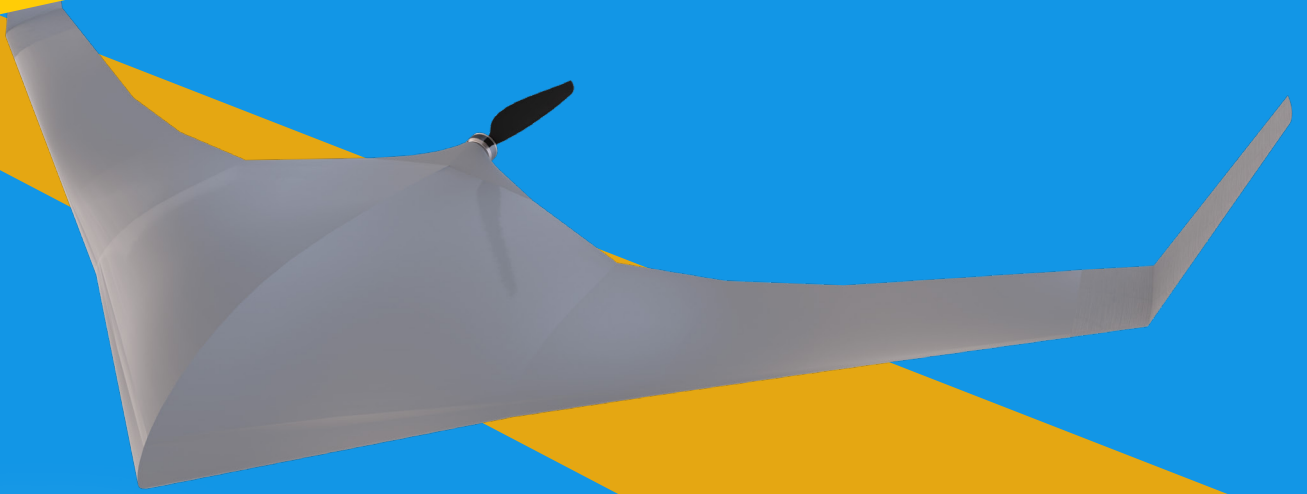


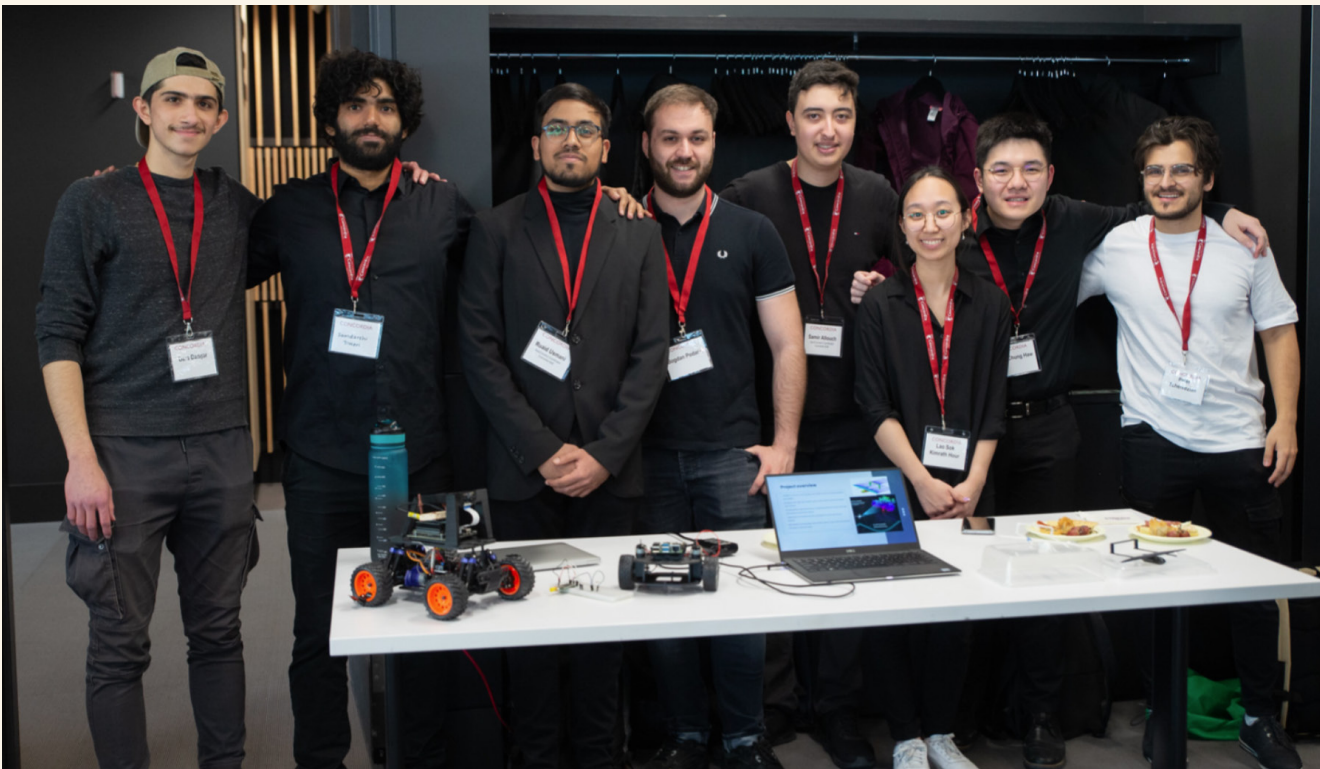


# AEROCONNECT 2024-2025 SPONSORSHIP PACKAGE



## We are AeroConnect.

We provide Concordia's engineering and computer science students with the unique opportunity to build and apply their skills in aircraft design. As a team, we work on the conception of carbon-neutral autonomous aircraft. Our aim is to implement novel technologies with the potential to revolutionize aid and rescue operations.

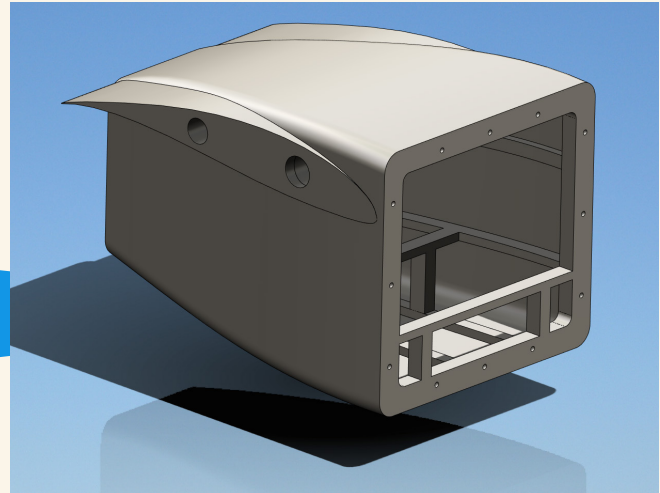


Steadily, our team has grown into a reliable force, notably winning 2nd place in the 2022 Aero Connect Challenge. To tackle greater goals, the team projects to increase the number of members. To facilitate integration, our team fosters an effective learning environment for members. Members are provided industry level Computer-Aided Design (CAD) and Finite-Element Analysis (FEA) software. We collaborate actively with professors specializing in all areas of aircraft design, including materials, avionics and aerodynamics. To encourage productivity and communication, we host weekly team meetings. Our team is supervised by Dr. Jonathan Liscouët, a professor from the department of mechanical, industrial and aerospace engineering of Concordia University, to whom we present quarterly updates and maintain active communication to discuss all design aspects.

