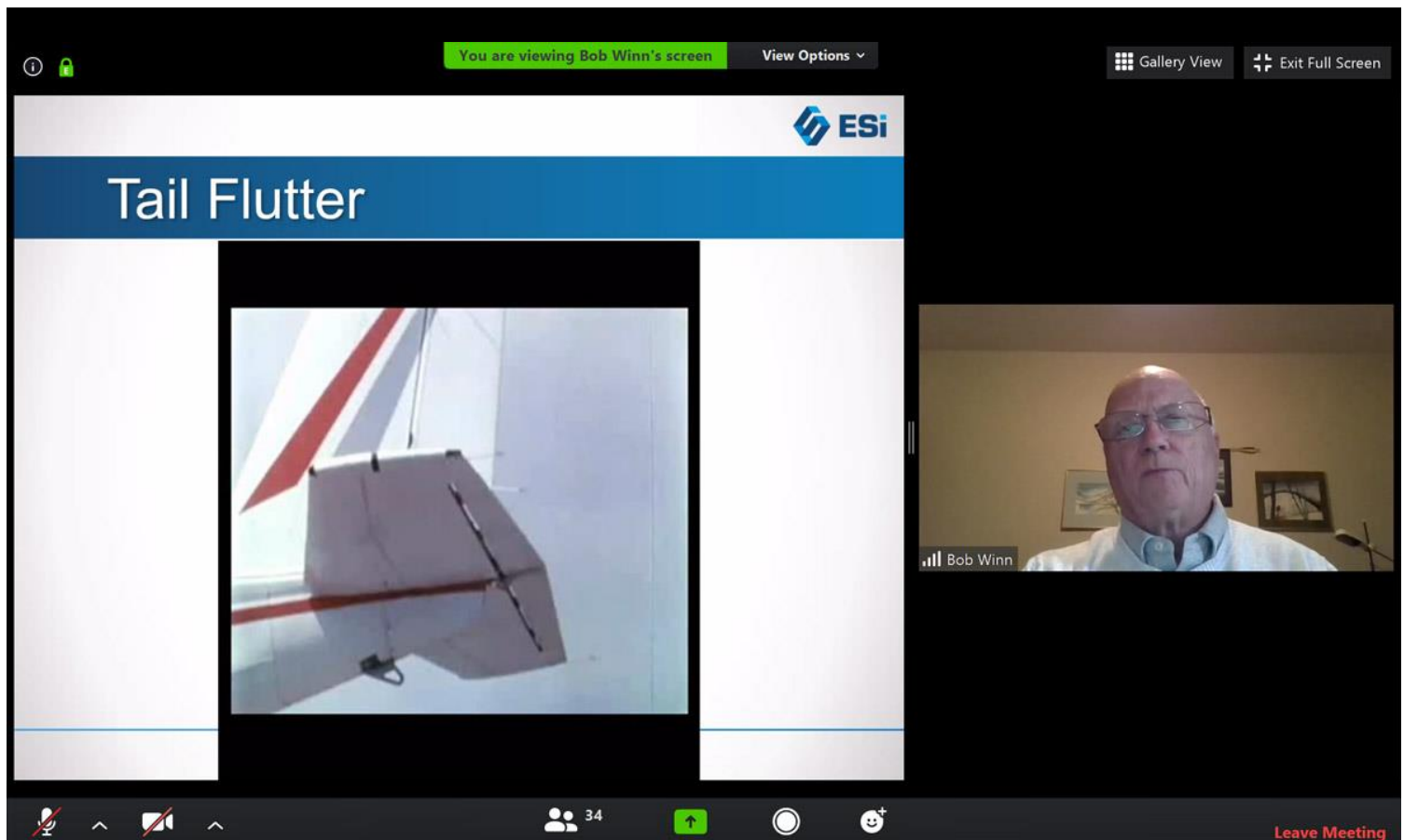


## The Northern Ohio Section Live Streams Distinguished Lecture

The Northern Ohio Section (NOS) of the American Institute of Aeronautics and Astronautics (AIAA) held another installment of the Distinguished Lecture series via live stream on April 23<sup>rd</sup>, 2020. The virtual lecture was held online via the Zoom web conferencing platform and was attended by 34 Section members.

Dr. Robert Winn, who currently serves as the Principal Emeritus at Engineering Systems, Inc. (ESI), gave the lecture entitled "Anatomy of In-Flight Break Up." Dr. Winn has been with ESI since 1994, and has reconstructed hundreds of aircraft accidents. The lecture covered the fundamentals of in-flight breakups and the three root causes: fatigue of a key structural element, flutter, and overload. The discussion included

