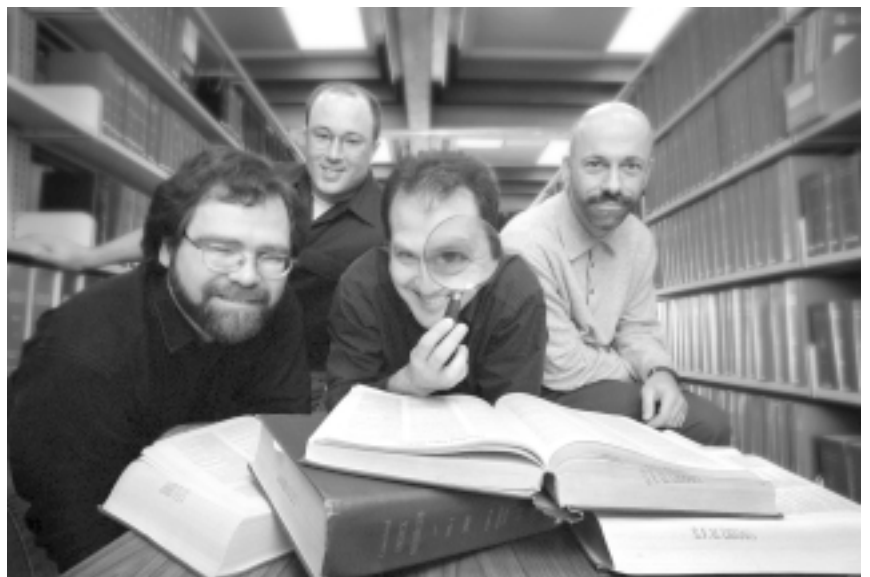


Mission Statement

The mission of the University/Industry Liaison Office (UILO) at Simon Fraser University (SFU) is to facilitate the creation of new university-industry research and development partnerships and to commercialize the results of university-based research with a view to providing an economic return to the university, the Province of British Columbia, and Canada.



*l-r: Paul McFetridge, Devlan Nicholson,
Fred Popowich and Davide Turcato of
SFU spin-off company
gavagai Technology Incorporated
are developing knowledge retrieval products.
Photo: Greg Ehlers, SFU IMC.*

Director's Comments



Michael C. Volker
Photo: SFU IMC

2000/01 was a very busy and rewarding year for the University/Industry Liaison Office (UILO) at Simon Fraser University (SFU).

The flow of technology disclosures was steady and efforts to protect intellectual property resulted in the filing of a record 18 new patent applications during the fiscal year. Commercialization successes included the assignment of two technologies to an SFU spin-off company and the negotiation of licensing agreements related to five other technologies.

Activity related to spin-off company creation and support remained a focus. Six new spin-off companies were formed, bringing the total number of spin-offs formed to 60, 41 of which are active. Six new equity positions were obtained on behalf of the University increasing the total number of equity positions held to 26. The UILO staff directly helped spin-off companies attract investment of more than \$8.9 million.

Our goal of staffing the UILO with a full complement of qualified technology managers was achieved during the year via the recruitment of Ms. Ziba Afshar. Focusing on the biotechnology and life sciences areas, Ms. Afshar's considerable educational and professional experience and skills provide a welcome level of expertise in these areas of research. As a member of the technology transfer team, Ms. Afshar is working closely with Ms. Teri Lydiard, who concentrates on technology arising from research in the engineering, computing, telecommunications and wireless areas, and Mr. Matt Ferguson who is focusing on infotechnology and the physical sciences.

Mentoring and education programs were provided to SFU entrepreneurs throughout the year, as in previous years, with emphasis on programs designed to assist in the early stages of company creation. We played a major role in developing an in-depth six-day course for researcher/entrepreneurs with the National Research Council. This program will now be managed by the WestLink Innovation

Network, of which SFU is a member. We were also part of the founding team of a new initiative - NewVenturesBC - a business competition designed to encourage the creation of new enterprises. We participated in numerous other educational programs and seminars.

The UILO operated its new incubator facility, TIME Ventures Innovations, designed to assist new ventures. This facility, located at SFU's Harbour Centre Campus in downtown Vancouver, allows new companies, including SFU spin-off companies, to be housed on a low risk basis and receive the benefit of the services offered by the technology transfer staff assigned to the TIME Centre.

The UILO also operates the TIME Business Centre, which attracts business people to the downtown campus, providing an opportunity for them to learn more about SFU's capabilities and resources. TIME acts as a gateway to the business community.

