

INSTITUTE OF PARASITOLOGY

**ANNUAL REPORT
2006 - 2007**

**Prepared by Professor Timothy G. Geary
Director
July 2007**



Cover

The picture on our cover was taken at the 46th Annual Meeting of the Canadian Society of Zoologists held at McGill in May 2007. The picture (superimposed on a photo of the Institute itself) represents all the living Directors of the Institute of Parasitology, since its founding in 1932.

43 years of Directors:

Left to right: Timothy G. Geary, present Director, 2007 –

Kenneth Davey, Director, 1964 to 1974

Gaétan Faubert, Acting Director (during sabbatical leave of sitting director), 1998-99

Marilyn Scott, Director, 1990-2000

Terry Spithill, Director, 2001-2006

Roger Prichard, Director, 1984-1990; 2000-2001

Credit: The photo was taken by Serghei Dernovici (M.Sc., McGill, 2003), and adapted for this Annual Report to the Dean.

I – Mission & Objectives

- To train students and highly qualified personnel at an advanced level in all of the life science disciplines relevant to the host-parasite relationship
- To advance knowledge in the life science disciplines relevant to the host-parasite relationship
- To undertake basic research aimed at reducing morbidity and mortality caused by parasite infections in animals and humans
- To communicate our findings to the scientific community and the general public
- To contribute our expertise to the broader mission of McGill University through our teaching, research and service in the life sciences in the Faculties of Agricultural and Environmental Sciences, Medicine, and Science, particularly in relation to Biotechnology and the Environment

II – Highlights of Past Year's Activities

- ▶ Prof. Timothy G. Geary was appointed Director of the Institute of Parasitology effective 1 April 2007. This is a five-year appointment. Dr. Geary also continues as a Tier 1 Canada Research Chair in Parasite Biotechnology.
- ▶ Prof. Terry Spithill resigned from McGill, as of December 31st, 2007, to take up a prestigious Research Chair in Veterinary Parasitology at Charles Sturt University, back in his native Australia. Though we are sad to see our friend and colleague depart, we wish nothing but the best to Terry and his wife Maureen as they start this new adventure in early 2008. Dr. Spithill was on sabbatical leave from 1 January to 30 June 2007. Professor Spithill will continue as a Tier 1 Canada Research Chair in Immunoparasitology until December 2007.
- ▶ Assistant Professor Florence Dzierszinski joined the Institute in December 2006, as our newest faculty member. She was recruited from the University of Pennsylvania and she received a prestigious Tier 2 Canada Research Chair in Parasite Pathogenesis as well as supporting funds from the Canada Foundation for Innovation. Dr. Dzierszinski was also recently awarded a five-year NSERC operating grant.
- ▶ Prof. Robin Beech returned from a sabbatical leave in the UK in December 2006. He was at Glasgow University, Scotland, in the Division of Veterinary Infection and Immunity, where he collaborated with Dr. John Gilleard. During his period of leave, Dr. Beech's research focused on annotation and analysis of the ligand-gated ion channel family of genes in the *Haemonchus contortus* genome.
- ▶ Prof. Armando Jardim was promoted to the rank of Associate Professor, with tenure, effective June 1, 2006. He continues his CIHR New Investigator salary award (2003-08).

