



# INTERNATIONAL SOCIETY FOR CONCRETE PAVEMENTS

ISCP e-NEWSLETTER  
VOLUME 12 • NUMBER 4  
APRIL 2015

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## ISCP NEWS

### ISCP Membership Benefits & Registration

Online membership registration is now available on the NEW International Society for Concrete Pavements (ISCP) website. ISCP sent an e-mail, along with this "MEMBERSHIP BENEFITS" flyer the second week of April to all members and potential members.

As ISCP's international membership grows, your benefits grow. Please encourage employers, colleagues and students to become ISCP Members and engage in our global concrete pavement discussions! Please share that **Student Memberships are FREE. Honorary Members are FREE** as well. We are excited about ISCP's changes to help promote concrete pavements throughout the globe and hope that your continued support will help further support this mission. Please view our exciting new website and review our membership benefits — many of which are new in 2015!

To renew your membership, please go online to <https://www.concretepavements.org/join/>. Please begin by selecting your membership type and follow instructions thereafter. With the new website, we are asking all existing and new members to please register using the same procedures this year.

For more information on ISCP, the mission, its members, and more, please go to the ISCP homepage: <https://www.concretepavements.org>.

### Announcing the NEW ISCP Logo



Since its inception in 1999, the International Society for Concrete Pavements has featured a logo that, for its time, reflected ISCP's vision for the future of the Society. The bold colors, the arc, and the arrow symbolized "forward movement" and global inclusion.

April 2015, sixteen years later, we have greatly expanded our membership benefits, enhanced our website, and now a **new logo!** The new logo abstractly integrates a globe—signifying the international basis of our Society's membership, with a concrete road—signifying our technical foundation in concrete pavements. These abstract graphical elements, a new bold font, and the blue-green and grey colors of the logo produce a contemporary feel.

Amy M. Dean, *ISCP Art Director and Editor-in-Chief*, designed several new logo concepts with input from Robert Rodden, *ISCP Executive Director*, the *ISCP Executive Committee*: Neeraj Buch, *President*; Jeff Roesler, *Vice President*; and Jacob Hiller, *Secretary-Treasurer*; along with Mark Snyder, *Past President*. The ISCP Board voted to select their favorite among the proposed logos. The ISCP Website, Newsletter and Logo colors congruently reflect one another as well.



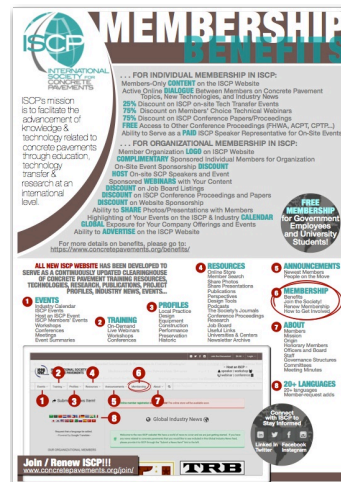
### REMINDER: This Thursday, April 30<sup>th</sup>: DEADLINE for 11<sup>th</sup> ICCP Abstracts & Letters of Intent

**REMINDER: Thursday, April 30, 2015 is the DEADLINE** for abstracts and letters of intent for the 11<sup>th</sup> International Conference on Concrete Pavements (11<sup>th</sup> ICCP) to be held August 28-31, 2016 in San Antonio, Texas, USA.

Please submit your abstract digitally to: [papers@concretepavements.org](mailto:papers@concretepavements.org). Or, if using the printable Call for Papers form, please submit your abstract via mail to: Tom Burnham, 1400 Gervais Avenue, Maplewood, MN 55109, USA

For the **Call for Papers FORM**, please go to: <https://www.concretepavements.org/11thiccp/11THICCPbrochure.pdf>.

**Exhibitors**, please complete a Call for Papers form indicating interest in receiving an exhibition registration package.



To review the Membership Benefits flyer, please go to: <https://www.concretepavements.org/benefits/>.

#### ORGANIZATIONAL MEMBERS & MAJOR EVENT SPONSORS:



#### IMPORTANT DATES:

**April 30, 2015** Letters of intent/abstracts  
**May 31, 2015** Approval of abstracts  
**September 30, 2015** Completed papers due for review  
**December 15, 2015** Reviews completed and authors notified  
**January 30, 2016** Submittal of revised papers for re-review  
**February 28, 2016** Authors notified  
**April 30, 2016** "Camera-ready" papers: electronic versions due



# ISCP Board Member, Dr. Peter Taylor, Named CP Tech Center Director

National Concrete Pavement Technology Center



The board of directors for the National Concrete Pavement Technology Center (CP Tech Center)-Iowa State University, announced that Dr. Peter Taylor, *Research Associate Professor-Iowa State Department of Civil, Construction and Environmental Engineering*, has been appointed as the Director of the CP Tech Center—effective April 10. He replaced Mr. Tom Cackler, Director since 2003, who is retiring from Iowa State University. Dr. Taylor has been the *Associate Director* of the *National CP Tech Center* since he joined the organization in 2007. As associate director, he was involved in managing and conducting research projects and programs investigating materials-related aspects of concrete pavements and in teaching applied concrete materials technology to practicing engineers.

