

THE UNIVERSITY OF  
**MEMPHIS**<sup>®</sup>

Herff College of Engineering

***Herff College of Engineering EDAY 2019***  
***WING DESIGN***  
***Grades 9-12***

This competition is open to teams made up of students who are currently in grades 9 through 12. Each team will represent their organization and will consist of four or fewer team members. Schools may have up to three teams entering the competition.

***Wing Design***

An airplane wing is to be tested in our laboratory, in our wind tunnel, to determine its lift and drag characteristics.

An airplane wing cross section (such as the Clark

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Your airfoil) is to be brought to our laboratory. The cross section that you will design is to be made of 1/8 inch thick poster board, 3-1/2 inches (maximum) long. Two of these are to be entered by you or your team. They must be identical. The cross section you submit will be attached to a wing cutter, which will cut a wing out of foam by following the shape of your wing.

Your wing will then be mounted onto a scale, and placed in our wind tunnel. The fan will move air past the wing, and a record of lift and drag versus velocity will be obtained. We are seeking the wing shape with the highest lift to drag ratio.

***Testing***

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1. Your wing cross section is to be made of 1/8 inch thick poster board.
2. Two identical copies of your wing cross section should be made.
3. The chord length of your wing design should be no longer than 3-1/2 inches.
4. We will make a wing out of foam by following the shape of your wing design.
5. The wing will be tested in our wind tunnel to obtain lift and drag data.
6. The wing with the highest lift to drag ratio wins.

***For your information: Look up Clark Y airfoil, chord length, NACA number system for wing cross sections***

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Please send any questions about the competition  
to

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