



Vaccine and Infectious Disease Organization  
*Protecting the World from Infectious Disease*

# VIDO



Novel  
approaches  
to emerging  
threats

2006-2007

A research organization of the



UNIVERSITY OF  
SASKATCHEWAN

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# VIDO

Our Vision    Protecting the world from infectious diseases



Our Mission    To be a pre-eminent research institute investigating the pathogenesis of infectious diseases and the development of effective therapeutic and prophylactic methods to control infectious diseases of humans and animals





## VIDO: An Unprecedented Journey

Dr. Lorne Babiuk, OC, SOM, PhD, D.Sc., FRSC,  
Director and CEO  
*Canada Research Chair in Vaccinology and  
Biotechnology*

Many years ago, we had a collective vision: to make a difference in the health of animals, and to thereby not only reduce animal suffering, but also to increase the productivity of our livestock management systems and the competitiveness of our livestock producers.

Throughout the years since, we have listened to the industry and focused our research efforts into those avenues where we could make a difference and where our research would benefit the end-user.

With time, it became obvious that many of the techniques and approaches we had developed for animal vaccines were equally relevant for human vaccines. In addition, some of the animal models we developed simulated very closely infectious disease of humans, and were more relevant for investigating human diseases than the mouse – the most frequently used animal model for human infectious disease studies. We also saw that many human diseases, especially the newest ones, are transmitted from animals to humans.

We capitalized on these commonalities and incorporated human disease investigations into our repertoire of potential targets, changing our name in 2003 from the Veterinary Infectious Disease Organization to the Vaccine and Infectious Disease Organization.

Though my time at VIDO draws to a close, I am indeed extremely happy to have been a part of this exciting experiment and this unprecedented journey.

However, the journey is not over. Our new International Vaccine Centre is under construction and many wonderful opportunities and challenges await VIDO/InterVac. I am confident that the foundations laid over the last three decades will ensure that VIDO/InterVac succeeds, and more importantly, that all society benefits from this investment in human capital, vision and financial resources, strengthening VIDO/InterVac's enviable position as a centre of global excellence in vaccine research. The appointment of Dr. Andrew Potter as the new Director is an excellent choice, providing confidence that VIDO/InterVac will achieve even greater success in the future.

This journey required the dedication of many organizations and individuals who had faith in us and supported us. Without their support, our path would have been much more difficult, if not impossible. In this final report as Director/CEO of VIDO/InterVac, I wish to thank all the supporters of VIDO

*With time, it became obvious that many of the techniques and approaches we had developed for animal vaccines were equally relevant for human vaccines.*

over the years. It is impossible to name everyone here, but all of their names have appeared in our annual reports.

### **InterVac: A Triumph of Partnership**

The most recent example of various partners joining forces to achieve what I would say is nothing short of remarkable, is the financial support committed for InterVac.

We felt that building a Biosafety Containment Level 3 facility was critical for VIDO to continue to have a significant impact on infectious diseases, and to enable Canada to address the rapid emergence of new, highly virulent infectious diseases. Thus, we embarked on designing a facility that would allow researchers in Canada to investigate the pathogenesis of Level 3 pathogens and develop therapeutic and prophylactic methods for their control.

With cost escalations, the challenges were enormous. However, we were able to assemble diverse partners who shared our vision to make InterVac a reality. Specifically, we are grateful to the Canada Foundation for Innovation for conducting the international scientific peer review and providing the seed funding of more than \$30 million to construct InterVac. This peer review and infusion of funds helped lever funding from agencies of the Government of Canada, the Province of Saskatchewan, the City of Saskatoon, and the University of Saskatchewan.

This partnership between three levels of government and the University was critical for the project to proceed. InterVac will provide exceptional opportunities for Canadian students and investigators in infectious diseases to carry out their research in a unique, world-class environment. It will also provide unprecedented opportunities for interaction with global researchers from academia, government, and the biopharmaceutical industry.

This should result in substantial long-term economic growth and direct health benefits both to our livestock and human populations. The physical infrastructure being built at VIDO/InterVac will enhance our intellectual capital and directly uphold the national research and development objectives of supporting economic growth and job creation, increasing Canada's capacity to carry out world-class research, expanding research and job opportunities for young Canadians, and promoting collaboration among Canadian and international institutions.

These combined effects will lead to enhanced commercialization and improved health for all Canadians, as well as helping the global community improve control of infectious diseases.

*InterVac will provide exceptional opportunities for Canadian students and investigators in infectious diseases to carry out their research in a unique, world-class environment.*

Dr. Lorne Babiuk and Dr. Andrew Potter at the InterVac groundbreaking ceremony June 25, 2007. Saskatoon Mayor Don Atchison (at left) and Mr. Brad Trost, Member of Parliament for Saskatoon-Humboldt, look on.



