

**Department of Mechanical and Aerospace Engineering Seminar**  
University of Virginia, Charlottesville, Virginia

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**"From the Blackbird to the Gull: A Decade of Flight Testing the World's  
Coolest Airplanes"**

**Rick Lind**  
**Assistant Professor**  
**Department of Mechanical and Aerospace Engineering, University of  
Florida**

**Time:** Thursday, April 19, 2007, 4PM

**Place:** MEC 341, Mechanical Engineering Building

Refreshments at 3:30PM in MAE Faculty Lounge, MEC 305

**ABSTRACT:**

Next-generation aircraft will adopt technologies that have been matured over the past decade through flight testing. This seminar will emphasize developments which are specifically related to agility and autonomy. The agility technologies are developed by incorporating biologically-inspired joints and structures that utilize wing flexibility to morph the shape of the vehicle. The autonomy technologies use vision-based feedback from a combination of optic flow and structure from motion to gain situational awareness of the vehicle and its surroundings. A series of these developments will be highlighted through demonstrations of implementations on advanced, and often unique, aircraft in both simulation and flight. In particular, agility and autonomy will be shown as enabling technologies to achieve mission capability for micro air vehicles operating in urban environments.

## BIO:

Rick Lind is an assistant professor in the Department of Mechanical and Aerospace Engineering at the University of Florida. After receiving his Ph.D in 1995, he was employed by NASA at the Dryden Flight Research Center until joining the faculty in 2001.

He has extensive experience within the aerospace community and has participated on flight tests for the F-15, F-16, F-18, SR-71 and Boeing 767 along with numerous UAVs. Most recently, he has been the principal investigator on over \$7,000,000 in funding to advance technologies related to autonomous systems and sensor-centric mapping.

His novel biologically-inspired designs of morphing aircraft that use vision for situational awareness have been featured on the Discovery Channel and the National Geographic Channel along with numerous magazines. Furthermore, he was invited to demonstrate these technologies at a reception for the U.S. House of Representatives on February 23, 2007 before The State of The Union Address