Dr. Taylor is a professional engineer (PE), registered in Illinois. He is president-elect of the American Concrete Institute (ACI), Iowa chapter, and sits on the board of directors for both the International Society for Concrete Pavements (ISCP) and the Transportation Engineering and Road Research Alliance (TERRA). He is active in the Transportation Research Board (TRB), the American Society for Testing and Materials (ASTM), and ACI.



## INDUSTRY NEWS & RESOURCES

### CP Road Map E-News

CP ROAD MAP  
shaping the future of concrete pavement



The **CP Road Map E-News** is the newsletter of the Long-Term Plan for Concrete Pavement Research and Technology (CP Road Map), a national research plan developed and jointly implemented by the concrete pavement stakeholder community. To read the CP Road Map, please go to: <http://www.cproadmap.org>.

#### New "Moving Advancements into Practice (MAP)" Brief

Moving Advancements into Practice (MAP) Briefs describe promising research and technologies that can be used now to enhance concrete paving practices. The April 2015 MAP Brief, "Concrete Pavement Curling and Warping: Observations and Mitigation", describes the mechanisms thought to be responsible for pavement curling and warping and strategies for mitigation. To view the April 2015 News Brief, please go to: <http://www.cproadmap.org/publications/MAPbriefApril2015.pdf>.

#### News from the Road

News from the Road highlights research around the United States that is helping the concrete pavement community meet the research objectives outlined in the CP Road Map. **The featured headlines of the April 2015 CP Road Map are below.**

**11<sup>th</sup> International Conference on Concrete Pavements**

**FHWA Publishes New Reference Document on Sustainable Pavement**

**Drinking Water Treatment Waste as a Low-Cost Curing Agent for Concrete**

**Louisiana Investigates Polyurethane Foam for Faulted Joints**

**Backcalculation of Existing Pavement for Bonded Concrete Overlays of Asphalt**

#### Updates from the States: Nebraska

In the State of Nebraska, research is coordinated through the Nebraska Department of Roads (NDOR) Research Program which brings together people from public and private areas of the transportation industry and uses their pool of knowledge and experience to prioritize statewide research ideas. A council made up of representatives from various transportation entities—cities, counties, consultants, contractors, FHWA, NDOR, and the University of Nebraska—prioritizes the research ideas. To read the entire report on Nebraska, please go to: [http://www.cproadmap.org/publications/e-news\\_2015\\_April-Nebraska.cfm](http://www.cproadmap.org/publications/e-news_2015_April-Nebraska.cfm).

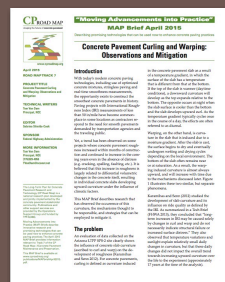
To read each of the articles, and for the News from the Road document, please go to: [http://www.cproadmap.org/publications/e-news\\_Apr2015.cfm](http://www.cproadmap.org/publications/e-news_Apr2015.cfm).

**WITH TODAY'S MODERN  
CONCRETE PAVING  
TECHNOLOGIES...  
THE OPPORTUNITY  
EXISTS TO CONSTRUCT  
THE SMOOTHEST  
CONCRETE PAVEMENTS  
IN HISTORY.**

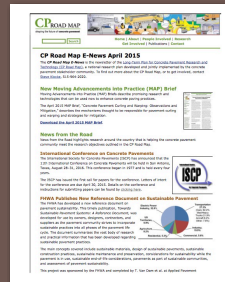
## Natural Nanocrystals Shown to Strengthen Concrete

One factor limiting the strength and durability of today's concrete is that not all of the cement particles are hydrated after being mixed, leaving pores and defects that hamper strength and durability. Researchers have discovered that the cellulose nanocrystals increase the hydration of the concrete mixture, allowing more of it to cure and potentially altering the structure of concrete and strengthening it. Cellulose nanocrystals (CNCs) derived from industrial by-products have been shown to increase the strength of concrete, representing a potential renewable additive to improve the ubiquitous construction material. The CNCs could be refined from byproducts generated in the paper, bioenergy, agriculture and pulp industries. They are extracted from structures called cellulose microfibrils, which help to give plants and trees their high strength, light weight, and resilience. Now, researchers at Purdue University have demonstrated that the cellulose nanocrystals can increase the tensile strength of concrete by 30 percent (30%).

