NEWS RELEASE
MacEwan UNIVERSITY

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Mind control

Edmonton – Fourth-year computer science students Stephen Doyle, Alex Crowder, John Simmonds and Mark Reid spent countless hours working on their capstone research project – using their brain waves to fly a drone.

Simmonds came up with the idea last summer and recruited his classmates to help develop the project. They quickly realized the project required them to incorporate their knowledge of computer science, engineering and design – with a sprinkle of neuroscience. But, after spending days, nights and weekends on the project and getting no results, they were beginning to accept there was no way this was going to work.

While wearing an EEG cap, Doyle started concentrating on thinking "up," and the drone began to lift off the ground. "It was the best feeling in the world to see it work," says Simmonds. "Because we knew that regardless of what happened, we had done the work and got the drone off the ground using our thoughts."

By the end of the project's lifespan, the students had to tether the drone so it wouldn't get to high and hit the ceiling, but the operator had to have a steady mind and clearly think about what "up" and "down" meant. For Doyle, that meant thinking of the action of doing a push up; Reid however, simply couldn't get his brain waves to connect with the drone. But for the three who could get it to fly, the main challenge remained successfully keeping the drone in the air.

"An interesting outcome for this project was that every time the students got the drone off the ground using their thoughts, their excitement would in turn cause their mind to lose focus," said Dr. Jeffrey Davis, assistant professor, Department of Computer Science. "It seems that emotion rather than thought may be a better way to fly the drone."

"Computer Science in itself as a major is unique because you need to be a broad learner," said Simmonds. "As much as a computer science degree is about coding and learning computers, it's also teaching you to learn as well."

In December, the group presented their capstone project, *Analysis of Imagined Movement Using EEG.* While they have no plans at the moment to continue the research, they say there is room for future students to pick up where they left off.

But in the end, they're happy they managed to get their project off the ground. Literally.

Founded in 1971, MacEwan University inspires its students with a powerful combination of academic excellence and personal learning experiences. Offering more than 65 programs including undergraduate degrees, applied degrees, diplomas, certificates, continuing education and corporate training, the university provides a transformative education in a creative, collaborative and supportive learning environment where creativity and innovation thrive. Located in Edmonton, Alberta Canada, MacEwan University offers a unique student experience that opens up diverse pathways for achievement and growth.