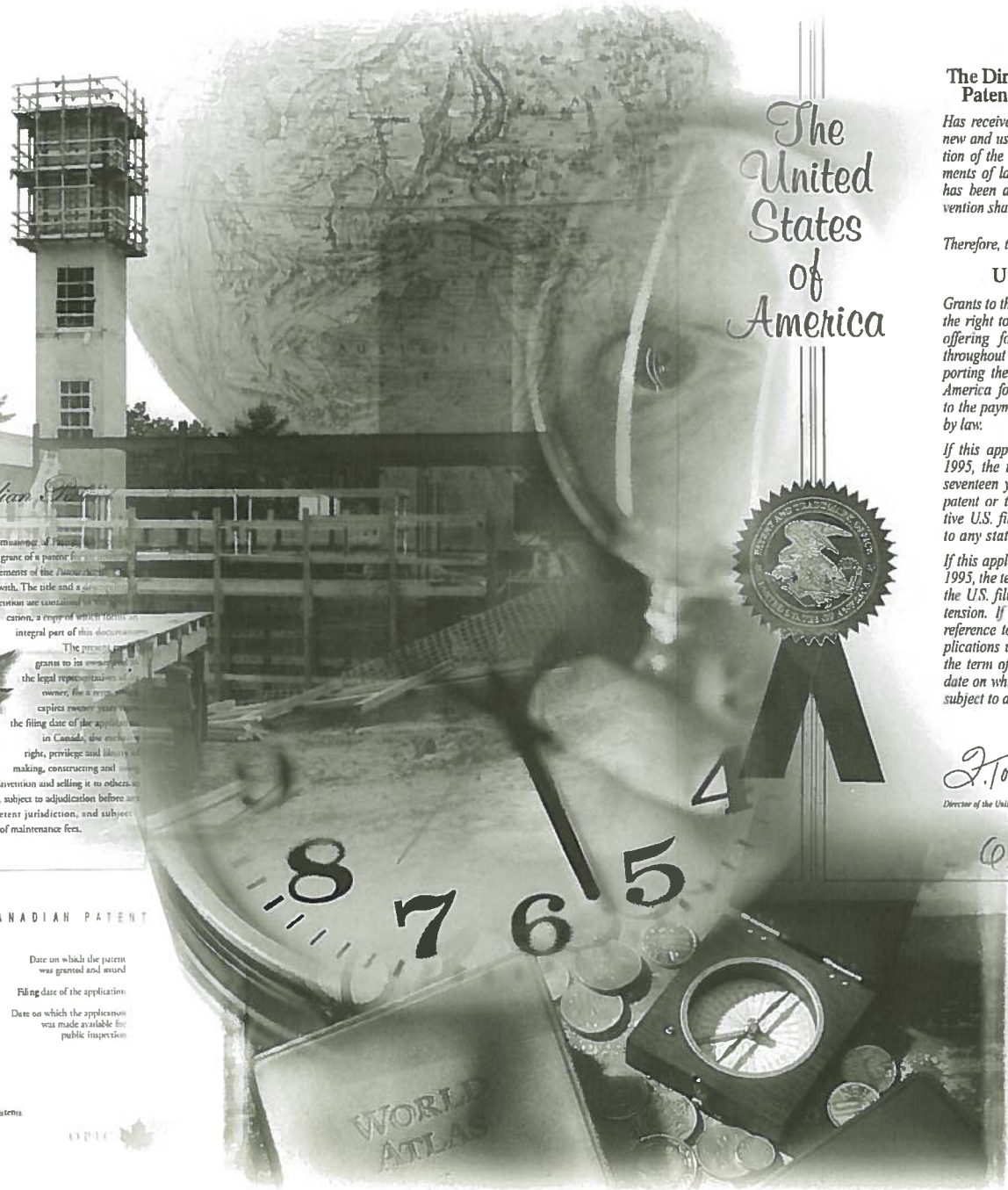
2002 VIDO ANNUAL REPORT

Growth EXPANSION



Office de la propriété intellectuelle du Canada
Un organisme d'Industrie Canada

Canadian Intellectual Property Office
An Agency of Industry Canada

Brevet canadien / Canadian Patent

Le commissaire aux brevets a reçu une demande de délivrance de brevet visant une invention. Ladite requête satisfait aux exigences de la *Loi sur les brevets*. Le titre et la description de l'invention figurent dans le mémoire descriptif dont une copie fait partie intégrante du présent document.

Le présent brevet confère à son titulaire et à ses représentants légaux, pour une période expirant vingt ans à compter de la date du dépôt de la demande au Canada, le droit, la faculté et le privilège exclusif de fabriquer, construire, exploiter et vendre à d'autres, pour qu'ils l'exploitent, l'objet de l'invention, sauf jugement en l'espèce rendu par un tribunal compétent, et sous réserve du paiement des taxes périodiques.

The Commissioner of Patents has received a petition for the grant of a patent for an invention. The requirements of the Patent Act have been complied with. The title and a description of the invention are contained in the specification, a copy of which forms an integral part of this document.

The present patent grants to its owner and the legal representatives of the owner, for a period which expires twenty years from the filing date of the application in Canada, the exclusive right, privilege and liberty of making, constructing and using the invention and selling it to others to be used, subject to adjudication before any court of competent jurisdiction, and subject to the payment of maintenance fees.

BREVET CANADIEN **2,089,753** CANADIAN PATENT

Date à laquelle le brevet a été accordé et délivré	**2001/11/20**	Date on which the patent was granted and issued
Date du dépôt de la demande	**1991/08/22**	Filing date of the application
Date à laquelle la demande est devenue accessible au public pour consultation	**1992/03/05**	Date on which the application was made available for public inspection

Commissaire aux brevets / Commissioner of Patents

Canada

3258 (CIPO 91)01-1

The Director of the United States Patent and Trademark Office

Has received an application for a patent for a new and useful invention. The title and description of the invention are enclosed. The requirements of law have been complied with, and it has been determined that a patent on the invention shall be granted under the law.

Therefore, this

United States Patent

Grants to the person(s) having title to this patent the right to exclude others from making, using, offering for sale, or selling the invention throughout the United States of America or importing the invention into the United States of America for the term set forth below, subject to the payment of maintenance fees as provided by law.

If this application was filed prior to June 8, 1995, the term of this patent is the longer of seventeen years from the date of grant of this patent or twenty years from the earliest effective U.S. filing date of the application, subject to any statutory extension.

If this application was filed on or after June 8, 1995, the term of this patent is twenty years from the U.S. filing date, subject to any statutory extension. If the application contains a specific reference to an earlier filed application or applications under 35 U.S.C. 120, 121 or 365(c), the term of the patent is twenty years from the date on which the earliest application was filed, subject to any statutory extensions.

Director of the United States Patent and Trademark Office

VIDO

VIDO'S MANDATE

To Serve the Canadian Livestock and Poultry Industry by:

Conducting animal health-related research

Communicating livestock management techniques and information

Facilitating the transfer of technology for international commercial development

VIDO'S GOALS

- To serve and assist the economic competitiveness of the livestock industry through research on the common infectious diseases of animals and poultry.
- To provide information leading to safe and effective animal health preventative medicine programs which enhance animal care through improved management and performance of livestock.
- To identify opportunities to utilize VIDO's livestock research to improve human and companion animal health.
- To maximize funding by enhanced visibility and development of innovative communication programs with all organizations that provide support to VIDO.
- To transfer technology to the biological industry to enhance its commercial application for the benefit of the Canadian livestock producers and to provide financial stability to VIDO.
- To manage its financial, educational, and human resource efforts to ensure long-term benefits to the organization's stakeholders.

COMMITMENT BEYOND

Joyce Sander
Manager Human Resources

The past year has seen VIDO accelerate its rate of activity through increased funding, broadening our fields of science, physical expansion and scientific research staff. VIDO's success depends upon our professional, technical and support staff. It is to these individuals that we would like to extend our sincerest personal appreciation and recognition for their hard work and dedication.

VIDO's management team has carefully mapped a strategy that will enable us to meet our research and growth commitments during the next year. The talent and energy needed to realize this strategy is found within every individual employed at VIDO. Together, VIDO will continue to be a world class research organization.

DR. CHRISTOPHER HEDLEY BIGLAND (DVM, DVPH, MSC)

2003 will make the Veterinary Infectious Disease organization's 27th anniversary. Since its inception, VIDO has known the success of making major scientific breakthroughs and the challenge of competing for funding to support ongoing research.