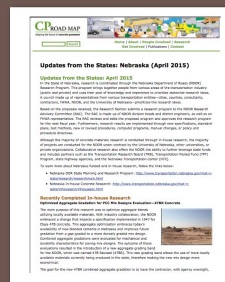
"This is an abundant, renewable material that can be harvested from low-quality cellulose feedstocks already being produced in various industrial processes," said Pablo Zavattieri, *Associate Professor, Lyles School of Civil Engineering*. To read the entire article, please go to: [http://www.internano.org/content/view/full/989/251/?utm\\_source=newsletter&utm\\_medium=email&utm\\_campaign=nmw20150312](http://www.internano.org/content/view/full/989/251/?utm_source=newsletter&utm_medium=email&utm_campaign=nmw20150312).



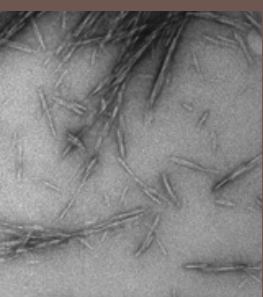
Cover 1: April MAP Brief  
"Concrete Pavement  
Curling and Warping:  
Observations & Mitigation"



Cover 2: April 2015  
"News from the Road"



Cover 3: Updates from  
the States: Nebraska.





## Totally Concrete Expo to be Held in South Africa



The African Construction and Totally Concrete Expos will be held May 11-14, 2015 at the Sandton Convention Centre in Johannesburg, South Africa. The theme is "Shaping the future of cement and concrete in Africa". The Expos are the definitive African educational and networking platform for insights on the latest developments and technologies associated with the cement, concrete and construction industry. As Africa's biggest gathering of those in the concrete and construction industry, this week of conferences, seminars, workshops, expos, site visits is dedicated to highlighting and promoting cement, concrete and construction in Africa. Exhibitors, Sponsors, Delegates, and Attendees will have the opportunity to network with 6000 visitors from over 1,000 companies, 170 speakers, 220 exhibitors, and learn about the latest technologies, industry trends, and innovations. Construction Week 2015 has 5 unique focused seminars and forums:

- African Construction Expo
- Totally Concrete Expo
- Coatings for Africa
- African Roads Evolution
- Housing for Africa
- Captains of Construction (by invitation only)

ACPA will hold a **Design Workshop** on May 12<sup>th</sup>. Brian Pierre, *ISCP Board Member*, will moderate and provide perspective on South African design methods. Robert Rodden, *ISCP Executive Director*, will be the primary presenter.

For delegate package options, questions, advice on sessions, and time structure, please contact: Malvin Kane: E-mail: [malvin.kane@totallyconcrete.co.za](mailto:malvin.kane@totallyconcrete.co.za) | Phone: +27 21 700 4300  
Sponsorship and exhibition opportunities contact: Daniel Bloch: E-mail: [daniel.bloch@hypenica.com](mailto:daniel.bloch@hypenica.com)  
For more information on the event, please contact: Meghan Gilson: E-mail: [meghan.gilson@hypenica.com](mailto:meghan.gilson@hypenica.com).  
To register, please go to: <http://www.totallyconcrete.co.za>.

## EUPAVE Workshop to be Held May 26, 2015 in Brussels, Belgium



The European Concrete Paving Association (EUPAVE) will hold a free one-day workshop titled "Best Practices in Concrete Paving" on Tuesday, May 26, 2015 from 10:00 to 16:30, on the EUPAVE premises (68, Boulevard du Souverain, 1170) in Brussels, Belgium. This workshop aims to gather experts active in concrete paving—contractors, designers, and road construction engineers—where participants will have the unique opportunity to exchange best practices and discuss solutions to challenges and difficulties experienced in application.

EUPAVE has recently stepped up its efforts in its main activity areas in sharing of best practices and communicating the benefits of concrete pavements. In order to strengthen communication with the industry, EUPAVE has presented the new category of involvement: "**PARTNER**"—specially designed for contractors, designers, road construction engineers, research institutes and academia, and professionals.

The event is free for EUPAVE members and partners. For more information and the workshop flyer PDF, please go to: <http://www.eupave.eu/documents/graphics/workshop-best-practices-in-cp/invitation-workshop.pdf?lang=en>.

