In order to assess how bird migration may be affected by climate change, it is necessary to understand the relationship between flight dynamics and energy consumption.

The new climate-controlled wind tunnel (part of the Advanced Facilities for Avian Research at UWO) will be used to determine the aerodynamics of live birds using real-time PIV wake measurements.
In order to carry out such challenging measurements an initial program of work is in progress, using static models with fixed wing positions attached to a force balance. Wake velocity data, taken in planes using PIV, will be correlated to these forces.

Expected Outcomes

Establishment of a validated methodology for determining the aerodynamic forces acting on a live bird during flight, using time-resolved PIV measurements.