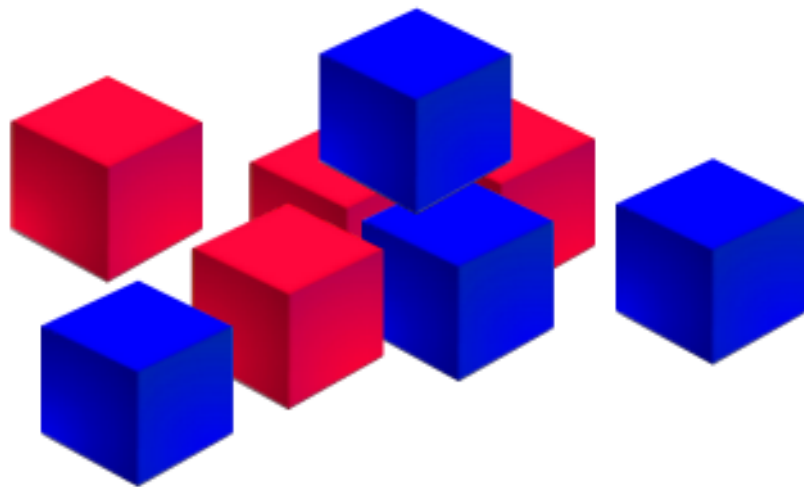


University Technologies International Inc.

Annual Review

Fiscal Year 1999-2000



University Technologies International Inc.
"Excellence in creating business opportunities from scientific innovation"



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University Technologies International Inc.

“Excellence in creating business opportunities from scientific innovation.”

UTI Inc. is a private, for-profit technology commercialization company wholly owned by the University of Calgary. It offers an entire spectrum of technology commercialization services including technology assessment, intellectual property protection and management, market assessment and evaluation, license negotiation and management, and company creation and development.

The company serves a wide variety of research-based clients in post-secondary institutions, government research laboratories, industrial research and development installations and in private facilities. Its customer base includes corporations, startup companies, research and development facilities and other research institutions.

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Letter from the President & CEO

After the festivities of University Technologies International Inc.'s Tenth Anniversary celebrations last year, it seems fitting that Fiscal Year 1999-2000 turned out to be the most successful business year in UTI's history. While its commitment to the technology commercialization industry and to its shareholder –the **University of Calgary** – and its stakeholders did not change, the company's focus on how it services those stakeholders has continued to evolve.

The company's previous commitment to build up its company creation and development business began to take effect in 1999-2000. While UTI continued to maintain its high level of service to researchers who chose licensing as the commercialization route for their technologies, the possibility of using new technology for company creation was given new emphasis with solid results.

The basic difference in the approaches is one of function. If a technology appears to be of singular use across a broad spectrum of an industry, licensing is the preferred commercialization route. However, if the technology represents a suite of applications and is capable of supporting a company or a corporate division, then company creation may be the best way to maximize the economic and social impact of that technology.



Oleh Hnatiuk
President & CEO

There are, of course, numerous other factors entering into the decision. The most significant of these is the researcher's commitment to his or her discovery. UTI has been fortunate to work with researchers whose brilliance and innovation is matched by their commitment to commercializing their discoveries.

People who know the technology commercialization industry understand that it is volatile and cyclic. There is no guarantee each year of a steady supply of technology disclosures - this industry's raw materials; and no guarantee those disclosures will be commercially viable. Additionally, the time frame attached to the technology commercialization process can see a technology take from two to 12 years to enter the commercial market. In that environment, some volatility is expected.