**Registration Deadline is May 11, 2015.** For registration to the workshop, contact: Ms. Özlem Aslan: E-mail: [o.aslan@eupave.eu](mailto:o.aslan@eupave.eu) | Tel: +32.(0)2.7904206

## Call for Applications by April 30<sup>th</sup> for Summer School to be Held July 26-31 in Dresden, Germany



Technische Universität Dresden (Dresden University of Technology—TU Dresden), in Saxony, Dresden, Germany, is pleased to announce the Call for Applications for Summer School for:

### HIGH-PERFORMANCE FIBRE-REINFORCED CEMENT-BASED COMPOSITES (HPFRCC) FOR FUTURE INFRASTRUCTURE.

The summer class will take place July 26-31, 2015 at TU Dresden, with the lectures in Room E02 at Georg-Schumann-Str. 7. The exercises will be carried out in the Alfred-Hütter Laboratory of the Institute of Construction Materials.

**TU DRESDEN WILL COVER TRAVEL & ACCOMMODATION COSTS OF INTERNATIONAL APPLICANTS UP TO 100%.**

Well-qualified PhD students and Post-Docs are encouraged to apply for participation in the Summer School. **Registration Deadline is April 30, 2015.** Please send your application to the Summer School Secretary: Ms Martina Awassi, *Institute of Construction Materials Faculty of Civil Engineering Technische Universität Dresden*  
E-mail: [diss2015-hpfrcc@tu-dresden.de](mailto:diss2015-hpfrcc@tu-dresden.de) | Phone: +49 351 463 36311 | Fax: +49 351 463 37268

Organized by the *School of Civil and Environmental Engineering*, the International Summer School focuses on novel high-performance fibre-reinforced, cement-based composites (HPFRCC) for new construction as well as for the strengthening and repair of buildings and infrastructure. The Summer School is part of the framework of the institution's strategy and is also a part of the Excellence Program at the TU Dresden. Participation in the Summer School including an attractive cultural program is free of charge to all participants. TU Dresden will cover the travel and accommodation costs of international applicants up to 100%. The TU Dresden's Institutional Strategy and it is funded by the Excellence Initiative of the German Federal and State Governments.

For more information on this Summer School program, please download the FLYER in PDF form: <https://www.concretepavements.org/wp-content/uploads/2015/04/DISS-HPFRCC-2015-Brochure.pdf>.  
For more information, please go to the event homepage: [www.tu-dresden.de/biw/ifb/diss2015](http://www.tu-dresden.de/biw/ifb/diss2015).



# Printable Brochure Now Available for the ASCP 2015 Conference to be Held in Australia July 20-21, 2015



The printable conference brochure for the Australian Society for Concrete Pavements (ASCP) 2015 is NOW AVAILABLE! The conference will be held July 20-21, 2015 at the Breakfree Aanuka Beach Resort in Coffs Harbour, NSW, Australia.

The 2015 Conference aims to bring new information to the Australian industry and aims to extend the scope of previous Conferences to include papers on the foundations which support concrete pavements. In addition to papers about concrete pavements (design, construction, materials and equipment), the Conference will present information related to pavement support aspects—especially earthworks, drainage, piling, soft soil considerations, and many concrete pavement topics.

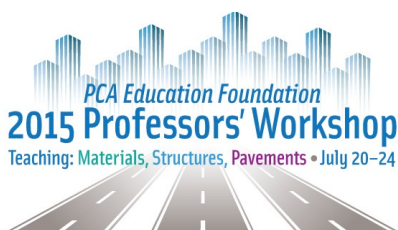
For a PDF of the **brochure**, please go to: <https://www.concretepavements.org/wp-content/uploads/2015/04/ASCP-2015-Concrete-Pavements-Conference-Program-Registration-Brochure.pdf>.

For an **article** on the ASCP Conference in the **ISCP January Newsletter**, on pages 4-5, please go to: <https://www.concretepavements.org/wp-content/uploads/2015/01/ISCP-Newsletter-Vol-12-No-1.pdf>.

For more on the conference and ASCP, please go to the ASCP website at: <http://www.concretepavements.com.au/Events/EventDetails.aspx?EventID=123>.

**ISCP MEMBERS** special note: ISCP and ASCP Directors who will be present, will hold a meeting on July 22 to discuss matters of mutual interest and who will represent the society at the event will include: Neeraj Buch, Peter Taylor, Juan Pablo Covarrubias, Jim Grove (recent past Director), George Vorobieff, and Anna-Carin Brink. For the complete list of the ISCP Executive Committee and Board of Director Members, please go to: <https://www.concretepavements.org/officers-and-board/>.

## PCA Education Foundation 2015 Professor's Workshop to be Held July 20-24 in Skokie, Illinois, USA



The Portland Cement Association (PCA) Education Foundation Professors' Workshop will be held July 20-24, 2015, at PCA in Skokie, Illinois, USA. This format includes sessions covering:

- Concrete Materials Properties
- Engineering and Economics of Concrete Structures
- Design, Construction, and Performance of Concrete Pavements

The Professors' Workshop is designed to provide faculty in engineering, architecture, and construction management programs the tools to teach the latest developments in concrete design, construction and materials.

