



Lynn M. Bowman

NASA Langley Research Center, Hampton, Virginia

Ms. Bowman has a M.S. degree in Aeronautical Engineering from George Washington University and holds a B.S. degree in Mechanical Engineering with minors in Structural Mechanics and Heat Transfer from Old Dominion University.

Ms. Bowman presently serves at NASA Langley Research Center, Hampton, Virginia, as the Project Manager for Lightweight Materials and Structures, an Agency level project in the Space Technology Mission Directorate, Game Changing Development Office.

As Manager she is responsible for development of advanced structures technology to enable lightweight systems to reduce mission cost. Additional responsibilities include strategic planning of multiple project elements to develop or demonstrate lightweight materials or structures for human exploration to initiate in future fiscal years. Upon request from Office of Chief Technologist (OCT), participated as Team Formulation

Member of an Agency level Analysis of NASA's Composite Technology Portfolio to assess capabilities and identify strategic knowledge gaps in the design and certification of composite space structures. As a result, OCT requested her support as a Core team member to assist with initiating a new Composite Technology Community of Practice.

Ms. Bowman has served as Project Manager for Structural Passive Landing Attenuation for Survivability of Human-crew (SPLASH) Project at NASA Langley Research Center, responsible for water impact testing of the Orion Crew Module Boilerplate Test Article. She coordinated with institutional facility offices at NASA HQ while overseeing the construction of the water basin at the Langley Gantry. She also served as the Project Manager Orion Crew Exploration Vehicle (CEV) Landing and Descent Deceleration Earth Recovery Systems (LaDDERS) Advanced Development Project (ADP).

Prior to joining the Space Technology Exploration Directorate, Ms. Bowman was previously an aerospace research engineer at NASA Langley Research Directorate (RD) with over 28 years of broad experience in conceptual design, analysis and testing of composites and metallic structures working in Mechanics of Structures and Concepts Branch.

Ms. Bowman has served in a variety of technical leadership and project management roles that required working with multiple Centers across the Agency, including Project Manager for the Lightweight Materials and Structures Project (LMS), **Acting Deputy Project Manager for the Shell Buckling Knockdown Factors Project (SBKF)**, Deputy Technical Integration Lead for Altair Lunar Lander, Vehicle Integration Lead for the Lunar re-Entry eXperiment (LEX) Flight Test Team, and Task Lead of the thermal-structural heat shield test team for the Orion Crew Exploration Vehicle (CEV) Thermal Protection Systems (TPS) Advanced Development Project (ADP). She was the engineering Task Lead for Ceramic Matrix Composite Thermal Protection Systems and Hot Structures and Control Surfaces tasks under the Next Generation Launch Technology (NGLT) program, provided structural analysis and test support to X-33, High Speed Civil Transport, and Advanced Composite Technology, and National Aerospace Plane programs.

She contributed significantly to several national failure investigations, including the Space Shuttle Challenger and Columbia accidents and Airbus A380 vertical composite tail failure. She was the co-Chair, responsible for planning and co-leading the 2008 Constellation Composite Structures Certification Workshop and also co-chaired the ARMD sponsored Advanced Composites Initiative Workshop held May 1-2, 2012 at NASA Langley Reid Conference center.

Ms. Bowman has published over 25 technical papers in the fields of structures, heat transfer, and thermal-structures. She is consistently recognized with numerous awards from both her peers from within and outside of NASA, received several technology innovation Agency awards including the NASA Exceptional Achievement Medal for her execution of the Orion SPLASH project. Ms. Bowman holds two patents including an engineering software patent that leads to commercialization of the HyperSizer program, a patent entitled "Combination Structural Support and Thermal Protections System", and a recently approved provisional patent entitled "Inflatable Airlock Technologies."

Selected Publications:

"Developmental Testing of Ablative TPS for Orion Heat Shield", USACA 32nd Composites Materials and Structures Conference/JANNAF ITAR session, Jan 2008.

"Technical Report of the External Tank Independent Technical Assessment Team", NASA White Paper, Feb 2005.

"Buckling Design Studies of Inverted, Oblate Bulkheads for a Propellant Tank", 43rd AIAA/ASME /ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference, paper no. AIAA 2002-1525, Apr 2002.

"Structural Analysis of the High-Speed Research Crown Flat Panel Subcomponent Aft Fuselage Section 46", Lockheed CR LMES SDSR 97-01, Sep 1997.

"A Study of Facilities and Fixtures for Testing of a High Speed Civil Transport Wing Component:", NASA Contractor Report 198352, Jul 1996.

"Global/Local Analysis of Internal Load Paths in Support of Composite Fuselage", Sixth NASA/DoD Advanced Composites Technology Conference, Aug 1995.

"Analysis of a Pathfinder Shell Subjected to Internal Pressure and Mechanical Loads", Fifth NASA/DoD Advanced Composites Technology Conference, Aug 1994.

"Analysis of Fuselage Frames with General Circumferential Shape using the Ritz Method", Masters Thesis, George Washington University, 1991.

"A Parametric Shell Analysis of the SRB Aft Field Joint", NASA TM-102748, Oct 1990.

"Active Cooling for the Engine of a Generic NASP Configuration", Third National Aero-Space Plane Technology Symposium, Jun 1987.

"An Analytical Thermal Stress Solution for a Sphere Under an Arbitrary Temperature Distribution", Third National Aero-Space Symposium, Jun 1987.

"Effect of Measured Material Properties on the Finite Element Analysis of an OH-58 Composite Tail boom", NASA TM 86430, Oct 1985.

"VIBRA - An Interactive Computer Program for Steady-state Vibration Response Analysis of Linear Damped Structures", NASA TM-85789, July 1984.

"A Versatile Graphics Program for General Finite Element Analysis", NASA CR-157421, Aug 1978.