In Fiscal 1999-2000, UTI experienced a **record number of technology disclosures - 113**. That far surpassed the record of 77 set last year and carries a promise of potential licensing and company creation activities down the road. The number of licensing agreements signed and the gross revenue from licenses dipped slightly in 1999-2000. This is attributed primarily to a shift in the market for the Global Positioning System technologies that UTI handles. Some of the technologies are in the mature stage of their marketability while the newer technologies are beginning to catch on. UTI completed **23 licensing deals** in FY 1999-2000, down from 29 the previous year. Income from licensing and gains from cashed-in equity were, in total, up considerably this year. **UTI's revenue and gains from the sale of equity achieved a record \$4.6 million.**

UTI has balanced its business operations between licensing and company creation and development. Part of the latter is the management, on behalf of its shareholder, of the equity UTI holds in companies which it has created or assisted. Fiscal 1999-2000 saw a marked increase in the market capitalization of two of those companies - **Wi-LAN Inc.** and **Cell-Loc Inc.** Through management of its equity in those companies, UTI

Letter from the President & CEO (continued)

was able to make a significant contribution to its shareholder, over and above its usual return.

At the end of the fiscal year, UTI was able to make a **donation in the amount of \$900,000 to the University of Calgary**. Half of this donation is to be earmarked for a fund to perpetuate the three annual \$15,000 UTI Fellowships. The other half was given to the University for whatever purpose it deems appropriate. This donation was over and above UTI's donation of three **researcher fellowships totalling \$45,000** made earlier in the fiscal year.

When both licensing revenue and gains from the sale of equity are taken into account, FY 1999-2000 stands out as UTI's most successful business year. UTI realizes that while company breakthroughs such as Wi-LAN and Cell-Loc experienced will not happen every year, efforts are being made to bring along the next Wi-LAN and Cell-Loc. At the same time, UTI is optimistic about the licensing situation for four reasons: disclosures are at an all-time high, last year saw a **record-tying number of disclosures from the University of Calgary - 53**, the number of disclosures from non-University of Calgary sources surpassed the UofC total, and disclosures under development show considerable commercial potential.

This fiscal year had significant impact on another aspect of UTI's operation - two of its longtime employees left the company. UTI is grateful for the contribution **Beverley Sheridan** and **Keith Gilchrist** made during their years with UTI and we wish them well.

UTI's **Board of Directors** changed significantly in November 1999 with **Brian Felesky** stepping down as Board Chairman after nine years. **Dr. William Cochrane** assumed the chairmanship, bringing with him a wealth of knowledge and experience in technology commercialization, academe, government and corporate growth. This change enabled Brian Felesky to focus on the chairmanship of the board's Venture Capital Committee. UTI's Advisory Council underwent a refocusing this year as members were given more opportunity to directly contribute to the development of specific technologies. This concept was met with strong support by the Advisory Council and UTI's technology managers.

Two technology commercialization industry developments warrant specific mention. The creation of **WestLink Innovation Network Ltd.** and of **ATCN** - the Alberta Technology Commercialization Network - is the direct result of the desire by technology commercialization organizations to build a stronger infrastructure. WestLink networks the technology transfer offices of all Western Canada universities to encourage technology bundling and to educate members on technology commercialization possibilities. ATCN was originally an alliance of UTI Inc., **Alberta Heritage Foundation for Medical Research**, the **Industry Liaison Office of the University of Alberta**, the **Alberta Research Council** and the **Protein Engineering Network of Centres of Excellence**. Other organizations are in the process of becoming members. Although different in function, these associations represent a willingness on the part of technology transfer professionals to work together to build the infrastructure so necessary to advance the industry.



Oleh S. Hnatiuk
President & CEO



Fiscal Year Statistical Summary

Fiscal Year 1999-2000 Statistical Summary

Disclosures

- University of Calgary	53
- Non-University of Calgary	60
- Total	113
- Previous High Total (1998-99)	77
- Historic Total (1989-2000)	696

Deals

- Deals (Licenses, Options and PDAs ¹)	23
- Historic Total (1989-2000)	336
- Active Licenses (Generating Revenue)	100
- Gross Revenue and Gains ²	\$4,613,171

Company Development³

- Companies Developed with UofC technology	2
- Companies Developed, non-UofC technology	10
- Companies Developed or Assisted 1989-2000	27
With UofC technology	16
With non-UofC technology	11

Intellectual Property Protection⁴

- New Patent Applications Filed	4
- Total Patent Applications Filed	45
- Total Patents Issued	34
U.S. Issued	13
International Issued	21

¹Product Development Agreements - research contracts connected to licensing agreements.