The week-long session includes networking opportunities to exchange ideas with professors from many universities, demonstrations by software vendors, and more than \$2,500 of free resource materials.

For the Professors' Workshop schedule, please go to: [http://www.cement.org/docs/default-source/fc\\_education/2015--pca-prof-workshop-schedule-4-20-15.pdf?sfvrsn=2](http://www.cement.org/docs/default-source/fc_education/2015--pca-prof-workshop-schedule-4-20-15.pdf?sfvrsn=2)

For more information and the workshop website, please go to: <http://www.cement.org/for-concrete-books-learning/education/professors'-workshop>.

For questions, please contact:

Michelle Wilson, PCA: E-mail: [mwilson@cement.org](mailto:mwilson@cement.org) | Phone: 847.972.9034

## 20<sup>th</sup> Colombian Symposium on Pavement Engineering to Be Held September 23-25 in Santa Marta, Colombia



The 20<sup>th</sup> Colombian Symposium on Pavement Engineering will be held September 23-25, 2015 in Santa Marta, Colombia. The main theme of the XX Colombian Symposium on Pavement Engineering is "government-industry-academia synergy to solve the problems of road infrastructure, and to

enhance economic development and sustainability". Today's society requires better road infrastructure to enhance economic development, providing greater mobility to the residents, and to facilitate the improvement of social conditions. It is essential to have a productive synergy between government agencies, industry pavements, and academia—with sustainability consistent with growth and development. The Colombian XX Symposium on Pavement Engineering will provide the opportunity for the dissemination and discussion of these issues. There will be participation of national and international experts.

Pertaining to the theme, the following topics are proposed for paper submittal:

- Materials: innovation, quality control, characterization, standards, design, etc.
- Environmentally friendly construction and maintenance of pavements Trends
- Serviceability, mobility and road safety
- Urban tertiary roads and pavements
- Management of pavements
- Development of the regulatory framework of the country in the area of pavements.

For the conference website, please go to: <http://www.simposiopavimentos.com.co>.

For the website in English, please go to: <https://translate.google.com/translate?hl=en&sl=auto&tl=en&u=http%3A%2F%2Fwww.simposiopavimentos.com.co>.





# 54<sup>th</sup> Annual Minnesota Concrete Paving Workshop & Awards Banquet was Held in Breezy Point, MN, USA

More than 160 people attended the 54<sup>th</sup> Annual Concrete Pavement Association of Minnesota (CPAM) Concrete Paving Workshop and/or Awards Banquet, held March 12-13, 2015, at Breezy Point Conference Center in Breezy Point, Minnesota.

Steve Gerster received the *John T "Arnie" Laingen Award*. This award is given to the individual who exemplifies Arnie's (1957-1989) integrity and commitment to promoting quality and excellence in the concrete paving industry in Minnesota. The recipient is chosen by a committee of peers.

For a list of the Merit Award-Winning Projects presented by CPAM and MnDOT, please go to: <http://www.concreteisbetter.com/wp-content/uploads/2015/01/Awards-Program-2015-1-page-REVISED-C1.pdf>.

For photos of the award winner and workshop speakers on the CPAM website, please go to: <http://www.concreteisbetter.com/photos/awards-banquet/>.



For the workshop presentations, available online in the eLibrary of the CPAM website, please go to: <http://www.concreteisbetter.com/elibrary/elib-workshop-presentations/>.

For more on CPAM, please go to: <http://www.concreteisbetter.com>.

**Category 3-MnDOT: CPR** Front row (l-r): Cal Puttbreese, MnDOT; Dan Labo, MnDOT; Justin Bossert, WSB; Corey Kittleson, Interstate Improvement; Nathan Steckelberg, Interstate Improvement; Sam Gramling, Interstate Improvement Back row (l-r): Matt Zeller, CPAM; Gary Oster, Cemstone; Craig Lau, WSB; Jeff Eggert, WSB; Bryon Amo, WSB; Tom Ravn, MnDOT

## INDUSTRY PUBLICATIONS

### TRB: Texturing of Concrete Pavements



TRB's National Cooperative Highway Research Program (NCHRP) Report 634: "Texturing of Concrete Pavements" explores and presents a recommended process for determining the type of concrete pavement texture that should be used for a specific highway project. The process considers the effects of texture type on friction and noise characteristics. The report will guide pavement and construction engineers in identifying and specifying textures for concrete pavements that will provide adequate surface characteristics. The information contained in the report will be of immediate interest to state engineers and others concerned with concrete pavement design and construction.

