

FACULTY RESEARCH TALKS

LISTEN. LEARN. COLLABORATE.

Zoom talk | Friday, Sept. 23, 2022 | Noon to 1 p.m.

INDUSTRY PARTNER SPOTLIGHT:

Sintavia, LLC



PRESENTER 1:

**BJORN
TOLENTINO**

Lead Materials
Engineer
Sintavia, LLC

Advancement of Metal Additive Manufacturing in Aerospace and Defense

The U.S. government and Department of Defense are leveraging additive manufacturing (AM) to remedy recent supply chain disruptions and bring manufacturing back to U.S. soil through programs like AM Forward. Similarly, the space industry is utilizing metal AM to produce more efficient propulsion systems. Sintavia, a designer and additive manufacturer of complex mechanical systems, is at the forefront of these movements. This talk will introduce Sintavia's innovations along with advancements and challenges in metal AM.

Mr. Tolentino earned his B.S. in aerospace engineering from UCF and was a member of Dr. Yongho Sohn's team at the Advanced Materials Processing and Characterization facility. He joined Sintavia in 2018 as an additive technician, providing support for the AM shop floor and later transitioned to additive manufacturing design engineer, focusing on aerospace components for LPBF and EBM systems. Today, Mr. Tolentino leads the materials department which focuses on both R&D and production support for the various departments at Sintavia. His main responsibility is to improve LPBF process parameters and advance alloy development.



PRESENTER 2:

**STEPHEN
EIKENBERRY**

Professor
CREOL, The College
of Optics and
Photonics

PolyOculus - Astrophotonics in Action

Dr. Eikenberry's team has developed the PolyOculus approach for producing large-area-equivalent telescopes by using photonic technology to link modules of multiple semi-autonomous, small, inexpensive, commercial-off-the-shelf telescopes. Crucially, this scalable design has construction costs which are more than 10 times lower than equivalent traditional large-area telescopes. In addition, PolyOculus is inherently highly automated and well-suited for remote operations. Dr. Eikenberry will provide an overview of the PolyOculus design, including the key enabling technology of photonic lanterns. He will also discuss some key application areas, from space-to-ground communications to atmospheric LIDAR to direct measurement of cosmic acceleration from dark energy.

Dr. Eikenberry received his Ph.D. in astrophysics from Harvard University in 1997. He was the Sherman H. Fairchild Postdoctoral Prize Fellow in Physics at Caltech from 1997 to 1998. Dr. Eikenberry was an assistant professor and associate professor in astronomy at Cornell University, then a professor of astronomy and professor of physics at the University of Florida before coming to UCF. Dr. Eikenberry's research focuses on studying black holes, neutron stars, dark energy, and extrasolar planets, and developing astronomical instruments to carry out these observations, with related applications in biomedical and remote sensing.