VANTEC, Vancouver's Angel Network, which the UILO launched a little over two years ago, is using the TIME facilities for its regular monthly meetings. This has tended to increase interactions with local industry and investors and indeed a number of SFU spin-offs have made presentations to this Network with many receiving either capital or mentoring.

With respect to financial support for our Office, which is largely funded from external sources, the UILO is grateful for the support it receives from the B.C. government's new Ministry of Competition, Science and Enterprise through its Science, Technology and Telecommunications Division (formerly known as the Information, Science and Technology Agency, ISTA), federal agencies such as the National Research Council and the Natural Sciences and Engineering Research Council.

I wish to express my appreciation to our energetic team, which is dedicated to helping SFU researchers and students commercialize their innovations and to working closely with the B.C. high technology community.

Summary of 2000/01 Achievements

TECHNOLOGY DEVELOPMENT

- 22 new invention disclosures
- 18 patent applications filed
- 4 new patents issued, bringing the total of issued patents in good standing to 38
- 5 new market studies undertaken; 3 completed

TECHNOLOGY COMMERCIALIZATION

- 5 technologies licensed, bringing the total number of licenses in force to 43
- 2 technologies sold

BUSINESS DEVELOPMENT

- 6 new spin-off companies formed, bringing the total of active spin-offs to 41
- 6 new equity positions in SFU spin-off companies, bringing the total number of equity positions to 26
- \$8.9 million of investment in SFU spin-off companies facilitated by UILO

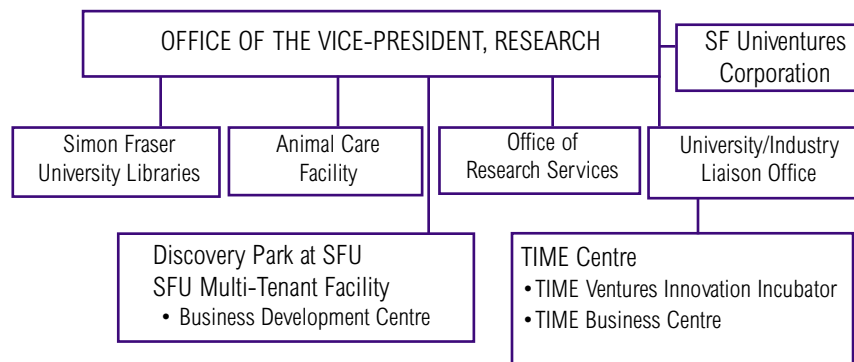
GROSS REVENUES

- \$313,235 from royalties, license fee receipts and dividends

Organizational Structure

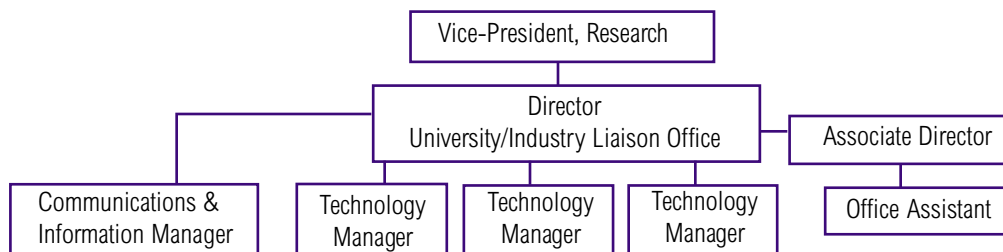
The UILO is a service organization for SFU faculty, staff and students, and for external agencies and firms that wish to collaborate with the University in research partnerships and technology transfer. It is the primary organizational structure responsible for technology transfer at SFU and is aligned administratively within the portfolio of the Vice-President, Research.

Figure 1 Office of the Vice President, Research



The Vice-President, Research oversees an integrated service organization which delivers both research grant and research contract administration and performs technology transfer and university/industry liaison activities including management of SFU's Multi-Tenant Facility at Discovery Park.

Figure 2 University/Industry Liaison Office





University/Industry Liaison and Technology Transfer

During 2000/01, the UILO embarked on several initiatives and worked closely with other entities to increase the number of technologies available for commercialization and to encourage successful knowledge and technology transfer.

TIME Centre (Technology, Innovation, Management, and Entrepreneurship Centre)

The UILO has established a permanent presence at the TIME Centre located at SFU's Harbour Centre Campus.

At the TIME Centre, the UILO operates **TIME Ventures Innovations**, an incubator facility for new ventures. The facility allows new companies, including SFU spin-off companies, to be housed on a low risk basis and receive the benefit of services offered by the technology transfer staff assigned to the TIME Centre.