Tining—a means of texturing newly constructed concrete pavements—is generally performed to enhance pavement-surface macro-texture to improve pavement-surface frictional characteristics and reduce potential for hydroplaning, skidding, and wet-weather crashes. However, there has been a concern that tining has evolved without adequate consideration of the effects on noise generation, long-term durability, smoothness, constructibility, pavement serviceability, and cost-effectiveness. Other options for texturing concrete pavements might provide better performance and yield environmental and economic benefits. Furthermore, no widely accepted guidelines or procedures for identifying and selecting methods of texturing concrete pavements that consider relevant technical, environmental, economic, and safety issues are available. Thus, research was needed to develop a rational procedure for use by highway agency personnel in identifying and selecting texturing methods that will provide adequate surface characteristics for concrete pavements.

Under NCHRP Project 10-67, "Texturing of Concrete Pavements," Applied Research Associates, Inc. (ARA), worked with the objective of recommending appropriate methods for texturing concrete pavements for specific applications and ranges of climatic, site, and traffic conditions. Appendixes A through F contained in the research agency's final report provide detailed information on the literature review, test results, and data analysis, as well as a sample specification for texture. These appendixes are not published herein; but they are available on the TRB website. To download the report in PDF form, please go to: [http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp\\_rpt\\_634.pdf](http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_rpt_634.pdf).

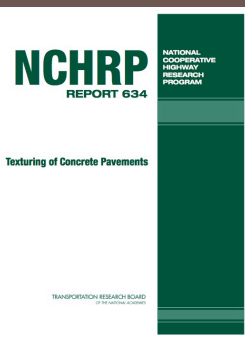
### IMCYC Reprints Concrete Pavement for Highways – Volume 1 – Construction and Projects



By popular demand, the IMCYC book "Concrete Pavement for Highways—Volume 1— Construction Projects" has recently been reprinted by the Instituto Mexicano del Cemento y del Concreto, A.C. (IMCY) and is now again available. The book is presented in Spanish, and is part of a series on concrete pavements for roads prepared by the Concrete Pavement Technical Committee (CPTC) of IMCYC. Divided into four parts, the book focuses on the topics of Design and Construction. Volume II of the series focuses on the topics of evaluation and preservation. To order the book, please go to: <http://tienda.imcyc.com.mx/tiendaimcyc/info.asp?item=450>.



2015 Arnie Laingen Award Recipient  
Steve Gerster, PCI Roads





TRANSPORTATION RESEARCH BOARD  
OF THE NATIONAL ACADEMIES

**Professional Development Hours:**  
A certificate for 1.5 PDH's will be provided to attendees who register & attend as an individual

## TRB: Mechanistic-Empirical Design & Details for Continuously Reinforced Concrete Pavement (CRCP)

**Wednesday, June 3** (1.5 hours)

2:00 pm-3:30 pm (Eastern) | 1:00 pm-2:30 pm (Central) | 11:00 am-12:30 pm (Pacific)

**Webinar Presenters:** Jeffrey Roesler, *University of Illinois at Urbana-Champaign*  
Michael Darter, *University of Illinois at Urbana-Champaign*  
Dan Zollinger, *Texas A&M University*

**Webinar Moderator:** Dulce Rufino Feldman, *California Department of Transportation*

**Webinar Outline:** AASHTO ME design for CRCP  
Background and software  
Main inputs for CRCP design  
Most sensitive design inputs and features  
European design procedures for CRCP  
Key differences in European and U.S. designs for CRCP  
Performance of CRCP  
End treatments and other design details  
Options for CRCP end treatments  
Design details for CRCP  
Question and answer session  
The first 60 minutes—presentations and the final 30 minutes—audience questions. The Registered Continuing Education Program (RCEP)

To register, for Learning Objectives and other information, please go to:  
<http://www.trb.org/Calendar/Blurbs/172488.aspx>.

For registration questions, please contact Reggie Gillum: E-mail: [RGillum@nas.edu](mailto:RGillum@nas.edu).



TRANSPORTATION RESEARCH BOARD  
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**NCHRP**  
SYNTHESIS 445

NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM

Practices for Unbound Aggregate Pavement Layers



A Synthesis of Highway Practice  
TRANSPORTATION RESEARCH BOARD  
OF THE NATIONAL ACADEMIES

**Professional Development Hours:**  
A certificate for 2 PDH's will be provided to attendees who register & attend as an individual

## TRB: Materials for Unbound Granular Pavement

**Wednesday, June 24** (2 hours)

1:00 pm-3:00 pm (Eastern) | NOON-1:00 pm (Central) | 10:00 am-11:00 am (Pacific)

**Webinar Presenters:** Erol Tutumluer, *University of Illinois, Urbana-Champaign*  
Debkanta Mishra, *Boise State University*  
Andrew Dawson, *University of Nottingham*

