Dennis M. Bushnell
Chief Scientist
NASA Langley Research Center

Responsible for Technical Oversight and Advanced Program formulation for a major NASA Research Center with technical emphasis in the areas of Atmospheric Sciences and Structures, Materials, Acoustics, Flight Electronics/Control/Software, Instruments, Aerodynamics, Aerothermodynamics, Hypersonic Airbreathing Propulsion, Computational Sciences and Systems Optimization for Aeronautics, Spacecraft, Exploration and Space Access .

49 years experience as Research Scientist, Section Head, Branch Head, Associate Division Chief and Chief Scientist. Technical Specialties include Flow Modelling and Control across the Speed Range, Advanced Configuration Aeronautics, Aeronautical Facilities and Hypersonic Airbreathing Propulsion.

Energy-related Activities/Contributions
Plenary presentations on Futures of Energetics to/for: World Future Society, American Society of Engineering Educators, Foundation For The Future, Energy in the Next 1000 Years, 2nd Conference on Future Energy, State/NSF sponsored Workshop on Natural Disasters, U.S. National Intelligence Council, NASA Workshop on Alternative Fuels, Georgia Tech, NASA Glenn Research Center, Royal Aeronautical Society, NSF Sponsored Workshop on Futures of Mechanics, U.N. Millennium Project.

Seminal contributions/publications in the area of Biofuels/Biomass as petroleum replacements, sourced from wastelands and saline/waste water via halophytes and algae.

Futures-Related Activities
For some 10 years, presented 30 plus invited briefs per year on the Futures of Technology, Energetics, Propulsion, Sensors, Space Access, Space Exploration, Aeronautics, Warfare, Threat/Vulnerabilities, Robotics/Smart Materials and Education to the U.S. Intelligence Community, U.S., Canadian and NATO national security organizations, government agencies/organizations, corporate planning boards and universities.

Originated and organize a yearly workshop for the US Army Training and Doctrine Command (TRADOC) on Future Technology/Warfare, out of which has grown the Army “Red Franchise”, the preferred National Security Future Operating Environment utilized by the Army, Navy and Joint Forces Command. The USAF modeled their “Discovery Games” on these TRADOC Workshops.

Member of the TechCast Panel, a group of international experts engaged in technology forecasting.

Membership
Member of National Academy of Engineering , Selected as Fellow of ASME, AIAA and the Royal Aeronautical Society, 6 patents, AIAA Sperry and Fluid and Plasma Dynamics Awards , AIAA Dryden Lectureship, Royal Aeronautical Society Lanchester, Swire and Wilber and Orville Wright Lectures, ICAS Guggenheim Lecture, Israel Von Karman Lecture, USAF/NASP Gene Zara Award, NASA Exceptional Scientific Achievement and Outstanding Leadership Medals and Distinguished Research Scientist Award, ST Presidential Rank Award, 9 NASA Special Achievement and 10 Group Achievement Awards, University of Connecticut Outstanding Engineering Alumni, Academy of Engineers, Pi Tau Sigma and Hamilton Awards, Univ. of Va. Engineering Achievement Award.

Service
Service on numerous National and International Technical Panels and Committees and consultant to National and International organizations. DOD related committee/ consulting assignments include USAF Rocket Propulsion Laboratory, BMDC, ONR, Intelligence Community/STIC, AFOSR, NRAC, NRC,WL, LLL, HASC, NUWC, DARPA, AGARD, ARL,IAT, AEDC, JANNAF, NAVSEA, Air Force 2025,AFSOC,Sandia ,SAB, Army War College, ACOM Joint Futures, SOCOM, TRADOC, SEALS, JFCOM, IDA, NDU, DSB and Army After Next.

Inventions and Development
Responsible for invention/ development of “Riblet” approach to Turbulent Drag Reduction, High Speed “Quiet Tunnels” for Flight-Applicable Boundary Layer Transition Research, Advanced Computational Approaches for Laminar Flow Control and Advanced Hypervelocity Airbreathing and Aeronautical Concepts with revolutionary performance potential. Contributions to National Programs include Sprint, HSCT/SST, FASTSHIP, Gemini, Apollo, RAM, Viking, X15, F-18E/F [patent holder for the “fix” to the wing drop problem],Shuttle, NASP, Submarine/Torpedo Technology, Americas’ Cup Racers, Navy Rail Gun, MAGLEV Trains and Planetary Exploration.

Scholarship
Author of 252 publications/major presentations and 350 invited lectures/seminars.

Reviewer for 40 Journals and Organizations, Editor, Volume 123 of AIAA Progress Series “Viscous Drag Reduction in Boundary Layers.”

Education
B.S. in M.E. degree from University of Connecticut with Highest Honors, Distinction, University Scholar (1963), M.S. degree in M.E. from University of Virginia (1967).U.S. Govt. ST