²Gross Revenue and Gains - gross licensing revenue, product development agreements, consulting and contract revenues, miscellaneous revenues and net gains from sale of equity interests.

³Companies which UTI and/or UTI technologies have played a significant role in developing.

⁴Final numbers may increase because of a delay of several months in receiving the official filing certificates or original letters patent from patent offices.

Technology Licensing Overview

The most common route for technology commercialization is licensing. Once intellectual property protection is in place, the potential market of a research discovery is evaluated and licensing is chosen as the most expedient and effective commercialization route, the search begins for the most appropriate licensing partner.

The search may be narrow, in the case of certain biomedical or pharmaceutical discoveries which are of interest to a small number of companies; or wide as is the case with Global Positioning System software which is of interest to a large number of companies.

Licenses may be exclusive (one licensee) or nonexclusive; may be one upfront payment, ongoing royalties or milestone payments based on time or usage. For statistical purposes, licenses which gross under US\$1,000 are not counted.

In Fiscal Year 1999-2000, UTI carried out 23 such agreements, all with University of Calgary technology - seven with the Faculty of Medicine, 13 with the Faculty of Engineering, two with the Faculty of Science and one with the Faculty of Humanities.

UTI ended the fiscal year with **100 active licenses generating revenue**, an increase of 16 over the previous fiscal year.



January 2000 - Business in Calgary Magazine names UTI Inc. and Wi-LAN Inc. two of its "Ten Hot Companies In Calgary."

Technology Licensing Highlights

Licensing of Global Positioning System Software constitutes the majority of UTI's licensing deals. This is not surprising considering the worldwide reputation of University of Calgary geomatics researchers for the depth, quality and usefulness of their discoveries. Licensing highlights of Fiscal Year 1999-2000 included continued interest in FLYKIN™, C3NAV™, MULTINAV™ and HEAD™ GPS software developed by the **Department of Geomatics Engineering** at the UofC Faculty of Engineering. Developers included **Dr. Elizabeth Cannon** and **Dr. Gérard Lachapelle** who is also head of the department. The KINGSPAD™ kinematic inertial GPS software of **Dr. K. P. Schwarz** also received considerable licensing interest in FY 1999-2000. Customers for these products included other geomatics research institutions including ones in Brazil and China, private engineering and communications companies in Canada, the United States and Greece and government departments in the U.S. and Canada including the Canadian Coast Guard.

The transition from stand-alone software to Internet-based applications was demonstrated by the licensing of Geo Eye™, a Java-based GIS application for the web developed by **Dr. Vincent Tao** of the Department of Geomatics Engineering. The licensee is a Calgary-based energy consulting company.

On the biological science side of licensing, the highlight was a license and Product Development Agreement signed by **Agritope, Inc.** of Portland, Oregon, to evaluate and further develop the brassinosteroid discoveries of **Dr. Thomas Back** of the UofC **Department of Chemistry**. Brassinosteroids are naturally-occurring plant compounds which control plant growth and maturity.

FY1999-2000 also saw a licensing agreement signed with **SagaTech Electronics Inc.** of Calgary. The electronics startup licensed the right to manufacture and sell a sleep apnea monitor based on the research of **Dr. John Remmers** of the UofC **Faculty of Medicine**.

The licensing of **Dr. Richard Pon's** technology of Rapid Cleavage of Synthetic DNA or RNA from Solid Phase Supports provides the emerging industry of large scale oligonucleotide synthesis a significant cost-saving opportunity in manufacturing. Oligonucleotides are useful in constructing DNA arrays for pharmacogenomic research and diagnostics as well as for producing gene therapeutics. The technology has been licensed to three biotechnology companies for a variety of uses.

The viral vector model and recombinant protein expression system of **Dr. Kostas Iatrou** of the Department of Medical Biochemistry and **Drs. Leo Behie and Patrick Farrell** of the **Department of Chemical and Petroleum Engineering** was optioned to two U.S. pharmaceutical research corporations and licensed to a third.

