Press Release

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The Vertical Flight Society Announces the Winners of the 42nd Annual Student Design Competition & Releases 43rd Request for Proposal

University of Maryland Takes Top Honors

Fairfax, Virginia, USA — **The Vertical Flight Society (VFS)** is proud to announce the winners of its **42nd (2025) Annual Student Design Competition**, recognizing outstanding achievement in vertical flight innovation by university students from around the world.

Wyvern: University of Maryland
1st Place Graduate Category

Draco: University of Maryland
1st Place Undergraduate Category

Each year, the **VFS Student Design Competition** challenges university teams to develop conceptual designs for vertical takeoff and landing (VTOL) aircraft, offering students a hands-on opportunity to apply their engineering knowledge to real-world aerospace challenges and fostering interest in vertical flight technology. The competition sponsorship rotates between Airbus, Bell, The Boeing Co., Leonardo Helicopters, Sikorsky, a Lockheed Martin Co., and the DEVCOM Army Research Lab.

Sponsored by Airbus, this year's competition awarded more than $12,000 in prize money to recognize excellence in engineering design and innovation. This Airbus Request for Proposal titled **"Pioneering Hydrogen-Electric VTOL,"** focused on designing a next-generation VTOL aircraft powered exclusively by hydrogen-based electric propulsion. As aviation seeks to decarbonize, hydrogen presents a promising alternative to fossil fuels, offering a cleaner energy solution for advanced air mobility platforms. Student teams were tasked with developing a viable VTOL concept that operates solely on hydrogen propulsion while meeting a range of technical and operational constraints.

For the 2024–2025 competition cycle, a total of **20 proposals** were submitted—**six graduate** and **fourteen undergraduate teams** — from **16 universities** across **10 countries** and **7 U.S. states**.

The **University of Maryland** earned top honors, securing first place in both the graduate and undergraduate categories. Additionally, **Politecnico di Torino** received the **Best New Graduate Entrant** award, while **Thapar Institute of Engineering & Technology** was named **Best New Undergraduate Entrant** and placed **third overall** in the undergraduate division. Team members from the first-place winning teams are invited to present their designs at the 82nd Annual Forum & Technology Display (www.vtol.org/forum) — scheduled for May 5–7, 2026 in West Palm Beach, Florida.

Executive summaries of the winning entries from the 42nd Annual Student Design Competition, along with archives of past competitions, are available at: **www.vtol.org/sdc**

The winning teams for the graduate category are as follows:

Place	University (Graduate)	City, Country	Design Team
1st	University of Maryland	College Park, Maryland, USA	Wyvern
2nd	Seoul National University	Seoul, Republic of Korea	Hopper
3rd	Politecnico di Milano	Milan, Italy	Sobek
Best New Entrant	Politecnico di Torino	Torino, Italy	Zefiro

The winning entry in the graduate category was **University of Maryland's "Wyvern"** named for the mythical, flame-free mythical dragon, Wyvern rises as the first manned hydrogen-powered all-electric fuel cell compound rotorcraft. With a 1648 kg GTOW, 277 kW installed power, 5 m radius rotor and a highly efficient box-wing, Wyvern achieves over four hours of zero-emission flight time with a modest 25 kg of gaseous H_2 and a large 185 kg dual-occupant payload.

The winning teams for the undergraduate category are as follows:

Place	University (Undergraduate)	City, Country	Design Team
1s	University of Maryland	College Park, Maryland, USA	Draco
2nd	Pennsylvania State University	University Park, PA, USA	Hydro Hawk
3rd Best New Entrant	Thapar Institute of Engineering and Technology	Patiala, Punjab, India	Sammpaati

The **University of Maryland's** undergraduate team presented **"Draco"** named after a dragon without fire, symbolizes a clean, zero-emission design. Draco is an advanced helicopter powered by Proton Exchange Membrane Fuel Cells (PEMFCs**)**, using hydrogen to generate electricity with minimal environmental impact. By integrating this sustainable power source, the team successfully minimizes technological risk, positioning the PEMFC system as the primary innovation in an otherwise reliable platform.

The newest RFP for the 43rd (2026) Annual Student Design Competition, sponsored by Leonardo Helicopters, is also now available at www.vtol.org/sdc. This new RFP, entitled **"Hybrid Electric Tiltrotor,"** challenges the engineering academic community to consider options that exist for each architectural aspect of this new hybrid propulsion strategy and are pleased that the XV-15 represents a well-researched documented example from which to conduct design excursions. Leonardo seeks hybrid design alternatives working from the NASA XV-15 as a baseline.

The Vertical Flight Society (VFS) is the world's leading technical society dedicated to advancing vertical flight. Established in 1943 as the American Helicopter Society, VFS has been at the forefront of rotorcraft and vertical flight innovation for more than 80 years. Today, the Society serves as the global resource for

knowledge, collaboration, and advocacy in vertical flight technology. Through scientific, technical, educational, and legislative initiatives, VFS provides leadership that continues to shape the future of helicopters, tiltrotors, eVTOL aircraft, and other transformative vertical flight systems.

VFS is @VTOLsociety on social media: Facebook, Instagram, LinkedIn, Vimeo and YouTube, and also has @ElectricVTOL channels on Facebook.

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