VIDO/InterVac will be the beacon for creative minds to dream big dreams. It will be the infrastructure that ensures these dreams come to reality, not just for the gratification of individuals but for the benefit of all Canadians and the global community.

### Companions on the Path

VIDO's success would not have been possible without the dedication of the staff and many trainees who have spent critical formative years gaining experience at VIDO. The current staff of over 150 – many of whom have been with VIDO for 10 to 25 years – has shown dedication and commitment to making a difference. Your support and dedication is greatly appreciated.

The VIDO "alumni" gave some of their greatest ideas to the VIDO team before moving on in their careers. You have become part of the VIDO family: we are always proud of our alumni and many of you still contribute to our success. We thank you all and look forward to continuing to interact with you for many years to come.

Finally, I have had the privilege of working with the most diverse and committed board of advisors anyone could wish to have. Indeed, others have asked me how we keep our board members so engaged in our activities. The entire organization, and especially senior management and I, thank you for your support. Your desire to make a difference and to help VIDO remain focused has been pivotal to our success.

In closing, I personally challenge the team at VIDO/InterVac and especially the University of Saskatchewan to continue this innovative experiment – a focussed team environment addressing global problems that normally cannot be addressed by individual investigators in an academic environment. Success will only come if we stretch the academic horizons and embrace the seamless marriage between academia, industry and government. Then, we can hope to achieve our full potential as a country and to reap the return on our imaginations.

### VIDO Board of Advisors

Front row, left to right: Mr. Terry Manning, Ms Catherine McKinley, Mr. Brian Perkins (Chair), Dr. Lorne Babiuk, Dr. Chuck Rhodes.

Back row, left to right: Dr. Stanley Alkemade, Dr. W. Ronald Osborne (Past Chair), Dr. Robert Kerr, Dr. Walter Hueser, Dr. Gordon Atkins, Dr. Steven Franklin.

Absent: Dr. Bill Ballantyne, Dr. Harley Olsen.





# Maintaining Excellence

Mr. Brian Perkins, P.Ag.  
*Chair, VIDO Board of Advisors*

As Chair of the VIDO Board of Advisors, I have had the great privilege to be involved with this organization through a pivotal time in its evolution.

The vision and commitment of VIDO's senior management, scientists and staff is incredible. This commitment significantly influences both the economics of livestock production and the needs of society through its impacts on infectious diseases. VIDO has been instrumental in bringing the importance of veterinary medicine and the link between animal diseases and human diseases to the attention of the public and policymakers alike.

Over the past five years, VIDO has been in a constant state of growth. With the opening in 2003 of the new research wing and now construction of the Biosafety Containment Level 3 InterVac facility, VIDO/InterVac is poised to fulfill its commitment to developing new methods to control infectious disease in both animals and humans. Within the University of Saskatchewan, VIDO/InterVac's partnership and collaboration with researchers in the health sciences, veterinary medicine and agriculture are key to its continued success, and its partnerships in the global research community continue to further extend this success.

VIDO's true strength lies with its staff. The talent and energy needed for VIDO to maintain its excellence is found in every individual employed here. Departing Director Dr. Lorne Babiuk is truly a research visionary who devoted his time to encouraging enthusiasm among all. Lorne's leadership and passion will be greatly missed.

On behalf of the VIDO Board of Advisors, we look forward to assisting Dr. Andrew Potter in capturing the opportunities that lay ahead. Andrew is an outstanding choice as the new Director. His leadership will continue to address the needs of the livestock community and further VIDO/InterVac's contribution to human health.

To the VIDO staff, thank you for allowing me to be involved during this most exciting time in your history.



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# Groundbreaking Celebration Launches Construction of the International Vaccine Centre

The \$110.4 million International Vaccine Centre (InterVac), to be completed by 2010, is an ambitious new Biosafety Containment Level 3 vaccine research and development facility at the University of Saskatchewan that will significantly enhance Canada's capacity to develop vaccines for both humans and animals.

Most emerging diseases of humans and animals fall into the Level 3 category. These include avian influenza, SARS, West Nile virus, and BSE; and persistent diseases such as tuberculosis.

Many Level 3 diseases have profound impacts on quality of life and the economy, so there is urgent need for vaccines and treatments (SARS alone cost the world economy \$100 billion). In addition, most of the diseases that infect humans arise in animals, making it essential to be able to study infection in animals as well.

