Things That Fly: The Similarities and Differences

Flying animals have unique aspects of their anatomy and behavior that make taking flight look easy. Aerodynamic requirements dictate the success of flight and, as a result, flying animals and flying machines have many characteristics in common.

Geoffrey R. Spedding, associate professor, Departments of Aerospace and Mechanical Engineering, University of Southern California, will speak on “The Aerodynamics of Almost Everything” at a colloquium at 2 p.m., Tuesday, Nov. 5, at NASA Langley's Pearly Young Theater.

Spedding will survey things that fly, looking for similarities and differences, and searching for reasons for both. His talk will focus on why birds flap their wings in flight, while airplanes do not. Also, he will outline some general lessons for biologically-inspired engineering design of small-scale flying machines.

Spedding received his doctoral degree from the University of Bristol, England, in 1981. His current research interests include the unsteady aerodynamic mechanisms in natural and engineered flight, and the initial development of surface waves by wind over water. Spedding has authored over 16 journal publications, book chapters and technical papers distributed to the scientific community, some of which are being used in laboratories worldwide.