- ▶ Prof. Georges continues as Director of the Institute's Biotechnology Program.
- ▶ Prof. Roger Prichard continues as a James McGill Chair (2003-2010).
- ▶ Dr. Sean Forrester, from the University of Ontario Institute of Technology, was appointed as an Adjunct Professor to the Institute of Parasitology. This is a 3-year appointment. Dr. Forrester co-supervises Institute doctoral student, Vijay Rao.
- ▶ Prof. Roger Prichard continues his work on a vaccine for African trypanosomiasis (sleeping sickness), a serious parasitic disease that is endemic in many parts of Africa. This research is funded by a Gates Foundation grant.
- ▶ Prof. Roger Prichard had a paper published in *The Lancet* with regard to his work on ivermectin resistance in *Onchocerca volvulus*. Citation: *Lancet* 369: 2021-2029, 2007.
- ▶ For the first time on the Macdonald Campus, a Structural Bioinformatics course was offered. The course was launched in January 2007; newly recruited Assistant Professor Reza Salavati was the course coordinator. The course was well received by the first cohort of students, and has been accepted by the McGill Centre for Bioinformatics as an elective for the Bioinformatics option across the University.
- ▶ Prof. Geary developed a new Functional Genomics course with an anticipated launch date of September 2007. Again, this will be the first time that students will have the opportunity to study functional genomics on the Macdonald Campus.
- ▶ Professors Geary and Faubert delivered a course on Water-borne Health Hazards as part of the Water Resource Engineering program in Winter 2007; this illustrates the continuing commitment of the Institute of Parasitology to other Macdonald programs, such as the Brace Water Institute.
- ▶ Prof. Terry Spithill and his research associate, Ms. Cynthia Santamaria (M.Sc., McGill, 2005) gave a training course entitled "Epidemiology and control of snail-borne diseases in irrigated areas in Sudan", conducted at the Central Veterinary Research Laboratories, Khartoum, Sudan, from March 24 – April 7, 2007.
- ▶ In September 2006, the number of non-thesis Biotechnology students remained similar to the previous year's enrolment. Since the launch in 2005 of the M.Sc. (Applied) degree in Biotechnology, demand for this program has been strong and continues to grow. There is a waiting list for the M.Sc.(A) Biotech program.
- ▶ Prof. Roger Prichard continued to serve Dean Madramootoo as Chair of the Academic Planning Committee for the Faculty of Agricultural and Environmental Sciences. This is a 3-year appointment.
- ▶ Dr. Jim Smith won an \$8600 grant from Graduate Faculty to fund proposed recruitment initiatives. Dr. Smith set up a McGill recruitment booth at the XIth ICOPA conference held in Scotland in August 2006. The recruitment booth was visited by over 1,000 visitors. It gave McGill a very high profile.

- ▶ The 46th Annual Meeting of the Canadian Society of Zoologists was held at McGill, May 21-25, 2007, with Institute members forming the majority of the Local Organizing Committee, which was chaired by Professor Gaétan Faubert. Professor Faubert received a plaque for his efforts and contributions to the Canadian Society of Zoologists.
- ▶ The Institute of Parasitology completed its fourth year as the Leader for the FQRNT Centre for Host-Parasite Interactions. With the departure from McGill of Terry Spithill, a new director for the Centre will have to be identified. Professor Prichard has agreed to be the interim director until a suitable candidate comes forward. The Quebec government will continue to fund the Centre for another 2 years in the current round. Then, the Centre must apply for renewal, and compete in the highly competitive funding arena.
- ▶ Dr. Janelle Wright joined Dr. Spithill's group on May 13th, 2007, as a postdoctoral fellow. She hails from the University of Queensland, Australia. She will be conducting novel research studying biomarkers of *F. hepatica*/*F. gigantica* infection in sheep.
- ▶ Dr. Maria de Lourdes Mottier from Argentina left Dr. Prichard's laboratory in April 2007 to go to Nuremburg, Germany, to get married, and to continue with her research career. She had been funded by an FQRNT International Postdoctoral Fellowship and a Faculty of Agricultural and Environmental Sciences Sustainable Agriculture Postdoctoral Fellowship. This fellowship is awarded to support innovative research in sustainable agricultural development based on academic merit and research potential. Dr. Mottier investigated mechanisms of resistance to macrocyclic lactone drugs in parasitic nematodes.
- ▶ Postdoctoral fellow Dr. Stephanie Yanow, winner of a prestigious Tomlinson Fellowship and a CIHR Fellowship awardee in Dr. Spithill's laboratory, left on December 23rd, 2006, to give birth to her second son, and subsequently took up a research position as Program Leader at the Provincial Laboratory for Public Health in Alberta. Dr. Yanow was conducting research to discover new chemotherapeutic agents to combat malaria.
- ▶ Postdoctoral fellow Dr. Rita Schildknecht left the laboratory of Professor Spithill on 30 April 2007 to take up a postdoctoral fellowship with Professor Mark Wainberg at the Lady Davis Institute. Dr. Joseph Nabhan commenced a postdoc in the laboratory of Professor Geary in January 2007.
- ▶ Dr. Anne Schwab (working in Dr. Geary's lab) won an FQRNT postdoctoral fellowship, which she will take up at the Université de Montréal Veterinary School at Saint-Hyacinthe, but she will continue to collaborate with veterinary parasitologists and molecular biologists at the Institute of Parasitology.
- ▶ Ms. Marie-Claire Rioux (PhD candidate in the lab of Dr. Spithill) won an FQRNT doctoral fellowship. She will complete her studies, after the departure of Dr. Spithill, in the laboratory of Dr. Geary. Mr. Normand Cyr, in the laboratory of Professor Jardim, also won an FQRNT doctoral fellowship and Mr. Jonathan Soloman, in the lab of Professor Geary, won a Master's FQRNT fellowship.

