Twenty-Five Years of Success

VIDO

VIDO Annual Report

1999 - 2000

The following individuals, groups, and agencies contributed funds to VIDO over the course of the past fiscal year through donations, grants, or contracts. Their support is acknowledged and greatly appreciated.

Agriculture and Agri-Food Canada
Agri-Food Innovation Fund
Ag-West Bioteeh Inc.
Alberta Agriculture Research Institute
Alberta Chicken Producers
Alberta Pork Producers Development Corporation
BC Hog Marketing Commission
Beef Cattle Industry Development Fund
Beef Industry Development Fund
BIOSTAR Inc.
British Columbia Investment Agriculture Foundation
Canada-Alberta Beef Industry Development Fund
Canadian Bacterial Diseases Network
Canadian Institutes of Health Research
Dairy Farmers of Canada
Department of National Defence
Department of Saskatchewan Economic & Co-operative Development
Department of Western Economic Diversification
Dr. Norman Habermehl
Health Services Utilization and Research Commission
Kamloops Stockmen's Association
Natural Sciences & Engineering Research Council of Canada
Ontario Cattlemen's Association
Ontario Pork Producers' Marketing Board
Poultry Industry Council
Province of British Columbia
Province of Manitoba
Research Network on Bacterial Pathogens of Swine
Saskatchewan Agriculture Development Fund
Saskatchewan Beef Development Board
Saskatchewan Cattle Marketing Deductions Fund
Saskatchewan Department of Agriculture & Food
Saskatchewan Health Research Board Fellowship
Saskatchewan Horned Cattle Trust Fund
Swine Improvement Services Cooperative
University of Saskatchewan
World Health Organization

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

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.

CHAIR'S REPORT

Last spring as we celebrated 25 years of VIDO's achievements, we also focused on the future. A great deal of effort had gone toward the applications for funding of a much-needed expansion of VIDO's facilities. Now as we go forward into our next 25 years, the dream has become reality. The Board of Directors has extended their congratulations to the Director and staff for their long hours and perseverance, which has been rewarded. I also applaud those individuals within both levels of government who shared our vision of a bright and promising future for VIDO and who acted to support the application for funding.

As we go forward with the expansion of our research facilities and begin to add the necessary staff, we are confident that VIDO will remain an environment in which creative synergy will continue to flourish. New equipment to be added will speed up much of the routine and repetitive sampling and testing needed to achieve results.

Don Winslow
Chair

With additional expertise and new technology, VIDO will capitalize on new opportunities in the field of genomics. This enhances our ability to generate technologies and information vital to the field of veterinary vaccine development, and animal health.

The primary focus of VIDO has always been to serve the livestock industry. During the last decade, this industry has grown increasingly aware of a challenge to meet the needs and expectations of consumers. Those expectations include both the quality and safety of food sold to consumers as well as the quality of life for food animals. There has been a natural convergence of animal and human health concerns. VIDO is in an excellent position to capitalize on both fields of medicine. There are opportunities to develop and market products and novel technologies of benefit to both animal health and production efficiency as well as to human health and food safety.

Brad Wildeman
Vice-Chair

It has been gratifying to me as Board Chair to witness the degree of respect shown to VIDO's accomplishments over its first twenty-five years. This respect has come from producers, government, bio-pharmaceutical companies and researchers both across Canada and around the world. It has been well-earned by management and staff who have always aimed to deliver more than they have promised to clients. VIDO now has been designated as a National and Regional Centre of Excellence in animal health, and is positioned to grow and to maintain its place among world-leaders in the development of technology and products to serve the livestock industry.

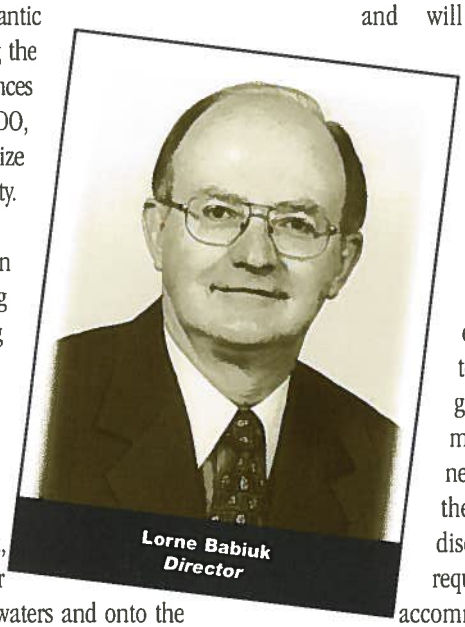
The Board of Directors will continue to work closely with our Director and Senior Management to assure our stakeholders that VIDO continues to operate with sound fiscal management and accountability. Together we will continue to set goals, and to closely monitor progress toward the realization of those goals. Members of our Board, drawn from across Canada, will assist our management team in the promotion of VIDO within commodity organizations, business and government. We will also move forward with the necessary increases to the management team to deal with increased activities and interaction between different constituencies, as well as to ensure the development of a strong succession plan within VIDO.

The years ahead promise to be challenging as we combine the usual ongoing activities of VIDO with the disruptions and extra work necessary to allow our expansion to proceed. It is however the beginning of exciting new opportunities and challenges which will be embraced by all within VIDO.

Twenty-Five Years of Success

DIRECTOR'S REPORT

The world has not only entered a new Millennium, but the "Century of Biology" that we are embarking on has already begun to unfold its riches. This past year has seen the completion of the genome sequence of many agents responsible for infectious diseases of humans and animals, as well as other species such as the fruit fly, plants such as rice or arabidopsis thaliana, and the most interesting and possibly the most complex, the human genome, has been deciphered. This frantic pace of genomics discovery is paving the way for society to harness these advances to improve our quality of life. At VIDO, we are positioning ourselves to capitalize on these riches for the benefit of society.


Lorne Babiuk
Director

One of the greatest opportunities in the post genomic era is that of using this technology for controlling infectious diseases. In the last issue of the year 2000, the editors of the magazine *Science*, peered into 2001 and predicted that infectious diseases would be a major area of activity globally and stated that, "Research into the planet's major scourges is moving out of the backwaters and onto the world stage. In 2000, the White House, the European Union, and the G8 all announced multi-million dollar initiatives to battle TB, malaria, and HIV, while the Bill and Melinda Gates Foundation chipped in too. New drugs and vaccines will take years to develop, but expect a flurry of papers to pave the way. Indeed, diseases such as ulcers and heart disease are being shown to be caused by infectious agents, further demonstrating the importance of infectious diseases in our lives. Quality science is clearly required if we hope to develop a family of safe and effective vaccines to control these diseases. VIDO's philosophy from Day 1 was to develop vaccines based on science. However, this cannot be done in isolation. Progress will best be achieved by building partnerships with scientists around the world. Clearly, the boundaries of science have been dismantled. Those organizations that recognize and capitalize on these opportunities will be the ones that succeed. Indeed, globalization is happening in all industries and research is not immune to such dramatic changes. VIDO now collaborates with researchers on six different continents and will continue to expand these collaborations to achieve our goals.

The past year has been both hectic and exciting for VIDO. In our last annual report, we indicated the need to expand our facilities to establish a critical mass of scientific expertise and the equipment required to capitalize on opportunities that genomics offers for vaccine development in humans and animals. The need for interdisciplinarity as well as the common features of infectious diseases of humans and animals requires us to expand our facilities to accommodate the additional expertise required. This expansion will allow us to recruit world-class scientists in genomics, bioinformatics, and vaccine formulation, and to strengthen our existing core competencies in the pathogenesis of infectious diseases and vaccine development using biotechnology. The addition of this expertise will be pivotal to ensuring VIDO remains a global leader in developing novel therapeutics and preventative measures for livestock and human infectious diseases. This expansion will also allow us to strengthen our linkages with other institutions in Canada and make VIDO an International Centre of Excellence in Vaccine development.

