Mechanics of Materials across Nano to Geological Time and Length Scales
In honor of the pioneering contributions of Professor Ares J. Rosakis on the occasion of his 60th birthday
September 16-17, 2016; Martinos Auditorium (Granoff Center for the Creative Arts)
154 Angell St, Brown University, Providence, RI

Program

September 16, 2016

07:30 – 08:20 am  Breakfast – Studio 1 (Granoff 4th floor)
08:20 – 08:30 am  Welcome Remarks by Larry Larson, Dean of Engineering, Brown University

Session 1: Seismo-mechanics
Session Chair: D.Henann, Brown University

08:30 – 09:00 am  Ares and the sorting out of bi-material rupture dynamics
                   James R. Rice, Harvard University
09:00 – 09:30 am  Earthquake fracture speeds: past, present and future
                   Shamita Das, Oxford University
09:30 – 10:00 am  The Diversity of Earthquakes and Energy Partitioning
                   Hiroo Kanamori, California Institute of Technology
10:00 – 10:30 am  Dynamic imaging of spontaneously evolving friction in laboratory earthquakes
                   Nadia Lapusta, California Institute of Technology

10:30 – 11:00 am  Break (lower lobby)

Session 2: Dynamic Fracture Mechanics
Session Chairs: R.P.Singh, Oklahoma State University
                   V.Eliasson, University of California, San Diego

11:00 – 11:30 am  Two Advances in Quasibrittle Fracture Mechanics: Fracking Simulations and Testing of Postpeak in Composites
                   Zdenek Bazant, Northwestern University
11:30 – noon    Visualization and quantification of dynamic crack penetration vs. branching at a weak interface in a brittle bilayer
                   Hareesh Tippur, Auburn University
noon – 12:30 pm  Shock Initiated Instabilities in Underwater Structures
                   Arun Shukla, University of Rhode Island

12:30 – 2:00 pm  Lunch – Studio 1 (Granoff 4th floor)
Session 3:  
Dynamic Fracture Mechanics  
Session Chairs: H.Kesari, Brown University  
V.Chalivendra, University of Massachusetts Dartmouth  

02:00 – 02:30 pm  
Dislocations vs Ares’ cracks! Which are the fastest?  
Phoebus Rosakis, University of Crete  

02:30 – 03:00 pm  
Intersonic Delamination in Curved Composite Laminates  
Demir Coker, Middle East Technical University  

03:00 – 03:30 pm  
Microstructurally-Informed Fracture & Fragmentation  
Leslie Lamberson, Drexel University  

03:30 – 04:00 pm  
Break (lower lobby)  

Session 4:  
Mechanical Behavior of Materials  
Session Chairs: M.Zhou, Georgia Institute of Technology  
K.Xia, University of Toronto  

04:00 – 04:30 pm  
Formation of echelon cracks in brittle materials  
K.Ravi-Chandar, University of Texas - Austin  

04:30 – 05:00 pm  
To measure and compute like never before in granular materials  
Jose Andrade, California Institute of Technology  

05:00 – 05:30 pm  
Ultrasonic Characterization of Materials from the Macro to the Nanoscale  
Sridhar Krishnaswamy, Northwestern University  

06:30 – 09:30 pm  
Banquet (Alumnae Hall)  
Master of Ceremonies: G. Ravichandran, Caltech  

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September 17, 2016

07:30 – 08:30 am  
Breakfast – Studio 1 (Granoff 4th floor)

Session 5:  
Bio-mechanics

08:30 – 09:00 am  
On the concept of ‘reptation’ of an elastic filament in a narrow channel  
L.B. Freund, University of Illinois, Urbana-Champaign

09:00 – 09:30 am  
Mechanics in Medicine  
Subra Suresh, Carnegie Mellon University

09:30 – 10:00 am  
Simulation of arterial tissue delamination experiments  
Xiaomin Deng, University of South Carolina

10:00 – 10:30 am  
Break

Session 6:  
Mechanics of Solids and Structures  
Session Chairs: C-E. Rosseau, University of Rhode Island  
I. Chasiotis, University of Illinois, Urbana-Champaign

10:30 – 11:00 am  
Mechanically guided, deterministic 3D assembly  
Yonggang Huang, Northwestern University

11:00 – 11:30 pm  
Nanoscale silicon surfaces: small but mighty  
Alan T. Zehnder, Cornell University

11:30 – noon  
Adhesion energy of a thin foil bonded on a substrate  
Cheng Liu, Los Alamos National Laboratory

noon – 1:30 pm  
Lunch – Studio 1 (Granoff 4th floor)

Session 7:  
Mechanics of Fracture  
Session Chairs: D.M. Kochmann, California Institute of Technology  
S. Hulikal, Brown University

01:30 – 02:00 pm  
Topological toughening of graphene and other 2D materials  
Huajian Gao, Brown University

02:00 – 02:30 pm  
Role of tensile twinning on fracture behavior of magnesium  
R. Narasimhan, Indian Institute of Science

02:30 – 03:00 pm  
Ductile Fracture of Controlled Microstructures  
Alan Needleman, Texas A&M University

03:00 – 03:30 pm  
Multiscale Mechanics of Natural Materials: A Source of Inspiration for Engineering Composites  
Hugh Bruck, University of Maryland

03:30 – 04:00 pm  
Break (lower lobby)

Session 8:  
Discussion
Panel Discussion
Moderator: **R.J. Clifton**, Brown University
Panelists: **J.W. Hutchinson**, Harvard University
**K.T. Ramesh**, Johns Hopkins University
**S. Pellegrino**, California Institute of Technology
**K-S. Kim**, Brown University
**A.F. Bower**, Brown University

Closing

Clam Bake (Sayles Hall)