

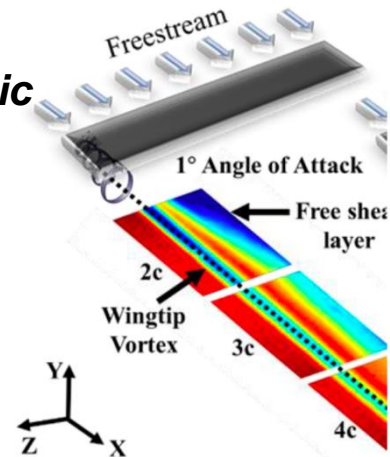


American Institute of  
Aeronautics and Astronautics  
Dayton-Cincinnati Section

## Lunch 'n' Learn

### *The Quest for Increasing Aerodynamic Efficiency: A Journey through Research and Teaching*

**Guest Speaker:**  
**Dr. Sid Gunasekaran**  
**Friday, 23 Aug 2019**



Increasing the aerodynamic efficiency of flying machines have remained a velleity for many years. Sid's talk will start off with discussions on the conditions leading to maximum aerodynamic efficiency and will then given insight into the wingtip vortex-free shear layer interaction which plays a primary role in the balance of induced and parasite drag of the wing. Then, methods which are currently undertaken to study this interaction will be discussed including unconventional wing designs. The dynamics of wingtip vortex and free shear layer will also be visited from the standpoint of propeller aerodynamics, especially when they are in close proximity to the ground. A vortex driven method to increase the efficiency of wind turbines will also be touched on. The talk will then conclude with some reflections on incorporating similar genre of research in undergraduate/graduate courses.

Dr. Sid Gunasekaran is an Assistant Professor in the Mechanical and Aerospace department at the University of Dayton. His research interests stems from the quest for understanding the conditions leading to maximum aerodynamic efficiency and have branched to low Reynolds number aerodynamics, wingtip vortex-shear layer interaction, propeller ground effect, lensed turbines, and unsteady aerodynamics. Sid also has passion for teaching and incorporating undergraduate research in core aerospace classes. As a 2018 UD VISION award winner, Sid's pedagogical practices were featured in KEEN Magazine and in Aerospace America.

**Time**  
11:45 AM

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

**Lunch**  
You will be able to  
purchase the buffet