Twenty-Five Years of Success

To achieve this, we made a request to the Canada Foundation for Innovation to acquire funds for this expansion. Our request to the Canada Foundation for Innovation was completely successful with the award of just over $14 million to add approximately 30,000 sq. ft. of new office and laboratory space during the 2000-2001 fiscal year. This request for funding was reviewed by an international review committee which rated the proposal highly – indeed, the review committee rated the proposal at the highest category possible for the capacity for innovation. Part of our innovative approach is to develop partnerships in research funding and commercialization. Indeed, the funding for the facility is a partnership between the Canada Foundation for Innovation ($5.1 million), the Province of Saskatchewan ($5.1 million), the Province of Alberta ($2 million), and the Western Economic Diversification Program ($2 million). Without these partnerships, the expansion would not have been able to proceed.

In addition to celebrating our success in obtaining the funding for our expansion, we also celebrated 25 years of contribution to the livestock industry. On May 5th, VIDO formally recognized its 25th Anniversary at the Western Development Museum with Dr. Bob Church, a former Board Member and long-term supporter of VIDO delivering the keynote address. During his address, he chronicled the formative years of VIDO to its current success and its contribution to the economy of livestock producers and to Canada. He also explained how the era of biology/genomics/proteomics is and will continue to influence every facet of our lives. He challenged VIDO to continue its innovative ways and to capitalize on the opportunities that are now available in genomics/proteomics as related to infectious diseases. The Province of Saskatchewan was represented by Minister Janice McKinnon who indicated the Province's continued support of VIDO and the importance of VIDO to the fabric of Saskatchewan. Dr. Michael Corcoran, Vice President of Research at the University of Saskatchewan and a VIDO Board Member, emphasized the importance of VIDO to the research enterprise at the University of Saskatchewan.

In addition to celebrating our past successes, VIDO also developed a new business plan as part of its funding and research strategy. One of the platforms of our business plan was to obtain sufficient funds to cover the indirect costs of research. In Canada, most funding agencies only cover the direct costs of research, but do not fund scientist's salaries and other activities required for the research program. We are hopeful that, in the next year, some of the government granting agencies will provide some overhead with their grants. However, this will never cover all the costs of research. Thus, our strategy is to obtain a proportion of our funding from the Province of Saskatchewan to ensure we remain a viable institution. Our belief is that such an investment in VIDO will continue to return great rewards to the Province and to our livestock industry. Progress to date in this request has been favorable and there has been a recognition that a research institute like VIDO, who does research for the public good, cannot survive without such funding. We await the final decision.

Twenty-Five Years of Success

VIDO is a firm believer that science transcends the artificial boundaries of many previously defined disciplines. In the area of vaccines, input from all the disciplines of infectious disease including bacteriology, virology, parasitology, and immunology are obviously critical as is molecular biology and genomics in allowing us to dissect the biology of these pathogens. However, we also need the disciplines of epidemiology to understand the dynamics of the spread of disease between individuals so that we can better manage these diseases. We need pathology to understand the spread of disease within the animal and how the animal responds and the disciplines of chemistry, pharmacy and engineering in vaccine formulation and delivery. These are just a few of the examples of the interdisciplinarity required for effective disease control. As part of this interdisciplinarity, we also see the commonality between infectious diseases of humans and animals. Previously, studies of infectious diseases of animals and humans have often been carried out in isolation. VIDO firmly believes that combining researchers with interest in infectious disease in humans and animals is not only innovative, but is required to ensure that both disciplines benefit from each other. Through its collaborations and internal resources, VIDO is capitalizing on comparative medicine approaches and we feel that this will not only be unique in Canada and in North America, but will be critical for ensuring healthy animals that provide a safe food source and reduce the spread of infectious agents between animals and humans, as well as to better understand the mechanisms of disease in each of these species. Our motto is "A healthy animal provides safe food for a healthy society."


Lorne Babiuk and Janice MacKinnon

During this past year, VIDO has made significant progress in developing a vaccine against *E. coli* 0157: H7. Although this disease agent does not affect productivity in cattle, infected animals shed the organism into the environment and people who ingest the organism can become extremely ill or die. The incident in Walkerton, Ontario where seven individuals died and hundreds became ill from drinking contaminated water is an example of where control of an agent in animals can influence human health. Similar examples exist where livestock and poultry (*Salmonella* species, *Campylobacter* species, and *Cryptosporidia*, etc.) are important reservoirs for human disease. In other instances, although the disease is not transmitted from animals to humans, development of a vaccine for a specific pathogen in animals will provide insights into controlling related diseases in humans. VIDO is positioning itself to capitalize on the convergence of technologies such as functional genomics and vaccine delivery technologies to benefit both animals and humans around the world. For example, our needle-free delivery technology will not only benefit livestock and reduce injection site reactions, but also remove the trauma of vaccination for humans. This should greatly improve vaccine compliance and thereby further reduce economic losses and human suffering caused by infectious disease.

The success of any organization is dependent on the individuals that comprise it. VIDO has, throughout its history, had an extremely dedicated management team, Board of Directors, and, most importantly, staff that were willing to go the extra mile. VIDO's staff of today clearly exceeds all of our expectations and, as a result, we have been able to achieve tremendous success in this past year, not only in research output, but product development and commercialization. The agreements we have signed with multinational bio-pharmaceutical companies will ensure that our products are commercialized for the benefit of society. We thank all of our supporters, both financially and politically, that have allowed us to achieve the goals of this past year. We look forward to continuing our relationships with all of our stakeholders and financial supporters to ensure that next year is even more successful than the past one.

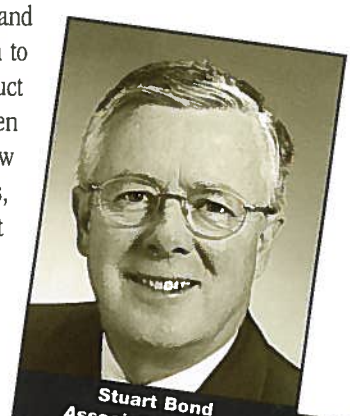
Since VIDO is a not-for-profit organization and we do not pay our Board of Directors, I would like to specifically thank the dedicated individuals who provide VIDO Management the guidance and support that is required. We are especially grateful for their direction and counsel during the past year as we designed our future strategy, including our marketing strategy and business plan to position ourselves for success in the 21st Century. We feel that our strategy needs to be continuously challenged so that we can ensure success for many years to come.

Twenty-Five Years of Success

MARKETING REPORT

"Healthy Animals = Safe Food" As a general statement this is very true and producers across this nation are aware of that fact. VIDO's business, when all is said and done, is to provide livestock and poultry producers with new, improved and more effective vaccines to battle infectious disease. In addition to this, our scientists are also working to find "needle-free" ways of applying vaccines in order to eliminate injection site problems and worse yet, broken needles.

Producer organizations across this nation see the value of VIDO's research. Precious check-off dollars are used to either promote their commodity in the never-ending war for shelf space and consumer dollars or for research to improve the quality of the product that they produce. On any given year funds can ebb and flow between these two priorities, however, it is recognized by most organizations that VIDO is a preferred partner and very unique in Canada as we specialize primarily in vaccine research.

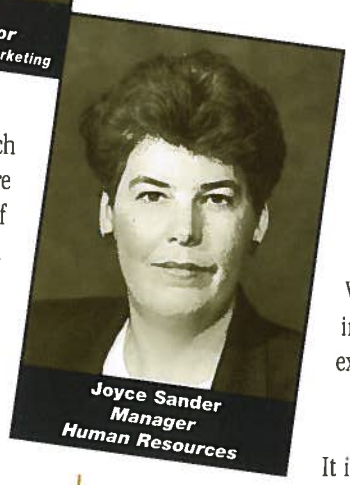


Stuart Bond
Associate Director
Business Development & Marketing

We are attempting to raise the awareness of producer organizations distant from our base of operations here in Saskatoon. To that end, much time has been spent primarily in Ontario with future emphasis being directed towards the poultry, dairy and beef industries in British Columbia. More time is spent with producer organizations in the province of Alberta than anywhere else in Canada other than our home province of Saskatchewan. We have a long history with Alberta producer organizations that have been steadfast in their support of VIDO throughout our entire 25-year history. Manitoba is also emerging as a growing and vibrant force in the livestock industry.