In 2000/01, the UILO arranged for the services of a "lawyer-in-residence," Mr. Michael Roman, a patent agent and corporate attorney from Catalyst-Law, who provides free advice on Intellectual Property Law and general business matters to the incubator tenants.

The UILO also operates the **TIME Business Centre**, which offers business facilities and services to its members on a drop-in basis. Services include access to computer workstations, printers, and databases. The Business Centre fosters networking and liaison between SFU and the corporate sector by bringing industry representatives to the Harbour Centre campus.



time
CENTRE

SIMON FRASER
UNIVERSITY
AT HARBOUR CENTRE

SFU Discovery Park

Discovery Parks Incorporated (DPI) is a wholly owned subsidiary of the Discovery Foundation and is managed by the UBC Real Estate Corporation.

Dr. Bruce Clayman, Vice-President, Research, maintains responsibility for Discovery Parks Inc. at SFU including the Business Development Centre described below. He is President of Discovery Park, Inc. and a Trustee for the Discovery Foundation.

Business Development Centre

The Business Development Centre (BDC) at SFU's Multi-Tenant Facility in SFU's Discovery Park operates as an incubation centre for SFU spin-off and other start-up companies, and as a central location to bring research-driven businesses into close working relationships with the University for the purpose of research and development activity. Day-to-day management of the BDC is the responsibility of the Office of the Vice-President, Research.

SF Univentures Corporation

SF Univentures Corporation is a private, for-profit company that is wholly owned by Simon Fraser University. The objectives of the Corporation are to facilitate placing the results of university research into the marketplace and to generate financial returns to the University as a result of commercialization.

The Corporation is used where it is advantageous or required, such as in holding equity positions on behalf of the University or to access funding programs including the NRC's Industrial Research Assistance Program (IRAP) Technology Enhancement (TE) fund.

Networks of Centres of Excellence (NCE) Technology Transfer

The UILO works with SFU NCE researchers to create commercial opportunities from the results of their NCE research. During the reporting period, SFU researchers were involved in 7 of the national networks as follows:

- AquaNet (Network in Aquaculture)
- CBDN (Canadian Bacterial Diseases Network)
- GEIODE (Geomatics for Informed Decisions)
- IRIS (Institute for Robotics and Intelligent Systems)
- MICRONET (Microelectronics Devices, Circuits and Systems for Large Scale Integration)
- MITACS (Mathematics of Information Technology and Complex Systems)
- TL•NCE (TeleLearning)

During 2000/01, SFU was the host institution for both MITACS and TL•NCE.



National Research Council Canada - Industrial Research Assistance Program

NRC sponsorship of technology transfer activities at SFU is centered on NRC Industrial Technology Advisors (ITAs) who are located at SFU's Business Development Center. The ITAs provide business and industry with access to NRC IRAP and offer business and technical referrals and assistance to local businesses. The ITAs and UILO collaborate where appropriate, particularly in the identification of potential partnerships between B.C. and Canadian companies and SFU researchers and with prototype development projects.

WestLink Innovation Network

The UILO is a member of WestLink Innovation Network, a not-for-profit organization that was formed to facilitate communication, interaction, collaboration, and technology development and commercialization among the Western Canadian Universities and their affiliated research institutions.

During 2000/01, *WestLink* and the UILO conducted a survey of SFU spin-off companies. A report on the findings of the survey is available on the UILO web site at www.sfu.ca/publications.

The UILO also worked closely with *WestLink* regarding the development of its Internship Program. The program is aimed at building a pool of people who understand both business and technology commercialization. Interns commit to a two-year term. Over the next two years, each intern will spend eight months at a UILO, eight months in a high-tech firm, and eight months with a venture capital firm. Between each eight-month semester, interns will attend intensive training events focussed on issues such as intellectual property and business development.



Working together to enhance technology transfer services. Above: Ziba Afshar, SFU UILO (standing) and Sandra Volume, WestLink. Left: Matt Ferguson, SFU UILO (in back) and Stuart Cullum, WestLink.

Research at Simon Fraser University

Research at SFU is conducted within departments, among inter-departmental research groups, and through independent centres and institutes serving specific research interests and needs. These inter-disciplinary research centres, institutes and groups break down artificial boundaries between disciplines, and have earned reputations as internationally-recognized centres of excellence for the promotion of basic and applied research.