**Webinar Moderator:** Rick Boudreau, *Boudreau Engineering*

**Webinar Outline:** Introduction  
Aggregate types and material selection  
Selection on the basis of task  
Mineral consumption issues  
Types of aggregate, characteristics, and consequences for selection  
Relationship between aggregate constituents and granular material  
Recycled and by-product aggregates  
Granular base and subbase construction practices  
Granular base defined  
Composition  
Segregation and degradation  
Stockpiling  
Transporting  
Spreading  
Unbound aggregate base characterization for design  
Role of aggregate base  
Pavement design with unbound aggregate layers  
Unbound aggregate characterization needs  
Resilient behavior  
Stress and directional dependencies of modulus  
Permanent deformation behavior  
Summary  
Question and answer session: The first 90 minutes—presentations and the final 30 minutes—audience questions. The Registered Continuing Education Program (RCEP) categorizes this webinar activity as relating to health, safety, and welfare including core technical.

This webinar will present material closely aligned with Chapters 2, 3, and 4 of "NCHRP Synthesis 445: Practices for Unbound Aggregate Pavement Layers". Webinar presenters will show how natural mineral aggregate and recycled/by-product aggregate (as used in granular base and sub-base layers of pavements) is obtained, selected, characterized, and transformed into functional pavement layers.

This webinar was organized by the TRB Standing Committee on Mineral Aggregates. Participants must register in advance of the webinar, and there is a fee for non-TRB Sponsor or non-TRB Sustaining Affiliate employees. To register, for the webinar objectives, and for more information, please go to:  
<http://www.trb.org/Calendar/Blurbs/172399.aspx>.

For the PDF on NCHRP Synthesis 445: Practices for Unbound Aggregate Pavement Layers, please go to:  
<http://www.trb.org/main/blurbs/169883.aspx>.

# CALL FOR ABSTRACTS/PAPERS DIGEST

**April 30, 2015** Due date for abstracts and letters of intent for the **11<sup>th</sup> International Conference on Concrete Pavements (11<sup>th</sup> ICCP)** to be held in San Antonio, Texas, USA, August 28-31, 2016. For the First Call for Papers brochure, please contact Leif Wathne, *11<sup>th</sup> ICCP Conference Chair*: E-mail: [lwathne@acpa.org](mailto:lwathne@acpa.org). For the online version of the brochure, please go to: <http://www.concretepavements.org/11thiccp/11THICCPbrochure.pdf>.

**April 30, 2015** Due date for abstracts for the **3<sup>rd</sup> International Conference on Best Practices for Concrete Pavement** to be held October 28-30, 2015 at the University of São Paulo in Bonito, Brazil. Please see the article on page 1 of the February 2015 ISCP Newsletter. Please submit abstracts and papers via e-mail to: [concpaybonito2015@gmail.com](mailto:concpaybonito2015@gmail.com).

**May 8, 2015** Due date for abstracts and resúmenes for the **10<sup>th</sup> Uruguayan Road Congress**, to be held October 14-16, 2015 in the Conference Room of the Technological Laboratory of Uruguay in Montevideo, Uruguay (Av Italia 6201). For more information, please contact:

Uruguayan Association of Roads: Phone: 598.2401.9459 | Fax: 598.2402.3007 | E-mail: [secretaria@auc.com.uy](mailto:secretaria@auc.com.uy)  
Website: [www.auc.com.uy](http://www.auc.com.uy)

English: <https://translate.google.com/translate?hl=en&sl=auto&tl=en&u=http%3A%2F%2Fwww.auc.com.uy>.

## CALENDAR

### MAY 2015

#### Totally Concrete Expo-South Africa

May 12-15, 2015, Sandton Convention Centre, Johannesburg, South Africa, <http://www.totallyconcrete.co.za/>  
**9<sup>th</sup> International Conference on Managing Pavement Assets (ICMPA9)**

May 18-21, 2015, in Alexandria, Virginia in the Washington, D.C. metropolitan area, USA, [www.ICMPA9.org](http://www.ICMPA9.org)

#### 5<sup>th</sup> International Symposium on Nanotechnology in Construction (NICOM5)

May 24-26, 2015, in Chicago, Illinois, USA, <http://www.nicom5.org>

#### International Seminar on Concrete Pavement Construction and Rehabilitation

May 25, 2015, at the Hotel Neruda in Providencia Santiago, Chile, [http://pavimentando.cl/?page\\_id=2598](http://pavimentando.cl/?page_id=2598)

### JUNE 2015

#### ASCE & T&DI International Airfield and Pavements Conference

June 7-10, 2015 at the Hilton Miami Downtown, Miami, Florida, USA, <http://www.pavementsconference.org/>

#### James Lai Symposium on Pavement Mechanics and Materials

#### 2015 ASCE Engineering Mechanics Institute Conference (MS 61)

June 16-19, 2015 in Palo Alto, California, USA, <http://www.emi2015.info/minisymposia/symposia>

