

SEPTEMBER 2003 MEETING Opening Night

WHEN:

Thursday, September 18, 2003

SCHEDULE:

5:00 p.m. **Social Hour**
 6:00 p.m. **Dinner: ALL YOU CAN EAT!**
Pizza, Salad, Soda and Beer
 7:00 p.m. **Speaker Presentation:**
Prof. Marc Meyers

WHERE:

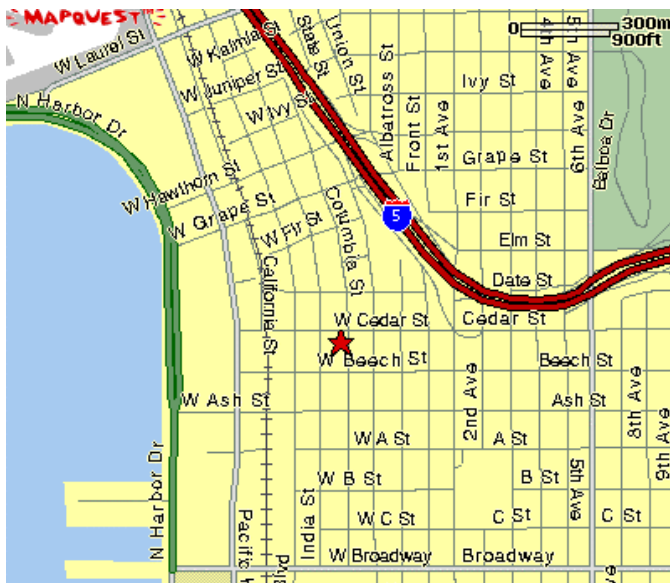
The Firehouse Museum
 1572 Columbia Street (at Cedar St.)
 San Diego, CA 92101
 (619) 232-3473

COST:

ASM Members - \$10
 Non-members - \$15
 Students - \$3

TO REGISTER:

Call ASM Info Line at (619) 685-8848, or send an e-mail to sandiego@asmchapters.org by 9/15/03.



Note: There is no chapter meeting scheduled for October. Instead we will be offering the **Fall Seminar on Non-Destructive Evaluation. Details will be posted on the Chapter website soon.**

PROF. MARC A. MEYERS, FASM

Dept. of Applied Mechanics
and Engineering Sciences, UCSD

PRESENTS:

Growth, Structure and Mechanical
Response of Abalone Shells

Abstract

Many properties of biological systems are far beyond those that can be achieved in synthetic materials with present technologies. For example, mollusks produce complex composites that are hierarchically organized in terms of composition and microstructure, containing both inorganic and organic components in complicated mixtures. These complex composites exhibit extraordinary mechanical properties, constituting a model material for future hierarchically structured composites.

Details of the growth sequence in abalone shells were revealed in SEM studies. The mechanical response of abalone shells in quasi-static and dynamic compression, and three-point bending was correlated with microstructure and damage mechanisms. Specimen to specimen variation required the application of Weibull statistics for quantitative evaluation. Strength was anisotropic and strain rate sensitive. Crack deflection, delocalization of damage, plastic microbuckling (kinking), and viscoplastic deformation of the organic layers were the most important mechanisms contributing to the unique mechanical properties of these shells.

Bio

Professor Meyers is an ASM Fellow and was awarded the "Distinguished Materials Scientist/Engineer Award" from TMS Structural Metals Division in 2003. His current research topics include: fragmentation and comminution of ceramics, dynamic response and shear localization in materials, synthesis of ceramics and composites using a sequence of gas-less combustion reaction and dynamic compaction. He received a MS and PhD from University of Denver, and has authored or co-authored several books and over 200 articles.

The San Diego Chapter is proud to announce that it has once again achieved 5 star status for the 2002-2003 Chapter Year. Thanks to all who helped make it happen. Let's do it again!

OBITUARY

JIM LINDGREN, PAST-CHAIR

The executive council regretfully reports that James Lindgren, former Chapter Chair, passed away on May 25th 2003 in West Hills, CA. Jim was born and raised in Michigan and served with the US Army in the Korean War. He earned a BS from Michigan Tech in 1952 in Metallurgical Engineering. Jim worked at Argonne National Lab for several years and took graduate metallurgy courses at Illinois Institute before coming to San Diego to work at General Atomic, where he was involved with materials research and failure analysis. While in SD, he pursued graduate level physics courses at SDSU that were helpful in his work with radioactive materials. Jim served as Chair for this chapter of ASM during the 1968-1969 year. Our thoughts and prayers go out to Jim's family, friends and colleagues.

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