- ▶ The Institute published volume 4 of its “Friends of Parasitology” Newsletter. A Friends of Parasitology Homecoming, celebrating the Institute 75th Anniversary, is planned for August 11th, 2007.
- ▶ The Institute offered in 06/07 a Flow Cytometry Core Facility as well as a Molecular Biology Service Facility to the McGill community, the FQRNT Centre, and industry.

Teaching and Learning (undergraduate and graduate):

Student Success

- A. *Undergraduate* – Although the Institute has no undergraduate program of its own, Institute professors taught basic life sciences to students in several required courses on the Macdonald Campus and in the Faculty of Medicine. As per Senate policy, numerical data from course evaluations are available to McGill students and staff via University postings by the Office of the Provost on the web each term. See <http://www.mcgill.ca/provost/courseevaluations/> (see Activity Reports for individual scores).
- B. *Graduate* – The Institute graduated 6 Ph.D. students (Drs. Eng, Gheorghiu, Kammanadiminti, Lee, Nabhan, and Schwab) and 5 Master’s students (B. Bhatnagar, A.-C. Bourgeois, A. Contreras, S. Smith, and S. Zhou) in our thesis research degree programs in 2006/07. One M.Sc. graduate (Sabrina Smith) was accorded Honors for her Master’s of Science dissertation. Dr. Eng accepted a permanent teaching position at Dawson College, Montreal, in the Science department. Dr. Gheorghiu accepted a position as Assistant Professor at St. George’s University in Grenada, West Indies. Dr. Kammanadiminti is currently employed as a Preclinical Research Scientist at Cangene Corporation, Winnipeg. Dr. Lee is currently conducting research in Japan. Dr. Nabhan is poised to depart to do a postdoc in the USA at Harvard. Dr. Schwab won an FQRNT postdoctoral fellowship, which she will take up at the Université of Montréal Veterinary School at St-Hyacinthe. Sabrina Smith was awarded the T.W.M. Cameron Prize for Excellence in Parasitology. Our five M.Sc. graduates all found employment in university research labs, in the teaching profession, or with pharmaceutical firms. Doctoral student Nicholas Patocka received the Gold Key Award for participation in student life on the Macdonald Campus. Doctoral candidate Marie-Claire Rioux won a travel award from the World Association for the Advancement of Veterinary Parasitology to attend their annual international WAAVP meeting held in Ghent, Belgium, in 2007.

In the non-thesis Biotechnology program, 6 students graduated with a Certificate in Biotechnology, and the new M.Sc. Applied in Biotechnology program graduated its second cohort of 13 students. The biotech industry is an eager employer for these well trained graduates. Graduates have found jobs at Merck Frosst, Boston, MethylGene Inc., Montreal, Eli Lilly, Toronto, and in Singapore, to name a few, while other graduates decided to continue into a Ph.D. program.

- C. *Visiting students* – Mr. Pramote Sriwanitchrak, Ph.D. student from Thammasat University, Thailand, is currently a trainee in the laboratory of Professor Spithill from 1 April – 30 September 2007. Ms. Catherine James, Ph.D. student from the University of Technology in Sydney, Australia, joined the laboratory of Professor Prichard as an academic trainee from 1 April to 31 July, 2007. Ms. Sarah Lake, Ph.D. student from the University of Liverpool, U.K., spent the month of November 2006 at the Institute in the laboratory of Professor Prichard. Ms. Manussabhorn Sethadavit, doctoral candidate from the Mahidol University, Thailand, visited Dr. Spithill's lab from June-December 2006.
- D. *Summer students*- Three undergraduate students were employed at the Institute during the summer of 2006 and all received advanced research training in the labs of Profs. Georges, Spithill, and Geary. One CEGEP student worked in the Institute animal facility as part of a Government of Canada Summer Careers Placement Program; he was so turned on to science that he subsequently started an undergraduate degree in the Microbiology department. The Institute exposed these trainees to cutting edge research in molecular biology, immunology, proteomics and population studies in the life sciences.
- E. *Visiting Scientists* – Associate Professor Prapee Sretarugsa, Chair of the Department of Anatomy at Mahidol University, Thailand, visited us on 12-14 July 2006, to discuss graduate programs and future collaborations. A delegation from Dubai was entertained at the Institute on 11 December 2006 to discuss biotechnology links between McGill and Dubai.
- F. *Training* – Doctoral student Maurice Odiere in the laboratory of Dr. Marilyn Scott, went to Las Vegas in March 2007 for a training course on the use and operation of a calorimeter.
- G. *Guest Lecturers* - During the 2006-2007 reporting year, the following distinguished scientists have given invited seminar presentations at the Institute:
- Dr. Florence Dzierszinski
Department of Biology, University of Pennsylvania
Topic: "From acute infection to persistence: interactions between the intracellular parasite *Toxoplasma gondii* and the host cell antigen presentation pathways"
- Dr. Simon Haile
Department of Infectious Diseases, Université Laval
Topic: "The SRS surface antigens of *Toxoplasma* – modulators of the intricate balance between parasite burden, effective immune response and immunopathology"
- Dr. Sarah Kimmins
Department of Animal Science, McGill
Topic: "The role of epigenetic modifications in male germ cell development"
- Dr. Deborah Kirstan
Department of Biological Sciences, California State University
Topic: "Effects of long-term caloric restriction on susceptibility to an intestinal nematode, *Heligmosomoides bakeri*"

Dr. P'ng Loke

Department of Pathology, University of California at San Francisco

Topic: "Unraveling novel interactions between parasites, macrophages and T cells"

Dr. Hugo Lujan

Instituto Mercedes y Martin Ferreyra, Argentina

Topic: "Protein trafficking in *Giardia lamblia*"

Dr. David Marcogliese

St. Lawrence Centre, Environment Canada

Topic: "Implications of climate change for parasitism in the aquatic environment"

Dr. Manami Nishi

Department of Biology, University of Pennsylvania

Topic: "Cell cycle regulation of organelle biogenesis and apicoplast protein trafficking in *Toxoplasma gondii*"

Dr. Peter Schantz

Centre for Disease Control, Atlanta, Ga

Topic: "Emergence of canine visceral leishmaniasis in North America 2000-2005"

Dr. Tatiana Scorza

Department of Biological Sciences, Université de Québec à Montréal

Topic: "Unravelling the nature of *Plasmodium c. adami* virulence in BALB/c mice"

Dr. Martina Stromvik

Department of Plant Science, McGill University

Topic: "Applying bioinformatics and molecular biology in the quest for the mechanics of specific gene expression"

Dr. Rick Tarleton

Centre for Tropical and Emerging Global Diseases, University of Georgia

Topic: "T cell responses to an intracellular pathogen: generation, specificity and maintenance of CD8+ T cell responses to *Trypanosoma cruzi*"

Dr. Andrew Thompson

Centre for Biomolecular Control of Disease, Western Australian Biomedical Research Institute

Topic: "Food and waterborne parasite zoonoses – some emerging issues"

Dr. Rogerio Saad Vaz

Centro Universitário Positivo Curitiba, Brazil

Topic: "Transfusional risks associated with Toxoplasmosis in hemocomponents of immunocompromised recipients: parasite persistence in processed blood"

Our students and trainees benefited enormously from contact with these leaders in their fields.

Research:

Discoveries and innovations

The Institute's research was published in 25 papers in peer-reviewed Journals and was presented at 44 conference presentations. Professors gave 23 invited presentations during the year.

- (i) Dr. Spithill was co-inventor on a US patent application by M. Lee, S. Yanow, L.A. Purcell & T.W. Spithill: "*Compounds for Treatment of Parasitic Infection*". Provisional patent application, Oct. 2006.
- (ii) Dr. Georges filed a US patent application: "*ABP60 Directed Diagnostics and Therapeutics for Cancer and Chemotherapeutic Drug Resistance*". Provisional patent application, March 28, 2006.
- (iii) Dr. Jardim was a co-inventor on a US patent application: "*Method for detecting flavor compounds in fermented products using enzymes*"; Jardim, A., Sheppard, J., and van Bergen, B. (2006).

Collaborations

The Institute is active in multiple international and national collaborations.