Following on from the major licensing deal of the previous fiscal year, **Giardiavax™**, the vaccine which prevents dogs and cats from getting giardia, is now marketed in Canada by **American Home Products** which licensed it through UTI from researchers **Drs. Merle Olson and Doug Morck** of the UofC **Animal Health Unit** and **Dr. Howard Ceri** of the **Department of Biological Sciences**.

Related to licensing is the renewal of the vaccine research agreement between **Dr. Anthony Schryvers** of the UofC Faculty of Medicine's **Department of Microbiology** and Infectious Diseases and **AVENTIS Pasteur**, formerly Pasteur Mérieux, headquartered in France.

Company Creation Overview

University Technologies International Inc.'s company creation and development activities are accomplished on three fronts. In addition to assessing research discoveries for their potential as the basis of a new company or substantially develop or change an existing one, UTI has been increasingly approached to use technology to assist or augment a company or line of business. The third line of activity is the management of the equity UTI holds on behalf of its shareholder, the University of Calgary, in these companies which it creates or develops.

Identifying new technology with company potential is only part of the process. The researcher/inventor is an important part of the equation as well. She or he must commit to being a part of and involved in the commercialization process.

UTI Inc. maintains equity in eight companies including **SYNSORB Biotech Inc.**, **Wi-LAN Inc.** and **Cell-Loc Inc.** which are publicly traded. Managing that equity, particularly in the three publicly-traded companies, is a growing and important part of UTI's business activities.

Gains from the performance of these two companies this past fiscal year enabled UTI to have its best business year ever and was a major factor in UTI being able to make a one time \$900,000 donation to the University of Calgary.



Company Creation Highlights

In keeping with its business goal of focusing on company creation and development, UTI assisted in the development of two companies in Fiscal Year 1999-2000 - **Perm Inc.** and **SYNSORB Biotech Inc.**, both of Calgary.

SYNSORB acquired **Oncolytics Biotech Inc.** which had been spun out of the University of Calgary Faculty of Medicine to commercialize the cancer-fighting human reovirus technology of **Dr. Patrick Lee**. SYNSORB then spun out Oncolytics as a public company raising \$17.5 million in two offerings in 1999-2000. UTI was a founding shareholder of Oncolytics and became a shareholder in SYNSORB when it acquired Oncolytics in April 1999. The Oncolytics public offering in November 1999 followed two private investments totalling \$1.95 million

Perm Inc. is a technology research, development, analysis and services company specializing in petroleum, chemical, environmental and materials engineering. It was started on the UofC campus by **Dr. Apostolos Kantzas**, Associate Professor, **Department of Chemical and Petroleum Engineering**, in association with **Kevin Allsopp**, **Dr. Konstantine Mirotnik** and **Dan Marentette** of the **Tomographic Imaging and Porous Media Laboratory**.

In addition to these major corporate developments, UTI entered into contractual agreements for development with ten companies involving non-UofC technology including companies developing Internet-based data management middleware software, a phase change material for temperature-sensitive shipments, therapeutic lotions and an angioplasty device.

University Medical Discoveries Inc. agreed to fund a research program at **Salpep Biotechnology Inc.** The UTI startup is developing therapeutic applications in sepsis, asthma, allergies, inflammation, stroke and heart disease. Salpep was founded by **Drs. Ron Mathison**, **Graham Moore** and **Joseph Davison** of the Faculty of Medicine, **Department of Physiology and Biophysics**, and **Dr. Dean Befus** of the **University of Alberta**.



Other Highlights of the Year

Fiscal Year 1999-2000, apart from being the most successful in UTI's business history, will be remembered as a year in which the technology commercialization industry in Alberta and Western Canada took some significant steps toward maturity.

One major step was the formation of **WestLink Innovation Network Ltd.** a not-for-profit organization that has been formed to facilitate communication, interaction, collaboration, and technology development and commercialization among the 13 Western Canadian Universities and their affiliated research institutions located in Manitoba, Saskatchewan, Alberta and British Columbia. WestLink, which became operational on May 1, 1999, plans to accelerate the rate of successful commercialization of scientific inventions created by its member organizations through collaboration, skill building and targeted 'gap-filling' programs and services.

