

**Technical Abstract**

Atrevida Science, CUBRC, and the University at Buffalo are developing an active morphing blade with an adaptive twist transformation. The design improves the performance of rotating aerodynamic structures.

**Anticipated Benefits/Potential Commercial**

Morphing blades improve the performance of wind turbines and rotary-winged and tiltrotor aircraft. Adaptability is enabled by actuating a series of flexible segments about a rigid spar. The flexibility is tuned to acquire a desired shape transformation. Our patented design and control technique enables an optimized angle of attack along the span of the blade. The Phase II work focuses on the physical construction of the blade, its structural integrity, and the ability to form the nonlinear twist distribution for Air Force customer applications.