



## Mapping out crime *is there a criminal in your neighborhood? Rigel will tell you!*

*Following in a criminal's footsteps took on an entirely new meaning as Kim Rossmo completed his doctorate at BC's Simon Fraser University in the early 1990s. Then an officer of the Vancouver Police Department, he created the concept of "geographic profiling", a means of locating suspects based on an analysis of where specific acts have been committed. Now a member of the Department of criminal justice at Texas State University in San Marcos, Professor Rossmo's innovation has attracted the interest of law enforcement officials around the world.*

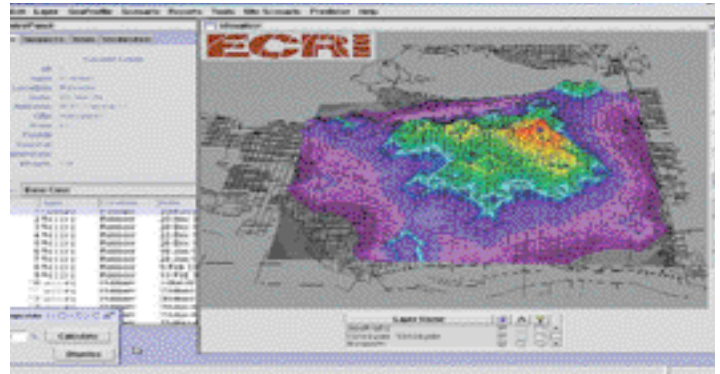
His technique uses algorithms and statistical methods based on actual serial crime data, as well as a behavioural model similar to that observed in animals that hunt. The result was a functional software system that he then tested on hundreds of crimes committed in North America and Europe. Soon investigators from these same jurisdictions were coming to him for help with their ongoing cases.

By the mid-1990s, Inspector Rossmo helped establish the Vancouver firm, Environmental Criminology Research Inc. (ECRI) to develop a commercial version of the geographic profiling software. The Canadian Police Research Centre, working with NRC-IRAP's Industrial Technology Advisors supported the project, enabling it to gain a foothold in this demanding market.

ECRI President Ian Laverty recalls that the turning point came when the RCMP agreed to purchase the software. The commitment provided the company with the impetus to develop a much more sophisticated version for general use. Today's software package, called Rigel, is now being introduced in five different countries because of its proven track record here in Canada. Mr. Laverty notes that it was links to law enforcement that made such performance possible in the first place.

"The CPRC people are very well plugged into the community, and very helpful", he says, "We used all of the contacts they provided us."

Police welcomed the concept behind Rigel. The software can manage hundreds of thousands of these data elements, examining them from the



*"They were easy to work with and they didn't stifle things with bureaucracy that would have made it very difficult."*

**— Dr. Kim Rossmo**

perspective of an individual who would have to travel to each site in order to commit a crime — geographic profiling.

Rigel finds patterns based on practical limitations hunters impose on themselves. In the wild, for example, lions have a territory defined by how far they are willing to look for prey. Likewise in the human environment, even the most enterprising criminals will impose distinct limitations on the time and effort they will expend. When enough information exists to define those limitations comprehensively, Rigel has been able to locate an unknown suspect's home within a few blocks.

In contrast to the military, says Professor Rossmo, police have few resources to pursue these kinds of ambitious research projects.

"Without an entity like the CPRC, we would be considerably further behind", he concludes, adding that firms like ECRI can play a critical role in bringing ideas and technology to the attention of these organizations. However, bureaucratic hurdles can often make these ventures too expensive for smaller companies to consider. In the case of Rigel, he praises the CPRC for keeping such problems to a minimum.

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