

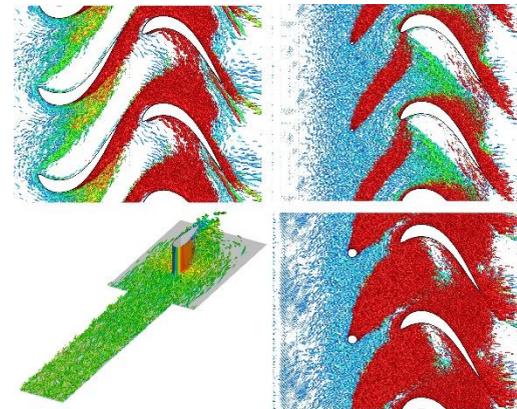


*American Institute of
Aeronautics and Astronautics
Dayton-Cincinnati Section*

**Lunch 'n' Learn
22 Sep 2023**

**Numerical Investigation of Unsteady Low-
Pressure Turbine Flow Fields**

Guest Speaker: Dr. Zachary Robison



Abstract: This talk showcases two simulation campaigns conducted at New Mexico State University in conjunction with experiments at PSU and Air Force Research Laboratory (AFRL). For modern front-loaded high-lift airfoils in low-pressure turbines, the endwall losses make a significant contribution to the total losses. Since these airfoils promise higher blade loading, research has been aimed at isolating and understanding the endwall structures associated with the losses. The work provides insight into the bimodal behavior of the horseshoe vortex. Also, the effect of wakes from a bar wake generator and turbine blade on endwall structures was investigated.

Biography: Zachary Robison is an NRC postdoc fellow with AFRL in the Aerodynamic Technology Branch located at Wright Patterson AFB. While working on his PhD at New Mexico State University, he was involved in four SFFP as a graduate student assistant at the low-speed linear cascade also located at Wright Patterson AFB. His PhD work included Large Eddy Simulations with an emphasis on endwall flow structures in low-pressure turbine applications and his present work includes Detached Eddy Simulations of cavity flows.

Time: 11:45 am

Location:

*China Garden Buffet
112 Woodman Dr.
Dayton, OH 45431*

Lunch:

*You will be able to
purchase the buffet*