Table 3

Research awards* by funding source (in dollars)							
Fiscal Year	National Granting Councils	Federal Govt.	B.C. Govt.	Other Prov. Govts.	Canadian Firms & Foundations	U.S., Other Foreign Agencies	Total by Fiscal Year
1998/99	13,677,157	403,839	2,269,829	5,000	1,964,323	756,594	19,840,416
1999/00	15,733,275	672,239	2,421,871	11,883	2,086,424	745,796	22,523,817

*external sources only

Table 4

Research contracts by funding source (in dollars)							
Fiscal Year	National Granting Councils	Federal Govt.	B.C. Govt.	Other Prov. Govts.	Cdn Firms & Foundations	U.S., Other Foreign Agencies	Total by Fiscal year
1998/99	0	755,044	68,400	45,000	265,808	512,940	1,667,192
1999/00	0	723,249	62,916	63,000	633,464	728,247	2,210,876



Impact of UILO Activities

Partnering Researchers with Industry and Government for Collaborative Research and Development

A primary activity of UILO staff is partnering or matching researchers with companies and government organizations to conduct collaborative research. UILO staff respond to industry requests for research assistance and visit companies to determine their research needs and make them aware of the expertise of SFU faculty, students, and staff. Informational materials describing applied research activities at SFU are developed and distributed and SFU research capabilities are listed in appropriate industry directories. The UILO cooperates with SFU Faculties to organize and implement research consortia and institutes that have industry interaction as an important objective.



The UILO, working with the Office of Research Services and the Research Grants facilitator in SFU's Centre for Systems Science, assisted Dr.

Ljiljana Trajkovic, Dr.

Steven Hardy and their

colleagues and stu-

dents in the SFU

School of Engineering

Science, to obtain

funding from TELUS

Mobility to conduct

cellular network traffic

research. Dr. Trajkovic

is a BC Advanced

Systems (ASI) Institute

Research Fellow — ASI provided matching funding

for this project.

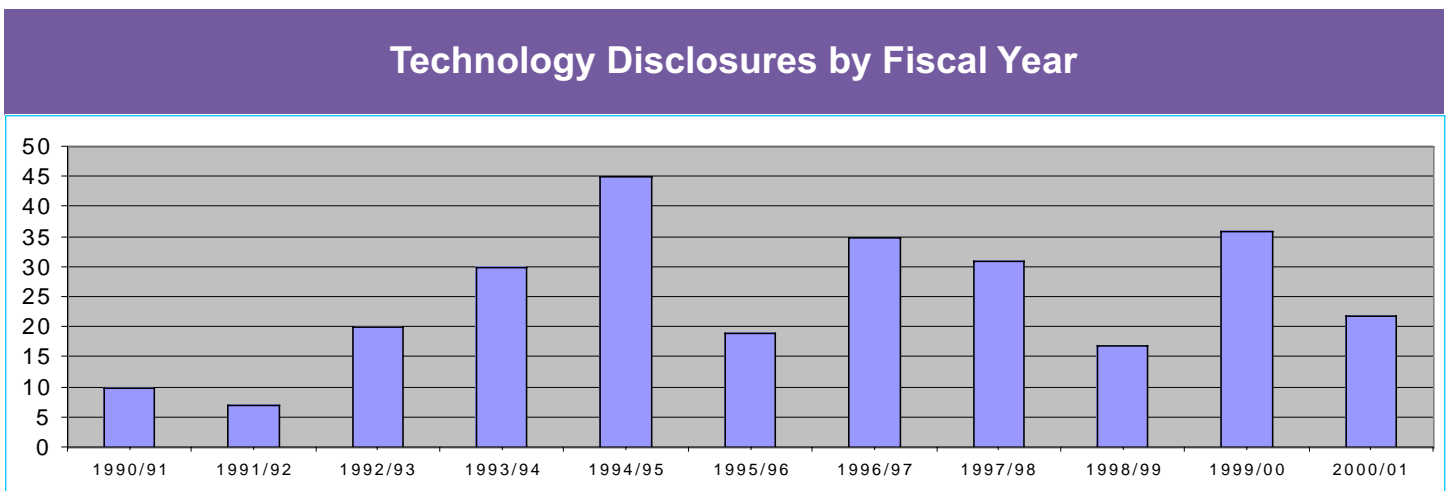


Photo: Greg Ehlers, SFU IMC

Identifying/Assessing University Technologies

By visiting researchers or via invention disclosures, technologies that may have commercial potential are identified. The UILO assists in identifying applications for University technologies and assessing the market. Since 1986 and as at March 31, 2001 the UILO had received 355 technology disclosures.

