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IEEE Galveston Bay Section

Joint Technical Societies Chapters

Present

**"AEROSPACE WEEK"**

**with special Webinars**

**on**

**TUESDAY-August 16th, FRIDAY-August 19th and SATURDAY- August 20th**

**TUESDAY- August 16th, 11:00 AM US-Central**

**TOPIC:** **"Spacecraft Avionics and Scientific Instruments"**

**SPEAKER: Walt Downing,** Executive V/P and COO

Southwest Research Institute (SwRI), San Antonio, Texas.

**PRESENTATION:**

Developing advanced spacecraft avionics and scientific instruments for unmanned space missions is a particularly challenging endeavor that requires solutions accommodating many conflicting design constraints including:

• State-of-the-art technologies for data, signal, and image processing,

• High reliability hardware and software requirements,

• Long duration missions involving dormant and operational periods,

• Extreme physical, electromagnetic, and radiation environments,

• Size, weight, and power limitations,

• High Technology Readiness Level (TRL) designs, and

• Proven flight heritage.

The purpose of this lecture is to discuss these design considerations, illustrated by several examples from past and current unmanned space missions.

**PRESENTER:**

Walt Downing is the executive vice president and chief operating officer of Southwest Research Institute (SwRI) in San Antonio, Texas.  SwRI is an independent, non-profit organization that conducts contract research and development in the physical sciences and engineering disciplines.  Space science and engineering are one of SwRI's largest and most widely recognized areas of technical activity.  SwRI principal investigators have led several well-known and published missions including the New Horizons mission to Pluto, the Juno mission to Jupiter, and the Lucy mission to the Trojan Asteroids.  SwRI has also provided a wide array of scientific instruments, avionics, and flight controllers on a large number of unmanned space missions.

Walt received a BSEE from Southern Methodist University and an MBA from the University of Texas at San Antonio.  He is a licensed professional engineer in the states of Texas and Florida.  He is an IEEE Life Senior Member and past president of the Aerospace and Electronic Systems Society.

**Complimentary Registration on VTool**

**https://events.vtools.ieee.org/event/register/319543**

**Deadline for registration: Sunday, August 14th, 5:00 PM US-Central**

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**FRIDAY-August 19th, 11:00 AM US-Central**

**TOPIC: "My Trip to Space”**

**SPEAKER: Dr George C. NIELD,**

**President, Commercial Space Technologies, LLC**

**PRESENTATION:**

Since the dawn of the space age more than 60 years ago, most of what has been accomplished in space has been carried out by governments or government space agencies. In the future, that is no longer likely to be the case. For example, just since July 2021, 3 different companies have successfully conducted a total of 8 commercial human spaceflights, with 36 private citizens having the opportunity to travel to space. This presentation provides a fascinating first-person account of one such mission and the training leading up to it: the fourth human flight of Blue

Origin's New Shepard rocket.

**PRESENTER:**

Dr. George C. Nield is the President of Commercial Space Technologies, LLC, which he founded to encourage, facilitate, and promote commercial space activities. He also serves as the Chairman of the Global Spaceport Alliance. He has more than 50 years of aerospace experience with the Air Force, the National Aeronautics and Space Administration (NASA), the Federal Aviation Administration (FAA), and in private industry. In March of 2022, he flew to space as a private astronaut onboard Blue Origin&#39;s New Shepard rocket. He served as the FAA's Associate Administrator for Commercial Space Transportation from 2008-2018. Prior to joining the FAA, Dr. Nield served as Senior Scientist for the Advanced Programs Group at the Orbital Sciences Corporation. His previous assignments include working as an Astronautical Engineer at the Space and Missile Systems Organization, a Flight Test Engineer at the Air Force Flight Test Center, and an Assistant Professor and Research Director at the USAF Academy. He was the Manager of the Flight Integration Office for the Space Shuttle Program at the NASA Johnson Space Center and later worked on both the Shuttle/Mir Program and the International Space Station Program.

A graduate of the United States Air Force Academy, he holds an M.S. and Ph.D. in Aeronautics and Astronautics from Stanford University and an MBA from George Washington University. He is also a Flight Test Engineering graduate of the USAF Test Pilot School. Dr. Nield is a registered Professional Engineer and a Fellow of the American Institute of Aeronautics and Astronautics.

**Complimentary Registration on VTool:**

**https://events.vtools.ieee.org/event/register/319544**

**Deadline: August 17th, 5:00 PM US-Central**

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**Saturday, August 20th, 11:00 AM US-Central**

**TOPIC:**  "**Qualification Test Strategies"**

**SPEAKER: Charles G. DuSold,** Senior Engineer, Boeing Phantom Works

**PRESENTATION:**

The impacts of CoVid on the supply chain have increased the design and component acquisition portions of avionics development. The result is a compression of the time available for manufacturing and testing prior to qualification. This presentation reviews some strategies to manage program risk in this new environment.

**PRESENTER:**

Charles DuSold is the Project Engineering Lead for the B-52H GPS IU Upgrade for Huntsville Engineering o Currently in the breadboard design phase and field deployment.  Project Engineering Lead for the CCiCAP Battery and Power Control Assembly units of Largest Space Qualified rechargeable Lithium-Ion batteries. Senior Manager for the Ares I and SLS Avionics and Power Systems. Senior Manager for ISS Communications and Tracking (C&T), SSP C&T, and ISS Command and Data Handling (C&DH). Lead the Boeing Avionics team executing the Altair (manned lunar lander vehicle) study under contract to NASA.

**Complimentary Registration on VTool**

https://events.vtools.ieee.org/event/register/319547

**Deadline: Thursday August 18th , 5:00 PM US-Central**

GBS "AEROSPACE WEEK" Coordinator:

Dr Zafar Taqvi, Chair GBS AESS Joint Chapter, University of Houston Clear Lake

GBS Website //r5.ieee.org/g