- (i) Dr. Prichard continues to receive a US\$1.16m grant from the Gates Foundation for the study "*Development of a vaccine against trypanosomiasis*". This is in collaboration with Dr. Yusibov (Centre for Molecular Biotechnology, Fraunhofer Inc., USA) and Dr. Lubega (Makerere University, Uganda). The WHO is also supporting this research.
- (ii) Dr. Prichard is collaborating with Dr. Michel Boussinesq, Institut de recherche en développement, Paris, France, to study "*The effects of ivermectin on genetic selection and reproduction in Onchocerca volvulus*".
- (iii) Dr. Prichard is collaborating with Dr. Mark Bradley (GlaxoSmithKline, UK) on the project "*Monitoring for drug resistance in the Global Alliance for the Elimination of Lymphatic Filariasis*".
- (iv) Dr. Scott is collaborating with Dr. Koski (McGill) and Drs. Ortega and Romero (University of Panama) on a health initiative "*Establishment of long-term research program in nutrition-infection interactions*".
- (v) Dr. Jardim is collaborating with Dr. M. Patole, University of Pune, India, to study glycosome biology.
- (vi) Dr. Spithill has ongoing collaborations in several areas of research. In the area of biomarkers for disease, he is working with Dr. D. Artis (U. Pennsylvania, USA), Dr. C. Carmona (UDELAR, Uruguay), Dr. H. Raadsma (Univ. Sydney, Australia) and Dr. D. Piedrafita (Univ. Melbourne, Australia). He is also involved in a graduate training program in fasciolosis with Prof. P. Sobhon (Mahidol University, Thailand) and Dr. Rudi Grams (Thammasat University, Thailand). He also collaborates on *F. gigantica* vaccines with Dr. Ibtisam Goreish, Central Veterinary Research Laboratories, Khartoum, Sudan.
- (vii) Dr. Salavati collaborates with I. Saira Mian for protein sequence analysis and modeling protein function, Lawrence Berkley National Laboratory, Berkeley, California.

Equipment grant

NSERC Research Tools and Instruments (Wykes, Koski & Scott), “Luminex”, \$66,400, (2007-2008).

New research initiatives from the McGill Centre for Host-Parasite Interactions, based at the Institute of Parasitology

Dr. Beech received an FQRNT Centre New Initiatives grant with Drs. R. Prichard, J. Dent and T. Geary, to study “*Development of transgenic parasitic nematodes*”.

Dr. Dzierszynski received an FQRNT Centre New Initiatives grant with Drs. A. Jardim and M. Desjardins, to study “*The pathogenesis of Toxoplasma gondii: PVM protein identification*”.

Dr. Ribeiro is collaborating with Dr. Dent studying “*Neuronal control of nematode development*” with funding from an FQRNT Centre New Initiative Award.

Dr. Salavati received an FQRNT Centre New Initiatives grant with Dr. G. Berghius, to study “*The architecture of trypanosomatids*”.

Dr. M. Stevenson at McGill’s Centre for the Study of Host Resistance received an FQRNT Centre New Initiatives grant with Drs. T. Geary and C. Piccirillo for the project “*Multidisciplinary strategy to identify immunosuppressive compounds*”.

Dr. M. Tremblay, with Dr. M. Ouellette, at Université Laval received an FQRNT Centre New Initiatives grant for a project entitled “*Use of HIV-1 protease inhibitors as anti-leishmanial compounds*”.

The Centre for Host-Parasite Interactions is maturing and expanding its research programs. It is a vehicle for driving new initiatives across Quebec where several Centre members will come together to start new collaborative research, often with international linkages. This process is ongoing.

Other international activities

- In December 2006, Dr. Elias Georges met with a delegation of governmental officials from Dubai, to advise regarding the establishment of a biotechnology graduate program in that country.
- Our Centre for Host-Parasite Interactions held its 7th Annual Quebec Parasitology Symposia during the time span of this report (see FQRNT section, pg. 14). It was a joint meeting with the Canadian Society of Zoologists 46th Annual Meeting held at McGill in May 2007. Several international visitors attended.

Academic Staff:

The list of academic staff as of June 1, 2006, is shown in Appendix IV. Prof. Robin Beech returned from a 1-year sabbatical leave in December 2006. Dr. Spithill commenced a six-month sabbatical leave as of 1 January 2007.

Departures – Prof. Terry Spithill has accepted a Research Chair in Veterinary Parasitology at Charles Sturt University in Australia. The Provost has given the Institute of Parasitology permission to recruit to fill this vacant position.

New Hires – Dr. Florence Dzierszinski was hired as a tenure-track assistant professor in Molecular Sciences. Dr. Dzierszinski was recruited to McGill from the University of Pennsylvania. Her research area is *Toxoplasma* and immunology.