Figure 4



Funding Prototype Development

The UILO provides funding to develop or test proof-of-concept inventions or to scale-up bench research which may have commercial potential.



Prototype Development Funding was awarded to Ms. Janine Toole and colleagues, School of Computing Science, toward the development of content for "Grammar Analyzer," an English-as-a-Second Language intelligent interface. The prototype funding also provided support for a programmer who rewrote the language engine. The UILO is currently exploring licensing opportunities in North America, Singapore and China.



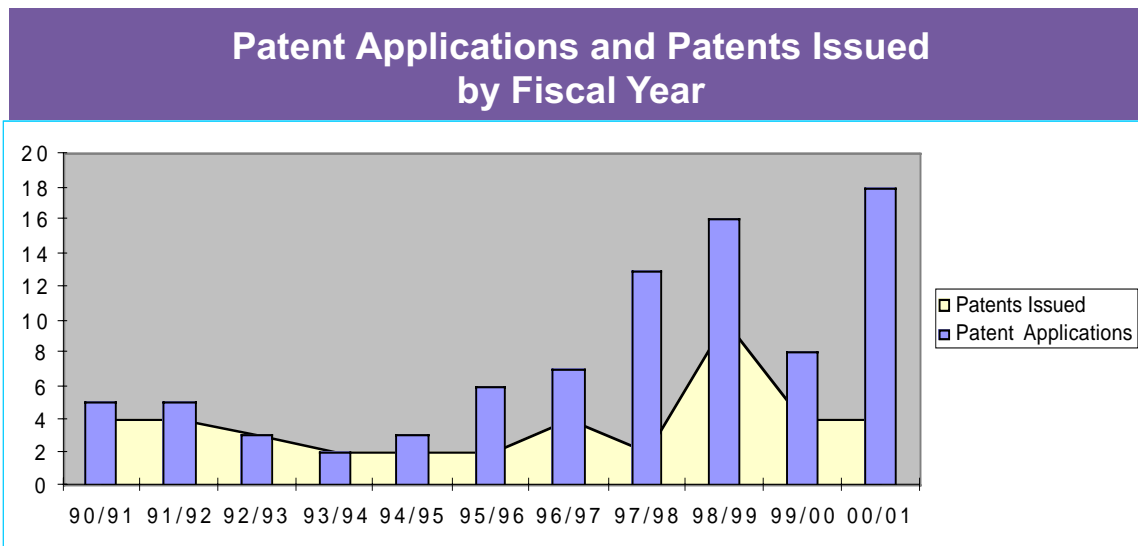
Providing Intellectual Property Advice and Protection

UILO staff conduct searches of patent databases and provide advice to researchers on whether intellectual property protection is possible. Each year, the UILO finances a small number of patent applications for promising technologies.

Patenting

As at March 31, 2001, 132 patent applications had been initiated for some 72 technologies. Of the 50 patents maturing from these applications, 38 are in good standing.

Figure 5



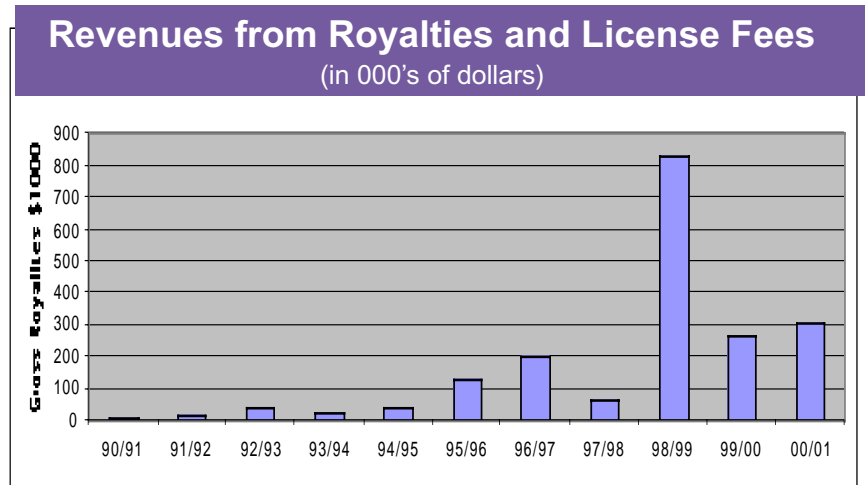
Identifying Industrial Partners to Commercialize University Technologies

Suitable industrial organizations are identified and contacted. UILO staff assist in determining the value of a University technology and negotiating commercialization agreements.

