Aircraft Redesigned: A Biomimicry Approach

Ahmad , Fawaz (School: Oxford High School)

The aviation industry is growing more than ever before. With this growing industry, new challenges arise such as sustainable aviation. As flights and air travellers increase world wide, fuel consumption is increasing which contributes to the acceleration of climate change. As such, the effects of climate change are imminent and it becomes imperative to address the sustainability problem in the aviation industry. This research aims to create aircraft designs that are more environment friendly but more specifically, creating greener airfoil designs. Drawing inspiration from the hydrodynamics of fish propulsion and their ability to move swiftly throughout the water without creating a disturbance, this project showcased the creation of novel airfoil designs modeling fish characteristics. The specific type of fish modeled is called the Wahoo (Acanthocybium Solandri) because it is known for its swift movement in the water. The model created in this project, based off of the Wahoo fish, was found to be more efficient than conventional designs.

Awards Won: