

DEPARTMENT OF MECHANICAL & AEROSPACE ENGINEERING

WILLIAM MAXWELL REED SEMINAR SERIES

“Critical Perspectives on Space Manufacturing: Evaluating Evidence, Challenges, and Opportunities for Entrepreneurial Innovation”

Ioana Cozmuta, Ph.D
Founder and CEO, G-SPACE Inc.

Abstract:

This presentation seeks to dissect the complex landscape of in-space manufacturing, examining it through the lens of microgravity’s impact on production processes and the burgeoning realm of space entrepreneurship. We will critically analyze the current body of evidence supporting the advantages of manufacturing in microgravity, juxtaposing theoretical benefits with tangible outcomes and industry standards. The talk will navigate through the intricacies of transitioning manufacturing to space, highlighting the scientific, technical, and economic challenges that need addressing to make this a viable and sustainable industry.

Delving into the heart of space-based entrepreneurship, we will explore the unique challenges and opportunities that this new frontier presents. Through examination of case studies and empirical data, the discussion will shed light on the operational realities of in-space manufacturing ventures, evaluating their success in overcoming logistical hurdles and market barriers. Furthermore, the presentation will engage with the critical question of how academic research and entrepreneurial ventures can synergistically drive the development of space manufacturing. We will assess the role of interdisciplinary collaboration in fostering innovation and paving the way for future advancements in this field. By providing a comprehensive overview of the evidence and challenges in space manufacturing and entrepreneurship, this talk aims to foster a nuanced understanding among academics and industry professionals, encouraging a dialogue that will shape the future direction of this exciting interdisciplinary domain.

Speaker Bio:

Dr. Ioana Cozmuta, founder and CEO of G-SPACE Inc., stands at the forefront of in-space manufacturing and microgravity analytics and design, innovating with an AI-driven platform. Her extensive experience spans over two decades including pivotal roles in NASA missions such as Stardust, Mars Science Laboratory, and Constellation Orion, and helped accelerate the development of the low-Earth orbit economy in particularly focusing on ISS commercialization with projects such as the Spaceborne Computer, Vascular Tissue Challenge, Crops on Mars. As a serial entrepreneur, she has notably impacted the New Space economy, founding several ventures including a company specializing in space-based optical fiber manufacturing.

She is an elected member of the prestigious International Academy of Astronautics, serves on the Advisory Committee of the US International Space Station National Laboratory, and provides due diligence for space investments. She is a TEDx speaker and a frequent lecturer on the New Space economy sharing her insights with MBA programs, emphasizing the commercial viability of space innovations. Ioana’s career is marked by a commitment to leveraging state-of-the-art innovation to address real-world challenges, demonstrating her profound impact on the space sector’s evolution and commercial integration. Her efforts have not only advanced scientific understanding but have also been instrumental in shaping the trajectory of commercial space exploration and manufacturing. Ioana holds a Ph.D. in Physics from the University of Groningen the Netherlands and two postdoctoral studies at CALTECH and Stanford University in the USA and has over 200 publications.

Date: Friday, April 12, 2024
Place: Whitehall Classroom Building 110

Time: 3:00 PM EST
Contact: Dr. Jonathan Wenk

Attendance open to all interested persons