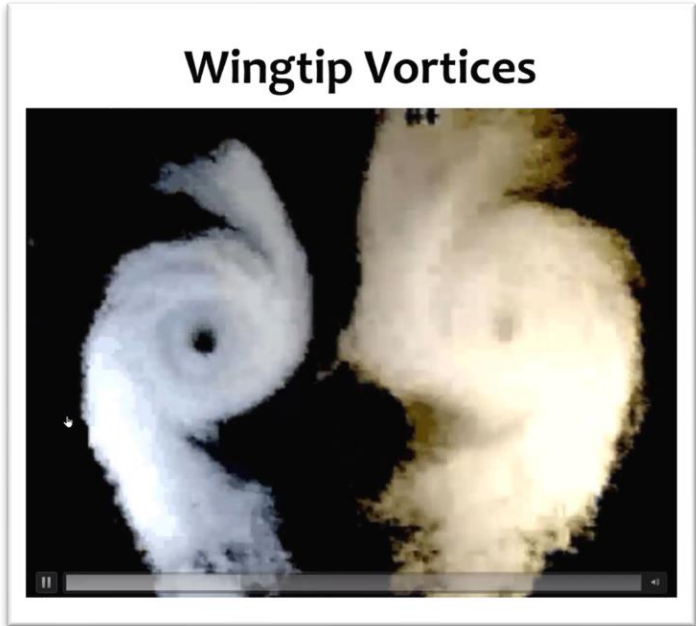


analysis of aircraft wreckage, fundamental airplane fluid dynamics, trajectory analyses, and airplane performance. The presentation was supported with videos, demonstrations, and high-definition animations of a general aviation accident.

Following the well-received lecture, the audience involved Dr. Winn in an enthusiastic questions-and-answers session, which lasted over 30 minutes. Despite the virtual format, participation went smoothly with attendees providing a wide range of questions and engaging in lively follow-up discussion.

Dr. Winn retired from the United States Air Force (USAF) in 1991 after 22 years. He was an instructor pilot in four different Air Force aircraft, taught aeronautical engineering at the USAF Academy, and served as Chief Scientist of the USAF European Office of Aerospace Research and Development in London, England.

*(Text: Joe Connolly; screen captures courtesy of Robert Winn)*



# Kansas City – What Did Happen



### STEM Projects for Students and Educators

The AIAA Northern Ohio Section (NOS) is committed to supporting the northern Ohio community by engaging and motivating the next generation of scientists and engineers. While the current situation regarding COVID-19 has limited our social, work, and educational activities, there is still so much that we can do to enhance our learning, inspire and teach each other, have some fun, and socially express our enthusiasm for STEM. To that end, AIAA NOS has compiled several projects for students to do from home that will stimulate their minds and spark their interest in aerospace. Download the package of STEM projects here:

<https://aiaanos.org/stem-projects>

While the biggest prize is the reward of knowledge and fun that each participant will receive, the AIAA NOS section is offering some monetary awards to students who tweet a video response to **@AIAANorthernOH** on Twitter demonstrating their successful project by **June 30th, 2020**, as follows:

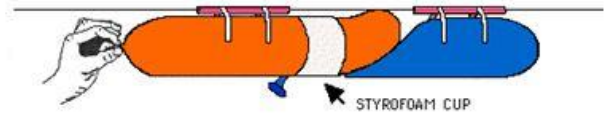
- **\$20 prize to each of the first 10 video responses posted**
- **\$100 prize to the overall most creative project and video response**

The NOS Twitter is: [twitter.com/AIAANorthernOH](https://twitter.com/AIAANorthernOH)

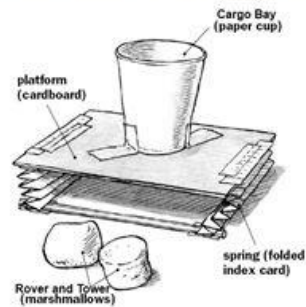
Educators are encouraged to share this material with their students, their student’s parents/guardians, and other educators. You may consider working some of these projects into your virtual curriculum, supplying them to your students as supplemental learning materials, or using them as an extra



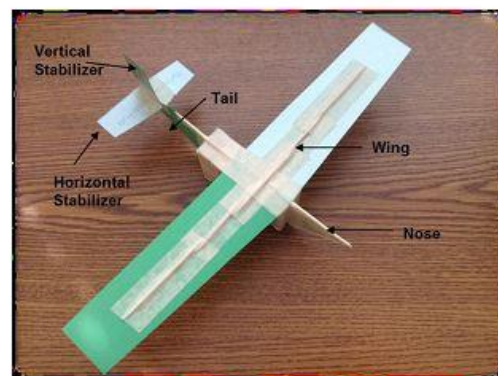
### Balloon Propulsion Dash



### Planetary Lander



### Let it Glide Challenge



credit opportunity. For parents/guardians, this may be a good way to stimulate your child’s mind and have some fun. You are encouraged to tailor/expand upon the activities provided here to make them less/more challenging and students are encouraged to improve their designs/solutions. In addition, you are encouraged to look for other activities that will stimulate the student’s appreciation of engineering and science.

For questions contact the AIAA NOS STEM chair, Jonathan Kratz ([aiaanos.stem@gmail.com](mailto:aiaanos.stem@gmail.com)).

We hope you enjoy the projects and learn something along the way.

*(Text: Jonathan Kratz, photo: Edmond Wong, projects: Ashlie Flegel)*

Northern Ohio Section Officers and Council Members (June 1, 2019 – May 31, 2020)

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