RCMP Backs SFU Chairs in Criminology

The Royal Canadian Mounted Police have many hallowed traditions; supporting University Research Chairs is not among them. Yet, in an unprecedented move, the RCMP decided to provide five-year funding for two Chairs in the SFU-based Institute for Canadian Urban Research Studies (ICURS). The Chairs are held by Drs. Patricia and Paul Brantingham—hers in Computational Criminology and his in Crime Analysis, both of which bear on crime reduction.

Planning for this exceptional collaboration began in, of all places, New Zealand. In July 2004, the annual Environmental Criminology and Crime Analysis (ECCA) Symposium was hosted in Auckland by the New Zealand Police. (The 2006 ECCA Symposium will be held in Vancouver, sponsored by the RCMP and ICURS.) The participants were mainly senior academic scholars and police officers, among them the Brantinghams, who are pioneers in crime mapping research and analysis, and Assistant Commissioner Gary Bass from the RCMP’s “E” Division, which administers RCMP activities in British Columbia.

“One of the things that struck me at the ECCA Symposium,” recalls Assistant Commissioner Bass, “was the number of criminologists who complained about their inability to get timely and specific crime data from the police. This was compromising the validity of their research. At the same time, I was intrigued by some of the academic research that was being done, particularly that of the Brantinghams and their SFU colleagues. I was determined to find a way for the RCMP to gain better access to SFU criminology expertise, without in any way restricting their academic independence. We opened a discussion in New Zealand, and continued it back home.”

An agreement was signed last Fall by the RCMP, the Government of BC and ICURS. “ICURS,” says Director Patricia Brantingham, “is an interdisciplinary centre that brings together people from a wide range of disciplines (criminology, geography, computing science and economics, for example) to study city issues.” To which Paul Brantingham adds, “Our particular focus is urban crime, and how factors such as city design, the layout of road networks, rapid transit stations and shopping mall hours affect the location, frequency and severity of crime.”

The BC Ministry of Public Safety and the Solicitor General is responsible for funding, planning and directing RCMP activities in BC, so it was intimately involved from the beginning. Regarding the two new SFU Chairs, Assistant Deputy Minister Kevin Begg, the Ministry’s Director of Police Services, commented, “Our overall objective is to move towards intelligence- or evidence-based policing. To this end, we’ve already created a single province-wide database for police records. This can now be used for crime analysis, crime mapping, and to find new ways to target criminals and identify trends and patterns in crime. As well, the Ministry, through its involvement with various ICURS initiatives, provides research topics for SFU Ph.D. students. This, in turn, increases interest in the whole field of policing and may encourage students to remain as researchers or to consider policing as a career.”

What are the RCMP’s expectations for the ICURS Chairs? “We are looking for high-quality research that will help us improve our ability to prevent and reduce crime,” says Assistant Commissioner Bass. “For example, if we put 10 new officers on the road, what impact will that have on the prosecution service, the courts, corrections and so on? We would like to know more about how health, education and other factors affect crime rates, for instance. Equally important, research undertaken through the ICURS Chairs will provide evidence that will enable us to evaluate our own programs better, to determine what works and what doesn’t, and to change what needs to be changed.”

Dr. B. Mario Pinto, SFU’s Vice-President, Research, is delighted with the establishment of the new Chairs. “The Crime Reduction Program is the result of a long-standing collaborative relationship that the Brantinghams have developed with the RCMP,” he said. “It’s an excellent example of a community partnership that will be of direct benefit to society in BC and across Canada.”
MESSAGE FROM THE
VICE-PRESIDENT, RESEARCH

Comparative Performance Indicators

Dr. B. Mario Pinto

In every issue of SFU News (www.sfu.ca/mediapr) and in this publication, we celebrate the achievements of our outstanding researchers. We also inform our communities about the research work in progress at SFU through public events such as the annual Research Luncheon (see the article on page 5 about this year’s gathering held in March). But how are we doing in comparison with other universities across the country? Our results in this year’s competitions for research grants from the three federal granting agencies tell a very positive story of success:

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<tr>
<th>Agency</th>
<th>SFU Success Rate</th>
<th>National Average</th>
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<tbody>
<tr>
<td>Social Sciences and Humanities Research Council (SSHRC) Standard Grants 2005/06</td>
<td>50%</td>
<td>39%</td>
</tr>
<tr>
<td>Natural Sciences and Engineering Research Council (NSERC) Discovery Grants 2005/06</td>
<td>90%</td>
<td>Not Yet Released</td>
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<tr>
<td>NSERC Research Tools and Instruments Grants 2005/06</td>
<td>54%</td>
<td>37%</td>
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<tr>
<td>NSERC Idea to Innovation (I2I) Grants (cumulative 2003-06)</td>
<td>72%</td>
<td>50%</td>
</tr>
<tr>
<td>Canadian Institutes of Health Research (CIHR) Operating Grants 2005/06</td>
<td>25%</td>
<td>27%</td>
</tr>
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Another useful performance indicator is research intensity. One way of defining this is the number of dollars of research income per full-time faculty member. For a comprehensive university such as SFU, however, with strong programs in the humanities and social sciences, the most meaningful figure is the number of research grants obtained per full-time faculty member, as this gives us a much more accurate measure of the extent of participation in research activity. In 2004/05, SFU’s total of 34.7 grants from the Social Sciences and Humanities Research Council of Canada (SSHRC) per 100 faculty members put us first among the comprehensive universities and seventh in the country behind only the largest medical/doctoral institutions. Although our faculty complement in the sciences is relatively smaller, we placed second among the comprehensive universities and, remarkably, fifth in the country with a total of 156.6 grants per 100 faculty members from the Natural Sciences and Engineering Research Council (NSERC) and the Canadian Institutes of Health Research (CIHR).

The success of our researchers in obtaining funding from the three federal granting agencies over the last three years means that we will receive over $5.2 million in 2006/07 from the federal Indirect Costs Program, which we will use to reinvest in research facilities and resources to support continued excellence in research.
The Expanding Universe of TIME

TIME began just over six years ago. It was February 2000 when the TIME (Technology, Innovation, Management, Entrepreneurship) Centre, operated by SFU's University/Industry Liaison Office (UILO), opened for business at the SFU Vancouver campus.

“The TIME Centre has a dual purpose,” says UILO Director Mike Volker. It provides spaces for technology-based companies to grow in a nurturing environment. Also, it’s a resource centre and meeting place for these firms as well as for off-site business people, lawyers, investors and accountants. Indeed, for all who use the TIME Centre it offers convenient access to the people, expertise and money that are vital to growing successful companies.”

That access has recently been expanded, thanks to financial support from Western Economic Diversification Canada (WD) and the National Research Council’s Industrial Research Assistance Program (NRC-IRAP). TIME now has two on-site experts in company development and early-stage funding sources, Elmer Sum and Bob de Wit.

“The new money enables us to enhance TIME’s services,” explains Mr. de Wit. “We’ve increased the funding we can provide from the UILO’s Prototype Development Fund. We’re expanding our company incubator from three offices to 15. We plan significant changes to our Web site and, in partnership with organizations such as Telus New Ventures BC that also receive WD assistance, we’ve launched the BC Technology Business Mentorship Program.”

In TIME’s Mentorship Program companies apply to make a presentation before a seven-member panel of experts. The panel includes specialists in law, accounting, marketing, corporate finance, entrepreneurship, and domain-technology development, all of whom volunteer their time. Several weeks ahead of their appearance before the panel, qualifying companies (Terms and Conditions are available from Bob de Wit) submit details of their business, emphasizing goals and aspirations and how they propose to achieve them. The company presentations and immediate feedback from the panel take two hours. Then there’s follow-up activity over the next few months.

“The mentor panel pointed out some key weaknesses in our business plan,” says Patrick Arneson, CEO of VivraTerra. “It prompted us to consider alternate ways of bringing our technology to market.”

Elmer Sum is implementing the entrepreneurial management processes that will further enhance TIME Centre facilities and services. “Among the initiatives being considered is an ‘Innovation Commons,’ where entrepreneurial people from various science and technology areas can meet in a casual networking environment to share ideas and experiences and make new contacts,” says Mr. Sum. “We also plan a series of ‘TIME Talks’ seminars on technology, commercialization, intellectual property protection, business development, marketing and access to investment funding. I welcome calls from anyone interested in TIME’s new initiatives and facilities.”

As it happens, many technology entrepreneurs have received early-stage funding through another TIME initiative – VANTEC, the Vancouver Angel Technology Network. Launched in 1999, VANTEC links individuals (called “angels”) who are willing to invest up to $100,000 in new ventures. The TIME Centre wants to know what impact VANTEC has had on the BC technology industry.