VIDO has numerous stakeholders. They include the Federal Government and Provincial Governments, producer organizations, animal health pharmaceutical firms and most importantly, the consumers of meat and dairy products in this country. In an age where information and knowledge are power, it is not surprising to find institutions such as ours under closer scrutiny. Fear of the unknown can be devastating to science as was clearly demonstrated recently over the Genetically Modified Organism issue. Anything that we can do to increase the comfort level and knowledge of what is taking place at VIDO is a good thing. To that end, VIDO will be increasing its activities with regard to news releases, newsletters and an improved website so that all of our stakeholders will have the clear opportunity to learn of our work and what it means to them.

Technology transfer back to producers is also part of VIDO's mandate. We have a swine technology transfer group that has been active for many years, made up primarily of industry leaders from throughout Canada. They are charged with the responsibility of addressing issues of importance to swine industry producers. They have created various publications and manuals, as well as being available to speak at major swine agricultural events throughout Canada. We are very proud of this group of volunteers and VIDO staff members who are directly involved. They have earned an excellent reputation.



Joyce Sander
Manager
Human Resources

It is our objective to create a VIDO beef technology transfer group in the coming year. It too will be made up of mainly volunteers representing the various disciplines associated with that industry who will come to us from all over Canada. Close discussions with various beef producer groups have verified that there is a need for this kind of tech transfer in their industry and they are very much looking forward to its creation.

Twenty-Five Years of Success

Bob Church · Michael Corcoran

Food safety is a major concern of the consumers of meat and dairy products today. Other things such as tenderness, good eating experience, convenience, animal welfare and ease of preparation, while very important issues, pale by comparison to food safety. Despite the fact that Canada's food has never been safer, we must not be complacent and must continue to address their concerns. The consumer of Canada's food products is the customer and "The customer is always right." VIDO is doing its part to address food safety and our activities in this area continue to increase.

All of us at VIDO are very excited about the expansion that was announced this year. More emphasis into genomics research and all that implies will do much to maintain VIDO's reputation as a "World-class vaccine research institution" for many years to come. We are particularly proud of the fact that no producer dollars were required to put this $14 million project together. VIDO recognizes that producer dollars are very precious and we would rather see them spent on research inside of our new facility rather than used to build it.

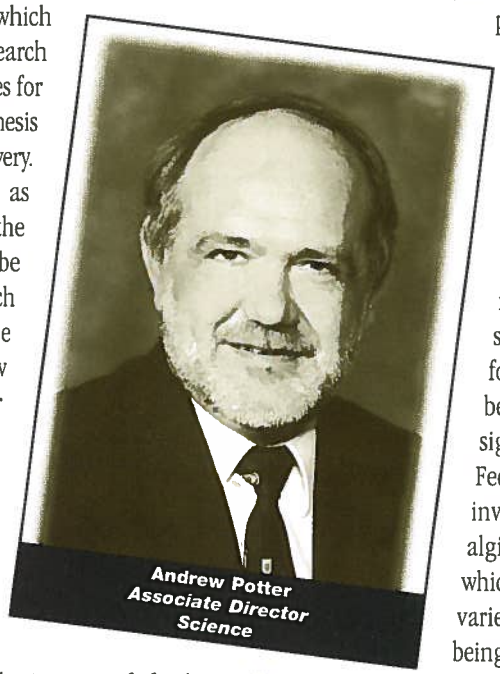
There is no doubt that size has an impact. VIDO is currently one of the largest food animal vaccine research institutions in the world. We have 85 staff members at the present time and once the new facility is completed, this is projected to increase to approximately 125. It is important to understand, especially for producer groups, that our staff is focused on their research, on practical results and on the impact those results will have on producers in Canada and around the world. Many vaccines currently in use in Canada and elsewhere that were researched here at VIDO do not bear our name and therefore producers are not aware that their creation occurred here. We see this fact as all the more reason for improved communication.

Finally, I would like to thank our Board of Directors for their cooperation during the past year and in particular those who are on our Communications sub-committee. They are very active in this area and clearly understand the value of good communications between VIDO and its various stakeholder groups.

Twenty-Five Years of Success

SCIENCE REPORT

VIDO and the University of Saskatchewan were successful in negotiating future funding from the Canada Foundation for Innovation to expand VIDO's facilities. This will allow us to more than double the available laboratory space for our research and permit the purchase of new equipment. During the last annual report, we described our goals for the use of this new facility which will involve expanding existing research programs to include newer technologies for the study of infectious disease pathogenesis as well as vaccine formulation and delivery. We foresee these new capabilities as laying a foundation upon which the needs of our stakeholders can be addressed, similar to the way in which biotechnology was used during the 1980s and 1990s to develop a new generation of veterinary vaccines. Our research targets continue to evolve and include projects that span the medical-veterinary communities, such as the development of viral vaccine vectors, nucleic acid immunization and "food safety" vaccines. The latter includes vaccines for the prevention of colonization of food-producing animals by *E. coli* 0157:H7, *Salmonella enteriditis* and *Cryptosporidium parvum*. In addition, we have added a new project dealing with the development of vaccines for the prevention of *Campylobacter jejuni* colonization of poultry. This project will involve a genomic approach to the identification of colonization mechanisms and identification of potential vaccine components. Thus, most of the bacteriology projects at VIDO now focus on human pathogens of animal origin.



Andrew Potter
Associate Director
Science

During the past year, several projects have evolved to the point where technology transfer to the private sector is occurring. Thus, these projects are moving from the research (proof of concept) phase into the development phase. These include development of vaccines for bovine mastitis caused by Streptococcal pathogens, *E. coli* 0157:H7 vaccines (in partnership with the University of British Columbia), and second generation *P. haemolytica*, *H. somnus* and scours vaccine for cattle. As these projects move from the laboratory into the real world, we are faced with new challenges which can only be addressed through a partnership with our industrial collaborators. In addition to specific vaccine projects, our vaccine formulation and delivery projects have been strengthened by the addition of significant funding from Provincial and Federal Governments. These projects involve the use of liposome-based and alginate microsphere-based formulations which can be delivered to animals via a variety of routes. These technologies are being applied to new and existing vaccine projects, including those dealing with Streptococcal mastitis and *E. coli* 0157:H7 vaccines. In addition to methods for the formulation of vaccines, we have also made significant progress in the development of new vaccination strategies. Despite the fact that vaccination has been practiced for centuries, most products today are delivered as they were 100 years ago.

Over the past year, our immunology group has demonstrated the utility of fetal immunization. This particular technology

has significant application for the prevention of diseases in humans, especially in high risk situations such as those in which pathogens could be transmitted from the mother to the fetus during birth. We are continuing to work in this area and anticipate that when combined with new delivery strategies for fetal immunization, it could find widespread use in both humans and animals.

In order to capitalize on the opportunities which will be provided by the new facility, there will be a need for VIDO to also expand its staff. While our core research will still be focused on the infectious diseases of animals, we need to recruit scientists with expertise in bioinformatics, genomics and other related technologies to fully realize the potential that is available. In addition, we will also strengthen existing areas such as vaccine formulation and molecular pathogenesis, since these will form a foundation for all of our activities. Wherever possible, we will acquire the necessary expertise through the formation of partnerships with other organizations world-wide. However, we foresee an increase in staffing levels by approximately 60 people over the next 3-5 years. Thus, we plan to start recruiting senior scientists immediately, adding approximately 2 per year over the next 5 years. This will require an increase in funding levels which we hope to achieve through several initiatives which were described in the last annual report.

VIDO's current activities are a natural progression in the evolution of our organization and build upon the expertise our staff has developed over the past two decades. As we move into the new millennium, we hope to maintain our leadership position in the animal health field and expand this into other areas to ensure that our platform technologies are utilized in as broad a spectrum of applications as possible. The transfer of our technologies into both the veterinary and medical communities represents a significant challenge, one which we believe VIDO can achieve.