InterVac will be Canada's largest vaccine research centre and one of the largest in North America. The 145,000-square-foot InterVac facility will be built connected to VIDO on the University of Saskatchewan campus.

VIDO/InterVac will operate under one director as a non-profit organization owned by the U of S. Infrastructure will represent the most significant investment ever made in Canada's vaccine research program and a great increase in the resources—both equipment and expertise—available to health researchers in Canada.



Dignitaries at the June 25, 2007 InterVac sod-turning ceremony (Mr. Peter MacKinnon, U of S President; Dr. Eliot Phillipson, President and CEO of the Canada Foundation for Innovation; the Hon. Warren McCall, Saskatchewan Minister of Advanced Education and Employment; Dr. Lorne Babiuk, VIDO Director; Saskatoon Mayor Don Atchison; Mr. Brad Trost, Member of Parliament for Saskatoon-Humboldt; and Dr. Andrew Potter, VIDO Associate Director, Research).

Dr. Lorne Babiuk with CTV intern Courtney Ketchen and videographer Brian Langdon.







## New Opportunities Through Change

Ms Joyce Sander, CIM, P.Mgr.

*Human Resources and Intellectual Property Manager*

The world around us is in constant change. In infectious disease research, change is happening faster than ever. Whether positive or negative, change can be stressful: we cannot secure the world overnight from the threat of emerging infectious diseases nor can we, as an organization, avoid change. However, we can choose how we respond.

VIDO has a dedicated research team of approximately 150 employees who are working to protect the world from infectious diseases. Despite our employees' extraordinary contributions to science and great dedication and energy, our achievements do not insulate us from change—and we benefit from this.

Within the last 12 months, we have integrated more closely with the University of Saskatchewan, and we have finalized the design and funding for InterVac. These changes create new opportunities for collaboration and the growth of our skills and knowledge.

We have also accepted the resignation of our director, who provided our leadership, vision and guidance over the past 14 years. While Dr. Babiuk will be greatly missed, this change opens the organization to the possibilities of a complementary vision for our future, held by our new director, Dr. Andrew Potter.

As Manager of Human Resources, I think about what our employees, both long-standing and new, expect during this period of change. The VIDO/InterVac Management Team will maintain our commitment to providing our employees that to which they are entitled: a competitive wage, respect, a safe working environment and meaningful work.

Change challenges us, and in so doing it energizes us. During this time of change and evolution, nothing limits us except ourselves—for the truest aspect of every person is their unbound potential.



Jean Potter, M.Sc. candidate (left) and Julia Whale, technician.

*During this time of change and evolution, nothing limits us except ourselves—for the truest aspect of every person is their unbound potential.*

# VIDO/InterVac Offers a World-class Training Experience



Ryan Arsenault is an M.Sc. candidate in VIDO's Emerging Diseases and Microbial Virulence program.

*I found VIDO to be just what I expected! It is a wonderful place to be a graduate student and I am proud to be a part of it. Its atmosphere offers a true blend of industrial and academic cutting-edge research.*

Niraj Makadiya, M.Sc. candidate,  
Vectored Vaccines program (Porcine Adenovirus)

*The opportunity to carry out my graduate studies at a world-class facility such as VIDO has been a wonderful experience. I have been fortunate to train amongst staff who are exceedingly professional and friendly and take part in the ground-breaking research that continues to put VIDO at the forefront of infectious disease research. VIDO supplies its graduate students with the skills and knowledge necessary for a productive research career.*

Jason Kindrachuk, PhD candidate,  
Molecular Pathogen Recognition program

*Throughout my years at the University of Saskatchewan, I feel that getting the chance to do my graduate studies at VIDO was one of the best things that ever happened to me. VIDO is a state-of-the-art facility with very talented individuals and a very high standard of safety. The work environment is great and the staff are very motivated. In addition, you get to meet people from all parts of the world. As a graduate student, I think this is one of the best places to train.*

Taseen Desin, M.Sc. candidate,  
Food Safety Vaccines and the Livestock  
Environment program

*The people of VIDO are what make it such a great place to study. There are always knowledgeable scientists who are available to give advice. Everybody is very friendly and willing to help out.*

Patrick Fries, M.Sc. candidate, Pathogenomics program

*I would like to say that carrying out my research at VIDO as a postdoctoral fellow was a great pleasure. After my PhD at the University of Tokyo, Japan, and my first postdoctoral experience at Washington State University, USA, I was given an exciting opportunity to work at VIDO. Who would have thought that my best research experience would be achievable in a city covered in snow six months of the year yet the sunniest city of Canada? Being at VIDO has provided me with the unique opportunity to work with world-class scientists in a fantastic research facility.*

Debabrata Biswas, PhD, Postdoctoral Fellow,  
Food Safety Vaccines and the Livestock Environment program



Jean Potter is an M.Sc. candidate in VIDO's Molecular Pathogen Recognition and Pathogenomics programs.