“We’ve engaged a local firm, Rocket Builders, to survey the angel investors and the companies that have participated in the angel network in the past few years,” explains Mr. de Wit. “Our goal, once we have the survey results, will be to enhance the impact of VANTEC. The TIME Centre’s activities related to developing new technology companies through mentorship and angel network initiatives complements and enhances NRC-IRAP’s mandate. We’ve collaborated with SFU on a number of initiatives over the years with great results.”

Christopher Ryan, Acting Executive Director, NRC-IRAP Pacific

Continued on page 4
COLLABORATIVE BUSINESS PLANNING

Dr. Charles Otieno, SFU MBA candidate

Charles Otieno personifies SFU’s interdisciplinary approach to research. He has doctorates in veterinary medicine (University of Nairobi, Kenya) and molecular biology (University of Guelph), and will soon add an SFU MBA, with emphasis on biotechnology management. Now he’s bringing his multi-topic training and knowledge to SFU’s University/Industry Liaison Office (UILO).

“SFU Business MBA programs involve a large practical component, where students study and analyze actual business problems through case studies and applied projects,” explains Kirk Hill, Executive Director of the SFU Business Career Management Centre. When he and Ziba Afshar, the UILO’s Life Sciences Technology Manager, discussed having MBA students work part time at the UILO to gain experience in technology commercialization, Ms. Afshar agreed to champion the idea. “MBA students often have degrees in other disciplines,” she explains, “as well as some business education and credible Business faculty mentors for any business related project.”

All MBA students at SFU must write a business plan for their Applied Finance course. First, Dr. Otieno (as an MBA student) presented a three-page outline of a proposed business plan project. Then, he and three other MBA students were authorized to develop a full business plan for a proposed start-up company that Ms. Afshar was overseeing.

“This was a great opportunity,” says Dr. Otieno, “because it was a real situation. Plus, I could draw on my extensive scientific education and my previous experience as a business development consultant at Genome BC. The business plan project was based on DNA biosensor technology for the fast, accurate and sensitive detection of molecules such as proteins. The technology has potential applications in molecular diagnostics for a range of health disorders, such as infectious and genetic diseases and cancer.”

Dr. Otieno and his three MBA student partners did industry research, company interviews, data collection and financial analysis before successfully completing the business plan.

There were benefits to all concerned: SFU Business received the UILO’s help in providing applied business planning experience for four MBA students; the UILO got practical help with one of its projects; and the four students were able to develop a business plan based on a real-life situation with potential practical applications. As for the proposed start-up company, it received an excellent, professional-quality business plan.

TIME from page 2

results, is two-fold: to help companies prepare good proposals for angel investors, and to recruit more angels. Preliminary results indicate that VANTEC may be twice as effective as other such networks around North America.”

The early numbers have impressed Industry Canada. It has entered into an agreement with SFU to purchase and perhaps apply the survey results elsewhere in the country. “Improving Canada’s technology commercialization system is critical to growing our economy,” notes Doug Kinsey, Director of Industry, Industry Canada (Pacific). “By identifying and enhancing links to the investment community, organizations such as VANTEC play a pivotal role for emerging innovators.”

For more information on the TIME Centre and the opportunities it provides, email time@sfu.ca or call 604-268-7970.
MICROBES AND MICROCHIPS AT THE 2006 RESEARCH LUNCHEON

“SFU’s Annual Research Luncheon is a special opportunity to showcase our outstanding researchers and inform our communities about new developments and emerging areas of study,” said Dr. B. Mario Pinto, SFU Vice-President, Research. Indeed, 17 faculty members from fields as diverse as economics, geography, business and archaeology were seated one per table at the March 2006 event, so that guests could comfortably discuss their research. Held in the Segal Centre at SFU’s Vancouver campus, it featured a talk by Dr. Fiona Brinkman of the Department of Molecular Biology and Biochemistry entitled “Microbes and Microchips.”

Dr. Brinkman has earned distinction as a Michael Smith Foundation for Health Research Scholar, a Canadian Institutes of Health Research New Investigator (both of which come with significant research funding), and recipient of the BC Innovation Council’s Young Innovator Award. She uses a combination of laboratory and computer-based approaches to study bacteria, particularly infectious microbes.

“Interdisciplinary team-based research, involving collaborations among faculty members from different departments, can lead to both significant research success and practical outcomes,” she explains. “For instance, in my work, a collaboration involving computer science and molecular biology has led to the development of the world’s most precise computer program for identifying medically and environmentally important bacterial cell surface proteins.”