The formation of **ATCN**, the Alberta Technology Commercialization Network, in September 1999 created a collaborative organization to augment and enhance technology commercialization within the province. Members of ATCN include AHFMR (Alberta Heritage Foundation for Medical Research,) Alberta Research Council, the Industry Liaison Office of the University of Alberta, PENCE Inc. (Protein Engineering Network of Centres of Excellence) and UTI Inc.

The year started with a number of UTI Tenth Anniversary events. UTI came into being June 1, 1989, and the tenth anniversary included a reception saluting researchers and honouring longtime directors.

In December 1999, UTI signed a formal agreement to commercialize discoveries and inventions from the **University of Lethbridge's** research facilities and departments. Under the terms of the agreement, the University will have full access to UTI's technology commercialization expertise including technology assessment, intellectual property protection and management, commercialization, licensing and company creation. UTI had done commercialization for individual UofL researchers in the past. The first venture under the agreement is **Textfinder™**, software designed to eliminate bookstore gridlock for thousands of students.

Also in December, the Association of University Technology Managers (**AUTM**) released its annual survey of technology commercialization activities across North America. Although based on the previous year's performance, the AUTM survey does give an indication of total commercialization activity and a benchmark of performance. For the second year, the University of Alberta and University of Calgary/UTI ranked one and two in the country and together accounted for more than 40 per cent of commercialization activity in Canada. UTI ranked at or near the top of several survey categories including the number of active, income-yielding licenses (59) and number of licenses and options executed in 1997-1998 (30.)

Other Highlights of the Year (continued)

UTI received support early in the fiscal year to create a technology transfer intern position in engineering and physical sciences. Under the Natural Science and Engineering Research Council (**NSERC**) initiative, patterned on the successful AHFMR technology commercialization intern program, UTI was able to hire University of Calgary Mechanical Engineering graduate **Kevin McIntock** as Marketing Associate, Engineering and Physical Science, to train with Technology Transfer Manager **Geoff Moon**. Kevin joined AHFMR-sponsored intern **Christopher Chow** who was in the second year of his biomedical internship.

UTI also received support under the Canada - Alberta Western Economic Partnership Agreement (**WEPA**) for its technology commercialization activities with emphasis on those focused on company creation.

Statistical highlight of the year was a record 113 disclosures of new technology to UTI. The 53 disclosures from the University of Calgary tied last year's record for that institution. A total of **60 disclosures came from non-UofC sources**, the vast majority of which were from private researchers, inventors and companies.

UTI presented three \$15,000 fellowships in Fiscal Year 1999-2000. These bursaries go to post-graduate or post-doctoral researchers in the faculties of Medicine, Science and Engineering at the University of Calgary.

The Science Fellowship, presented for the first time, was awarded to **Dr. Trond Trondsen**, an Imaging Specialist with the UofC's **Institute for Space Research** in the Faculty of Science. His main research area, under the supervision of **Dr. Leroy L. Cogger**, is optical imaging of the Aurora Borealis (Northern Lights) with an emphasis on ground-based imaging of the aurora's microstructure.

The Engineering Fellowship was awarded to PhD candidate **Naga R. Mudigonda** of the **Department of Electrical and Computer Engineering**. He is working under the supervision of **Dr. Rangaraj M. Rangayyan** on computer-aided methods for the detection and classification of breast tumors in mammographic images to achieve early diagnosis of breast cancer.

Michael Kruhlak was the recipient of the Medicine Fellowship. Supervised by **Dr. David P. Bazett-Jones** of the **Cancer Biology Research Group** in the Department of Biochemistry and Molecular Biology, Faculty of Medicine, his research involves examining how the organization of protein and nucleic acid-based structures in the nucleus of a cell influence fundamental cellular processes which may be mis-regulated in cancer cells.



UTI Staff

Fiscal Year 1999-2000 saw a number of personnel and responsibility changes at UTI.

