



THE UNIVERSITY OF ARIZONA

Wyant College
of Optical Sciences

INDUSTRIAL AFFILIATES WORKSHOP

KEYNOTE SPEAKERS PROFILE

MR. NEAL BROCK DR. JAMES MILLERD



DR. JAMES MILLERD & MR. NEAL BROCK, 4D TECHNOLOGY

Tuesday, February 15, 2022 | 9:17 AM - 9:57 AM

Title: "The Innovation Metrology Behind the James Webb Space Telescope"

Abstract: NASA's revolutionary James Webb Space Telescope was recently launched and is currently being deployed in a zero-gravity location well past the moon where servicing is impossible. Producing its sophisticated optical system required new technology and methods to ensure its components would perform as designed and presented a significant metrology challenge. This talk will present an overview of the telescope and the innovative dynamic interferometry techniques that were developed and used during fabrication, assembly and final test. The optical metrology instruments, originally developed for JWST, are now being used to meet the most challenging metrology requirements in semiconductor, data storage, AR/VR, automotive, aerospace, defense, and other high technology manufacturing industries throughout the world.

Bio: Dr. James Millerd and Mr. Neal Brock are co-founders of 4D Vision Technology, Inc. and 4D Technology Corporation where they served as President and Director of Technology Development, respectively, until 4D was acquired in 2018 by Nanometrics (now Onto Innovation). Their work in real-time holography and optical measurement has led to over 80 publications, 15 patents, and multiple product awards in the areas of vibration-insensitive interferometry. Previously, Dr. Millerd held positions at MetroLaser and Northrup-Grumman (TRW) and has a BS in Physics and EE from CSU, Chico (1987) and Ph.D. from the University of Southern California (1992). Mr. Brock held positions at MetroLaser, Aerometrics, NASA, Navy, and Marine Corps, and has a BS in Physics from San Jose State University (1990).



THE UNIVERSITY
OF ARIZONA

The University of Arizona
Wyant College of Optical Sciences
1630 E. University Blvd.
Tucson, AZ 85721
info@optics.arizona.edu
www.optics.arizona.edu