Twenty-Five Years of Success


I AM VIDO
From Vision to Reality
VIDO

Carol Martel
Manager
Financial Operations

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 University of Saskatchewan - Veterinary Infectious Disease Organization as at September 30, 2000 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.

Except as explained in the following paragraph, we conducted our audit in accordance with auditing standards generally accepted in Canada. 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.

The Organization derives part of its income in the form of donations and certain grants the completeness of which is not susceptible to satisfactory audit verification. Accordingly, our verification of revenues from these sources was limited to the amounts recorded in the records of the Organization and we were not able to determine whether any adjustments might be necessary to donations and grant revenue, excess of income over expenditure, assets and fund balance.

In our opinion, except for the effect of adjustments, if any, which we might have determined to be necessary had we been able to satisfy ourselves concerning the completeness of donations and certain grants referred to in the preceding paragraph, these financial statements present fairly, in all material respects, the financial position of the Organization as at September 30, 2000 and the results of its operations and the changes in its cash flows for the year then ended in accordance with accounting principles generally accepted in Canada.

Ernst & Young LLP

Saskatoon, Canada
January 12, 2001

Chartered Accountants

ERNST & YOUNG

UNIVERSITY OF SASKATCHEWAN
VETERINARY INFECTIOUS DISEASE ORGANIZATION (VIDO)

RESEARCH TRUST - STATEMENT OF INCOME, EXPENDITURE AND FUND BALANCE
YEAR ENDED SEPTEMBER 30, 2000

	2000	1999
INCOME		
Donations and unconditional grants (Schedule 1)	$ 200,934	$ 493,337
Conditional grants (Schedule 2)	2,517,880	2,859,507
Contract research		
Department of Western Economic Diversification	45,000	476,803
Commercial	1,326,823	740,117
Associated Company	2,825	18,965
Government of the Province of Saskatchewan		
-Saskatchewan Department of Agriculture & Food	300,000	300,000
-Department of Saskatchewan Economic and Co-operative Development	590,504	595,533
Ag-West Biotech Inc.	5,381	95,108
Department of National Defence	1,765	69,701
Licensing fees	100,000	-
Royalties	239,085	205,000
Investment income	139,391	117,205
Animal sales	99,704	64,653
University of Saskatchewan	153,273	157,448
	5,722,565	6,193,377
EXPENDITURE		
Salaries and benefits	3,185,673	3,270,068
Materials and supplies	1,190,350	1,137,296
Animal services	239,863	135,829
Equipment repair and service agreements	52,855	55,622
Sub-contract research (Note 7)	117,211	207,017
Travel and recruiting	138,694	136,935
Patents and legal fees	355,542	293,757
Amortization	288,568	232,358
Other expenditures (Note 8)	40,829	82,257
	5,609,585	5,551,139
EXCESS OF INCOME OVER EXPENDITURE	112,980	642,238
FUND BALANCE, BEGINNING OF YEAR	4,964,702	4,457,615
	5,077,682	5,099,853
TRANSFER TO CAPITAL TRUST, NET OF ASSET PURCHASES	(88,664)	(135,151)
	$ 4,989,018	$ 4,964,702

See accompanying notes

UNIVERSITY OF SASKATCHEWAN
VETERINARY INFECTIOUS DISEASE ORGANIZATION (VIDO)

DR. ALFRED SAVAGE VIDO RESEARCH FUND
STATEMENT OF INCOME, EXPENDITURE AND FUND BALANCE
YEAR ENDED SEPTEMBER 30, 2000

	2000			1999		
	Restricted for Endowment Purposes	**Expendable Funds**	**TOTAL**	Restricted for Endowment Purposes	Expendable Funds	TOTAL
EXCESS OF INCOME OVER EXPENDITURE						
Investment Earnings	**8,831**	**3,807**	**12,638**	749	3,586	4,335
FUND BALANCE, BEGINNING OF YEAR	**59,776**	**18,278**	**78,054**	59,027	14,692	73,719
FUND BALANCE, END OF YEAR	**$ 68,607**	**$ 22,085**	**$ 90,692**	$ 59,776	$ 18,278	$ 78,054

UNIVERSITY OF SASKATCHEWAN
VETERINARY INFECTIOUS DISEASE ORGANIZATION (VIDO)

CAPITAL TRUST
STATEMENT OF INCOME, EXPENDITURE AND FUND BALANCE
YEAR ENDED SEPTEMBER 30, 2000

	2000	1999
EXCESS OF INCOME OVER EXPENDITURE		
Investment earnings	**$ 38,878**	21,652
FUND BALANCE, BEGINNING OF YEAR	**643,755**	486,952
	682,633	508,604
Purchase of Capital Assets	**(111,336)**	(64,849)
Transfer from Research Trust	**200,000**	200,000
FUND BALANCE, END OF YEAR	**$ 771,297**	$ 643,755

See accompanying notes

UNIVERSITY OF SASKATCHEWAN
VETERINARY INFECTIOUS DISEASE ORGANIZATION (VIDO)

COMBINED BALANCE SHEET
AS AT SEPTEMBER 30, 2000

	2000	1999
ASSETS		
CURRENT ASSETS		
Funds held - University of Saskatchewan	$ **2,001,220**	$ 1,152,098
Due from University of Saskatchewan - operating fund	**830,785**	375,603
Accounts receivable (Note 3)	**168,294**	966,288
Inventories (Note 4)	**149,077**	112,427
	3,149,376	2,606,416
INVESTMENTS	**834,084**	647,577
CAPITAL ASSETS (Note 5)	**3,289,433**	3,284,707
	$ **7,272,893**	$ 6,538,700
LIABILITIES		
CURRENT LIABILITIES		
Accounts payable	$ **6,800**	$ 6,100
Accrued vacation pay	**223,865**	257,470
Unearned revenue (Note 6)	**1,191,221**	588,619
	1,421,886	852,189
EQUITY		
RESEARCH TRUST	$ **4,989,018**	$ 4,964,702
DR. ALFRED SAVAGE VIDO RESEARCH FUND	**90,692**	78,054
CAPITAL TRUST	**771,297**	643,755
	5,851,007	5,686,511
	$ **7,272,893**	$ 6,538,700

APPROVED BY THE BOARD:

Director

Trustee

See accompanying notes

UNIVERSITY OF SASKATCHEWAN
VETERINARY INFECTIOUS DISEASE ORGANIZATION (VIDO)

COMBINED STATEMENT OF CASH FLOWS
YEAR ENDED SEPTEMBER 30, 2000

	2000	1999
CASH FLOWS FROM OPERATING ACTIVITIES		
Research Trust-Excess Income over Expenditure	$ 112,980	$ 642,238
Dr. Alfred Savage VIDO Research Fund-Excess Income over Expenditure	3,807	3,586
	116,787	645,824
Net change in non-cash working capital (Note 10)	875,859	(316,841)
Loss on disposal of capital assets	4,806	-
Amortization of capital assets	288,568	232,358
Net cash flows from operating activities	1,286,020	561,341
CASH FLOWS FROM INVESTING ACTIVITIES		
Investment in University of Saskatchewan long-term investment pool	(186,507)	(73,232)
Purchase of Capital Assets from Capital Trust	(111,336)	(64,849)
Purchase of Capital Assets from Research Trust	(186,764)	(490,511)
Net cash flows used in investing activities	(484,607)	(628,592)
CASH FLOWS FROM FINANCING ACTIVITIES		
Dr. Alfred Savage VIDO Research Fund-Excess Income over Expenditure	8,831	749
Capital Trust-Investment income related to capital purchase	38,878	21,652
Net cash flows from financing activities	47,709	22,401
NET INCREASE (DECREASE) IN CASH	849,122	(44,850)
CASH, BEGINNING OF YEAR	1,152,098	1,196,948
CASH, END OF YEAR	$ 2,001,220	$ 1,152,098
CASH CONSISTS OF:		
Funds held - University of Saskatchewan	$ 2,001,220	$ 1,152,098

See accompanying notes

UNIVERSITY OF SASKATCHEWAN
VETERINARY INFECTIOUS DISEASE ORGANIZATION (VIDO)
NOTES TO THE FINANCIAL STATEMENTS
SEPTEMBER 30, 2000

1. ESTABLISHING AGREEMENT

The 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

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

The Research Trust fund consists of revenue and expenditures related to the Organization's (VIDO's) program delivery and administrative activities. This may also include the purchase of assets through grants that are specific to the Research Trust.

