ENGINEERING MECHANICS INSTITUTE
EMI 1687 ASCE
eNewsletter

New EMI Medal

Zdeněk P. Bažant Medal for Failure and Damage Prevention

Zdeněk P. Bažant

The ASCE Board of Direction approved at its January 8, 2015 meeting the new **Zdeněk P. Bažant Medal for Failure and Damage Prevention**. The newly established Society award will be administered by the Engineering Mechanics Institute of ASCE. Many thanks to Prof. Franz Ulm (M.I.T.) for leading the effort to establish the award!

The purpose of the award is to *recognize an individual for significant contributions to the engineering science of failure and damage prevention*.

January 2015

In this issue

The selection committee will evaluate senior-level civil engineers or engineering scientists based upon outstanding performance or specific and noteworthy actions which may include publications, patents or other forms of scientific invention demonstrating a clear impact on failure and damage prevention. The award may be made in even-numbered years. The medal will be given without regard for society membership or nationality, but ASCE or institute members shall receive preference where candidates are considered equal in all other ways. The award selection committee, which is composed of members of the Engineering Mechanics Institute and the U.S. National Committee on Theoretical and Applied Mechanics (USNCTAM), shall recommend a recipient to the Society's Executive Committee for approval.

The official rules for the **Zdeněk P. Bažant Medal for Failure and Damage Prevention** will be posted on the ASCE website. To nominate for this award, submit the following, by the **November 1, 2015** nomination deadline:

- A cover letter, signed by the nominator
- An Official Award Nomination form
- The nominee's CV or biographical information
- Two or three letters of recommendation

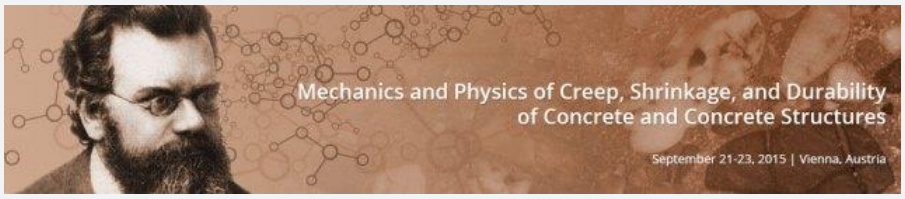
Electronic submissions are encouraged to awards@asce.org by November 1, 2015. Paper submissions are also accepted, in which case one copy of the complete nomination package should be received by the Honors and Awards Program at the

ASCE headquarters: 1801 Alexander Bell Drive, Reston, VA 20191-4400.

EMI 2015 Conference

Registration Opens: January 25, 2015
Early Bird Registration Deadline: March 15, 2015
Online Registration Deadline: May 15, 2015

CONCREEP-10 Conference



Register Today!

Early registration deadline is March 31, 2015

Keynote Lecturers: Prof. Zdeněk P. Bažant, "*Interaction of creep and damage in concrete: Chemo-nano-macro*", and Prof. Franz-Josef Ulm.

Learn more about the conference and view the list of Mini-symposia.

EMI On-Demand Seminar

Mechanics of Random and Fractal Materials and Structures

Location: Online
Fee: Member $245.00 | Non-Member $295.00
Credit CEU:0.6
Instructor: Professor Martin Ostoja-Starzewski

Course Outline:

1. Stochastic/fractal geometries of microstructures and lattice models (periodicity vs. randomness, rigidity, dynamics, and optimality)
2. Meso-scale bounds for random (non)linear (in)elastic media, and size of representative volume element (RVE)
3. Scalar/tensor random/fractal fields and stochastic finite elements (SFE)
4. Mechanics of fractal media
5. Classical (Cauchy) versus generalized (micro-polar or nonlocal) models
6. Formation of fractal patterns at elastic-inelastic transitions

For registration information, visit the ASCE website at:
Mechanics of Random and Fractal Materials and Structures.

EMI's First International Conference Held at The Hong Kong Polytechnic University

Prof. KT Chau

EMI held its first international conference on January 7-9, 2015 at the Hong Kong Polytechnic University (PolyU). Chaired by Prof. K.T. Chau of the Department of Civil & Environmental Engineering of PolyU, a long-time member of ASCE's Engineering Mechanics Division and Engineering Mechanics Institute, the conference was truly an international event as it attracted attendees from Asia (mainland China; Hong Kong, China; India; Korea; Singapore; Taiwan; and Thailand), Europe (France, Germany, Spain, Switzerland, and UK), the

Middle East (Iran, Israel, and Lebanon), the Americas (Brazil, Canada, USA) and Australia.

Although the conference theme was “Mechanics for Civil Engineers against Natural Hazards”, the technical program covered nearly all areas of engineering mechanics.

The conference attendees were welcomed by Ir Prof P.K. Alex Wai, Ph.D., FHKEng, FHKIE, FOSA, FIEEE, Vice President, Research Development, PolyU, Prof. Roberto Ballarini, Ph.D., P.E, F.EMI, F.ASCE, EMI President, and Prof. K.T. Chau during the Opening Plenary Session at the Jockey Club Innovation Center, a recently completed building designed by Dame Zaha Hadid.

The conference program featured each morning two plenary lectures given by leading researchers. Prof. Zdenek P. Bazant (Northwestern University) explained why fracking works and how to optimize it. Prof. Ronaldo Borja (Stanford University) explored multi-scale poromechanics accommodating double porosity and shear band. In his overview of poroelasticity, Prof. Alexander H.D. Cheng (University of Mississippi) discussed porous materials, poroelasticity pioneers, poroelastic mechanisms, and physical phenomena and applications. Prof. Ghanem (University of Southern California) discussed risk assessment for complex systems with interdependent subsystems and complex failure modes using case studies from recent major accidents. Prof. Philip L.-F. Liu (Cornell University) presented his latest research on water waves through coastal aquatic forest areas. Prof. You-lin Xu (The Hong Kong Polytechnic University) explained how a structural health monitoring system can be the basis for prognosis of fatigue damage of a suspension bridge such as the Tsing Ma Bridge in Hong Kong. Videos of the plenary lectures will be posted on the EMI website.

The 21 technical presentation sessions included 11 special symposia organized by committees and 10 regular sessions. The eleven symposia included two sessions on “Geomaterials: Poromechanics and Failure”, two sessions on “Analytical and Computational modelling of Advanced Materials”, two sessions on “Structural Health Monitoring”, and sessions on “Boundary Element Method and Meshless Method”, “Smart Structures in Hazard Mitigation”, ”Fracture Mechanics for Cementitious Materials”, “Soil-Structure Interactions”, and “Forward and Inverse Problems in Elasticity and Applied Mechanics.”

Innovation Tower - Hong Kong Poly U