

Research wizard's devices turn up in surprising places

BY TAMARA GIGNAC, CALGARY HERALD JANUARY 2, 2010



Lead developer Dr. Gerard Lachapelle helped lead the team which created a GPS unit to help skiers on the Canadian Alpine Ski Team improve their techniques and line selection during practice runs. The unit was developed at the Schulich School of Engineering at the University of Calgary.

Photograph by: Colleen De Neve, Calgary Herald

It's difficult to remember a world without personal navigation devices to help us figure out where we are, where to go and how to find something.

The technology is mounted on our dashboards, housed in our cell-phones and embedded in collars worn by our pets.

But Gerard Lachapelle -- one of the world's leading experts in the study of geomatics -- still recalls a time when it was easy to get lost.

Thirty years ago, a typical piece of GPS equipment cost \$150,000, weighed 500 kilograms and required 1,500 watts of power.

Today, the gear is small enough to fit into the tiniest of devices and is more than just a toy for hardcore gadget geeks.

"The technology has evolved immensely and, as a consequence, is totally pervasive and found everywhere," said the University of Calgary engineering professor, who heads the school's geomatics department.

Lachapelle is a modest man, but there is no disputing the influence he's had in making the U of C a hub for research in satellite and wireless-based navigation technologies.

Since his arrival at the U of C in 1988, he's collected countless awards, acted as mentor to many geomatics experts and provided expertise in the development of new intelligent devices.

His work turns up in all sorts of surprising places -- like on the belts of Canada's alpine ski team. Homegrown athletes used technology developed in his top-secret research lab to improve their technique while training for Vancouver 2010.

Another claim to fame is his work on a signal tracking methodology used by the European Union's Galileo satellite navigation system.

Lachapelle's U of C team is taking part in a project with Canadian BlackBerry creator Research In Motion to find a way to make it easier for cellphone users to access satellite signals indoors and underground.

And if today's GPS and wireless innovations seem like the stuff of science fiction, the 60-year-old Quebec native can hardly wait to see what's around the corner. He envisions a future where the devices continue to tackle issues of safety, health and personal comfort.

"We have seen tremendous applications in the automobile industry. Next we can expect advances in personal wellness and physical exercise . . . and that will lead to a healthier and happier population," he said.

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