#### ASCE-Engineering Mechanics Institute (EMI) Conference, USA

June 16-19, 2015 at Stanford University, <http://www.emi2015.info/minisymposia/symposia>

#### ASCE-Design for Concrete Pavements, USA

June 25-26, 2015 at Sheraton Brookhollow Houston, Houston, Texas, USA,

<http://mylearning.asce.org/diweb/catalog/item/id/333177/q/c=79&q=concrete&t=2116>

### JULY 2015

#### TRB 11<sup>th</sup> International Conference on Low Volume Roads, USA

July 12-15, 2015 at the Omni William Penn Hotel, Pittsburgh, Pennsylvania, USA

<http://www.trb.org/Conferences/2015/11LVR>

#### 14<sup>th</sup> AASHTO/TRB Conference on Transportation Infrastructure Maintenance and Operations

July 19-23, 2015 in Des Moines, Iowa, USA, For more information, contact James Bryant at [jbryant@nas.edu](mailto:jbryant@nas.edu).

#### ASCP 2015 Conference, Australia

July 20-21, 2015, at BreakFree Aanuka Beach Resort, in Coffs Harbour, NSW, Australia

<http://www.concretepavements.com.au/NewsItem.aspx?NewsID=105>

### AUGUST 2015

#### Concrete 2015

August 30, 2015 - September, 2015, in Melbourne, Victoria, Australia

<http://concrete2015.com.au/>

### SEPTEMBER 2015

#### ASCE-Design of Concrete Pavements, USA

September 10-11 2015 at Hyatt Palace Baltimore Inner Harbor East, Baltimore, Maryland, USA

<http://mylearning.asce.org/diweb/catalog/item/id/333180/q/c=79&q=concrete&t=2116>

#### XX Simposio Colombiano sobre Ingeniería de Pavimentos, Colombia, South America

September 23-25 2015 at Centro de Convenciones del Hotel Santamar in

Santa Marta, Magdalena, Colombia, South America <http://www.simposiopavimentos.com.co/>

#### 11<sup>th</sup> International Symposium on Brittle Matrix Composites – BMC-11

September 28-30 2015 in Warsaw, Poland, <http://bmc11.ippt.pan.pl/>

### OCTOBER 2015

#### 10<sup>th</sup> Uruguayan Concrete Conference, Uruguay

October 14-16, 2015, at the Technological Laboratory of Uruguay (LATU), in Montevideo, Uruguay

<http://ibracon.org.br/eventos/57CBC/ingles/default.asp>.

#### USP & IBRACON 3<sup>rd</sup> International Conference on Best Practices for Concrete Pavements

October 28-30, 2015 at the Centro de Convenções de Bonito,

in the state of Mato Grosso Du Sol in Bonito, Brazil

[http://www.ibracon.org.br/eventos/57cbc/3rd\\_Concrete\\_Pavement.pdf](http://www.ibracon.org.br/eventos/57cbc/3rd_Concrete_Pavement.pdf)

#### 57<sup>th</sup> Brazilian Concrete Congress Conference

October 27-30, 2015 at the Centro de Convenções de Bonito,

in the state of Mato Grosso Du Sol in Bonito, Brazil

<http://ibracon.org.br/eventos/57CBC/ingles/>

#### PIARC XXV<sup>th</sup> World Road Congress

November 2-6, 2015 in Seoul, South Korea, <http://piarcseoul2015.org/>

### NOVEMBER 2015



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Moderator Jeff Roesler:  
[jroesler@illinois.edu](mailto:jroesler@illinois.edu)

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**Instagram**

<https://instagram.com/concretepavementsociety/>

For events in 2016 and beyond, please go to:  
<http://concretepavements.org/events/category/conferences/>

#### The ISCP Newsletter is produced monthly by:

Editor-in-Chief & Art Director: **Amy M. Dean** [newsletter@concretepavements.org](mailto:newsletter@concretepavements.org)

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ISCP invites members and friends to submit articles and calendar items future issues to:  
[newsletter@concretepavements.org](mailto:newsletter@concretepavements.org). For the ISCP website, please go to <https://www.concretepavements.org>.

ISCP President: **Neeraj Buch, Ph.D.** [president@concretepavements.org](mailto:president@concretepavements.org)

Vice-President: **Jeff Roesler, Ph.D., P.E.** [vice-president@concretepavements.org](mailto:vice-president@concretepavements.org)

Secretary/Treasurer: **Jake Hillier, Ph.D.** [secretary-treasurer@concretepavements.org](mailto:secretary-treasurer@concretepavements.org)

ISCP Executive Director: **Robert Rodden, P.E.** [exec@concretepavements.org](mailto:exec@concretepavements.org)

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