</td>
<td>Jacob Henschen Jan Vosahlik</td>
</tr>
<tr>
<td>Sp17 Detroit, MI</td>
<td>Does 3D Printing Have a Future in Our World and Beyond?</td>
<td>Tengfei Fu Eric R. Giannini</td>
</tr>
<tr>
<td>Fa16 Philadelphia, PA</td>
<td>Can We Design Concrete for Nuclear Environments?</td>
<td>Tengfei Fu Eric R. Giannini</td>
</tr>
<tr>
<td>SP16 Milwaukee</td>
<td>Can We Implement Performance-Based Specifications for Durability of Concrete? Will They Work?</td>
<td>Tengfei Fu Eric R. Giannini</td>
</tr>
<tr>
<td>Fa15, Denver</td>
<td>Forum postponed</td>
<td></td>
</tr>
<tr>
<td>SP 15, Kansas City</td>
<td>Are Nano-Materials and Nano-Technologies Ready for Full-Scale Concrete Construction Applications</td>
<td>Tengfei Fu Kerry S. Hall</td>
</tr>
<tr>
<td>Fa 14, Washington, DC</td>
<td>Is Roller-Compacted Concrete Ready for the Prime-Time Paving Market?</td>
<td>Kerry S. Hall Thomas Schumacher</td>
</tr>
<tr>
<td>Sp 14, Reno</td>
<td>Non-Destructive Testing of Concrete—Capabilities and Limitations</td>
<td>Thomas Schumacher Farshad Rajabipour</td>
</tr>
<tr>
<td>Event</td>
<td>Title</td>
<td>Authors</td>
</tr>
<tr>
<td>------------</td>
<td>-------------------------------------------------------------------------------------------</td>
<td>--------------------------------</td>
</tr>
<tr>
<td>Fa 13, Phoenix</td>
<td>Can Cement Specifications Be Used to Reduce Cracking in Concrete?</td>
<td>Thomas Schumacher Farshad Rajabipour</td>
</tr>
<tr>
<td>SP 13, Minneapolis</td>
<td>What is the Biggest Analytical Gap in the Analysis of Reinforced/Prestressed Concrete and What Are the Implications for Structural Design Codes?</td>
<td>Farshad Rajabipour Thomas Schumacher</td>
</tr>
<tr>
<td>Fa 12, Toronto</td>
<td>Do We Know Enough to Manage and Mitigate ASR Deteriorations in New and Existing Concrete Structures?</td>
<td>Farshad Rajabipour</td>
</tr>
<tr>
<td>SP 12, Dallas</td>
<td>Bridge Deck Cracking—What We Know and What We Can Do About It</td>
<td>Farshad Rajabipour</td>
</tr>
<tr>
<td>Fa 11, Cincinnati</td>
<td>What is the Current Status of Nanotechnology?</td>
<td>Mohammad S. Khan</td>
</tr>
<tr>
<td>SP 11, Tampa</td>
<td>What is the Current State of Epoxy-Coated Reinforcing Steel?</td>
<td>Mohammad S. Khan</td>
</tr>
<tr>
<td>Fa 10, Pittsburgh</td>
<td>Are we focusing enough on sustainable development?</td>
<td>Mohammad S. Khan</td>
</tr>
<tr>
<td>SP 10, Chicago</td>
<td>Fly Ash Contributes to Sustainable Concrete Construction – Is It Justified to Reclassify the Material as a Hazardous Waste?</td>
<td>Mohammad S. Khan</td>
</tr>
<tr>
<td>Fa 09, New Orleans</td>
<td>Are Concrete Structures Better Suited for SALON C Hurricanes and Other Extreme Events?</td>
<td>Mohammad S. Khan</td>
</tr>
<tr>
<td>SP 09, San Antonio</td>
<td>Are We Investing Enough in Research and Utilizing Research Funding Smartly?</td>
<td>Mohammad S. Khan</td>
</tr>
</tbody>
</table>