MICHIGAN VERTICAL FLIGHT TECHNOLOGY

2020-2021 SPONSORSHIP PACKAGE

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WHO WE ARE

Pushing Forward by Moving Upward, Together

We are a multidisciplinary design team focused on advancing the field of urban air mobility. The goals of this team are to design, manufacture, and test a vertical take-off and landing (VTOL) vehicle that is compact, efficient, and simulates the challenges of urban air mobility. This aircraft will be used to compete in the Vertical Flight Society's Inaugural Design-Build-Vertical Flight Competition in April 2021.

Our passion for advancement in the private sector of the aerospace industry combined with a commitment towards sustainability and mobility drive us towards creating an efficient urban air vehicle that can act as a tool for the development of this promising field within the aerospace industry.

We are a team dedicated towards developing student skills and knowledge by creating an environment geared towards teamwork and innovation. Our membership has spanned three colleges at the University of Michigan, making our impact as diverse and widespread as possible.

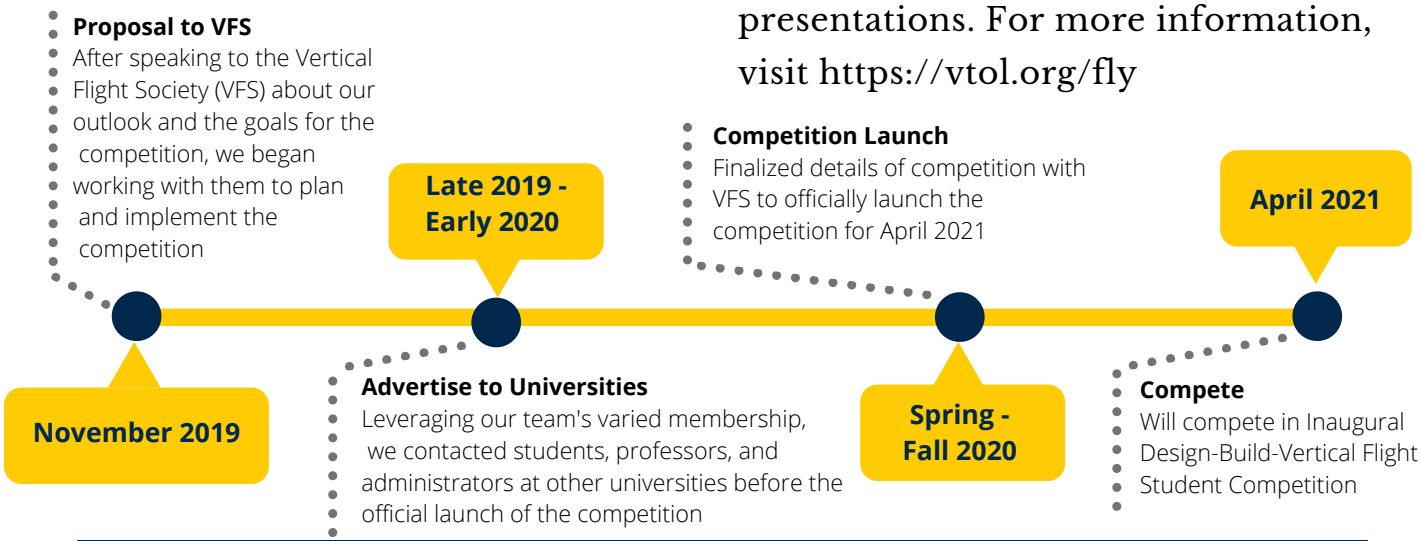
We are striving to be one of the most influential teams at the University of Michigan and it will take a concerted effort across the College and the University to reach that goal.

OUR COMPETITION

Nationwide competition for urban air mobility

Since we were founded in 2018, we have been working to create a collegiate-level eVTOL competition to bridge the gap between technology development in industry and student development at universities. By developing hands-on skills and familiarization with this technology at the university level, we will enhance the ability of the next generation of engineers to push the limits of eVTOL technology. This past Spring, the Vertical Flight Society answered our call and has created the VFS Design-Build-Vertical Flight Competition.