"His vision became both a reality & a success"

Dr. Christopher Hedley Bigland first distinguished himself in 1941 when at the age of 21 he became the youngest graduate of the Ontario Veterinary College. Following graduation he returned to his native city of Calgary to enter private veterinary practice with Dr. J. Gordon Anderson. Together they operated the first animal clinic between Winnipeg and Vancouver.

Dr. Bigland was also one of the first to recognize the need for a veterinary college in Western Canada. With the support of the Alberta veterinary profession, he led a campaign that culminated in the 1963 decision to establish the Western College of Veterinary Medicine in Saskatoon, Saskatchewan. In 1964, he was invited to join the new College as Head of the Department of Veterinary Microbiology, which he proceeded to build into a first class teaching and research department. Dr. Bigland held this position until 1974, the year he began to concentrate his efforts on gaining political and financial support for the establishment of VIDO.

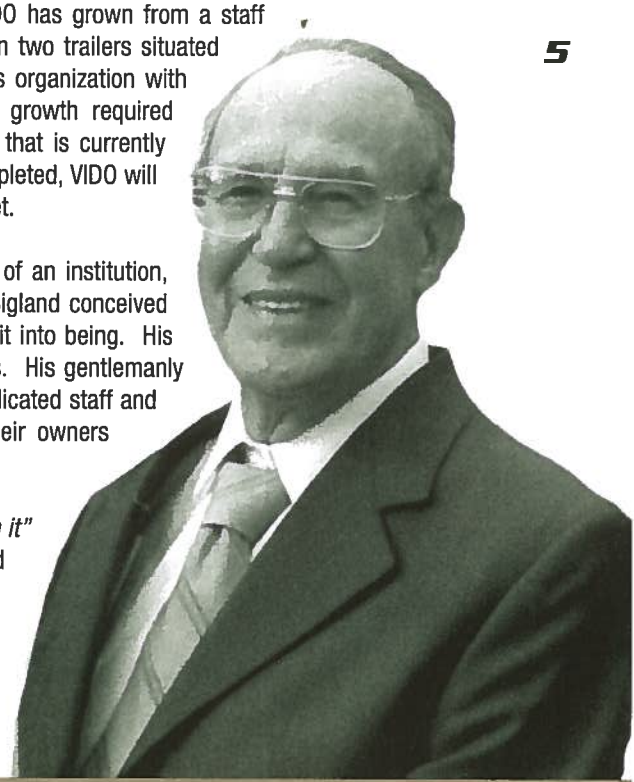
In 1980, Dr. Bigland received the Award of Merit for his achievements at VIDO from the Ontario Veterinary Association. In 1985, he was awarded the MacMillan Laureate in Agriculture by the University of Guelph. This award recognizes the most significant contributions to Canadian Agriculture made over a 5 year period. Together with the University of Saskatchewan, the VIDO Board of Directors founded the C.H. Bigland Fellowship fund to assist with the advanced training of veterinarians. Yet another honour bestowed upon Dr. Bigland. In 2003 he will be inducted into the Saskatchewan Agriculture Hall of Fame.

Dr. Bigland retired from his position with VIDO in the summer of 1984 and now resides in Saskatoon. Dr. Bigland and his wife Eva (deceased) have two daughters, Janet and Margaret, and six grandchildren.

In the 27 years since its inception, VIDO has grown from a staff of five employees temporarily housed in two trailers situated on the University campus to a vigorous organization with over 90 employees. This phenomenal growth required a $17 million expansion of the facility, that is currently underway. Once the construction is completed, VIDO will grow by an additional 51,476 square feet.

The story of VIDO is not only the story of an institution, but is also the story of a man. Chris Bigland conceived the idea of VIDO. His tenacity brought it into being. His scientific curiosity directed its programs. His gentlemanly approach to people drew together a dedicated staff and his genuine interest in animals and their owners guided the project to its completion.

"Bless this ship and all those who sail in it"
Dr. C. Bigland



CHAIR'S REPORT

It is my pleasure to report on the activities of VIDO over the past year. This past year has seen VIDO experience several notable events, many of which mark defining moments in its evolution.

Brad Wildeman CHAIR

The livestock and poultry industries have experienced firsthand, the dramatic effect that occurrences in other regions of the world can have on producers back home in Canada. We have witnessed the effects of terrorism and bio-terrorism; devastating outbreaks of foreign animal disease, both from a biological and economic perspective. We have seen the effect of food-borne illness in the marketplace, and the growing attention of our customers and consumers production practices, the use of antimicrobial medications, and the effect they may have on human health.

Fortunately, it was exactly for these reasons that VIDO was originally envisioned, and why it has received support from all aspects of the livestock and poultry industries over the past years. Because of the vision of both management and past Board participation, the activities of VIDO have been guided toward research activities that provide solutions to challenges now being experienced by our collective industries.

Several of these solutions are now being tested at various levels in the pathway towards commercialization. Many of these appear very promising in addressing the issues we face today. It is through the attitude of collaboration and cooperation with other industry players that has allowed VIDO to contribute on such a meaningful scale to our sustainability.

Peter Schuld VICE CHAIR

The past successes of VIDO have resulted in two exciting new opportunities for the future growth of VIDO's research capacity.

Firstly, the Government of Canada, through the Canada Foundation for Innovation, and in collaboration with Provinces of Alberta and Saskatchewan, has provided funding of $17.3 million to expand VIDO's physical infrastructure and to provide additional research funding. This will allow for an increase of 51,476 square feet of research space and an additional 61 research positions to increase our ability to address new challenges even better than in the past.

Secondly, during the analysis of research findings at VIDO, as well as at other research institutions throughout the world, aided by the development of new diagnostic technologies such as genomic science, it has become increasingly apparent that diseases occurring in animals are often similar to diseases in humans. This holds the hope that those solutions found to eradicate a disease in one species can provide the clues to eradication in other species as well. For this reason, and because of the expertise that VIDO already has in utilizing new platform and genetic technologies, the Organization has now entered into strategic research arrangements targeted toward finding solutions for human medicine. This is a new direction for VIDO, but it is not viewed as a departure from livestock and poultry health research, but rather as a synergistic approach to exploring new frontiers that can benefit both humans and animals.

The future of VIDO looks very promising. It continues to fulfill its mandate to the industry it was envisioned to serve, but in new and exciting ways. Through the continued cooperation and shared vision of the Board and management, and through the continued commitment of the research team, VIDO will continue as an important asset to the Province, the University, and to the entire industry.

VIDO

DIRECTOR'S REPORT

Lorne Babiuk **DIRECTOR**

The past decade has seen both an acceleration of discoveries in all fields of science, as well as recognition for the need to partner with diverse disciplines to capitalize on the advantages of multidisciplinary research. This type of partnering will ensure the advances in research are translated into commercially viable products. Although acceleration of discoveries and competitiveness through partnerships might sound like an oxymoron, partnerships clearly increase productivity. Therefore, those who partner are more successful and, more competitive than the organizations that do not partner.

Throughout its history, VIDO has been an organization that has looked for opportunities to partner and lever the resources available to it. Indeed, VIDO has become known for its ability to leverage its resources for the benefit of VIDO and its partners. The reasons for partnering are many fold: 1) Expanded expertise: No one organization can afford to have resident experts in all the complementary fields required for successful completion of many multidisciplinary projects, 2) Expand ideas/concepts: Exposure to individuals from different environments and expertise allows VIDO scientists with the opportunity to fine-tune their own ideas and explore new concepts. This makes any research team more competitive. 3) Expand funding opportunities: Expanded concepts and well thought-out ideas make scientists more attractive to granting agencies. Currently, a number of agencies require collaboration between institutions and even countries. VIDO's network of collaborations is serving us well in this arena. 4) Access to equipment/techniques: Equipment is not only extremely expensive, but often requires full-time dedicated expertise to operate and interpret the resulting data. No one organization can afford to maintain a complete infrastructure for only occasional use. Thus, VIDO has established linkages with collaborators that have a common interest and have the equipment and expertise VIDO cannot afford. 5) Recruitment and trainee placement: In today's knowledge-based economy, competition for highly trained personnel is global. By collaborating with the international community, we can "pre-screen" potential employees and, more importantly, ensure that they "fit" with the team culture at VIDO. Furthermore, our trainees have exposure to collaborators resulting in opportunities for them to further their careers. As a result, we have alumni placed in key strategic organizations which further enhances our collaborations.

DIRECTOR'S REPORT CONTINUED...