## Novel Opportunities Extend VIDO Research

Dr. Andrew Potter, PhD, Associate Director, Research  
*Senior NSERC Industrial Research Chair in Food Safety*

During the past year, VIDO's research programs have continued to evolve, with significant progress made in existing projects as well as new projects coming on stream.

Our research activities continue to balance between disease-specific projects and the development of "platform technologies" – research findings that can be applied to different diseases or species. As well, we balance between human and animal applications. In fact, it is becoming increasingly difficult to differentiate between animal and human health from a research perspective.

Our research projects are aligned in seven theme areas:

- vectored vaccine development
- viral vaccine development
- bacterial vaccines
- emerging infectious diseases and microbial pathogenesis
- immunomodulation (vaccine formulation and delivery)
- neonatal immunization
- pathogenomics

Each of these project groups is supported by two additional programs: clinical research and development, and chemistry/genomic services.

Our theme areas are not meant to be limiting or to hinder interactions, but rather to foster team-based problem solving. The Organization continues to be collaborative in nature, both internally and externally, and we view

this as a considerable strength in terms not only of our ability to carry out research activities, but also to offer a unique and productive training environment for our students and postdoctoral fellows.

Our training environment will be further enhanced by the recent establishment of a graduate degree program in vaccinology and immunotherapeutics for students in a variety of disciplines. The program will reside within the newly created University of Saskatchewan School of Public Health.

This is my last report as Associate Director (Research), as I have been given the honour of succeeding Dr. Lorne Babiuk as Director of VIDO/InterVac. I have enjoyed being closely involved in shaping VIDO's research programs over the past 13 years, and look forward to continuing to meet the challenges Dr. Babiuk has set for us.

Dr. Volker Gerdtz will assume leadership of VIDO/InterVac's research programs in July 2007. He has both the scientific credentials and the management skills required to move VIDO/InterVac to the next level of international scientific acclaim, and his commitment to teaching and mentorship will be a valuable contribution to the U of S School of Public Health.

*We balance between human and animal applications. In fact, it is becoming increasingly difficult to differentiate between animal and human health from a research perspective.*



# Research Highlights

It is not possible to describe each of our growing number of projects in detail and therefore only highlights of selected areas are described below. Full project descriptions can be found on our web pages at [www.vido.org](http://www.vido.org).