Dr. Brinkman’s talk touched on only one aspect of her research. She is also part of the Genome Canada Pathogenomics Project, in which researchers from Canada, England, Ireland and Singapore are attempting to understand the “innate” immune system, the human body’s first defence against invading pathogens. “We’re trying to find therapeutics that can help boost the ‘good’ components of our innate system, while dampening those components which, when overstimulated, can lead to negative consequences.”

There’s a story on Dr. Brinkman’s research and life in the April 2004 issue of SFU’s AQ magazine. (www.sfu.ca/aq/archives/april04/features/brinkman.html).

From left: Dr. B. Mario Pinto, Vice-President, Research; Dr. Fiona Brinkman, Assistant Professor, Department of Molecular Biology and Biochemistry; Dr. Michael Stevenson, President and Vice-Chancellor

FEATURED RESEARCHERS WITH DR. B. MARIO PINTO AND DR. FIONA BRINKMAN

ROOTED IN PHYSICS

In our Winter 2006 issue, we told you of the Synergy Award for Innovation presented last fall to Dr. Jiri Vrba of VSM MedTech (formerly CTF Systems) and Dr. Hal Weinberg of SFU by the Natural Sciences and Engineering Research Council (NSERC). It recognized their highly productive research collaboration, which extended back over three decades and led to the development and use of a unique magnetic imaging system. What NSERC didn’t mention in the citation was the crucial role played by the SFU Physics Department. Its expertise in condensed matter research—superconductors, in particular—advanced the science underlying the system.
New Appointment

Meet Don Osman, SFU’s new UILO Technology Manager, who joined our staff in January.

A professional engineer registered in both BC and Manitoba, Don has over 20 years’ experience in technology transfer. He has worked for the National Research Council’s Industrial Research Assistance Program (NRC-IRAP), defining problems and seeking solutions for industry. At the University of Manitoba he developed and implemented industrial outreach programs, as well as negotiating contracts for faculty members in collaborative research, nondisclosure and licenses, intellectual property protection and related activities. And for six years he was Program Director for The Canadian International Development Agency’s Science and Technology Centre in Ukraine.

He gained additional experience at the Herzberg Institute of Astrophysics in Victoria, where he oversaw the Institute’s business development activities and contractual matters involving research and development, intellectual property issues and licensing.

“I’ve become familiar with many technology sectors and projects,” he says. “These range from adaptive optics, advanced composite materials, monoclonal antibodies and low noise amplifiers to construction materials and methods and sustainable development.”

We’re very pleased to welcome Don Osman to SFU and encourage faculty members, students and staff to contact him to discuss their innovative ideas and proposals.

Don can be contacted at dosman@sfu.ca or 604-291-3966.

Policy Updates

In the Autumn 2005 edition of Research Links, Dr. B. Mario Pinto reported on the review of four of SFU’s research policies, an initiative undertaken in his first year as Vice-President, Research. Revisions to Policy GP 17, University Occupational Health and Safety, and Policy R20.03, Treatment of Animals in Research and Teaching, were both finalized in 2005. An update on the status of the other two policies appears below.

R20.01, Ethics Review of Research Involving Human Subjects

This policy provides a mechanism for ethics review of research involving human participants to protect those participants, researchers, support staff, students, and third parties, and to educate those involved in this type of research. Every five years, Senate undertakes a review of this policy and makes amendments should they be deemed necessary. Input from the University community was obtained and taken into consideration in the preparation of the draft policy, which was circulated for a second round of consultation this February. The final draft is now posted at www.sfu.ca/vpresearch/R20.01/R20_01_Revision.html and will be submitted to Senate and the Board of Governors for approval.

R20.02, Biosafety

This policy ensures the safety of students, faculty, staff, the community, and the environment when using biohazardous materials under the auspices of SFU, and to facilitate research, teaching and testing in compliance with all relevant regulations and standards. A review of this policy was initiated in the fall of 2005 to ensure that adequate provision is made for containment facilities. Feedback from the University community was sought on the draft revised policy this March and April, and it will now be submitted to Senate and the Board of Governors for approval. The final draft is posted at www.sfu.ca/vpresearch/R20.02/R20_02_Revision.html.

Funding Links

The Office of Research Services (ORS) regularly publicizes research funding opportunities for SFU faculty members. For further information, please see: www.sfu.ca/ors/funding_opp.html