On January 5, 2000, **Hugh Jones**, formerly UTI's Manager of Business Development, was named Vice President. He will be playing an expanded role in dealing with the vast increase of disclosures from independent inventors. On March 15, 2000, CEO **Oleh Hnatiuk** was named President and CEO.

At UTI's Tenth Anniversary festivities in June 1999, **Hugh Jones**, Financial Administrator **Wendy Porter** and former President **Beverly Sheridan** were honoured for long-term service. All three had been with the company for its first 10 years. Sheridan left the company in December 1999 and Technology Commercialization Manager **Keith Gilchrist** left in January 2000.

Staff List (as of March 31, 2000)

Oleh Hnatiuk, President & CEO
Hugh Jones, Vice President
Kevin McDuffie, Manager, Technology Transfer
Geoff Moon, Manager, Technology Transfer
Wendy Porter, Financial Administrator
Don Morberg, Communications Manager
Helen Shannon, Marketing Research Analyst
Arlene Parsons, Information Associate
Christopher Chow, Marketing Associate
Kevin McLintock, Marketing Associate,
Melanie Newbery, Administrative Assistant
& Corporate Secretary
Iona Fuhrer, Financial Assistant
Sandy De Vos, Administrative Assistant



Christopher Chow and Helen Shannon staff the UTI booth at the annual Medical Products Show at the University of Calgary.

Board of Directors/Advisory Council

Several items of note involving the **Board of Directors** and the **Advisory Council** took place during Fiscal Year 1999-2000.

The most significant of these was **Dr. William Cochrane** assuming the board chairmanship in November 1999. The former President and Vice-Chancellor of the University of Calgary, former Dean of the UofC Faculty of Medicine, former provincial Deputy Minister of Health and former President and CEO of Connaught Laboratories replaced **Brian Felesky QC** who remains on the board and chairs the Venture Capital Committee. At the same time, **C. E. (Chuck) Shultz** became Vice-Chair of the Board of Directors. Dr. Mildred Shaw was replaced as the University of Calgary's General Faculty Council representative on the board in July 1999 by Dr. Hamid Habibi. UTI thanks Dr. Shaw for her contribution during her two year appointment.

The Advisory Council changed dramatically during 1999-2000. The focus of the council changed from general to specific as the board was expanded and members were polled to determine their specific interests in technology commercialization. The Advisory Council members will become more directly involved, using their interests and experience on specific commercialization projects. The council was expanded from 22 members the previous fiscal year to 36 including specialists in engineering, medical devices, finance, biotechnology, academe and management. UTI sincerely thanks retiring Advisory Council members **G. W. Cameron, Wanda Dorosz, Michael A. Grandin, Robert A. Willson** and **Howard Yeager** for their contribution to UTI over their terms.

Board of Directors (as of March 31, 2000)

Chairman of the Board
Dr. William Cochrane

Oleh S. Hnatiuk
Dr. Len Bruton
Richard Elenko
Brian Felesky, QC
Dr. Grant Gall

Dr. Hamid Habibi
William Kaufmann
Leigh Pullen
Chuck Shultz

Peter Tertzakian
Wieland Wettstein
Dr. Keith Winter
Dr. Chan Wirasinghe

Advisory Council (as of March 31, 2000)

Mike Beamish
Bob Brawn
Dr. Robert Church
William Croft
Jack Davis
Larry Fitchner
Robert Gibson
Donald Gilley
Richard Haskayne
Bruce Healy
Brian Hunt
Dr. Tom Keenan

Dr. John Kendall
John Lau
Alvin Libin
Joe Lukacs
Archie MacKinnon
Mike Maher
John Masters
Ken McCready
Robert Mills
Maury Parsons
John Ramsay QC
Doug Reid

Christopher Robb
Bill Robinson
Brent Rusk
Alf Sailer
Dr. Hans van de Sande
Robert Schulz
Richard Shannon
Dr. Eldon Smith
Hugh Stanfield
William Stemp
Don Thurston
Dr. Anne Tyrie



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