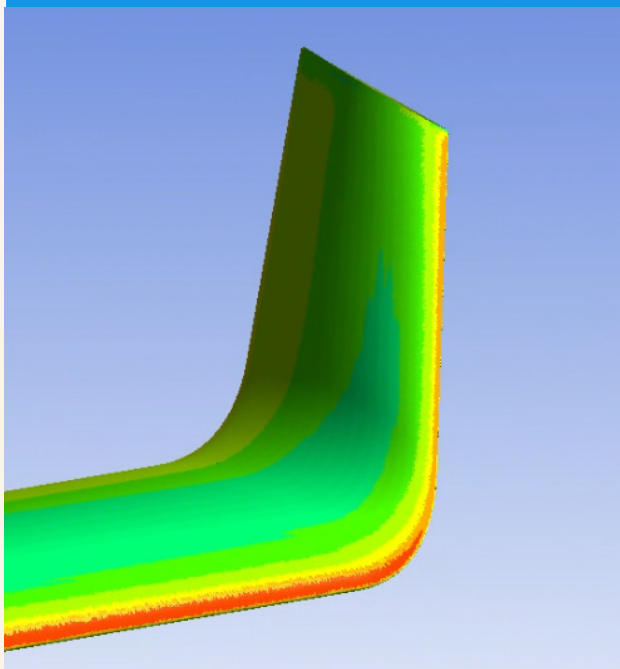
Our project consists in designing and manufacturing a fully electric autonomous vertical take-off and landing (VTOL) search and rescue drone. The designed Unmanned Aerial Vehicle (UAV) will scan and locate wildfires and missing individuals across vast, inaccessible areas, effectively reducing emergency response time.

Our design features a lightweight yet durable airframe capable of withstanding rigorous environments through search and rescue missions.

Tentative fuselage center piece



Aerodynamic simulation of winglet using Ansys Fluent



Our team leverages Computational Fluid Dynamics (CFD) to optimize aerodynamics, enhancing aircraft stability and controllability. We ensure that our designs meet performance goals while adhering to weight and dimension requirements. One of the most complex challenges lies in the CFD analysis of winglets. Our winglet design is the result of over 100 iterations of Multidisciplinary Design Analysis & Optimization (MDAO), each meticulously crafted to maximize lift, reduce drag at the wingtips, and maintain optimal stability.

This project focuses on developing a cutting-edge autonomous drone which leverages the latest in hardware and software technologies with real life search and rescue implementation.

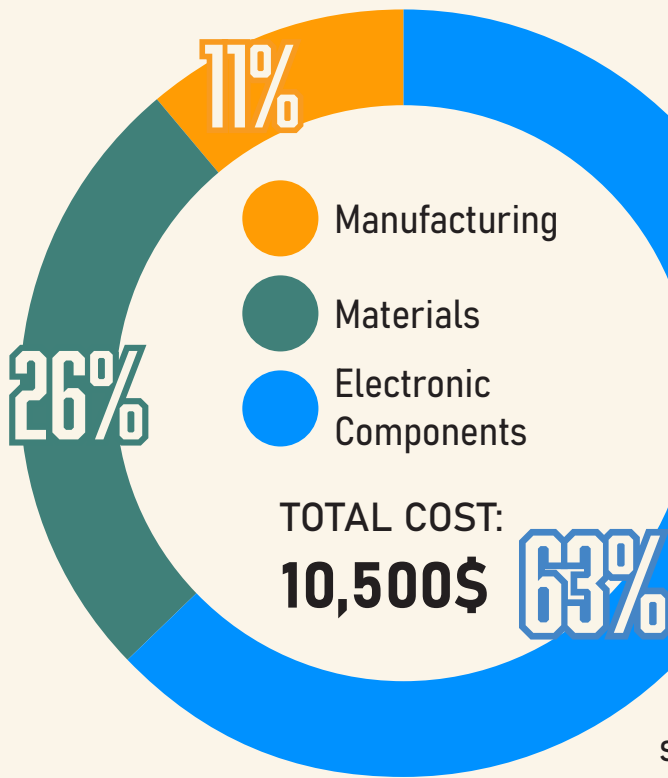


Today, by sponsoring us, you gain:

- › **Visibility** on a dynamic stage filled with students, alumni, and industry professionals through university events and official competitions.
- › **Recognition** for your commitment to developing sustainable autonomous aircraft and reducing the carbon footprint.
- › **Brand exposure** via our official social media accounts, followed by aerophiles, academics, and aerospace enthusiasts.

Tomorrow, these very students will be at the forefront of the engineering workforce. Connecting with them now is the perfect way to engage with future skilled professionals who may one day seek out your services—or even supply them!





