

## **“SHAPING AEROSPACE WITH INFORMATION TECHNOLOGY: THE EXAMPLE OF PROPULSION”**

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### **ABSTRACT**

Many think that in the 21st century, the world has entered the age of information, but aerospace has embraced IT since the dawn of the jet age. The then very latest hardware and software has been used to design and maintain the world’s air fleets over the past five decades. We have now entered the era of vast interconnection, computation, and storage – concepts underlying such popular terms as AI, the cloud, cyber-physical systems, and factory 4.0. Using aerospace propulsion as a context, this lecture traces the development of such ideas from the 1950’s through today and speculates on the opportunities and challenges it holds for the future.

### **BIOGRAPHY OF SPEAKER**



Dr Epstein is the Vice President of Technology and Environment at Pratt & Whitney (PW). He is responsible for coordinating technology and setting the direction for PW. He also provides strategic leadership in the investment, development, and incorporation of technologies that improve performance and reduce the environmental impact of Pratt & Whitney’s world-wide products and services. He joined PW in 2007. Prior to joining PW, Dr Epstein was the R.C. McLaurin Professor of Aeronautics and Astronautics and Director of the Gas Turbine Laboratory at the Massachusetts Institute of Technology (MIT). He currently holds an appointment there as Professor Emeritus.

Dr Epstein has served on many panels and committees advising the US government. He is currently the Chair of the NASA Aeronautics and Space Engineering Board, and member of the NASA Advisory Council. He has won many international awards for his work in propulsion including the American Society of Mechanical Engineers (ASME) Gas Turbine Award, the ASME R. Tom Sawyer Award, the American Institute of Aeronautics and Astronautics (AIAA) Dryden Lectureship in Research, the International Gas Turbine Institute Gas Turbine Technology Award, and the Canadian Aeronautics and Space Institute Turnbull Lectureship. Dr Epstein is a member U.S. National Academy of Engineering, an Honorary Fellow of the AIAA, and a fellow of the ASME and of the Royal Aeronautical Society.