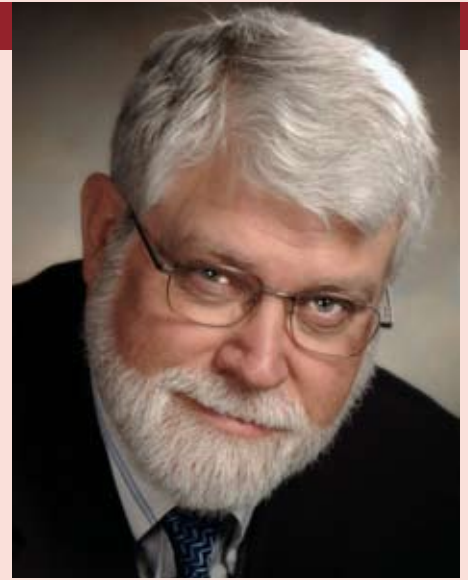


*Paul Brantingham*

# The Institute for Canadian Urban Research Studies at SFU



**T**he Institute for Canadian Urban Research Studies (ICURS) is an interdisciplinary research centre based in the School of Criminology at Simon Fraser University.

ICURS members include faculty from many departments across the university, among them Business Administration, Computing Science, Criminology, Economics, Interactive Arts and Technology, and Mathematics and Statistics.

The Institute has as its focus research studies that increase our knowledge of the urban environment. Special emphasis is placed on the study of crime in urban settings and the development of new crime-analysis tools.

Under the leadership of founding Director Patricia Brantingham, ICURS has developed a network of affiliated research institutes at universities around the world. These include the Jill Dando Institute for Crime Science at the University College London; the Criminology Research Centre at the University of Western Australia; the Criminal Justice Center at the University of Alaska Anchorage; the

Institute for Geo-Spatial Intelligence at Texas State University; the Crime Prevention Analysis Lab at the California State University San Bernardino; the Environmental Criminology Research Lab at the University of Arkansas; and the Environmental Criminology Research Lab at Northeastern University in Boston.

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In Canada, ICURS has formal relationships with research labs at the University College of the Fraser Valley and Mount Royal University College and a working relationship with the University of Montreal.

The ICURS research network supports research in multiple settings through both parallel and joint projects. At present, ICURS and its affiliated research institute in Western Australia are conducting parallel projects intended to assess the criminogenic impact of new rapid transit lines that are being extended from the centre of Vancouver and of Perth into new suburban communities

that have not been served previously by rapid transit connections. ICURS and its affiliated research centre at the University College of the Fraser Valley recently completed a major study of the evolution of policing capacity in British Columbia over the past 30 years.

ICURS also maintains extensive formal relationships with government and the private sector. The Ministry of Public Safety and Solicitor General and "E"-Division of the RCMP provide substantial funding in support of ICURS' research program in crime reduction. IBM Canada has provided a major donation in support of ICURS' computational criminology initiative. SFU has supported ICURS by constructing a new, high-security computing laboratory in the new ASSC1 building.

Thanks to this support from the University and our public and private sector partners, ICURS is able to conduct a large-scale criminological research program that involves distinguished visiting professors, postdoctoral students, and more than a dozen graduate research assistants in criminology, computing science, mathematics, and interactive arts and technology. In this research program, ICURS focuses on crime reduction policy, crime analysis, and computational criminology.

Crime reduction is the policy approach used to determine the most effective ways to reduce crime within a fair and just common law system. Crime analysis covers a broad range of techniques used to better understand the phenomena of crime at national, provincial, municipal, neighbourhood, and local areas. Computational criminology uses theories of crime in an urban environment, together with the advancements in computational sciences.

ICURS blends expert knowledge in government departments with leading-edge theory and research in universities. Its goal is to work thematically across the disciplines of criminology, computing science, geography, economics, and applied mathematics to make advances in the understanding and modelling of the complex urban environment and, with these models, better understand how to improve approaches to crime reduction and the use of informatics in criminological research.

ICURS introduced the first Computational Criminology Initiative (CCI) in 2003. CCI themes/research clusters include the following.

1. Interoperability between justice and urban databases
  - The principal current study involves comparative analysis of crime location and land-use patterns across the province.
  - Additional studies are looking at crime patterns in relation to the structure of neighbourhoods, the criminogenic impact of the Canada Line SkyTrain, and crime patterns in specific municipalities.
2. Artificial Intelligence with agent-based modelling
  - A major project, being conducted jointly with the School of Computing Science, involves the construction of a simulation model that projects the crime target search patterns of a large

number of individuals across an urban road network.

3. Computationally intensive approaches to crime and justice issues
  - A major project, being conducted jointly with IRMACS—another SFU multidisciplinary institute— involves the construction of a computer simulation of the entire British Columbia criminal justice system that can be used to assess both the cost and the crime-reduction potentials of different policy and resource-allocation choices.

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4. New visualization techniques for understanding crime patterns
  - A current major project, being undertaken with the School of Interactive Arts and Technology, involves the construction of a immersive virtual urban environment for study of a wide variety of issues related to how the appearance and structure of the city influences both typical urban mobility choices and fear of crime.

Crimes and security issues involve human agents, laws, and the physical and social landscape. This complexity requires new, adaptable research tools. As part of its research program, ICURS has developed a number of specialized tools and techniques for analyzing crime and urban form.

These include crime location quotients that can assess the relative intensity and importance of different crimes in different communities and TOPO, a topological regionalization technique for understanding the

structure and boundaries of urban neighbourhoods.

Spin-off companies based on research originally undertaken in ICURS include ECRI, Inc., which specializes in technology supporting the geographic profiling of serial offenders; and Forensic Logic, which provides crime analysis software to law enforcement agencies.

As part of its community service activity, ICURS has helped the Grandview-Woodlands Community Policing Office in Vancouver to develop a survey instrument for assessing community concerns about crime and disorder.

Key people at ICURS include Dr. Patricia Brantingham, University Professor of Computational Criminology and Director of ICURS; Dr. Paul Brantingham, University Professor of Crime Analysis and Associate Director; Dr. Bryan Kinney, Assistant Professor of Criminology and Director, the ICURS Laboratory; Fiona Young, ICURS Visiting Professor. ▲

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*Convocation Mall* Photo Credit: *Arvin Asadi*