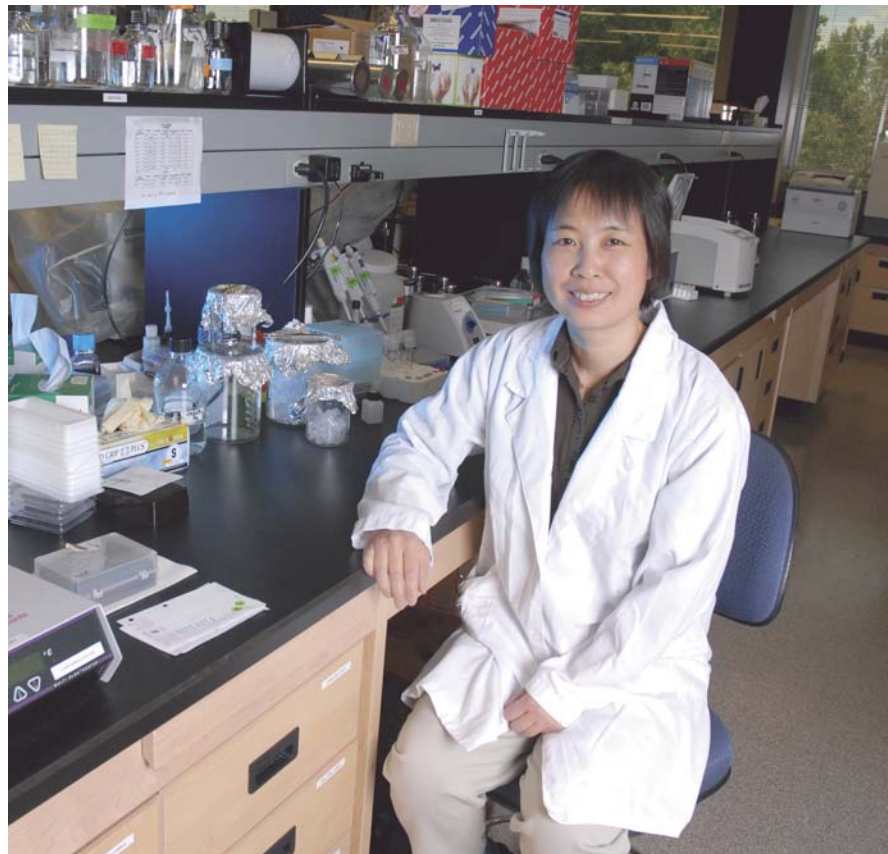
## Zoonotic Disease

Diseases transmitted from animals to humans account for over half of all human infectious diseases, and for new diseases of humans, this percentage rises to 75 per cent<sup>1</sup>. Thus, these diseases represent a considerable risk to humans and are also responsible for large economic losses to livestock producers worldwide.

One need look no further than the effect of the handful of bovine spongiform encephalopathy (BSE) cases on the Canadian beef and dairy industries to see this. Likewise, the severe acute respiratory syndrome (SARS) virus was estimated to cost the global economy \$100 billion and the threat of pandemic influenza has already had a global impact as well.

VIDO established a program in food and water safety a decade ago, focusing initially on the development of vaccines for *E. coli* O157:H7 and *Campylobacter jejuni*, two causes of gastrointestinal disease in humans that are transmitted by cattle and poultry respectively.

This program was expanded to include two *Salmonella* species in 2003, and has formed the basis for the establishment of two



Dr. Yan Zhou, head of VIDO's Influenza Research and Vaccine Development program.

Industrial Research Chairs at VIDO. The program has been valuable not only in terms of the tangible outputs of the research, but also in providing an excellent training environment for five graduate students and an equal number of postdoctoral fellows.

The zoonotic disease most in the public eye in recent years has been avian influenza and its potential to cause a pandemic. The perceived threat has been very real in Canada, with

potentially lethal virus isolates identified in the Fraser Valley of British Columbia, leading to a cull of susceptible avian species.

VIDO is responding to this threat with an established influenza vaccine project headed by Dr. Yan Zhou, who has overseen the project's rapid expansion thanks to additional funding over the past year. Dr. Zhou and her colleagues have made rapid progress in vaccine development using reverse

<sup>1</sup>Taylor L.H., Latham S.M., Woolhouse M.E. (2001) Risk factors for human disease emergence. *Philos Trans R Soc Lond B Biol Sci.* **356** (1411):983-9

genetics approaches in which the researchers begin with a gene and then determine its function. The team has also identified novel protein targets for both attenuating, or weakening, the virus, and developing new antiviral compounds.

In addition, under the leadership of myself, Dr. Scott Napper and Dr. Philip Griebel, we have recently added a prion vaccine project as part of the research portfolio of PrioNet Canada, one of the federal Networks of Centres of Excellence. The project has direct application for BSE as well as chronic wasting disease vaccines. Also under the leadership of Dr. Napper, we have launched a new project on *Mycobacterium avium* subspecies paratuberculosis, the cause of Johne's disease in cattle. The bacteria have been tentatively linked to Crohn's disease in humans, although a cause-and-effect relationship has not been demonstrated. We anticipate substantial progress of these two projects in the next one to two years.

### Neonatal Immunization

Vaccination is only beneficial if vaccines are formulated and delivered in an appropriate fashion and to individuals of the proper age. Successful vaccination of the newborn is often compromised by poor immunogenicity of current vaccines, biases in the newborn's



Dr. Scott Napper's laboratory is investigating BSE, host-pathogen recognition, and methods for high-throughput analysis of host cell enzyme activity.

immune responses and potential interference with maternally-derived immunity. We believe that neonatal immunization is a desirable goal for many diseases and, led by Dr. Volker Gerdts, are actively working on the development of novel vaccine formulations that will induce rapid immunity following one to two vaccine doses.

Our work, funded by the Bill



Dr. Volker Gerdts leads VIDO's Neonatal Immunization program.

and Melinda Gates and Krembil Foundations, is targeted initially at pertussis (whooping cough) and respiratory syncytial virus infection, respectively, but will have application in a variety of other areas as well. Pertussis is a particular problem in developing countries where it kills up to 300,000 children per year. Respiratory syncytial virus (RSV) is a major cause of respiratory disease in infants and there is no licensed vaccine.

Since pig and cow disease models are key to these research projects, the technology will be directly applicable to the livestock industry. These projects are both based on creating broad and balanced immune responses through linking activation of "innate" and "adaptive" immunity (the antibody response) and making use of novel carriers and adjuvant molecules (substances added to vaccines to improve the immune response).

During the past year, we added a new project led by Dr. Jose Perez-Casal to address *Mycoplasma* infection in cattle.