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 the Organization (VIDO) until 2010. During the endowment period, 80% of the fund's annual investment earnings are available to purchase equipment, instruments, materials and supplies to be used in research projects.

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.

Revenue Recognition

Restricted contributions are recognized as revenue of the Research Trust fund in the year in which the related expenditures are incurred. Unrestricted contributions are recognized as revenue of the Research Trust fund when received. License fees, research payments and royalties are recognized as they are received or earned under the terms of the agreements with the licensees.

Investment income earned on the Dr. Alfred Savage VIDO Research fund is recognized as income of that fund; 20% of the fund's earnings are 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. 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

	2000	1999
Conditional grants (Schedule 2)	**$ 129,819**	$ 199,382
Contract research	**36,250**	665,815
Royalties	**-**	100,000
Accrued interest	**2,225**	1,091
	$ 168,294	$ 966,288

4. INVENTORIES

	2000	1999
Animals	**$ 89,919**	$ 59,756
Materials and supplies	**59,158**	52,671
	$ 149,077	$ 112,427

UNIVERSITY OF SASKATCHEWAN
VETERINARY INFECTIOUS DISEASE ORGANIZATION (VIDO)
NOTES TO THE FINANCIAL STATEMENTS
SEPTEMBER 30, 2000

5. CAPITAL ASSETS

	2000			1999
	Cost	**Accumulated Amortization**	Net Book Value	Net Book Value
Computers	**$ 583,209**	**$ 535,195**	$ 48,014	$ 43,134
Software	**28,380**	**23,923**	4,457	7,463
Vehicles	**133,305**	**79,381**	53,924	66,158
Furnishings & Equipment	**2,475,620**	**1,725,304**	750,316	623,190
Site Improvements	**158,512**	**143,081**	15,431	16,668
Buildings	**5,106,344**	**2,689,053**	2,417,291	2,528,094
	$ 8,485,370	**$ 5,195,937**	$ 3,289,433	$ 3,284,707

6. UNEARNED REVENUE

	2000	1999
Conditional grants (Schedule 2)	**$** 1,191,220	$ 583,237
Contract research	-	5,382
	$ 1,191,220	$ 588,619

7. SUB-CONTRACT RESEARCH

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

	2000	1999
University of British Columbia	**$ 38,346**	$ 53,403
National Research Council of Canada	**30,667**	35,000
University of Calgary	**48,198**	118,614
	$ 117,211	$ 207,017

8. OTHER EXPENDITURES

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

9. INCOME TAXES

The Organization (VIDO) is not subject to either federal or provincial income taxes. The Organization (VIDO) is required to pay GST and PST on taxable services and supplies.

UNIVERSITY OF SASKATCHEWAN
VETERINARY INFECTIOUS DISEASE ORGANIZATION (VIDO)
NOTES TO THE FINANCIAL STATEMENTS
SEPTEMBER 30, 2000

10. NON-CASH WORKING CAPITAL

	2000	1999
Increase in Due from University of Saskatchewan operating fund	**$ (455,182)**	$ (24,273)
Decrease, (increase) in Accounts receivable	**797,994**	(331,622)
Increase in Inventories	**(36,650)**	(10,330)
Increase in Accounts payable	**700**	-
(Decrease), increase in Accrued vacation pay	**(33,605)**	49,356
Increase in Unearned revenue	**602,602**	28
	$ 875,859	$ (316,841)

11. RELATED PARTY TRANSACTIONS

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

b) The University of Saskatchewan is the beneficiary of a Trust which owns 16.44% of BIOSTAR Inc. as at March 31, 2000 (1999-16.85%). BIOSTAR Inc. is a research and development company associated with the development of some of the Organization's (VIDO's) products and technologies. During the year the Organization (VIDO) had the following transactions with BIOSTAR Inc.:

	2000	1999
Income from BIOSTAR Inc. to VIDO		
Contract research	**$ 2,825**	$ 18,965
Royalties	**175,000**	200,000

At September 30, 2000 the Organization (VIDO) has a receivable from BIOSTAR Inc. of $0. (1999-$106,570).

12. CONTINGENCIES

The Organization (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, 2000.

13. COMPARATIVE FIGURES

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

Schedule 1

UNIVERSITY OF SASKATCHEWAN
VETERINARY INFECTIOUS DISEASE ORGANIZATION (VIDO)

SCHEDULE OF DONATIONS AND UNCONDITIONAL GRANTS
YEAR ENDED SEPTEMBER 30, 2000

	2000	1999
LIVESTOCK INDUSTRY		
Beef		
Saskatchewan Horned Cattle Trust Fund	$ 35,000	$ 75,000
Kamloops Stockmen's Association	1,400	700
Saskatchewan Cattle Marketing Deductions Fund	75,000	150,000
Manitoba Cattle Producers Association	-	5,000
	111,400	230,700
Dairy		
Alberta Milk Producers	-	25,000
Dairy Farmers of Ontario	-	50,000
South Coastal Dairy Education Association	-	500
	-	75,500
Swine		
Ontario Pork Producers' Marketing Board	12,000	-
Alberta Pork Producers Development Corporation	40,000	50,000
BC Hog Marketing Commission	2,500	-
Manitoba Pork Council	-	20,000
Sask Pork	-	10,000
Swine Improvement Services Cooperative	128	242
	54,628	80,242
Poultry		
Alberta Chicken Producers	16,000	-
Canadian Turkey Marketing Agency	-	50,000
	16,000	50,000
PROVINCIAL GOVERNMENTS		
Alberta	-	40,000
British Columbia	3,200	1,200
Manitoba	15,200	15,200
	18,400	56,400
OTHER FOUNDATIONS, COMPANIES AND INDIVIDUALS		
Individuals	506	495
	$ 200,934	$ 493,337

See accompanying notes

UNIVERSITY OF SASKATCHEWAN
VETERINARY INFECTIOUS DISEASE ORGANIZATION (VIDO)
SCHEDULE OF CONDITIONAL GRANTS AND CONTRACTS
YEAR ENDED SEPTEMBER 30, 2000

	September 30, 1999		2000	September 30, 2000			
	Accounts Receivable	Unearned Revenue	Funds Received	Accounts Receivable	Unearned Revenue	2000 Income	1999 Income
Natural Sciences & Engineering							
Research Council of Canada (NSERC)							
-Operating, Strategic and Equipment	$ -	$ 180,111	$ 306,820	$ -	$ 157,800	$ 329,131	$ 411,267
-Industry Matching	-	33,637	40,000	-	5,617	68,020	6,362
Agriculture and Agri-Food Canada	-	-	350,000	-	350,000	-	-
Canadian Bacterial Diseases Network (CBDN)	15,684	-	195,982	-	7,087	173,211	240,228
Agriculture Canada/NSERC Research Partnership Grants	-	42,177	104,100	-	45,230	101,047	141,533
Medical Research Council	-	88,712	355,256	-	185,190	258,778	120,076
World Health Organization	-	31,200	29,559	-	15,052	45,707	-
Ontario Cattlemen's Association	30,928	-	84,800	11,859	30,681	35,050	66,729
Alberta Agriculture Research Institute (AARI)	10,004	23,685	256,397	19,437	69,755	219,760	251,722
Research Network on Bacterial Pathogens of Swine	-	-	78,250	-	69,038	9,212	-
Human Frontier Science Program	-	-	-	-	-	-	104,507
Poultry Industry Council	-	-	4,858	7,288	-	12,146	-
Saskatchewan Agriculture Development Fund	91,764	-	232,000	27,760	24,189	143,807	271,329
Saskatchewan Beef Development Board	-	13,479	25,800	18,509	-	57,788	31,715
Canada-Alberta Beef Industry Development Fund	-	46,757	196,326	10,619	22,404	231,298	147,537
Beef Industry Development Fund	50,490	-	132,599	-	-	82,109	315,039
Beef Cattle Industry Development Fund	512	43,469	48,306	5,694	33,488	63,469	17,079
Agri-Food Innovation Fund	-	25,771	478,000	-	135,136	368,635	612,919
Health Services Utilization and Research Commission	-	27,797	105,860	-	21,237	112,420	2,220
Saskatchewan Health Research Board Fellowship	-	-	85,514	-	19,292	66,222	63,187
Dairy Farmers of Canada	-	22,498	40,000	-	25	62,473	17,502
British Columbia Investment Agriculture Foundation	-	3,944	45,000	28,653	-	77,597	38,556
	$ 199,382	$ 583,237	$ 3,195,427	$ 129,819	$ 1,191,221	$ 2,517,880	$ 2,859,507

