

# The 7th International Palaeontological Congress



## Flight evolution in vertebrates

Powered flight is one of the most complex and demanding locomotory behaviours among vertebrates, independently evolving in only three groups during the 380+ million-year history of tetrapods. First recorded in Triassic pterosaurs more than 200 million years ago, this was followed tens of millions of years later when Jurassic theropods evolved a feather-based wing. Most recently bats evolved flight after the end-Cretaceous extinction. Through the fate of fossilisation, the best understood story of how a vertebrate group evolved from non-flying ancestors comes from theropods. This was made possible by numerous exceptional theropod fossils documenting multiple anatomical and functional milestones along their transition from ground to sky. Additionally, the origins of theropod flight benefits from details obtained directly from living bird anatomy, development, behaviour and performance. Though lacking the detailed fossil record of theropods, aerodynamic modeling, as well as extant lines of evidence, are helping to illuminate bat flight origins, just as new fossils and phylogeny are beginning to make similar advances for pterosaurs. Therefore, the story of each vertebrate flight origin and the evidence behind them have their own strengths and weaknesses. This symposium curates a special collection of talks that aim to cross-pollinate this multidisciplinary field in order to stimulate its further development.

### Conveners:

- Dr. Michael Pittman ([mpittman@cuhk.edu.hk](mailto:mpittman@cuhk.edu.hk))

If you are interested in this symposium, please contact the conveners.