## World's first vaccine to control *E. coli* O157:H7, co-developed by VIDO, approved in 2006

*E. coli* O157:H7 is the bacterial strain that in 2000 killed several people in Walkerton, Ont. and made hundreds ill when it contaminated the town's drinking water. In the U.S., three per cent of food-related deaths are caused by *E. coli*.

Based on a discovery by University of British Columbia researcher Brett Finlay, the vaccine is derived from several novel bacterial proteins the *E. coli* O157:H7 bacteria need to infect the intestine.

Dr. Andrew Potter spearheaded the transformation of this technology into a vaccine. The vaccine works by preventing attachment of the bacteria to the intestinal surface of cattle, so the bacteria cannot remain in the intestine.

The cattle vaccine was approved for release in Canada in 2006. In addition to VIDO and UBC, partners in the vaccine's development include: the Alberta Research Council, the Beef Cattle Industry Development Fund, Bioniche Life Sciences, Inc., the Canadian Bacterial Diseases Network, and the Canadian Institutes of Health Research.

*Mycoplasma* strains, some of which are circulating worldwide, are capable of causing a variety of disease syndromes in cattle, ranging from respiratory disease to chronic conditions such as arthritis.

Recently, Dr. Perez-Casal received funding to pursue vaccine development based upon antigens (substances that stimulate the immune response) that are conserved amongst a variety of bacterial pathogens of cattle. These include pathogens responsible for respiratory disease and mastitis, making the antigens potentially useful for a number of applications.

As VIDO moves into the next year, there are two developments

that will have a significant impact. First, the University of Saskatchewan's School of Public Health will enhance our ability to carry out multidisciplinary research and to offer an enhanced training environment for students.

Secondly, with all funding now in place for the construction of the International Vaccine Centre (InterVac), we will begin the process of aligning our research to take advantage of the Biosafety Containment Level 3 capacity of this facility. While this process has already begun (e.g., with our hepatitis C vaccine development programs), we foresee moving into the area of chronic diseases which has been largely ignored by industry in the past.



Dr. Jose Perez-Casal leads vaccine development programs at VIDO against *Mycoplasma bovis* and bovine mastitis.



## Meeting Opportunity and Challenge with a Focus on Relationships

Dr. Paul Hodgson, PhD, MBA  
*Associate Director, Business Development*

As many of our stakeholders are aware, there were two major announcements at VIDO this year.

The first was that VIDO had secured the entire \$110.4 million required to complete the International Vaccine Centre (InterVac). The second was that our director, Dr. Lorne Babiuk, had accepted the position of Vice-President (Research) at the University of Alberta.

These events will bring both opportunities and challenges for business development and infectious disease research at VIDO/InterVac. Grasping the opportunities and rising to the challenges will be key to our continued success.

Infectious diseases continue to be at the forefront of public concern, and rightly so. The continuing emergence and re-emergence of human diseases that have their origins in animals (e.g., avian influenza, BSE, West Nile virus) make the research and development at VIDO increasingly important to the welfare of the world. Our strategic partnerships with key stakeholder groups including agricultural producers, industry, academia and government, will ensure that the efforts of our scientists are translated into products to benefit society.

*Building long-term, productive relationships with companies continues to be a strategy to ensure we are benefiting our stakeholders.*

An example of the continued extension of our relationships with producers and the agricultural community is the launch of the Swine Disease Matrix and recently, Beef InfoNet. These web-based knowledge transfer resources, developed by VIDO and our Livestock Industry Technical Groups, are sources of information for producers on numerous issues affecting the agricultural community. We hope to create similar resources for the poultry and dairy industries pending appropriate funding and interest.



Building long-term, productive relationships with companies continues to be a strategy to ensure we are benefiting our stakeholders. A recent example of a successful partnership is the December 2006 approval of the Bioniche Life Sciences *E. coli* O157:H7 vaccine for field use in Canada. This vaccine, developed by VIDO, the University of British Columbia, the Alberta Research Council and Bioniche, is the world's first to control *E. coli* O157:H7 in cattle. By controlling this bacteria, the cause of what is often termed "hamburger disease," the vaccine will help improve the safety of food and water supplies. In turn, the royalties generated from the sale of this and other similar products will continue to support research at VIDO/InterVac.

In closing, we thank Lorne for his leadership in building VIDO into the premiere institute it is today, and wish him our best in his latest challenge. We eagerly anticipate the opportunities that will present themselves during the coming year, and challenge ourselves to respond effectively.



University of Saskatchewan President Mr. Peter MacKinnon addresses the audience at the InterVac sod-turning ceremony June 25, 2007.