Technology in Commercialization

Number of new license agreements in 2000/01	5
Total number of license agreements to date	54
License agreements in force as at March 31, 2001	43
Total number of technologies/patents sold to third parties	5

Figure 6



Assisting with the Creation of New Ventures

The UILO assists researchers to determine the feasibility of establishing a new venture based on a University technology. UILO staff provide general business advice, help in preparing a business plan, and recommend potential financing options. Office space for new ventures is available in the Business Development Centre located at SFU's Discovery Park and at the TIME Ventures Innovations incubator at SFU's Harbour Centre campus.

Simon Fraser University Spin-Off Companies

Number of new spin-off companies 2000/01	6
Total number of spin-off companies as at March 31, 2001	60
Total active spin-off companies as at March 31, 2001	41

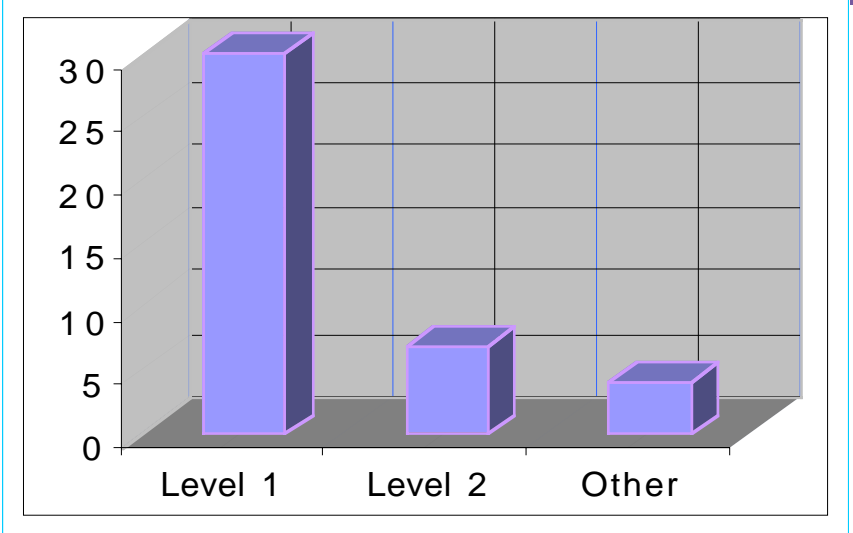


The UILO has entered into non-exclusive strategic commercialization agreements with the goal of broadening the range of options available to assist SFU researchers with the commercialization of their SFU-developed technologies with the following companies:

- BTG-USA, Inc., an international licensing organization, evaluates the commercial potential of SFU inventions and patents in electronics, telecommunications, medical and engineering markets.
- InVentures Incubator Inc., a B.C. company, has established a working relationship with SFU whereby the University provides the company an opportunity to evaluate technology disclosures in the areas of telecommunications, microelectronics, photonics/fiber optics, image processing, robotics/user interfaces, system software and e-learning.
- Dexton Technologies Corporation of Burnaby, B.C. is focussing on assisting SFU students with projects in the information technology field, but is also interested in evaluating technologies from faculty, staff and students in a broad range of areas.

Figure 7

Distribution of Active Spin-off Companies by Type



LEGEND

- Level 1: Founded to commercialize SFU technology and/or significantly reconstituted around technology licensed from SFU, and SFU/UILO involved in commercialization
- Level 2: Founded to commercialize SFU technology
- Other: Company principal(s) and/or SFU/UILO deem level and nature of collaboration sufficiently significant

The following spin-off companies were incorporated during 2000/01:

- **Applied Medical Devices Inc.** is commercializing a suite of medical devices developed by Dr. Andrew Rawicz and colleagues in the School of Engineering Science.
- **gavagai Translation Inc.** will develop and market machine translation technology developed by Dr. Fred Popowich, School of Computing Science and Dr. Paul McFetridge, Department of Linguistics. An equity position has been obtained on behalf of the University.
- **PING Digital Signal Processing Inc.** will commercialize 3D Acoustic Imaging technologies developed by Dr. Kraeutner, SFU School of Engineering Science. The UILO has obtained an equity position in the company on behalf of SFU.
- **Second Narrows Projects Inc.** was recently incorporated to commercialize electronic tutorials developed by Dr. Michael Brydon. The University has obtained an equity position in the company.