VIDO's core competency of high quality discovery research in the area of infectious disease pathogenesis and vaccine development benefits the livestock and biopharmaceutical industry. It is our philosophy that no matter how elegant the discovery research is, without partnerships with companies that can complete the development and marketing of this research, all of our efforts would be in vain. Thus, VIDO has established a large number of research and licensing agreements with companies who have the ability and resources to complete the development and commercialization of VIDO's research. ***Figure 1*** demonstrates the number of research and licensing agreements VIDO currently enjoys. These agreements encompass small start-up companies with 10-15 employees, up to multinational companies with thousands of employees. Each of these relationships are unique. For example, some of our agreements are strictly research agreements, others strictly licensing agreements, with some being a combination of where the research agreement is linked with an option to license the technology once we have completed the research. This potpourri of agreements allows VIDO scientists to be involved in all aspects of the research including understanding the commercialization pathway. These types of agreements are not only important to VIDO, since it provides us with funding and knowledge of commercial needs, but also of benefit to commercial companies since they have access to novel technology and can reduce their risk of involvement in research. Such a blend of activities provides more stable funding to VIDO and, more importantly, ensures VIDO scientists are conducting cutting edge science that has commercial relevance. An example of a multi-stakeholder collaboration is a $27 million Genome Canada grant awarded to VIDO this year. This proposal involves scientists at VIDO, the University of British Columbia, Simon Fraser University, University of Calgary, the National Research Council, and two companies, Inimex (a start-up company in Vancouver), and Pyxis Genomics (an Illinois company who has located their Canadian office in Saskatoon). This project is solidifying VIDO's foundation in the exciting field of genomics and its application to both animal and human health. The recent sequencing of genomes of both pathogens and host is revolutionizing how we address diseases at the molecular level. VIDO's involvement in this exciting technology began over a decade ago, but has recently been accelerated by the Genome Canada grant.

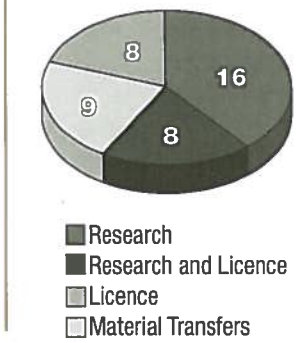


Figure 1

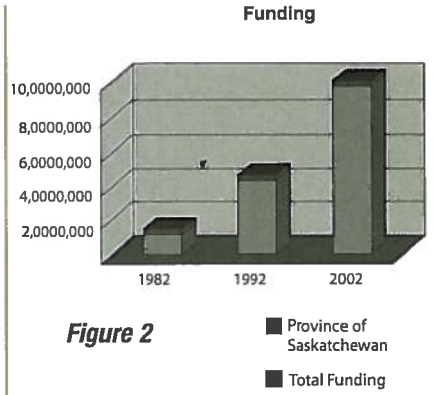


Figure 2

The research and licensing agreements have allowed VIDO to develop strong linkages with partners demonstrating that we do not only do quality science, but can achieve the agreed upon milestones. These relationships are critical for future agreements and collaborations.

The need for partnerships is further demonstrated by the reduction in funding from the Province of Saskatchewan. VIDO has never in its history had any guaranteed funding from any source. Since most grants in Canada do not allow the use of grant funds for professional salaries, Provincial funding is critical for VIDO's survival. Unfortunately, as seen in ***Figure 2***, Provincial funding from the Government of Saskatchewan to VIDO has not only fallen dramatically in real dollars over the last 10 years, but it currently makes up less than 3% of VIDO's budget. Clearly, this is of concern and efforts continue to be made to demonstrate to the

Government of Saskatchewan the importance of Provincial funding for retention and recruitment of quality scientists needed to maintain world leadership in this very competitive field. The only way we have been able to maintain such high quality staff is to develop these partnerships and linkages with academics, industry, and governments from around the world.

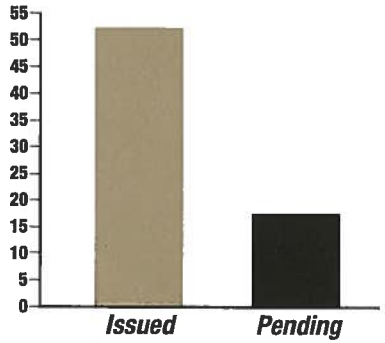


Figure 3

In today's world, patents and protection of intellectual property is the currency of the industry. Without patent protection, industry's competitive advantage is lost. To remain competitive, VIDO has invested significantly in patents, which are currently providing rewards to VIDO in licensing agreements and revenue. We anticipate this will increase in the future. ***Figure 3*** demonstrates VIDO's patent portfolio. Currently, we hold 52 USA patents. Many of these patents are also awarded in other countries. Thus, our patent portfolio is becoming very extensive. In addition to the issued patents, VIDO's 15 pending patents will ensure VIDO continues to maintain its edge in technology protection. In addition to patents having a direct value, our experience in protecting intellectual property is critical for our future success and is one of the reasons companies partner with VIDO.

This year we began the construction of a new wing to accommodate additional scientists and new equipment required for our expanded research projects. The $17.3 million expansion (***Figure 4***) will add 51,476 sq. ft. of new laboratory and office space. A conference centre is being added to the basement that will allow us to hold international conferences and further expose our researchers to international scientists and vice versa. These interactions should lead to further opportunities for collaboration. The expansion will provide equipment and space to increase our scientific complement to 140 people. The new facilities will allow us to both attract and retain Canadian scientists. This will not only enhance our ability to tackle more complex projects, but will allow a more multidisciplinary approach to discovery and research.

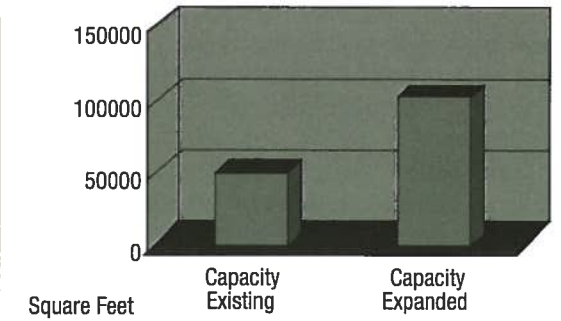


Figure 4

The Canadian government has established an aggressive innovation agenda to move Canada into the top tier of research-intensive countries over the next decade. We applaud this vision and are doing our part to help Canada achieve this goal. The only way we can compete in a knowledge-based economy is to have highly skilled workers. As part of VIDO's current complement of 100 researchers, 19 of these are registered in graduate training programs (***Table 1***). These highly skilled trainees will be critical to fill the projected needs of academia, government, and industry if Canada hopes to achieve its goal of increased productivity and enhanced quality of life for all Canadians. This complement of scientists will continue to grow as we increase our staff by 40 people over the next year.

TABLE 1

VIDO's Current Scientific Complement
39 PhD scientists • 19 grad student • 6 visiting scientists

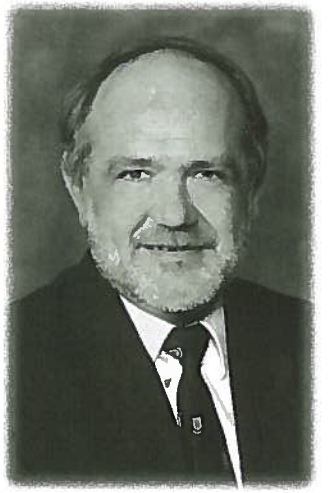
RESEARCH REPORT

The infectious disease research community has seen many changes over the past five years, including the widespread application of genomic technologies to the study of host-pathogen interactions as well as the establishment of linkages between various life sciences sectors (eg. human and animal health). This has led to increased competition, not only in the research areas themselves, but also for research funding. VIDO has always welcomed competition as it invariably has led to increased external collaboration which enhances our ability to meet our objectives as well as the needs of our stakeholders. Such collaborations include research networks, national research partnerships and international programs. These interactions are important as they are a source of new ideas and technologies as well as novel applications for existing VIDO technologies. This collaborative culture has also positioned VIDO to take part in the increasing number of partnership programs being established by NSERC, CIHR, Genome Canada and others.

VIDO has regularly restructured its research programs to deal with changes in the external environment and during the past year we have changed from a discipline-based structure to one based on project areas. This was done to enhance internal collaborations as well as facilitate administration of research programs. Our new research divisions are as follows:

Vaccine Development
Vaccine Formulation and Delivery
Pathogenomics
Nucleic Acid Technologies
Vectored Vaccines
Clinical Research and Epidemiology
Structural Chemistry and Genomic Services

We believe that a structure based upon similar objectives will enhance our ability to not only meet our short and long term goals, but also foster interactions between programs. This is especially true for technologies which are platforms for all research programs in the Organization, two of which include genomics and vaccine formulation.