We are thrilled to be competing in the inaugural competition on April 16th, 2021 at the Army Research Lab Robotics Research Collaboration Campus in Grace's Quarters, Maryland. This is an electric-powered vertical take-off and landing (VTOL) competition that seeks to encourage interest in unmanned aircraft technology and small air vehicle design and fabrication. The team will be scored on our aircraft's range, agility and speed, landing accuracy, and payload fraction through a series of courses as well as technical reports and team presentations. For more information, visit https://vtol.org/fly



DIVERSITY, EQUITY, & INCLUSION

Fostering a culture of inclusion and inspiration for students of all identities

MVFT is committed to creating an inclusive environment for members of all backgrounds and identities. Our current DEI plan focuses on socio-economic status, accessibility, underrepresented minorities (URMs), and gender diversity. Many of MVFT's technical projects are focused on engineering disciplines - such as aerospace, mechanical, and electrical engineering - where people of these identities are often in the minority. Particularly, we are increasing focus on socio-economic status due to current circumstances with COVID-19 and the resulting economic circumstances which have contributed to an increasing socio-economic gap and have caused students to rely more on their own resources rather than those provided by the university.

This has led us to also focus on accessibility for both students currently located in Ann Arbor and those who are not. MVFT will also focus on increasing gender diversity due to the prominent gender gap within both industry and academia as the University of Michigan's College of Engineering is composed of less than 30% women and the Aerospace department less than 16% women. Through our DEI initiatives, MVFT hopes to strengthen our mission goal which is the belief that engineering is for everyone and a field where all people can come together and work towards a common goal with equal opportunity and inclusion.

For a copy of our entire DEI plan, please contact Emily O'Connell at mvft.business@umich.edu.

OUR VEHICLE

A proof of concept for the future of eVTOL aircraft

After a series of initial sub-team trade studies and team votes, MVFT has decided to pursue a tricopter tilt-rotor aircraft, with a blended-wing body (BWB) as seen in the top left photo. This is a concept that the team is confident in but has not worked with yet, making it an exciting new challenge.

Due to the touch-and-go nature of the fly-off challenges at competition, we want a highly maneuverable aircraft. This means switching between hover and cruise as quickly and efficiently as possible, which is a large advantage of tilt rotor aircraft.

All rotors will be positioned vertically for take-off, hover, and landing to fly like a typical tricopter. Then, once ready for transition, all three motors and propellers will rotate about the pitch axis and produce forward thrust. As these rotate, the aircraft will pick up enough speed for cruise flight, and the vehicle will operate as a traditional fixed-wing aircraft.

During horizontal flight, yaw control will be provided via differential thrust on the two forward-facing propellers. Due to the BWB design, elevons will also be used for full control of pitch and roll while in cruise flight. During vertical flight, pitch and roll will be controlled via differential thrust, and thrust vectoring of the front two motors will provide yaw.

Our design allows for the ability to have vertical take-off and landing as well as conventional take-off and landing (CTOL) from a runway.

OUR VEHICLES

A proof of concept for the future of eVTOL aircraft

SPONSORSHIP

Sponsoring MVFT means being a part of our team

As we design, build, and test our aircraft and prepare for competition, we are seeking corporate sponsors to join our team. These sponsors, from small, local firms to industry leading corporations will allow us to push further, innovate more, take on larger challenges, and demonstrate what the future of urban mobility can look like. Sponsoring Michigan Vertical Flight Technology means being a part of our team.

Partnering with MVFT means:

- Gaining or increasing a foothold at the University of Michigan and particularly the College of Engineering
- Continuous brand building opportunities through our website, social media, team apparel, and competition participation.
- Direct access to skilled and qualified students who are members of our team.
- A unique opportunity to advance the research and development of urban air mobility vehicles.

With our team focus on advancing the urban air mobility space, developing vehicles, and growing a nationwide competition, gift-in-kind donations and technical and business advising are just as contributional to our team goal as monetary sponsorship.

If you are interested in working with our team or have additional questions please contact Emily O'Connell at mvft.business@umich.edu or call (407) 558-9914.

SPONSORSHIP TIERS

Bronze
$500+

- Logo and link on our website
- Company mention on all social media
- Company description on website
- Regular communication from team about achievements, progress, and developments

Silver
$1,500+

Bronze benefits plus:

- Tertiary size logo on media cover photos, team apparel, and all other branding
- Access to team member resume book
- Invitation to yearly design review

Maize
$5,000+

Silver benefits plus:

- Secondary size logo on media cover photos, team apparel, and all other branding
- Secondary size logo on vehicle
- Invitation to vehicle unveiling

Blue
$10,000+

Silver benefits plus:

- Primary size logo on media cover photos, team apparel, and all other branding.
- Primary size logo on vehicle