See accompanying notes

PATENTS, PUBLICATIONS &

1999/2000 Publications

Patents

Switzerland Patent #0,618,814
Title: Recombinant bovine herpesvirus type 1 polypeptides and vaccines.
Date: October 15, 1999
Authors: Babiuk, L.A., van Drunen Little-van den Hurk, S., Zamb, T., and Fitzpatrick, D.

United States Patent #5,969,126
Title: GNRH-Leukotoxin chimeras.
Date: October 19, 1999
Authors: Potter, A.A. and Manns, J.G

United States Patent #5,985,289
Title: Haemophilus somnus outer membrane protein extract enriched with iron-regulated proteins.
Date: November 16, 1999
Authors: Potter, A.A. and Harland, R.J.

United States Patent #6,001,591
Title: Recombinant bovine adenoviruses.
Date: December 14, 1999
Authors: Mittal, S.K., Graham, F.L., Prevec, L., and Babiuk, L.A.

United States Patent #6,022,960
Title: GNRH-Leukotoxin chimeras.
Date: February 8, 2000
Authors: Potter, A.A., and Manns, J.G.

European Patent No. 061020
Title: Vaccines for Actinobacillus pleuropneumoniae.
Date: February 9, 2000
Authors: Potter, A.A., Gerlach, G. Willson, P. Rossi-Campos, A.

United States Patent No. 6,086,890
Title: Bovine Adenovirus Expression Vector System
Date: July 11, 2000
Authors: Mittal, S.K., Graham, F.L., Prevec, L., Babiuk, L.A.

Research Publications in Scientific Journals

Baca-Estrada, M.E., Foldvari, M., Ewen, C., Badea, I., and Babiuk, L.A. 2000. Effects of IL-12 on immune responses induced by transcutaneous immunization with antigens formulated in a novel lipid-based biphasic delivery system. Vaccine 18: 1847-1954.

Baca-Estrada-M., Foldvari, ,M., Snider, M., Harding, K., Kounikakis, B., Babiuk, L.A., and Griebel, P. 2000. Intranasal immunization with liposome formulated Yersinia pestis vaccine enhances mucosal immune responses. Vaccine 18: 2203-2211.

Baxi, M.K., D. Dereget, J. Robertson, L.A. Babiuk, T. Schlapp, and S.K. Tikoo. 2000. Recombinant bovine adenovirus type 3 expressing bovine viral diarrhea virus glycoprotein E2 induces an immune response in cotton rats. Virology 278.234-243.

Braun,R.P., Babiuk, L.A., Loehr, B.I. and van Drunen Littel-van den Hurk, S. 1999. Particle-mediated DNA immunization of cattle confers long-lasting immunity against bovine herpesvirus-1. Virology 265: 46-56.

Dosman, J.A., Senthilselvan, A., Kirychuk, S.P., Lemay, S., Barber, E.M., Willson, P., Cormier, Y., Hurst, T.S. 2000. Positive human health effects of wearing a respiratory in a swine barn. Chest 118: 852-860.

Gerdts, V., Babiuk, L.A., van Drunen Little-van den Hurk, S., and Griebel, P.J. 2000. Fetal immunization by a DNA vaccine delivered orally into the amniotic fluid. Nature Medicine 6: 929-932.

Gibb, D.J., Schwartzkopf-Genswein, K.S., Stookey, J.M., McKinnon, J.J., Godson, D.L., Wiedmeier, R.D., and McAllister, T.A. 2000. Effect of a trainer cow on health, behavior, and performance of newly weaned beef calves. J Anim Sci 78: 1716-25.

Gomis, M.S, Gomis, A.I.U., Horadagoda, N.U., Wijewardene, T.G., Allan, B.J., Potter, A.A. 2000. Prevalence and description of cellulitis and other Escherichia coli disease syndromes in broilers in Sri Lanka. Trop. Anim., Hlth. Prod. 32: 341-351.

Griebel, P.J., Beskorwayne, T., Godson, D.L., Popowych, Y., and Hein, W. 2000. Cloning non-transformed sheep B cells. J Immunol Methods 237: 19-28.

Lewis, P.J., van Drunen Littel-van den Hurk, S., and Babiuk, L.A. 1999. Effect of antigen compartmentalization on the immune responses to a gD DNA vaccine. J. Virol. 73:10214-1023.

Lewis, P.J., van Drunen Littel-van den Hurk, S., and Babiuk, L.A. 1999. Development of immune responses in the presence of passive antibody J. Gen. Virol. 80: 2829-2837.

Liu, Q., Wang, L., Willson, P., and Babiuk, L. 2000. Quantitive, competitive PCR analysis of porcine circovirus DNA in serum from pigs with post-weaning multisystemic wasting syndrome. J. Clin. Microbiol. 38: 3473-3477.

Loehr, B.I., Willson, P., Babiuk, L.A., and van Drunen Littel-van den Hurk, S. 2000. Gene gun mediated DNA immunization primes development of mucosal immunity against bovine herpesvirus-1 in cattle. J. Virol. 74: 6077-6086.

Mutwiri, G., Bateman, C., Baca-Estrada, M.E., Snider, M., and Griebel, P.J. 2000. Immunocompetence of gut-associated lymphoid tissue in newborn lambs. Vaccine 19: 1284-1293.

Olfert, E.D. and Godson, D.L. 2000. Humane endpoints for infectious disease animal models. Institute for Laboratory Animal Research Journal 41: 99-104.

Raggo, C., Habermehl, M., Babiuk, L.A., Griebel, P.J. 2000. In vivo effects of a recombinant bovine herpesvirus-1 vector expressing bovine interferon-gamma. J. Gen. Virol. 81: 2665-2673.

Reddy, P.S., Idamakanti, N., Zakhartchouk, A.N., Babiuk, L.A., Mehtali, M., and Tikoo, S.K. 2000. Optimization of bovine coronavirus hemagglutinin-estrase glycoprotein expression in E3 deleted bovine adenovirus-3. Virus Research 70 65-73.

Reddy, P.S., Idamakanti, N., Pyne, C., Zakhartchouk, A.N., Godson, D.L., Papp, Z., Baca-Estrada, M.E., Babiuk, L.A., Mutwiri, G.K., and Tikoo, S.K. 2000. The immunogenicity and efficacy of replication-defective and replication-competent bovine adenovirus-3 expressing bovine herpesvirus-1 glycoprotein gD in cattle. Veterinary Immunology and Immunopathology 76 257-268.

Shoda, L.K., Palmer, G.H., Florin-Christensen, J., Florin-Christensen, M., Godson, D.K., and Brown, W.C.. 2000. Babesia bovis-stimulated macrophages express interleukin-1beta, interleukin-12, tumor necrosis factor alpha, and nitric oxide and inhibit parasite replication in vitro. Infect Immun 68: 5139-45.