VIDO staff and guests at the January, 2007 ceremony at which up to \$25 million was announced by the federal government towards the International Vaccine Centre (at right, Mr. Ken Cheveldayoff, MLA Saskatoon Silver Springs; University of Saskatchewan Vice President (Research) Dr. Steven Franklin; and Dr. Tom Wishart, Associate Vice-President (Research) and Dean of Graduate Studies.

# Strength to Overcome Infectious Disease Rests on a Strong Foundation

Ms Carol Martel, CMA  
*Chief Financial Officer*

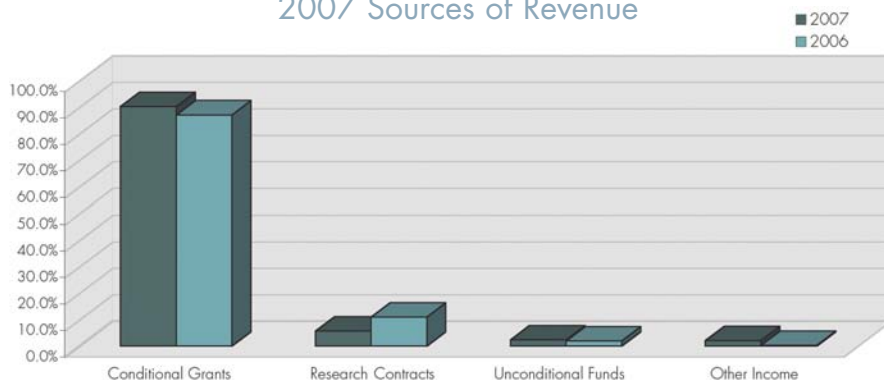
A diverse group of supporters has been instrumental in enabling us, a non-profit organization owned by the University of Saskatchewan, to tackle research challenges on a global scale. Their confidence in us is evident in their fiscal support of VIDO's endeavours to meet the challenges of a continually changing research climate. VIDO/InterVac is driven to conduct research that will address these challenges and benefit our stakeholders by improving human and animal health.

VIDO/InterVac is the result of the shared commitment of many partners to the need for large-animal biocontainment facilities. Our research programs are evolving to take advantage of our expanded infrastructure. Also contributing to our evolution is VIDO's role in the University of Saskatchewan's School of Public Health. This key role is also the result of a shared commitment to the importance of multidisciplinary research and training, as well as our collaborations with industry, government research laboratories and other universities.

The funding partners enabling this evolution include:

- federal and provincial governments
- livestock industry councils and agencies
- foundations
- competitive grants
- pharmaceutical industry

2007 Sources of Revenue



We are also grateful for the support of the University of Saskatchewan which provides various infrastructure services and financial and administrative functions to VIDO.



*Of our \$12.4 million budget, \$7.58 million is spent on personnel, \$497,000 on maintaining intellectual property and \$2.87 million on materials and equipment.*



The spirit of collaboration thrives in VIDO; we are both intra- and entrepreneurial. This spirit also drives our financial partners to assist us in pursuing objectives ranging from scientific discovery to developing intellectual property, and to the recruitment and training of more than 150 highly qualified scientists, technicians, postdoctoral fellows, graduate students, summer students and administrative staff.

Of our \$12.4 million budget, \$7.58 million is spent on personnel, \$497,000 on maintaining intellectual property and \$2.87 million on materials and equipment.

We thank all of our partners for their continued support of VIDO/InterVac. We also wish to thank Dr. Lorne Babiuk for his tireless efforts to develop the relationships we have enjoyed with our supporters and for being the leader we were proud to follow.

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**UNIVERSITY OF SASKATCHEWAN**  
**VACCINE & INFECTIOUS DISEASE ORGANIZATION (VIDO)**  
**Statement of Income for the Year Ended April 30, 2007**  
(with comparative figures for the year ended April 30, 2006)

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	April 2007	April 2006
<b>INCOME</b>		
Donations and unconditional grants	\$ 282,609	\$ 234,500
Conditional grants	11,356,098	10,869,886
Contract research	377,681 <sup>1</sup>	1,145,492
Royalties and Licensing Fees	328,206	216,743
Investment income	247,664	25,493
Miscellaneous revenue	7,535	2,710
	<b>\$ 12,599,793</b>	<b>\$ 12,494,824</b>
<b>EXPENDITURE</b>		
Salaries and benefits	\$ 7,584,218	\$ 7,029,921
Materials and supplies	1,843,779	1,993,441
Equipment repair and service agreements	272,298	116,145
Sub-contract research	479,952	332,964
Travel and recruiting	264,119	186,356
Patents and legal fees	497,452	36,090
Amortization	1,464,676	1,446,628
Other expenditures	16,010	57,751
	<b>\$ 12,422,504</b>	<b>\$ 11,199,296</b>
<b>EXCESS OF INCOME OVER EXPENDITURE</b>	<b>\$ 177,289</b>	<b>\$ 1,295,528</b>