Andrew Potter
ASSOCIATE DIRECTOR

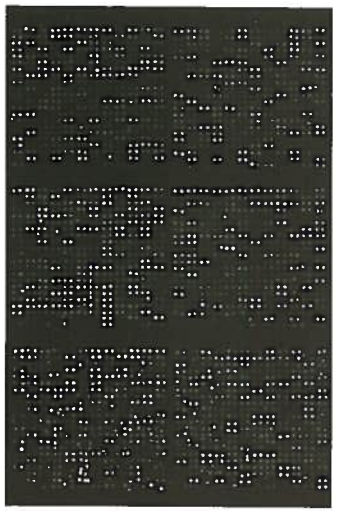
GENOMICS

VIDO has been active in the field of genomics for the past 15 years through the sequencing of small pathogen genomes as well as functional studies. During the past year, VIDO and its collaborators at the University of British Columbia, Simon Fraser University, Inimex Pharmaceuticals and Pyxis Genomics were awarded $27 Million by Genome Canada to study the functional genomics of mucosal immunity. This has allowed us to expand our genomics-related research significantly, including the addition of five new scientific positions as well as several technical and training positions. This project involves a functional analysis of the immune responses which occur following infection at mucosal surfaces (ie. those of the respiratory and gastrointestinal tracts) in cattle and poultry (VIDO/Pyxis) as well as in humans (UBC/Inimex). In addition, the project involves a significant component targeted at the study of microbial functional genomics, especially those pathogens which can be transmitted from animals to humans. Researchers at Simon Fraser University will be developing the bioinformatics tools necessary to complete this work. This research is unique in that it will permit an analysis of immune responses in natural disease models as well as comparative studies between animals and humans. It is an excellent example of how competition and change in the biological sciences has led to a significant enhancement of VIDO's research programs through our collaborative philosophy.

RESEARCH REPORT CONTINUED...

VACCINE FORMULATION AND DELIVERY

One of our new research groups deals with vaccine formulation and delivery, activities which were formerly part of several different research programs. While the identification of vaccine antigens has progressed significantly over the past 15 years, many vaccines are still formulated and delivered to the subject using century-old technology, usually a needle and syringe. We believe that the true potential of vaccination as a disease control strategy will only be reached once the technology for the formulation and delivery of vaccines catches up with antigen identification and production technologies. Thus, we have specifically targeted collaboration with groups who posses novel adjuvants and immune modulators that can be used to stimulate local immunity at mucosal surfaces as well as the magnitude of systemic immune responses. The ability of one such adjuvant, produced by one of our partners, to stimulate immune responses is shown in ***Figure 2***. It can be seen that this adjuvant is capable of increasing not only the magnitude of immune responses relative to alum (a commonly-used adjuvant), but also the quality of the response as illustrated by a more balanced production of IgG1 and IgG2A. Dr. George Mutwiri and his group are currently optimizing a number of such compounds for eventual use in both animals and humans. Furthermore, these vaccines will ultimately be delivered using non-invasive delivery methods such as the intranasal or oral routes.



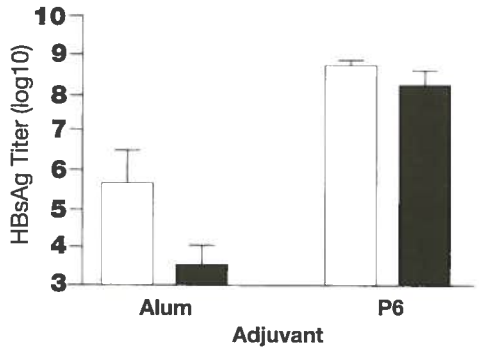
Microrray analysis of bovine intestinal cell gene expression. The different shades represent relative changes in the level of gene expression

Figure 1

One high risk group for infectious disease is the newborn and VIDO has worked throughout its history on infections of the neonate, such as calf scours. Our formulation and delivery team is currently working in partnership with a group of Canadian medical researchers to enhance immunity in children using some of VIDO's mucosal vaccination strategies. This has been carried out by either direct immunization of the child or by immunization of mothers with subsequent passive transfer of immunity. Dr. Volker Gerdts is heading this effort at VIDO, using porcine models to monitor immune responses to human vaccines, focusing initially on pertussis. This is an exciting area of research for us, as it involves all aspects of vaccinology from design and delivery to sociological issues surrounding vaccine use. In addition, this is VIDO's second project dealing primarily with human disease.

We have also moved into two other areas of research by collaborating with other University of Saskatchewan researchers. Dr. Hugh Townsend of the Western College of Veterinary Medicine has joined VIDO to further his work on equine vaccines, an area in which VIDO has not been active in the past. This will offer yet another avenue for some of VIDO's technology to be applied in the animal health field. In addition, Dr. Scott Napper of the Department of Biochemistry is working on protein structure and function, an area which is critical to our future success as we move from ***(Figure 1)*** genomics into the proteomics field. Such partnerships with other University of Saskatchewan departments will enable us to take advantage of the Canadian Light Source to further our research in rational vaccine design.

The previously mentioned projects represent areas which have changed significantly over the past year through external collaborations. All of VIDO's other research programs continue to progress with the same collaborative philosophy and we look forward to continuing such efforts during the coming year.



Immune reponses to hepatitis B surface antigen following immunization with vaccines formulated in a conventional adjuvant (Alum) or a novel immunostimulatory compound (P6).
Open bars represent antibodies of the IgG1 isotype; closed bars represent the IgG2a isotype

Figure 2

PRODUCER RELATIONS

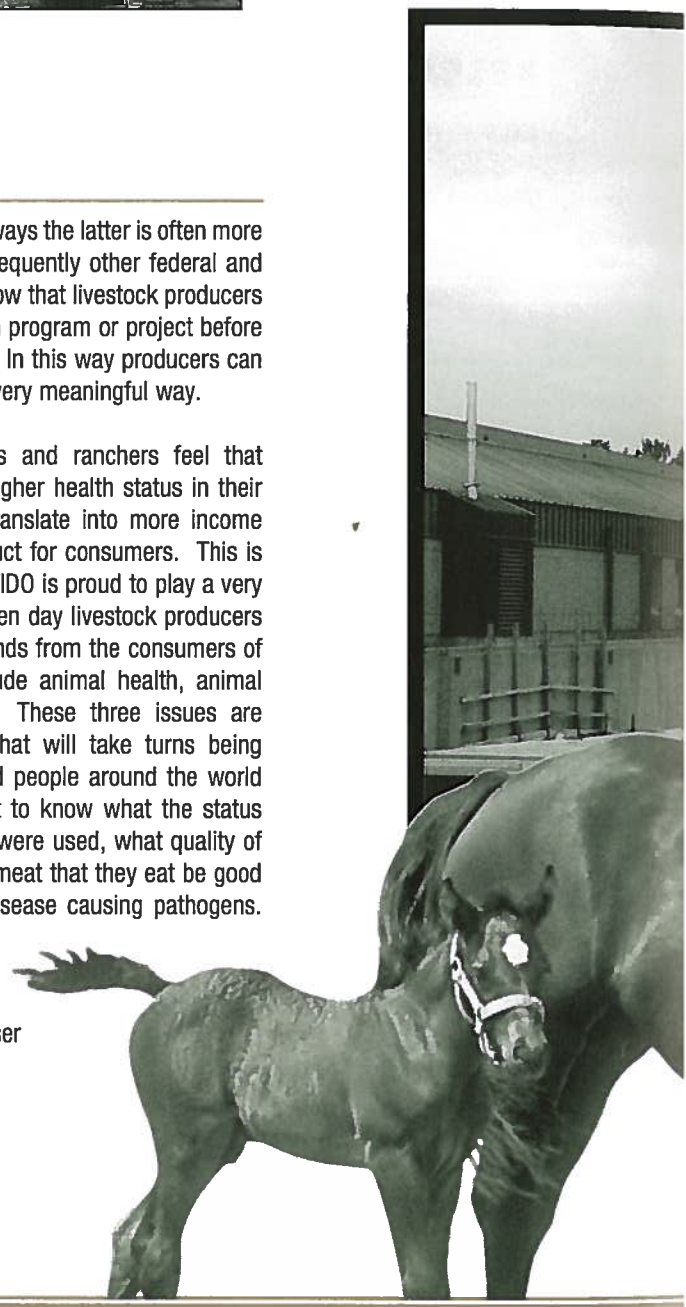
VIDO has had another record breaking year and so has Producer Relations. Competition for very limited funding dollars continues to intensify every year. Our best hope is to get the confidence, endorsement and collaboration of key industry leaders. This can only be accomplished if they understand what we are doing and have a high level of trust in the VIDO staff member delivering that message to them. The trust factor is established over time with continued personal contact.