- **ShipVillage Logistics Solutions Inc.** will market a freight forwarding, online solution that uses technological data mining techniques to match customers seeking freight forwarding solutions. Drs. Jiawei Han and Mr. Sam Razi, School of Computing Science developed the technology. The UILO has obtained an equity position in the company.
- **ttul.net Communications Ltd.** is developing a prototype for a Universal Serial Bus Converter to communicate over IP networks. Ken Simpson, a Graduate Student in the School of Engineering Science, created the technology. An equity position has been obtained in the company on behalf of SFU.

Communication

The UILO undertakes a number of initiatives to enhance the understanding of our mission and further our objectives with our external constituency (industry and government agencies). Effort is also focused on communicating the services of the UILO to SFU faculty, staff members, and students.

Education

The UILO conducts various workshops and seminars (as well as offering on-line information and resources) designed to educate and inform technology entrepreneurs on matters pertaining to business development and management. For example, during 2000/01 Mr. Volker taught an Intellectual Property Seminar to students enrolled in SFU's Management of Technology program. Also in 2000/01, the final session of "Going Corporate: From the Lab to the Market" was held. This program consisted of a series of information events developed by WestLink Innovation Network together with SFU, the University of British Columbia, the University of Victoria and the Technical University of BC. The series addressed topics including intellectual property protection, new venture financing, marketing, and spin-off company creation.



The UILO was involved with the creation and launch of New Ventures BC, a cooperative endeavor of business, academic and government partners, sponsors and contributors that have banded together to help stimulate a strong, healthy economy in British Columbia. The New Ventures BC Competition will be an annual event open to all BC residents, with prizes totaling \$125,000, believed to be the largest of its kind in North America. Individuals with a new business idea can attend seminars and networking information sessions that will give them the chance to turn their idea into a successful startup. By participating in the annual competition, entrepreneurs will build business skills and help to create a sustainable diversity in the province's investment community. It is expected that many SFU technologies and entrepreneurs will benefit from this program in the future



Liaison with Outside Agencies

The UILO maintains and develops working relationships with external agencies, especially those involved in university-industry technology transfer, innovation and entrepreneurial development. In particular, membership is continued on committees where relationships between industry and SFU researchers can be forged.

The UILO interacts regularly with the following:

- Association of University Technology Managers
- British Columbia Advanced Systems Institute
- British Columbia Biotechnology Association
- British Columbia Technology Industries Association
- Canadian Advanced Technology Association
- Canadian Technology Network
- Fuel Cells Canada
- Industry Canada-Strategis
- National Research Council Canada IRAP
- National Technology Index/Opportunity Match
- Networks of Centre Excellence
- New Media BC
- New Ventures B.C
- Science Council of British Columbia
- T-Net British Columbia
- Trans-Forum
- Vancouver Board of Trade
- Vancouver Enterprise Forum
- Vancouver Stock Exchange
- VANTEC (Vancouver Angel Network for Technology Enterprises)

Internal Communications

UILO staff liaised with the Faculty Research Liaison Officers who represent the Office of the Vice-President, Research, including the UILO, to faculty members.

In 2000/01, UILO staff produced three new issues of *Research Links*, a newsletter designed, in part, to deliver technology transfer information to SFU faculty members. *Research Links* is designed to deliver information about obtaining research funding and commercializing arising technologies. UILO stories included an outline of services offered to SFU researchers and a review of recent UILO achievements.

Communicating the Impact of SFU Research and Technology Transfer

The UILO produced one issue of *Research Partners*, a newsletter highlighting successful partnerships between SFU researchers and industry. Stories included a focus on services offered to external partners and an update regarding several SFU spin-off companies.

Twenty-six stories mentioning the UILO appeared in the local and national media during 2000/01.

Mr. Volker produced monthly columns, "The Way I See It" to *Silicon Valley North BC* edition, and "Tech Futures" to T-Net BC.

The UILO contributed to a video production and a brochure prepared for the opening of SFU's TIME Centre.



