2023 High-Altitude Balloon Challenge Registration Opens

For the third consecutive year, Civil Air Patrol's Aerospace Education directorate is launching the National High-Altitude Balloon Challenge for cadets, with team registration open March 20-May 22. Begun as the first national cadet STEM competition in 2021, the balloon challenge involves innovative cadet-designed science experiments to evaluate the effects of high altitudes on various items that could be used to support the quest to live and work in space.

In 2022, more than 1,500 cadets from 122 squadrons across all eight CAP regions participated, designing more than 500 experiments for launching to the stratosphere in 50-milliliter test tubes on high-altitude weather balloons.

Last August, the experiments were lifted as payloads in three balloons, ascending to heights between 98,663-105,661 feet before falling back to Earth for recovery. Indiana and Kentucky wing adult members and cadets helped prepare and release the balloons on the grounds of the cadet squadron home at Anderson Preparatory Academy in Anderson, Indiana. Indiana Wing air, ground, and small Unmanned Aerial Systems teams tracked and retrieved the balloons. The recovered payloads were shipped back to the cadet teams to analyze their experiments.

Cadet experiments tested in the near space environment included:

- the effects of blood glucose strips to help those with diabetes be better able to function in space;
- the adhesiveness of Dermabond topical skin adhesive that would be needed in space to close and keep free from infection superficial linear cuts; and
- the life of batteries with the possible benefits of being able to protect and extend the life of batteries when living and working in space as seen in this science slide.

"The cadets did extensive research and worked collaboratively with their team members as well as universities and subject matter experts to determine their experiments," said Capt. Bob Roberts, the national High-Altitude Balloon program director from the South Carolina Wing. "Additionally, they prepared detailed analysis reports and videos to showcase their experiment results and potential usage for the future."

The ambassador and namesake of the top award for this challenge, retired U.S. Air Force Col. Joe Kittinger, passed away in December, but his wife, Sherry, is committed to continuing his legacy in supporting this cadet program with the $5,000 grand prize to accompany the Kittinger Cup, which will be presented to the top cadet team in the overall competition.

Squadron commanders and/or aerospace education officers are asked to register a team if there are two or more cadets interested in and committed to following through with the entire competition. All challenge details and the registration link for the 2023 competition can be found here on the High-Altitude Balloon Challenge webpage.