MONTHLY MEETING – TOPIC

September 15, 2015 – ASM Trustee Visit

Topic: Impact: The Dynamic Behavior of Materials

Speaker: Dr. Kathryn A. Dannemann
Principal Engineer
Southwest Research Institute
San Antonio, TX (www.swri.org/)

Directions: The Corner Pug, 1046 New Britain Avenue
West Hartford, CT 06110, Ph: 860-231-0241
(www.cornerpug.com/ordereze/Directions.aspx)
Via I-84. From west Take exit 41 from I-84E for South Main Street toward Elmwood. Turn left onto New Britain Ave. From east Take I-84W to Flatbush Ave in Hartford. Take exit 45 from I-84. Turn right. Take left onto New Park Ave to New Britain Ave in West Hartford. Pug is at the corner of New Park and New Britain Avenues. (Parking, in back, from New Park Avenue)

This presentation will highlight some of the phenomena that allow materials to withstand high speed impacts and resist speeding bullets. Macro- and microscopic aspects of materials behavior will be presented. Examples from high rate and ballistic experiments will be discussed to illustrate the high strain rate response of metals (aluminum alloys, steels), ceramics, glass and fabrics. The experimental techniques that are utilized to study materials behavior at high strain rates will also be presented.

Bio:
Kathryn Dannemann is Principal Engineer in the Engineering Dynamics Department at Southwest Research Institute (SwRI). Her professional interests and experience include: mechanical behavior of materials, materials characterization and structure, and the interactive effects of microstructure and processing on materials performance. Her work at SwRI has focused on the high strain rate behavior of materials (metals, welds, ceramics, composites, glass) for applications ranging from armor systems to naval and space applications. Prior to joining SwRI, Dr. Dannemann worked at General Electric where she was most recognized for her contributions on high-temperature materials for gas turbine applications. She is a materials engineering graduate of Rensselaer Polytechnic Institute (BS, MS) and MIT (PhD).

Kathryn has been an active member of ASM International for 35 years. She was elected to the Board of Trustees in 2014 and currently serves on several ASM committees. Kathryn is Education Chair of the Alamo chapter of ASM, and assisted the chapter in inaugurating an ASM Teachers Materials Camp in San Antonio. She is Vice President of the Society for Experimental Mechanics (SEM), and on the Editorial Board of SEM’s newest publication, Journal of Dynamic Behavior of Materials. She has held numerous leadership positions in other technical societies, including: Chair of the TMS High Temperature Alloys Committee, and Chair of the SEM Dynamic Behavior of Materials Technical Division.

Entrées must be pre-Ordered
- Mac-N-Cheese
- Yankee Pot Roast
- Crab Crusted Atlantic Salmon
- Herb Roasted Half Chicken

Agenda:
Cocktails: 6:00-6:30 PM
Dinner: 6:30-7:30 PM
Program: 7:30-8:30 PM

Program Charges:
- Regular Members - $28
- Young Professionals - $20
- Retirees - $15
- Full Time Students - $15

Technical Chairperson: Rainer Hebert
Reservations: Call Linda at Service Steel Aerospace 203-906-6381 or lthomas@ssa-corp.com by noon September 11th for dinner.

Thanks!

Abstract:
The performance of materials at high strain rates is critical in many engineering applications (e.g., structures, sports, military, automobiles, aircraft). The processes that occur during rapid loading of materials can differ greatly from those that operate during quasi-static loading. Some materials undergo strain rate strengthening with substantial strength increases; others are insensitive to strain rate effects. Understanding of the dynamic material response requires a multi-disciplinary approach including materials science, as well as physics, experimental and applied mechanics, mathematics and computational science.

October 13, 2015
Topic: Microstructural Visualization and Correlations with EBSD Measurements
Speaker: Stuart I. Wright