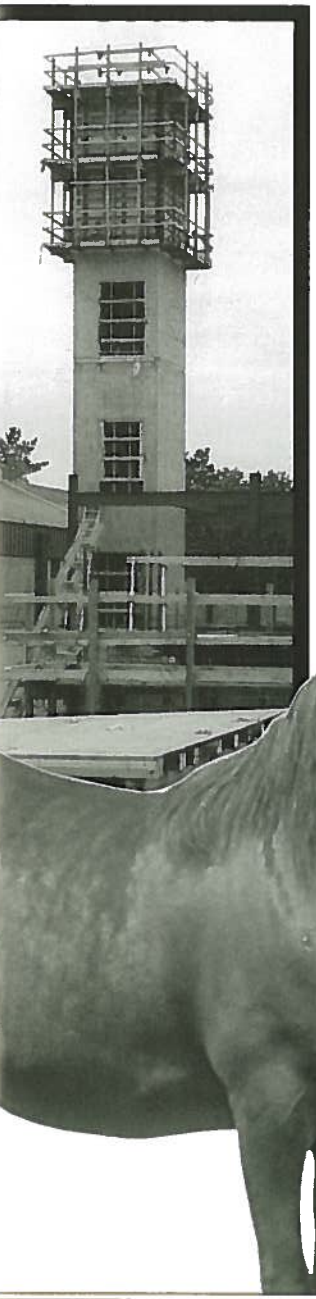
Stuart Bond
ASSOCIATE DIRECTOR

Extensive travel to our four key commodity groups (beef, dairy, swine and poultry) continues to be a key job requirement. Attendance and support at annual meetings at both the provincial and the national level is desirable. Getting the VIDO story out to producers and government attendees at these meetings is important. Sometimes this takes the form of formal presentations to the general meeting and at other times to their respective research committees. Also, one on one conversations with key industry people can work to our advantage.

The two fundamental goals are funding from producers and endorsement of our research. In many ways the latter is often more important to VIDO than the former. Frequently other federal and provincial granting agencies want to know that livestock producers are on side with a research program or project before they commit their funding. In this way producers can collaborate with VIDO in a very meaningful way.

Understandably, if farmers and ranchers feel that our work will result in a higher health status in their herd/flock then this will translate into more income for them and a safer product for consumers. This is a win – win situation and VIDO is proud to play a very important role. On any given day livestock producers are bombarded with demands from the consumers of their commodity that include animal health, animal welfare and food safety. These three issues are "top of mind" concerns that will take turns being the number one issue. Canadians and people around the world where our products are exported want to know what the status of our animals was; what medications were used, what quality of life did the animals enjoy, and will the meat that they eat be good nutritionally for them and safe from disease causing pathogens. Today the eating experience for many also includes the concerns mentioned above. Well informed livestock producers have their eye on the end user





PRODUCER RELATIONS CONTINUED...

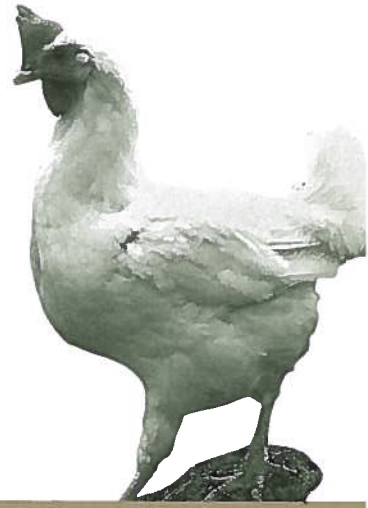
of their product as never before. They understand the importance that surrounds a good eating experience are issues that if allowed to linger unattended, places the future of their commodity and livelihood at risk.

VIDO also has a responsibility in technology transfer back through the farm gate. This is accomplished with personal contact previously mentioned and backed up by timely news releases throughout the year that tell the good news stories that abound at VIDO with its 100+ scientists and technicians. Progress reports informing the public about the advances made in a given infectious disease vaccine or one of our exciting platform technologies are highly sought after. In addition to this there are two volunteer technology transfer groups in beef and swine. These two groups operate independently of one another and in addition to VIDO staff members are predominantly made up of industry leaders from across Canada comprised of producers, animal nutritionists, agricultural engineers and veterinarians to mention only a few.

Currently the Swine Tech Group's project is "Proper Design and Management of Large Group Housing (LGH) for feeder pigs." This timely project is scheduled for completion in 2003 and then they will move on to LGH in the sow barn. Similarly the Beef Tech Group's project is "Proper Protocols Surrounding a Herd Health Vaccination Program". It is hoped that their work will foster a much closer and better informed cattleman/veterinarian relationship in this vital and potentially costly area. Funding for both of these groups comes from their respective provincial commodity organizations from Ontario through to British Columbia – a strong message of endorsement and encouragement to say the least!

To conclude, consistency and continuity is the approach we are aiming for in the competitive world of research. *WWW.VIDO.ORG* (our website) anchors all of our communications to scientists, producers and the public at large. News letters (The VIDO Report) three times each year and a minimum of a dozen news releases to back up what we can do in person can also be found on the VIDO website. This has turned out to be a strategy that is a winning approach to the Communications and Technology transfer field.

Yes, it has been a "Very Good Year"!



FINANCIAL SECTION

financial section

Carol Martel
MANAGER
FINANCIAL OPERATIONS

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Deloitte & Touche

AUDITORS' REPORT

**TO THE BOARD OF DIRECTORS OF THE
VETERINARY INFECTIOUS DISEASE ORGANIZATION (VIDO),
UNIVERSITY OF SASKATCHEWAN**

We have audited the combined balance sheet of the Veterinary Infectious Disease Organization (VIDO), University of Saskatchewan as at September 30, 2002 and the statements of income, expenditure and fund balance (Research Trust, Dr. Alfred Savage VIDO Research Fund and Capital Trust) and combined statement of cash flows for the year then ended. These financial statements are the responsibility of the Organization's management. Our responsibility is to express an opinion on these financial statements based on our audit.

We conducted our audit in accordance with Canadian generally accepted auditing standards. Those standards require that we plan and perform an audit to obtain reasonable assurance whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation.

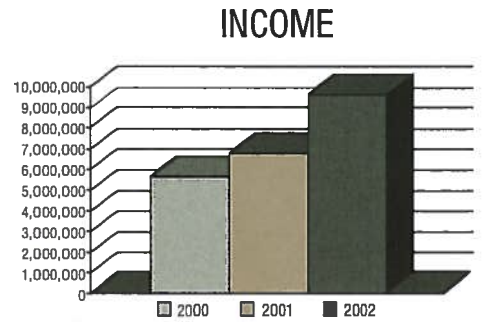
In our opinion, these financial statements present fairly, in all material respects, the financial position of the Organization as at September 30, 2002 and the results of its operations and its cash flows for the year then ended in accordance with Canadian generally accepted accounting principles.