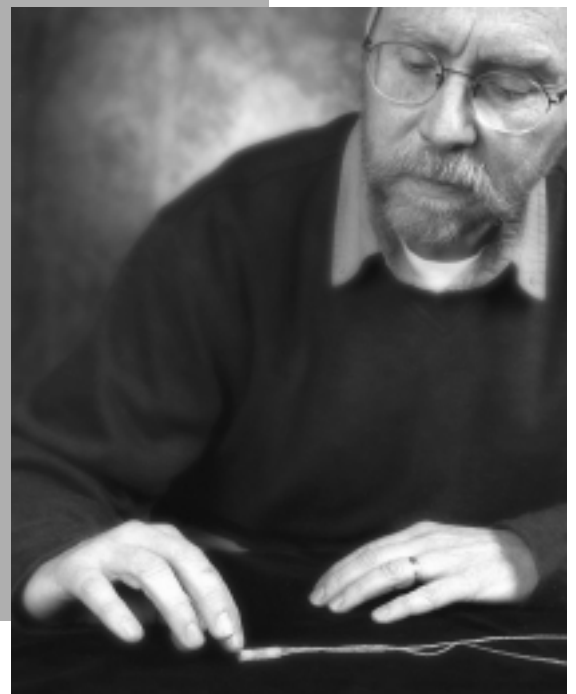
SFU researcher Dr. Andy Hoffer is the President and Chief Scientific Officer of NeuroStream Technologies Inc., a firm he created in 1997 to commercialize the results of his SFU research centered on the development of nerve cuffs. These are sleeves placed around nerves beneath the skin to carry electrical signals that

can activate limbs or organs rendered non-functional by strokes or other causes.

The company has moved off campus to Port Coquitlam and now employs 13 people. NeuroStream's cuffs will be ready late in 2001, and the first clinical trials in patients will soon get underway. Meanwhile, research continues on cuff development and signal extraction methods.

During 2000/01, Neurostream secured \$1 million in venture capital financing from GrowthWorks Capital Ltd. and the Business Development Bank. Also during 2000/01, the UILO assisted the company with the preparation of a successful application to the Science Council of British Columbia's (SCBC) Technology BC program.

*Photo: Greg Ehlers,
SFU IMC*





Spin-off companies in which SFU holds equity

Agnitor Technologies Inc.

Incorporated 1998-99 to commercialize Dr. J. Dill's research results

Canadian V-Chip Design Inc.

Incorporated 1996 to commercialize the V-Chip

Chirologix Pharmaceuticals Inc.

Incorporated 1998-99 to commercialize antibiotic agents

Cogent ChipWare Inc.

Incorporated 1999-00 to commercialize SRAM and other VLSI technologies

Constraint Works Inc.

Incorporated 1997-98 to commercialize scheduling constraint technology

Credo Interactive Inc.

Incorporated 1996 to commercialize SFU Field of Use for Life Forms.

Crime Prevention Analysis Lab

Incorporated 1999-00 to commercialize crime prevention analysis and other GIS technologies.

DBMiner Technology Inc.

Incorporated 1996 -97 to further commercialize DBMiner

gavagai Technology Inc.

Incorporated 1999-00 to commercialize machine language translation and intelligent information searching technologies.

gavagai Translation Inc.

Incorporated 2000-02 to commercialize machine translation technology

ICue Technology Inc.

Incorporated 1996-97 to commercialize Dr. Yang's research

Kinetic Effects Inc.

Incorporated 1991 to commercialize Life Forms software.

NCompass Labs Inc.

Incorporated 1996 to commercialize Objects on the Web technology, NCompass.

[Neologos Technologies Corp.](#)

Incorporated 1996 to develop and commercialize software tools

[Neurostream Technologies Inc.](#)

Incorporated 1996-97 to commercialize nerve cuff medical devices

[PING Digital Signal Processing Inc.](#)

Incorporated 2000-01 to commercialize 3D Acoustic Imaging technologies

[Second Narrows Projects Inc.](#)

Incorporated 2000-01 to commercialize electronic tutorials

[ShipVillage Logistics Solutions Inc.](#)

Incorporated 2000-01 to market a freight forwarding, online solution that uses technological data mining techniques

[TelesTraining Inc.](#)

Incorporated 1999-00 to offer training to teachers, tutors and trainers related to design, production and delivery of on-line training

[ThoughtShare Communications Inc.](#)

Incorporated 1999-00 to commercialize CZWeb and JCZoom software technologies

[TRIMP Tech\(nologies\) Inc.](#)

Incorporated 1996-97 to commercialize Trimp technology

[ttul.net Communications Ltd.](#)

Incorporate 2000-01 to develop a Universal Serial Bus Converter to communicate over IP networks

[Twinstrand Therapeutics Inc. \(was De Novo Enzyme Corp.\)](#)

Incorporated 1996 to design and develop novel enzyme systems

[Vera Genics Ltd. \(formerly Viratest Carcinogen Monitoring Inc.\)](#)

Incorporated 1995 to undertake testing for carcinogens.

[Virtual Learning Environments Inc.](#)

Incorporated 1995-96 to commercialize telelearning research results

[Welichem Biotech Inc.](#)

Incorporated in 1996 to develop antibiotics and anticancer agents



For more information, please contact:

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