Chairs – Dr. Prichard continues to hold a James McGill Chair which supports his extensive international research program in molecular helminthology. Dr. Dzierszinski won a Tier 2 Canada Research Chair in Parasite Pathogenesis; this will support her research. Dr. Geary continues in his Tier 1 Canada Research Chair in Parasite Biotechnology. Dr. Spithill continues as a Tier 1 CRC in Immunoparasitology.

Assoc. Prof. Robin Beech – Dr. Beech is currently collaborating with Dr. John Gilleard at Glasgow University regarding the gated ion channel family of genes in the *Haemonchus contortus* genome.

Prof. Faubert – Dr. Faubert served as the Chair of the Parasitology section of the Canadian Society of Zoologists, and also as Chair of the Local Organising Committee for its 46th Annual Meeting held at McGill in May 2007.

Prof. Geary – Dr. Geary serves on McGill's Technology Transfer Committee and on the Macdonald Campus Library Committee. He was a member of the Centennial Symposium/Food for Thought Committee, and is the Interim Chair of the Industrial Liaison Committee for the American Society of Parasitologists. Dr. Geary holds a Tier 1 Canada Research Chair in Parasite Biotechnology and won his first NSERC grant in April 2006.

Assoc. Prof. Elias Georges – Dr. Georges served on the Board of the McGill spin-off biopharmaceutical company, Aurelium Biopharma Inc. He also served as a member of the Macdonald Campus Development Committee. He is Director of the Biotechnology Program at the Institute.

Assoc. Prof. Jardim – Dr. Jardim was promoted to Associate Professor, with tenure, as of 1 June 2006.

Prof. Prichard – Dr. Prichard served as the Principal Coordinator of the International Consortium for Anthelmintic Resistance SNPs Workshop in Glasgow, 2006. He was also elected a Fellow of the Australian Society for Parasitology, and continues as an Honorary Fellow of the European Veterinary Parasitology College. Dr. Prichard chairs the Faculty of Agricultural and Environmental Sciences' Academic Planning Committee, and serves on the Faculty Nominating Committee.

Assoc. Prof. Ribeiro – Dr. Ribeiro has served as the Chair of the Macdonald Campus Safety Committee as well as the Institute of Parasitology Safety Committee since January 2006. She also was on the University Tenure Committee for the Faculty of Medicine.

Assistant Professor Salavati – Since his arrival in December 2005, Dr. Salavati has focused his efforts on the development of a Structural Bioinformatics course and the setting up of his research laboratory. He was the recipient of an NSERC Discovery Grant, and an NIH Grant. He serves on the Faculty IT Committee.

Assoc. Prof. Marilyn Scott – Dr. Scott served as an elected Senate Representative for the Faculty of Agricultural and Environmental Sciences. She developed a liaison to the McGill-Panama Cluster, and she also served as Associate Director for Graduate Student Affairs for the McGill School of Environment.

Dr. Jim Smith – Dr. Smith served as a member of the Graduate and Postdoctoral Studies Standing Committee on Fellowships and Awards. Dr. Smith received funding for recruitment for the Institute from the Faculty of Graduate Studies. His application was one of the eight applications funded, from a pool of 28 applications in total. Dr. Smith used the funding to set up recruitment booths at the XIth International Congress for Parasitology meeting in Scotland in August 2006.

Prof. Terry Spithill – Dr. Spithill resigned, as previously mentioned, effective 31 Dec. 2007, to take up a Research Chair, and rejoin his family, in his native Australia. Dr. Spithill will be greatly missed and remembered with great affection. Dr. Spithill plans to become a McGill Adjunct Professor and continue to collaborate with researchers at the Institute. Prof. Spithill will be away from McGill, but he will still be close in terms of research collaboration.

Involvement in the Community:

Institute faculty served the academic and wider community in multiple ways. All staff serve on a variety of Faculty and McGill Committees, review journal articles and PhD/MSc theses, and organize conferences, as detailed in the Activity Reports. Some particular involvement is highlighted here.

Drs. Armando Jardim and Gaétan Faubert served as judges for the Quebec Association of Independent Schools Montreal Board of Trade Outstanding Student Competition 2006-07.

Dr. Geary served on the Nominating Committee for the American Association of Veterinary Parasitologists.

Dr. Geary also served on the Industrial Relations Committee for the American Society of Parasitologists.