Deloitte & Touche LLP

Chartered Accountants

Saskatoon, Canada
February 7, 2003

Deloitte Touche Tohmatsu



VETERINARY INFECTIOUS DISEASE ORGANIZATION (VIDO), UNIVERSITY OF SASKATCHEWAN

RESEARCH TRUST - STATEMENT OF INCOME, EXPENDITURE AND FUND BALANCE
YEAR ENDED SEPTEMBER 30, 2002

	2002	2001
INCOME		
Donations and unconditional grants (Schedule 1)	$ **359,784**	$ 326,053
Conditional grants (Schedule 2)	**4,939,191**	3,472,379
Amortization of Conditional grants - Building expansion (Note 6)	**257,302**	2,842
Contract research		
Department of Western Economic Diversification	**(3,631)**	24,575
Commercial	**1,719,001**	1,659,401
Government of the Province of Saskatchewan		
-Saskatchewan Department of Agriculture, Food and Rural Revitalization	**300,000**	275,000
-Saskatchewan Industry and Resources	**731,106**	250,000
Gift-in-kind	**187,189**	-
Licensing fees	**43,209**	11,026
Royalties and dividends	**414,503**	357,015
Investment income	**58,237**	76,157
Animal sales	**489,556**	193,441
University of Saskatchewan (Schedule 2)	**145,670**	122,638
	9,641,117	6,770,527

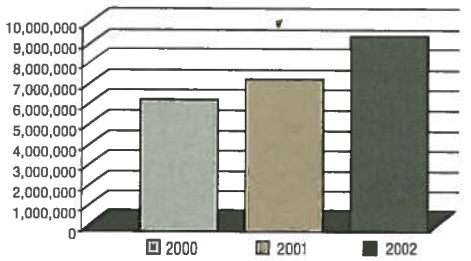
See accompanying notes

VETERINARY INFECTIOUS DISEASE ORGANIZATION (VIDO), UNIVERSITY OF SASKATCHEWAN

RESEARCH TRUST - STATEMENT OF INCOME, EXPENDITURE AND FUND BALANCE
YEAR ENDED SEPTEMBER 30, 2002

	2002	2001
EXPENDITURE		
Salaries and benefits	**4,381,498**	3,774,722
Materials and supplies	**2,483,773**	1,367,007
Animal services	**315,561**	444,739
Equipment repair and service agreements	**325,048**	80,476
Sub-contract research (Note 8)	**(18,293)**	87,593
Travel and recruiting	**250,311**	167,456
Patents and legal fees	**186,489**	133,918
Amortization	**524,554**	314,385
Other expenditures (Note 9)	**404,670**	107,580
	8,853,611	6,477,876
EXCESS OF INCOME OVER EXPENDITURE	**787,506**	292,651
FUND BALANCE, BEGINNING OF YEAR	**5,187,426**	4,989,018
	5,974,932	5,281,669
TRANSFER TO CAPITAL TRUST, NET OF ASSET PURCHASES	**(241,095)**	(94,243)
FUND BALANCE, END OF YEAR	**$ 5,733,837**	$ 5,187,426

EXPENDITURES



See accompanying notes

VETERINARY INFECTIOUS DISEASE ORGANIZATION (VIDO),
UNIVERSITY OF SASKATCHEWAN

DR. ALFRED SAVAGE VIDO RESEARCH FUND
STATEMENT OF INCOME, EXPENDITURE AND FUND BALANCE
YEAR ENDED SEPTEMBER 30, 2002

	2002			2001		
	Restricted for Endowment Purposes	**Expendable Funds**	**TOTAL**	Restricted for Endowment Purposes	Expendable Funds	TOTAL
EXCESS OF INCOME OVER EXPENDITURE						
Investment (Loss) Earnings	**$ (1,908)**	**$ 1,409**	**$ (499)**	$ (4,915)	$ 4,155	$ (760)
FUND BALANCE, BEGINNING OF YEAR	**63,692**	**26,240**	**89,932**	68,607	22,085	90,692
FUND BALANCE, END OF YEAR	**$ 61,784**	**$ 27,649**	**$ 89,433**	$ 63,692	$ 26,240	$ 89,932

See accompanying notes

VETERINARY INFECTIOUS DISEASE ORGANIZATION (VIDO),
UNIVERSITY OF SASKATCHEWAN

CAPITAL TRUST

STATEMENT OF INCOME, EXPENDITURE AND FUND BALANCE

YEAR ENDED SEPTEMBER 30, 2002

	2002	2001
EXCESS OF INCOME OVER EXPENDITURE		
Investment earnings	**$ 24,651**	$ 28,119
FUND BALANCE, BEGINNING OF YEAR	**893,659**	771,297
	918,310	799,416
Purchase of Capital Assets	**(8,905)**	(105,757)
Transfer from Research Trust	**250,000**	200,000
	241,095	94,243
FUND BALANCE, END OF YEAR	**$ 1,159,405**	$ 893,659

See accompanying notes

VETERINARY INFECTIOUS DISEASE ORGANIZATION (VIDO), UNIVERSITY OF SASKATCHEWAN

COMBINED BALANCE SHEET
AS AT SEPTEMBER 30, 2002

ASSETS	2002	2001
CURRENT ASSETS		
Funds held - University of Saskatchewan	$ 2,745,249	$ 1,893,961
Due from University of Saskatchewan - operating fund	3,903,285	4,903,752
Accounts receivable (Note 3)	677,478	303,345
Inventories (Note 4)	152,781	290,862
	7,478,793	7,391,920
INVESTMENTS	842,929	834,736
CAPITAL ASSETS (Note 5)	7,552,433	3,363,618
	$ 15,874,155	$ 11,590,274

See accompanying notes

VETERINARY INFECTIOUS DISEASE ORGANIZATION (VIDO),
UNIVERSITY OF SASKATCHEWAN

COMBINED BALANCE SHEET
AS AT SEPTEMBER 30, 2002

LIABILITIES	2002	2001
CURRENT LIABILITIES		
Accounts payable	**$ 11,800**	$ 6,600
Accrued vacation pay	**375,905**	254,031
Unearned grants (Schedule 2)	**1,372,373**	1,382,171
	1,760,078	1,642,802
UNEARNED GRANTS - BUILDING EXPANSION (Note 6)	**7,131,402**	3,776,455
	8,891,480	5,419,257
EQUITY		
RESEARCH TRUST	**$ 5,733,837**	$ 5,187,426
DR. ALFRED SAVAGE VIDO RESEARCH FUND	**89,433**	89,932
CAPITAL TRUST	**1,159,405**	893,659
	6,982,675	6,171,017
	$ 15,874,155	$ 11,590,274

APPROVED BY THE BOARD:

Brad Wildeman Director

Laura M. Kennedy Trustee

See accompanying notes

VETERINARY INFECTIOUS DISEASE ORGANIZATION (VIDO),
UNIVERSITY OF SASKATCHEWAN

COMBINED STATEMENT OF CASH FLOWS
YEAR ENDED SEPTEMBER 30, 2002

	2002	2001
CASH FLOWS FROM (USED IN) OPERATING ACTIVITIES		
Cash received from Livestock industry	$ **343,184**	$ 306,953
Cash received from Provincial Governments and Individuals	**16,600**	19,100
Cash received from Conditional grants	**4,494,798**	3,503,865
Cash received as Gift in Kind	**187,189**	
Cash received from Contract research	**2,757,726**	2,233,976
Cash received from Royalties, licensing and dividends	**457,712**	368,041
Cash received from University of Saskatchewan	**195,043**	121,563
Interest income received for operating purposes	**58,237**	76,157
Cash paid for Salaries and benefits	**(4,254,424)**	(3,744,756)
Cash paid for Materials, supplies and sub-contractors	**(2,490,746)**	(1,456,584)
Cash paid for Patent and legal costs	**(186,489)**	(133,918)
Cash paid for Animal services, net of animal sales	**337,342**	(391,099)
Cash paid for Other expenditures	**(1,061,186)**	(353,254)
	854,986	550,044
Interest earned on Dr. Alfred Savage VIDO Research Fund	**1,409**	4,155
Net cash generated through operating activities	**856,395**	554,199

See accompanying notes

VETERINARY INFECTIOUS DISEASE ORGANIZATION (VIDO),
UNIVERSITY OF SASKATCHEWAN

COMBINED STATEMENT OF CASH FLOWS
YEAR ENDED SEPTEMBER 30, 2002

	2002	2001
CASH FLOWS USED IN INVESTING ACTIVITIES		
Decrease in University of Saskatchewan investment pool	**(8,193)**	(652)
Purchase of Capital Assets from Capital Trust	**(8,905)**	(105,757)
Purchase of Capital Assets from Research Trust, net of disposals	**(198,910)**	(94,958)
Purchase of Capital Assets from Research Trust-Building Expansion funds	**(4,424,397)**	(190,113)
Net cash used in investing activities	**(4,640,405)**	(391,480)
CASH FLOWS FROM (USED IN) FINANCING ACTIVITIES		
Funds received for building expansion - Research Trust	**3,573,918**	3,779,297
Decrease in Dr. Alfred Savage VIDO Research Fund investments	**(1,908)**	(4,915)
Interest income received on Capital Trust Funds	**24,490**	28,607
Interest earned on building expansion funds	**38,331**	-
Net cash provided by financing activities	**3,634,831**	3,802,989
NET (DECREASE) INCREASE IN CASH HELD	**(149,179)**	3,965,708
CASH, BEGINNING OF YEAR	**6,797,713**	2,832,005
CASH, END OF YEAR	**6,648,534**	6,797,713
Funds Held - University of Saskatchewan	**2,745,249**	1,893,961
Due from University of Saskatchewan - operating fund	**3,903,285**	4,903,752
	$ 6,648,534	$ 6,797,713

See accompanying notes

VETERINARY INFECTIOUS DISEASE ORGANIZATION (VIDO), UNIVERSITY OF SASKATCHEWAN
NOTES TO THE FINANCIAL STATEMENTS
SEPTEMBER 30, 2002

1. ESTABLISHING AGREEMENT

The Veterinary Infectious Disease Organization (VIDO) was established by an Agreement dated August 11, 1975 between the Devonian Foundation of Calgary, Alberta, the Province of Alberta, the Province of Saskatchewan and the University of Saskatchewan to conduct research on infectious diseases of food producing animals.

