

Academic Showcase

Centennial College



**BEYOND THE
BARRIERS**

Building the
Ontario Aerospace
R & T Community

Dr. Eric Blaise
Innovation Program Manager –
Aerospace and Surface Transportation



Centennial College

Overview

- Aviation Technician (Aircraft Maintenance)
- Aviation Technician (Avionics Maintenance)
- Advance Manufacturing and Automation Tech.
 - NEW - Aerospace Manufacturing Engineering Technology/Technician
- Information and Communication Engineering Technology

Key Areas of Research

- Robotics and Automation
- Aircraft Maintenance Repair and Overhaul
- Aircraft Assembly
- Reverse Engineering and Prototyping
- Printed Circuit Board and Electronic Circuit Design
- Next Generation landing gear technology - electrification

Significant Facilities

- Aerospace programs housed at Ashtonbee Campus in Scarborough
- Relocation pending to approximately 130,000 ft² training and research facility at Downsview Park
- School of Engineering Technology and Applied Sciences labs housed at Progress Campus

Principal Contact

- Alan McClelland, Dean, School of Transportation
- Traci Brittain, Chair, School of Transportation
- Dr. Eric Blaise, Innovation Program Manager, Applied Research

Overview of Significant Research Projects

- **Aircraft component positioning and installation system (NSERC-CCI-ARD)**

Centennial College's researchers and students developed the robotic lifting and positioning systems concept within six months with a full 3-D model of all the components needed for building this system as well as costing for procuring and system integration.

- **Computer Numerical Control Machine Tool Controller Memory Upgrade (NSERC-CCI-ARD)**

The object of the project was to develop a new printed circuit board by reverse engineering the old design. The new memory card uses modern components with lower production costs. The project included the design of a 2MB memory with a lithium battery backup, and the testing and validation of this new design. This project allowed students to gain valuable skills in designing and prototyping printed circuit boards for older machinery.

- **Conceptual Counter Drone Safety System and Feasibility (Centennial - ARIF)**

Currently, there's no system preventing someone from flying a drone into a regulated airspace close to an airport or in the path of a commercial airliner. The research project would look into the control mechanism of commercially available drones, design a system to take control of rogue drones flying into controlled airspace and show the technical feasibility of this by demonstrating taking control of a remotely controlled drone.

Significant Laboratory and Test Capabilities

- Centennial's new state-of-the-art facilities at Downsview Park will include the following facilities for training and research (along with classrooms, flex labs, administrative offices and student common areas):
 - Two sheet metal labs (approx. 580 sq. m.)
 - Composites lab (approx. 290 sq. m.)
 - Small Hangar (approx. 842 sq. m.)
 - Large Hangar (approx. 2527 sq. m.)
- Advanced Manufacturing and Robotics Technology:
 - Robotics lab: 5 ABB robots
 - End of arm tooling: 3D Design capability

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Come speak with us at the Trade Show!