Dr. Dzierszinski gave a talk entitled: “*Studying Toxoplasma gondii pathogenesis to understand immunity to intracellular pathogens and progress towards rational vaccine design*” at the Dean’s Donor Reception (Macdonald Campus alumni) “Health, Nutrition and Climate Change”, April 2007.

Dr. Gaétan Faubert presented an Invited Lecture entitled: “*Coping with Water Scarcity*”, at the Brace Water Management Day held on the Macdonald Campus on 14 March 2007. This lecture was open to the public and the McGill community.

Dr. Jim Smith responds to a wide assortment of questions about parasites from the general public, students, university teachers, and the media, and maintains the following web pages for public access:

The World of Parasites

(<http://martin.parasitology.mcgill.ca/jimspage/worldof.htm>)

Parasitism and Associations

(<http://martin.parasitology.mcgill.ca/jimspage/biopage/parasit.htm>)

The Power and Versatility of *in situ* Hybridization

(<http://martin.parasitology.mcgill.ca/insituhybridization/index.htm>)

Cell Structure and Function

(<http://martin.parasitology.mcgill.ca/jimspage/cellbiol/cell.htm>)

III – FQRNT Centre for Host-Parasite Interactions Centre de recherche sur les interactions hôte-parasite

In 2006-2007, our Provincially-funded Regroupement Stratégique Centre completed its fourth busy year of operation. Please visit the website www.mcgill.ca/chpi for details of our scientific activities, and services offered, throughout the Centre.

The Centre for Host-Parasite Interactions brings together researchers and their trainees at the Institute of Parasitology, Department of Microbiology and Immunology, Department of Biology, Department of Chemistry, Department of Epidemiology and Biostatistics, Department of Physiology, Department of Chemical Engineering, Department of Bioresource Engineering, School of Dietetics and Human Nutrition, Brace Research Institute, McGill Centre for Tropical Medicine and the McGill University Health Centre, at McGill University, Université de Montréal, Centre de recherche en Infectiologie, Université Laval, INRS – Institut Armand-Frappier, and Université du Québec à Montréal into what is considered by external reviewers as the strongest centre for parasitological research in the world. It is recognized as an FQRNT Regroupement stratégique. The research of the Centre focuses on Mechanisms of Pathogenesis and Host Defense to Parasite Infections, and the Molecular Basis of Anti-parasite Drug Resistance and Drug Discovery. This cross fertilization is also of great benefit to the approximately 108 trainees in the Centre. As a result of the Centre, there have been over 60 joint publications from Centre members and trainees over the last 2 years and numerous collaborative research grants and contracts. The Centre has received international recognition by being invited to participate with networks or centres of excellence in other parts of the world in joint collaborative projects.

Each year the Centre holds several research meetings involving all members of the Centre. The Annual two-day Scientific Meeting typically involves 50 – 60 oral and poster presentations and invited international experts. This year, it was held at McGill as a joint Scientific Meeting of the Centre with the Canadian Society of Zoologists. Plans are underway for next year's meeting at Université Laval. In addition to the Annual Scientific Meeting, a meeting was held to review progress on New Initiative projects funded by the Centre as well as a meeting to plan more joint applications within the Centre, for external grants. The Centre is vibrant and adds tremendous value to the research and training efforts of its members.



IV – Challenges

We are confident that the future of the Institute of Parasitology is incredibly bright, but we sense that it is approaching a cross-road. The Institute has gone through a significant growth period since the year 2000, with several major CFI Awards, three CRC Awards, the FQRNT Centre Award, and the establishment of a Biotechnology graduate program. Unfortunately, infrastructure funding and support staff appointments have not kept pace with growth. We have been unable to identify new sources of funding that will enable us to maintain our considerable momentum. This applies especially to the area of high technology platform instrumentation made possible by CFI wins, which have high maintenance costs associated with them as well as requiring dedicated highly skilled technicians for optimal operation of the instruments. The sustainability of our present high level of operation is coming into question. The Institute would greatly benefit from more University support to maintain its operations at this demonstrable high level of success. The Biotechnology graduate program, as it continues to grow, is also in need of its own operating budget. We look forward to working with the University and potential outside sources to resolve these issues.

The Institute of Parasitology will be celebrating its 75th Anniversary in August 2007. We look forward to the next 75 years of research excellence, teaching, and service to the University. We aspire that the Institute of Parasitology will continue to make significant contributions to the study of parasitology worldwide, and to fulfill its mandate to graduate highly skilled professionals in our domain.