Effective April 1, 1980 the above Agreement was replaced by a Constitution which provides for a Board of Directors to assume the responsibilities formerly performed by the Board of Advisors and the Governing Committee.

2. SIGNIFICANT ACCOUNTING POLICIES

These financial statements have been prepared in accordance with generally accepted accounting principles which include the following policies:

FUND ACCOUNTING

VIDO follows the deferral method of accounting for contributions and grants to each of its funds. VIDO classifies its funds by purpose and objective as follows:

The Research Trust fund consists of revenue and expenditures related to VIDO's program delivery and administrative activities. This may also include funds raised specifically for the building expansion and for the purchase of assets through grants.

The Capital Trust fund consists of grants, investment earnings and authorized transfers from the Research Trust fund and Dr. Alfred Savage VIDO Research Fund to be used for the purpose of acquiring capital assets approved by the Board of Directors.

The Dr. Alfred Savage VIDO Research fund was approved as an endowment for VIDO until 2010. During the endowment period, a portion of the fund's annual investment earnings are available to purchase equipment, instruments, materials and supplies to be used in research projects.

USE OF ESTIMATES

The preparation of the financial statements in accordance with Canadian generally accepted accounting principles requires management to make estimates and assumptions that affect the amounts reported in the financial statements and notes to the financial statements. Actual results may differ from those estimates.

INVENTORIES

Inventories of materials and supplies are valued at the lower of cost and net realizable value. Animal inventory is valued at cost.

INVESTMENTS

Funds designated as endowment funds, restricted for the purposes of acquiring capital assets or future expenditures are invested with other funds from the University of Saskatchewan in a long-term investment pool. Long-term investments are carried at market value.

VETERINARY INFECTIOUS DISEASE ORGANIZATION (VIDO), UNIVERSITY OF SASKATCHEWAN
NOTES TO THE FINANCIAL STATEMENTS
SEPTEMBER 30, 2002

REVENUE RECOGNITION

Restricted contributions are recognized as revenue of the Research Trust fund in the year in which the related expenditures are incurred. Donations and unconditional grants are recognized as revenue of the Research Trust fund when received. License fees, research payments and royalties are recognized as they are received under the terms of the agreements with the licensees or contractors. Gifts-in-kind, including equipment are recorded at fair market value on the date of their donation.

Investment income earned on the Dr. Alfred Savage VIDO Research fund is recognized as income of that fund; a portion of the fund's earnings is retained for reinvestment. Investment income earned on the Research Trust fund and Capital Trust fund is recognized as revenue when earned.

CAPITAL ASSETS

Purchased capital assets are recorded at cost. Donated capital assets are recorded at fair market value upon receipt. Amortization is provided on a straight-line basis over the asset's estimated life as follows:

Computers	3 years
Software	3 years
Vehicles	6 years
Furnishings and equipment	8 years
Site improvements	20 years
Buildings	40 years

ROYALTIES

Royalties are recognized as they are received or earned.

3. ACCOUNTS RECEIVABLE

	2002	2001
Conditional grants (Schedule 2)	$ 675,580	$ 290,358
Contract research	-	11,250
Accrued interest	1,898	1,737
	$ 677,478	$ 303,345

4. INVENTORIES

	2002	2001
Animals	$ 66,373	$ 229,720
Materials and supplies	86,408	61,142
	$ 152,781	$ 290,862

5. CAPITAL ASSETS

	2002 Cost	2002 Accumulated Amortization	2002 Net Book Value	2001 Net Book Value
Computers	$ 413,207	$ 321,085	$ 92,122	$ 40,530
Software	15,855	10,311	5,544	3,965
Vehicles	170,883	95,094	75,789	97,662
Furnishings and Equipment	4,225,577	1,838,661	2,386,916	889,321
Site Improvements	178,324	146,353	31,971	17,708
Buildings	7,907,691	2,947,600	4,960,091	2,314,432
	$12,911,537	$ 5,359,104	$ 7,552,433	$ 3,363,618

6. UNEARNED GRANTS – BUILDING EXPANSION

Unearned grants reported in the Research Trust fund include the unamortized portions of restricted funding designated for the building and equipping of an expansion to the current VIDO facility.

Funding details and amortization to revenue are as follows:

	Committed	Received to 2002	2002 Revenue Earned	2001 Revenue Earned	2002 Unearned Revenue	2001 Unearned Revenue
Western Economic Diversification	$ 4,500,000	-	-	-	-	-
Canada Foundation for Innovation	5,151,773	2,659,253	209,276	-	2,449,977	1,235,335
Province of Saskatchewan Alberta Science and Research Authority	5,651,773	2,660,000	-	-	2,660,000	510,000
- Income earned	2,000,000	2,000,000	1,283	2,711	1,996,006	1,997,289
- Interest earned		72,293	46,743	131	25,419	33,831
	$ 17,303,546	7,391,546	257,302	2,842	7,131,402	3,776,455

Funds received from Alberta Science and Research Authority and interest earned on those funds are restricted to the purchase of equipment.

7. BUILDING EXPANSION

During the year, VIDO began expansion of its research capacity to include genomics, therapeutics, new delivery systems and diagnostics research. To accommodate this, construction and equipping of a 51,476 square foot building addition estimated to cost $18.5 million began in March, 2002. As at September 30, 2002, a rodent holding facility, office and expanded loading dock were completed. The remainder of the building is scheduled for completion by September, 2003.

Upon occupancy of the expanded facility, staffing levels are expected to increase from 79 people to approximately 140 people.

8. SUB-CONTRACT RESEARCH

During the year VIDO entered into sub-contract research collaborations with various third parties relating to funding from conditional grants and contracts including the following:

	2002	2001
SemBioSys Genetics Inc.	**$ 29,000**	$ -
National Research Council of Canada	**(47,293)**	8,702
University of Calgary	-	78,891
	$ (18,293)	$ 87,593

9. OTHER EXPENDITURES

Other expenditures consist of VIDO operating accounts which include repairs and maintenance, equipment rental, annual report and technical bulletins, professional fees and Board expenses.

The financial statements do not include expenditures for administrative and ancillary services, or in-kind support provided by the University of Saskatchewan.

10. INCOME TAXES

VIDO is not subject to either federal or provincial income taxes. VIDO is required to pay GST, net of rebates and PST on taxable services and supplies.

11. RELATED PARTY TRANSACTIONS

a) VIDO is a research unit of the University of Saskatchewan. The University of Saskatchewan maintains, as part of its normal operations, various financial and administrative functions relating to VIDO.

b) The University of Saskatchewan is the beneficiary of a Trust which owns 16.53% of Star Biotech Inc. as at March 31, 2002 (2001-16.44%). Star Biotech Inc. is a research and development company associated with the development of some of VIDO's products and technologies. During the year VIDO had the following transactions with Star Biotech Inc.:

	2002	2001
Income from Star Biotech Inc. to VIDO		
Royalties	**$ 100,000**	$ 37,500
Dividends	-	32,175
	$ 100,000	$ 69,675

12. CONTINGENCIES

VIDO has entered into certain contractual arrangements, which may require repayment of the contracted amount if the research sponsored by the contract results in commercialization. There are no amounts repayable under these contracts at September 30, 2002.

13. COMPARATIVE FIGURES

Certain of prior year's comparative figures have been reclassified to conform to the current year's presentation.

