

MAE Special Seminar

“Structures & Materials Activities Supporting the *Columbia* Accident Investigation at NASA Langley Research Center”

**Dr. Mark Shuart
NASA Langley Research Center
Hampton, Virginia**

ABSTRACT

On February 1, 2003, the Space Shuttle *Columbia* broke apart upon re-entry killing its seven-member crew. This tragedy initiated a comprehensive accident investigation that was conducted at laboratories across the Nation to determine the causes. The NASA Langley Research Center participated in the investigation using its competencies in structures and materials, aerothermodynamics, and airborne systems. This presentation will describe the structures and materials contributions to the investigation from NASA Langley. Results from chemical and fracture analyses, nondestructive terahertz imaging, and impact dynamics modeling will be discussed. Debris collection activities in east Texas will also be described. All these results contributed to the determination of the cause of the accident and are the basis for current activities that will ensure a safe return to flight.

**Student Union Theater
Friday, February 25, 2005
Refreshments – 9:00 am
Seminar 9:30 am – 10:30 am**