



IEEE Systems Council Chapter presents IEEE Distinguished Lecture Series on:

Christopher Dunbar '81,'86

Principal Director (retired)

Guidance and Control

The Aerospace Corporation

Virtual

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Time: 12 noon

<https://csulb.zoom.us/j/81332239863>



Interdisciplinary Engineering Skills are Driving Space Innovation

Abstract: We are living in a golden age of space development and exploration. Government funding and attention have not had this much space focus since the 1960s. At the same time, we see huge commercial space investment, the rise of startup companies, new technologies in related fields, the advancement of computing power, and the practicality and application of artificial intelligence. Collectively these observations mean that engineering challenges that seemed impossible a decade ago, are now possible. New fields of academic study such as mechatronics, or the tight integration of mechanical and electrical engineering, are at the core of providing many of these solutions.

This presentation will cover the driving forces behind the rapid change in the space industry. It will introduce new concepts and modes of satellite operation enabled by mechatronics and other interdisciplinary skills needed by industry to address the hardest near-term problems. Lastly, it will explore ways for industry and academia to collaborate, focusing on the need for educational institutions, from elementary to university level, to modify their curricula to provide enough skilled engineers and scientists to meet the needs of the future.

About speaker: Mr. Christopher Dunbar is the retired Principal Director of Guidance and Control, at the Aerospace Corporation, overseeing 130 advanced degree engineers and technicians, along with three laboratories focused on mechatronics, test and experimentation, and real-time simulation of satellite and launch vehicle systems. His customers included National Security Space missions, NASA missions and a growing number of commercial missions. Mr. Dunbar is a subject matter expert in the field of Control Systems, having worked his 40-year career in that field and applying his expertise to mechatronic systems ranging from pipeline research in Alaska, missile guidance systems, and attitude determination and control of satellites and small unmanned aerial vehicles. He holds a B.S. and an M.S. in Electrical Engineering from California State University, Long Beach.