Zakhartchouk, A.N., Godson, D.L., Babiuk, L.A., and Tikoo, S.K. 2000. 121R protein of BAV-3 protects mouse cells from TNF lysis. Intervirology (Accepted).

Research Presentations, Posters, and Abstracts Presented at Meetings

Amoako, K., Prysliak, T., Allan, B., and Potter, A. Streptomycin-dependent mutations and attenuation in an avian pathogenic Escherichia coli strain. CBDN Annual Meeting. May 6-9, 2000. Canmore, AB.

Baxi, M.K., Deregt, D., Robertson, J., Babiuk, L.A., and Tikoo, S.K. Recombinant bovine adenovirus-3 expressing bovine viral diarrhea virus glycoprotein E2 generates immune responses in cotton rats. 19th Annual Meeting of American Society of Virology. July 8-12, 2000. Fort Collins, CO.

Fontaine, M.C., Perez-Casal, J., and Potter, A. An investigation of the GapC protein of mastitis-causing Streptococci. CBDN Meeting. May 6-9, 2000. Canmore, AB.

Gerdts, V., Babiuk, L.A., and Griebel, P. 2000. 'Gut-loop" as a model to develop oral veterinary vaccines. European Federation of Immunological Sciences (EFIS) Satellite Workshop: Infectious Immunity and Vaccines, Kazimnierz Dolyn n. Wilsa, Poland

Gerdts, V., Babiuk, L.A., van Drunen Littel-van den Hurk, S., and Griebel, P. 2000. Fetal immunization by a DNA vaccine delivered orally into the amniotic fluid. 14th European Immunology Meeting, European Federation of Immunological Societies. Poznan, Poland.

Gomis, S., Amoako, K., Ngeleka, M., Belanger, L., Althouse, B., Kumor, L., Waters, E., Stephens, S., Riddell, C., Potter, A., and Allan, B. Cellulitis in Turkeys: Histopathological and bacteriological evaluations. CBDN Annual Meeting. May 6-9, 2000. Canmore, AB.

Griebel, P., Mutwiri, G., Gerdts, V., Beskorwayne, T., Kaushik, R., and Brownlie, R. B-cell development in Peyer's patches. Australian Society of Immunology 30th Annual Conference. 2000. Sydney, Australia.

Loehr, B.I., Babiuk, L.A., and van Drunen Littel-van den Hurk, S. Genital mucosa of cattle as DNA immunization site. 5th International Congress of Veterinary Virology. 2000. Brescia, Italy. Pg. 134.

Nauwinck, H. Vanroose, G., Van Soon, A., Favoreel, H., Vanderheyden, N., Thiry, E., van Drunen Littel-van den Hurk, S., and de Kruif, A. Inhibition of bovine sperm cell-oocyte binding by bovine herpesvirus-1 (BHV-1) and recombinant BHV-1 glycoproteins gC and gD. 25th International Herpesvirus Workshop. 2000. Portland, OR, USA.

Perez-Casal, J., Fontaine, M., and Potter, A. Construction of a chimeric GapC protein from several mastitis-causing Streptococci. CBDN Meeting. May 6-9, 2000. Canmore, AB.

Rankin, R., Griebel, P., King, T., Babiuk, L.A., and van Drunen Littel-van den Hurk, S. Oral DNA immunization in sheep. 5th International Congress of Veterinary Virology. Brescia, Italy. Pg. 138.

Rankin, R., Griebel, P., King, T., Babiuk, L.A., and van den Hurk, S. Oral DNA immunization in sheep. European Society of Virology, Italy.

Rontved, C.M., Tjornehoj, K., Viuff, B., Larsen, L.E., Godson, D.L., Ronsholt, L., and Alexandersen, S. Infection with bovine respiratory syncytial virus in calves is accompanied by a significant pulmonary secretion of tumor necrosis factor-a. American Association of Immunologists, May 2000, Seattle WA

Song, X., Bolton, A., Perez-Casal, J., and Potter, A. Roles of the Streptococcus dysgalactiae Mig protein in pathogenesis: Phagocytosis of a Mig mutant by bovine neutrophils. CBDN Meeting. May 6-9, 2000. Canmore, AB.

PRESENTATIONS

Stocki, S., Rawlyk, N., Babiuk, L.A., and Allan, B. Identification and characterization of DNA sequences unique to Escherichia coli capable of causing disease in poultry. CBDN Annual Meeting. May 6-9, 2000. Canmore, AB.

Tikoo, S.K. and Q. Wu. Bovine adenovirus-3 based gene transfer vectors. 3rd Annual meeting of American Society of Gene Therapy. May 31- June 4, 2000. Denver, CO.

Tikoo, S.K., Brownlie, R., Babiuk, L.A, and Baxi, M. Bovine adenovirus-3 as a live viral vaccine vector. 2nd International Veterinary Vaccines and Diagnostics Conference. July 22-28, 2000. Oxford, UK.

Willson, P.J. Fact Sheet on Pleuropneumonia. Saskatchewan Pork Industry Symposium. November 17-19, 1999. Saskatoon, SK.

Willson, P.J., Wang, L., Liu, Q., O'Connor, B., and Keeniside, J. Distribution of swine with porcine circovirus type 2 in Alberta. Annual Meeting of Canadian Society of Microbiologists. June 11-15, 2000. Winnipeg, MB.

Wu, Q. and S.K. Tikoo. Transduction of human cells by bovine adenovirus type 3 (BAV3) vector containing a modified fiber protein. 19th Annual Meeting of American Society of Virology. July 8-12, 2000. Fort Collins, CO.

Yoo, D., Zuo, J., Willson, P., Wang, L. Dewey, C., and Frienship, P.M. Serological evidence of the prevalence of swine hepatitis E virus in Canadian pigs. Conference on Research Workers in Animal Diseases. November 7-9, 1999. Chicago, IL.

Zhang, L., Babiuk, L.A., and Tikoo, S.K. Monitoring foreign gene expression in the E3 region of BAV type 3. 19th Annual Meeting of American Society of Virology. July 8-12, 2000. Fort Collins, CO.

Zhou, Y., Reddy, P.S., Babiuk, L.A., and Tikoo, S.K. Bovine adenovirus type 3 (BAV-3) E1B small protein is not essential for virus growth in fetal bovine retina cells (FBRC). 19th Annual Meeting of American Society Virology. July 8-12, 2000. Fort Collins, CO.

Reports and Presentations to Livestock Industry, etc.

Godson, D.L. and Dubeski, P.L.. New Strategies for Boosting the Immune System. National Beef Science Seminar. January 27, 2000. Lethbridge, AB

Griebel, P. B-cell development: The role of Peyer's patches. Australian Society for Immunology 2000 Meeting. Sydney, Australia.

Griebel, P. Needle-free vaccine delivery. Western Canadian Association of Bovine Practitioners. 2000. Saskatoon, SK

Griebel, P. New Vaccines for Disease Control. 2000. National Beef Science Seminar. Lethbridge, AB

Griebel, P., van den Hurk, S., Tikoo, S., Baca-Estrada, M., Lohr, B., Gerdts, V., Mutwiri, G., and Babiuk, L.A. New Vaccines for Disease Control. Proceedings of National Beef Science Seminar. New Science for a New Century. Jan 26-28, 2000. Lethbridge, AB.

Tikoo, S.K. Animal Adenovirus as an expression vector. Neuropsychiatric Research Unit, Department of Psychiatry, University of Saskatchewan. 2000. Saskatoon, SK.

Tikoo, S.K. Animal adenoviruses as vectors for human gene therapy. Transgene, Strausbourg, France.

Willson, P. Infectious hazards from swine. Saskatchewan Labor Workshop on Health and Safety in Hog Production. January 27, 2000. Saskatoon, SK.

Willson, P. New prevention for Strep. suis in pigs. Farm-Scape... A presentation of Manitoba's Pork Producers. January 6, 2000. CKLQ, Manitoba.