**Funds Allocation**

To cover the cost of airframe components, sensors, computing platforms as well as the propulsion and power systems, an adequate budget is necessary. Our club depends on the aid of generous contributors like you to secure those funds. The monetary support our club receives directly funds our innovative projects, driving forward novel designs and nurturing the creative spirit of undergraduate students.

## Sponsorship Tiers

Tier	Platinum	Gold	Silver	Bronze	Sponsor
Contribution value <sup>I</sup>	\$2,000+	\$1,500+	\$1,000+	\$500+	Any
Logo on website and social media	x	x	x	x	x
Logo on a drone of choice <sup>II</sup>	x x	x x	x		
Company presented in events	x	x	x		
Logo on team merchandise	x	x			
Events title sponsor	x				
Company merchandise distribution <sup>III</sup>	x				

I. *Contribution value* considers all material, service and monetary contribution provided to

II. More details on the two drones on page 6

III. *Company merchandise* includes branded stickers provided by AeroConnect and additional branded novelty items provided by your company

## Surveillance drone for search and rescue:

The project consists of developing a fully autonomous search and rescue drone. The drone is designed to provide real-time environmental visuals and geolocalisation information. The drone operates autonomously, but for redundancy and reliability purposes, the aircraft can also be remote-controlled.



## Blended wing body surveillance drone:

This project is set to revolutionize autonomous surveillance drones by improving key metrics like weight, range, flight time, and power efficiency. We aim to offer the best price-to-range ratio, ensuring cost-effective yet high-performance drones. Committed to sustainability, our designs will minimize environmental impact using advanced materials and efficient propulsion systems. With a dual-camera setup and innovative Blended Wing Body design, our drones will provide reliable, versatile surveillance solutions. Our goal is to deliver cutting-edge drones that set new standards in performance, affordability, and eco-friendliness.





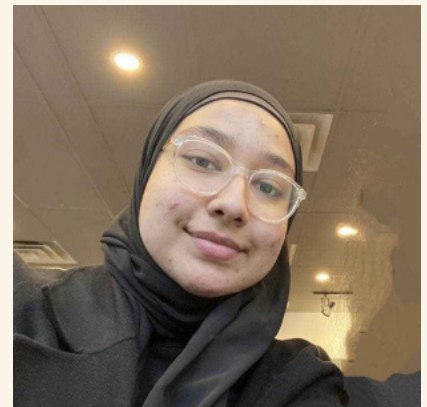
Samir Allouch, Team  
Coordinator 2022-2025

## A message from our team coordinator

Two years ago, despite limited resources and a small team, we secured second place in the SAE AeroConnect Challenge. This year, we're aiming even higher by expanding our team, increasing funding, and developing sustainable, carbon-neutral drones. Our goal is to enhance our student association and offer members invaluable hands-on experience. With your support, we're confident in pushing boundaries and showcasing our innovations every year. Thank you for helping us make this vision a reality!

During my aerospace engineering studies, specializing in avionics and aerospace systems, I was captivated by the field's broad applications but often questioned my place. Through SAE, I refined my skills across all phases of aircraft design, aligning with my specialization. Now, as the electrical and systems lead at AeroConnect, I oversee circuitry, system design, and aircraft control, leading projects like an eVTOL and a blended-wing body aircraft. By year's end, I will also contribute to the conceptual design of a hydrogen-based aircraft.

Since joining the team in Summer 2023, Aeroconnect has been a great way to apply the different subjects of aircraft design often seen across many courses in a more theoretical way. Furthermore it has pushed me to dive deeper into specific fields such as Stability & Control or Blended-Wing-Body Multidisciplinary Design Optimization.



Yumna Zaheer,  
Avionics & Systems Lead



Andres Cazenave-Tapie,  
Aerodynamics Lead

## SAE AEROCONNECT Competitions



### 2021 Overall 2nd place

Technical Design Report - 2nd place  
Failure Mode Effect Analysis - 1st place, tie  
Design Review Presentation - 3rd place  
Floor Showcase Booth - 2nd place



### 2022 Overall 2nd place

Technical Design Report - 2nd place  
Preliminary Design Review Presentation - 3rd place

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