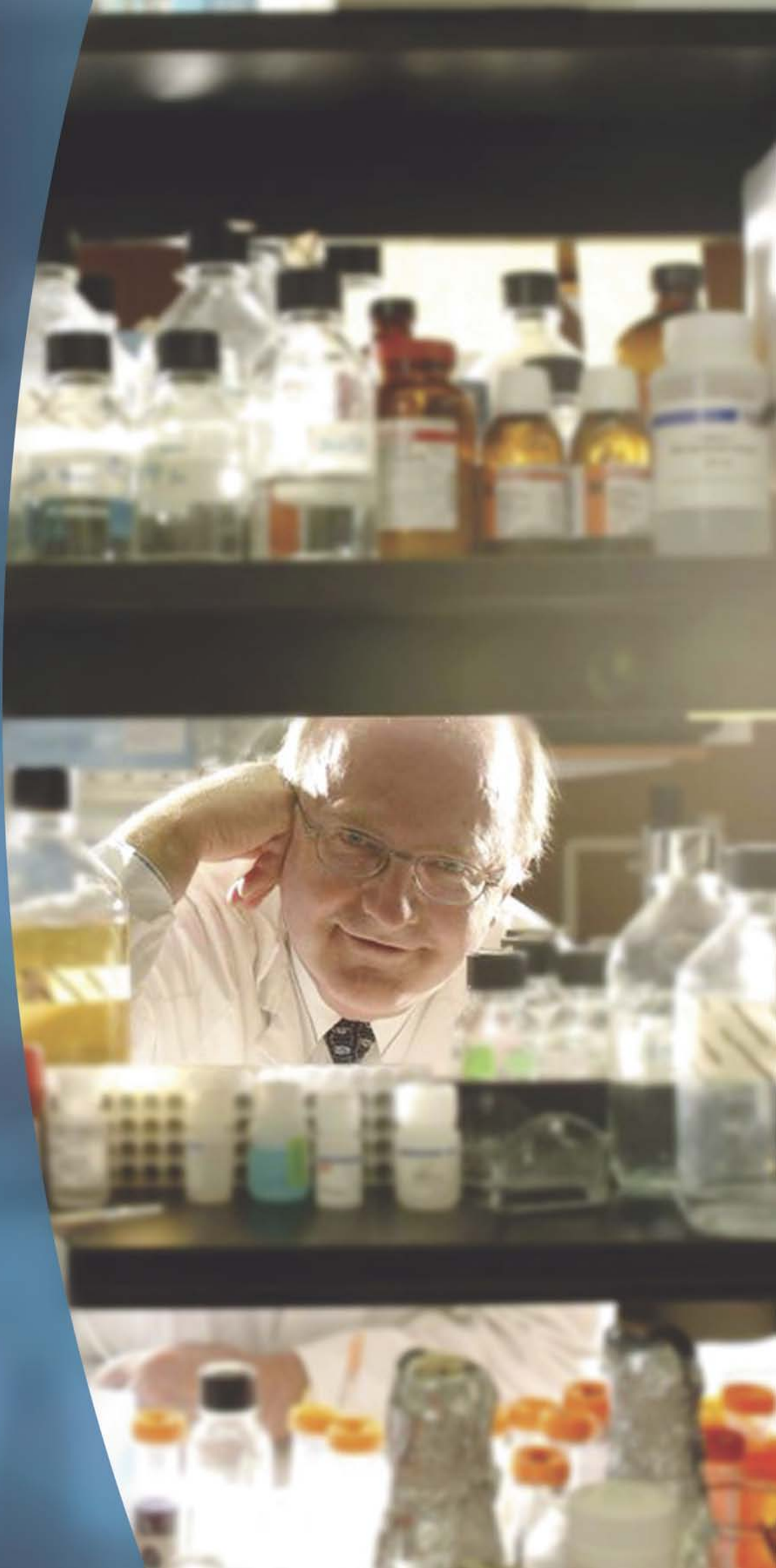
Unaudited

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<sup>1</sup> Contract research awarded as conditional grant.

*"One of our  
greatest challenges  
is that we do not  
actually dream big  
enough. Lack of  
imagination is our  
biggest albatross."*

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# Vaccine and Infectious Disease Organization

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