Willson, P. and Whittington, L. Sustainability and water use. Centered on Swine. July 5-6, 2000.

Willson, P., Connor, W., Grenwich, L., Shantz, N. Poor immunity from a Strep. suis autogenous bacterin. Prairie Swine Centre Annual Research Report. 1999.

Willson, P., Wilson, D., Hueser, S., and Farrow, M. Saskatchewan Pork Expo. February 29-March 1, 2000. Saskatoon, SK.

Chapters in Books, Expository and Review Articles

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Canadian Bacterial Diseases Network Personnel (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.

As we go forward
into our next 25 years,
VIDO will continue
to grow and adapt to:

The technology
The pace
The players

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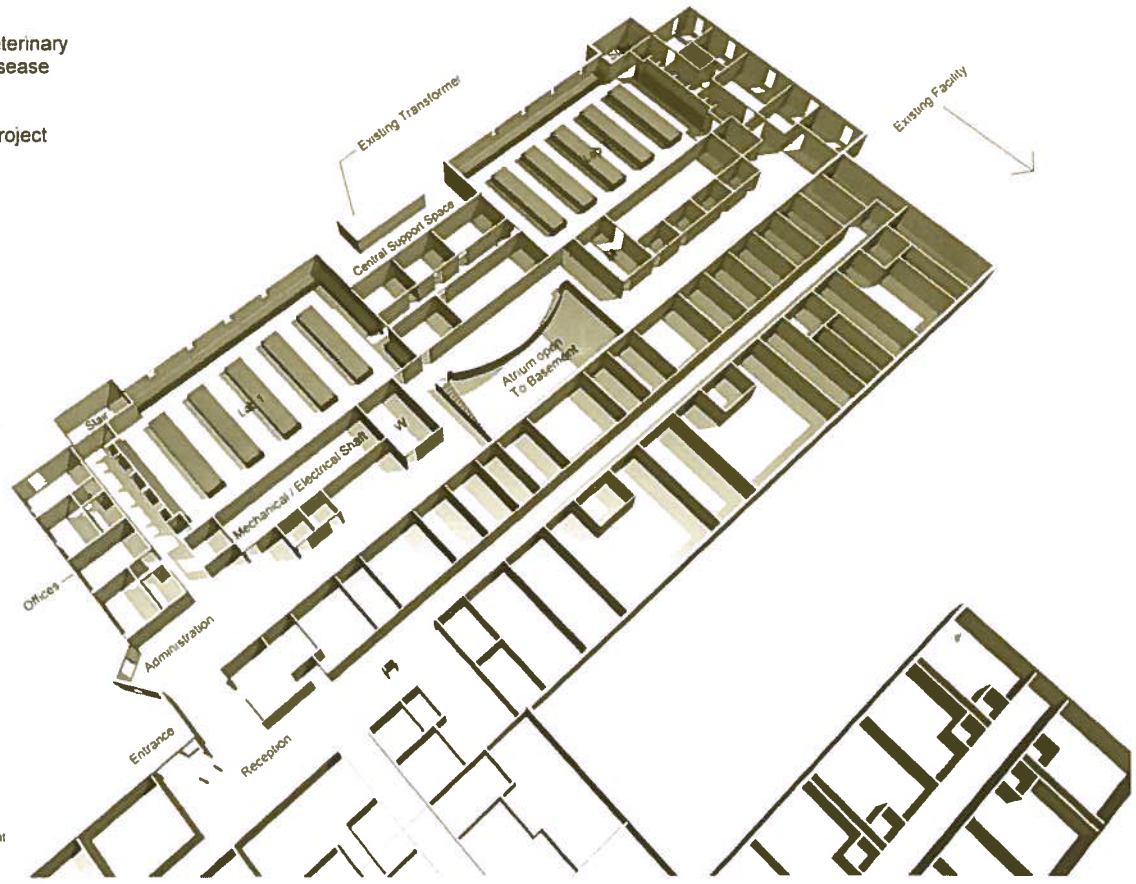
Proposed Veterinary Infectious Disease Organization

Expansion Project

First Floor



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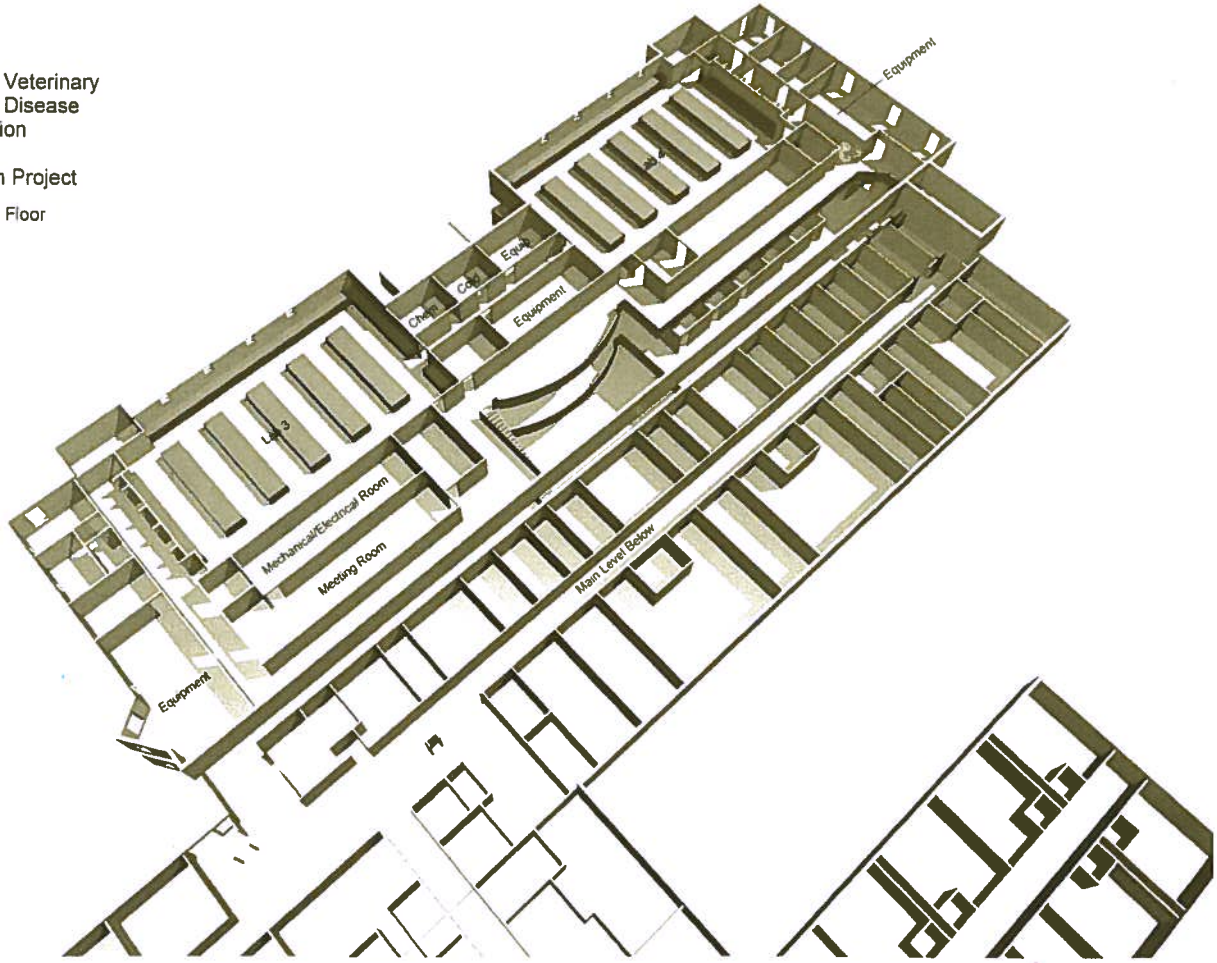
Proposed Veterinary Infectious Disease Organization

Expansion Project

Second Floor



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