VETERINARY INFECTIOUS DISEASE ORGANIZATION (VIDO), UNIVERSITY OF SASKATCHEWAN

SCHEDULE OF DONATIONS AND UNCONDITIONAL GRANTS
YEAR ENDED SEPTEMBER 30, 2002

	2002	2001
LIVESTOCK INDUSTRY		
Beef		
British Columbia Cattlemen's Association	$ 5,000	$ -
Saskatchewan Horned Cattle Trust Fund	37,500	37,500
Kamloops Stockmen's Association	700	700
Saskatchewan Cattle Marketing Deductions Fund	180,000	180,000
Alberta Cattle Commission	-	10,000
Manitoba Cattle Producers Association	5,000	-
	228,200	228,200
Dairy		
South Coastal Dairy Education Association	-	500
	-	500
Swine		
Alberta Pork	50,000	30,150
Manitoba Pork Council	25,000	20,000
Sask Pork	33,000	28,000
Swine Improvement Services Co-operative Ltd.	84	103
	108,084	78,253
Poultry		
Alberta Chicken Producers	6,900	-
	6,900	-
PROVINCIAL GOVERNMENTS		
British Columbia	700	3,900
Manitoba	15,200	15,200
	15,900	19,100
OTHER FOUNDATIONS, COMPANIES AND INDIVIDUALS		
Individuals	700	-
	$ 359,784	$ 326,053

See accompanying notes

VETERINARY INFECTIOUS DISEASE ORGANIZATION (VIDO),
UNIVERSITY OF SASKATCHEWAN
SCHEDULE OF CONDITIONAL GRANTS AND CONTRACTS
YEAR ENDED SEPTEMBER 30, 2002

Schedule 2

	September 30, 2001		2002	September 30, 2002			
	Accounts Receivable	Unearned Revenue	Funds Received	Accounts Receivable	Unearned Revenue	2002 Income	2001 Income
Federal Departments and Agencies							
Natural Sciences & Engineering Research Council of Canada (NSERC)							
Operating, Strategic and Industry Matching	$ -	$ 387,310	$ 463,384	$ -	$ 110,543	$ 740,151	$ 228,734
Canadian Institutes of Health Research	-	294,581	840,353	-	653,052	481,882	231,650
Agriculture Canada/NSERC Research Partnership Grants	7,637	-	-	-	-	(7,637)	156,967
Canadian Bacterial Diseases Network (CBDN)	72,979	-	205,196	67,848	-	200,065	285,065
Agriculture and Agri-Food Canada	18,562	-	974,255	155,700	-	1,111,393	1,011,009
Canada Research Chair - Infrastructure	-	127,440	141,600	53,583	-	322,623	-
Canada Research Chair - Operating	-	6,263	426,906	-	216,803	216,366	43,737
Research Network on Bacterial Pathogens of Swine	-	70,552	113,594	-	43,320	140,826	72,361
Canvac	-	171,000	188,475	-	83,421	276,054	-
Genome Canada	-	-	-	154,303	-	154,303	-
Provincial Departments and Agencies							
Saskatchewan Council for Community Development	65,128	-	300,000	112,643	-	347,515	365,128
Saskatchewan Agriculture Development Fund	20,100	22,631	238,715	65,114	63,283	243,077	141,971
Agri-Food Innovation Fund	-	50,916	186,000	16,000	-	252,916	164,220
Health Services Utilization and Research Commission	-	27,488	41,488	-	473	68,503	109,062
Saskatchewan Health Research Board Fellowship	-	47,683	72,804	-	50,147	70,340	47,941
Saskatchewan Beef Development Board	19,200	-	-	19,200	-	-	55,691
Alberta Agriculture Research Institute (AARI)	30,438	72,088	138,565	2,450	24,591	158,074	305,580
Canada-Alberta Beef Industry Development Fund	41,314	-	41,314	-	-	-	72,520
Beef Cattle Research Council	-	-	30,000	8,781	-	38,781	-
Beef Cattle Industry Development Fund	-	20,798	5,449	12,422	-	38,669	67,536
British Columbia Investment Agriculture Foundation	7,500	-	7,500	-	-	-	33,847
Producer Groups							
Dairy Farmers of Canada	-	-	-	-	-	-	25
Ontario Cattlemen's Association	-	11,517	51,200	709	27,952	35,474	33,705
Poultry Industry Council	7,500	7,570	25,000	6,827	6,863	25,034	39,030
Other Agencies							
World Health Organization	-	-	-	-	-	-	15,052
Livestock Environmental Initiative	-	23,290	3,000	-	1,508	24,782	(8,452)
	$ 290,358	$ 1,341,127	$ 4,494,798	$ 675,580	$ 1,281,956	$ 4,939,191	$ 3,472,379
University of Saskatchewan							
Canada Research Chair - Infrastructure	$ -	$ 41,044	$ 195,043	$ -	$ 90,417	$ 145,670	$ 1,075
	$ 290,358	$ 1,382,171	$ 4,689,841	$ 675,580	$ 1,372,373	$ 5,084,861	$ 3,473,454

See accompanying notes

2001/2002 PUBLICATIONS

US Patent #6,379,944 B1
Title: Mammalian cell lines expressing bovine adenovirus functions.
Date: April 30, 2002
Authors: Mittal, S.K., Graham, F.L., Prevec, L., Babiuk, L.A., and Tikoo, S.K.

US Patent #6,391,316
Title: Vaccine Compositions Comprising Haemophilus somnus Transferrin-binding Proteins and Methods of Use.
Date: May 21, 2002
Authors: Potter, A.A., Rioux, C., Schryvers, A.B.

US Patent #6,319,716
Title: Bovine adenovirus type 3 genome and vector systems derived thereform.
Date: November 20, 2001
Authors: Tikoo, S.K., Babiuk, L.A., Reddy, P.S., Zakhartchouk, A., Baxi, M.

Canadian Patent #2,089,753
Title: Interleukin-2 leukotoxin gene fusions and uses thereof.
Date: November 20, 2001
Authors: Potter, A.A., Campos, M., Hughes, H.P.A.

Research Publications in Scientific Journals

Babiuk, L.A. 2002. 3rd World Congress on Vaccines and Immunization. Expert Opin Biol Ther 2: 665-669.

Babiuk, L.A., Babiuk S.L. and Baca-Estrada, M.E. 2002. Novel vaccine strategies. Adv Virus Res 58: 29-80.

Babiuk, S., Baca-Estrada, M., Foldvari, M., Storms, M., and Rabussay, D., Widera, G., and Babiuk, L.A. 2002. Electroporation improves the efficacy of DNA vaccines in large animals. Vaccine. 20: 3399-3408.

Baca-Estrada, M.E., Ewen, C., Mahony, D., Babiuk, L.A., Wilkie, D., and Foldvari, M. 2002. The haemopoietic growth factor, Flt3L, alters the immune response induced by transcutaneous immunization. Immunology 107: 69-76.

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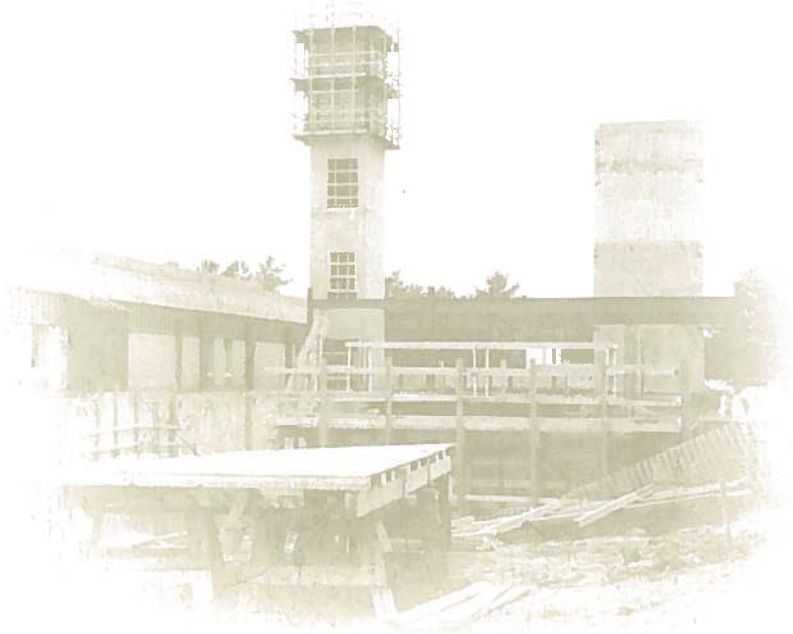
Dr. S. Stephens – Dept. of Veterinary Pathology

Canadian Bacterial Diseases Network (various centres throughout Canada)
A network of over 50 investigators from seven Canadian universities, a number of industrial companies, and government laboratories interested in bacterial diseases of humans, animals, and fish.



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