from cells to community: solutions for spinal cord injury
ICORD at a glance, 2006/7

Principal Investigators (PIs): 51 (see p. 12)

Trainees: 273 (see p. 18)

Publications, April 2006 to March 2007: more than 380 (see appendix 2)

Total research grants held by ICORD PIs: more than $12 million (see p. 23)

Total research endowments: $18.4 million (see p. 23)

Total Rick Hansen Foundation Research Fund grants awarded for 2006/7: $990,500* (*including $415,000 core infrastructure & support for research—see p. 24)

Founding Partners:
ICORD (International Collaboration On Repair Discoveries) was created through a partnership between the Rick Hansen Foundation, the University of British Columbia and Vancouver Coastal Health Research Institute

Other partners:
ICORD is a unique research centre focused on strategies to improve functional recovery and quality of life after spinal cord injury.

ICORD's interdisciplinary research program brings together scientists, physicians, clinicians, surgeons, engineers, educators and the SCI community to facilitate the discovery and implementation of relevant solutions that will make a difference for people with spinal cord injury today and tomorrow.

In BC alone, more than 430 researchers (51 principal investigators plus more than 380 trainees, technicians, and staff) from the sciences, medicine, surgery, rehabilitation, engineering, education, and community-based humanities research are working towards fulfilling ICORD's mission and mandate.

Our Mission and Mandate
To foster and maintain an interdisciplinary, collaborative research and training environment for the development and translation of more effective strategies to promote functional recovery and improved quality of life after spinal cord injury.

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From the Director

Significant milestones and continued growth and success highlight this past year for ICORD.

In November 2006, we officially celebrated the start of construction on ICORD’s new home at the Vancouver General Hospital Campus. Together with BC Premier Gordon Campbell and an impressive list of dignitaries from government and partner organizations, the building was unveiled as the Blusson Pavilion in recognition of the generous support provided by Dr. Stewart and Marilyn Blusson to the Rick Hansen Foundation in support of ICORD’s new $45 million, 11,000 square metre research and clinical care facility, which is on schedule for completion in Fall 2008.

Whereas ICORD’s new physical home will be in the Blusson Pavilion, our academic home now resides within the newly created College for Interdisciplinary Studies (CFIS) at UBC. The College, formed after the Faculty of Graduate Studies was restructured to focus on student services, supports and cultivates world-leading interdisciplinary research and teaching at UBC that aims to find solutions to complex worldwide challenges. We also remain a proud member of the Vancouver Coastal Health Research Institute (VCHRI).

A key indicator of the success of our research program is the number of peer-reviewed articles produced by our members. Over the past year, ICORD researchers published over 380 papers—a rate of more than one article per day. ICORD members were also awarded over $12 million in external grant funding from national and international funding agencies such as the Canadian Institutes of Health (CIHR), Natural Sciences and Engineering Research Council (NSERC), the Christopher & Dana Reeve Foundation (CRF) and the United Kingdom’s International Spinal Research Trust (ISRT). In addition, the excellence of many of ICORD’s Principal Investigators and trainees was recognized through numerous awards and prizes. I am most gratified by the ever-expanding number of graduate and postdoctoral trainees at ICORD, which now exceeds 200!

ICORD’s continued leadership in several international initiatives led to a set of new and highly regarded resources for the worldwide SCI community. ICORD provided key leadership in the publication of the ICCP (International Campaign for Cures of spinal cord injury Paralysis) Clinical Trial Guidelines and an accompanying general public summary booklet (Experimental treatments for SCI: what you should know). SCIRE (Spinal Cord Injury Rehabilitation Evidence) was also successfully launched. Produced in partnership with the Ontario Neurotrauma Foundation, the SCIRE synthesis and evaluation of the research evidence underlying rehabilitation interventions to improve SCI outcomes has proven to be a key resource for researchers and health professionals. SCIRE and the Experimental Treatments for SCI Booklet now average about 1000 downloads per day on the ICORD website (www.icord.org)!

ICORD also continued to play a leadership role in national and regional initiatives, such as the Canadian SCI Translational Research Network, the Rick Hansen SCI Registry, the Canadian SCI Alliance, and the BC SCI Strategy.

In April 2006, John and Penny Ryan hosted the 3rd Annual Reserved Gala in support of ICORD and the John and Penny Ryan BC Leadership Chair. Once again, the Ryans, along with their dedicated volunteer team from Whistler Real Estate, created a special and successful evening, raising more than $270,000 in support of the Leadership Chair, which is now fully capitalized at $6.35 million.

ICORD’s achievements were made possible thanks to the hard work and dedication of all of our faculty members, trainees, staff, panel members, partners and supporters. I would like to acknowledge the continued efforts and support of ICORD’s Executive and administrative staff, whose diligent and dedicated work is key to ICORD’s continued success and growth.

Over the next year, we look forward to watching the completion of the Blusson Pavilion while we continue working with our many members, partners and supporters to facilitate the success of meaningful SCI research initiatives at home, across the country, and around the world.

- John Steeves
  John & Penny Ryan BC Leadership Chair
  Professor and Director of ICORD
ICORD brings together a large group of researchers, trainees and staff, all working towards fulfilling ICORD’s mission and mandate in many different disciplines. The administration of this group is done by a small dedicated executive, advised by experts in the field of spinal cord injury, and reporting to a steering committee made up of representatives from UBC, VCH and the Rick Hansen Foundation.

The Executive is responsible for the management of ICORD. The Executive, through the Director, reports to the Steering Committee and receives advice and guidance from ICORD’s Advisory Bodies.

The International Advisory Panel participates in the development of strategic directions for ICORD research and related clinical and community-based activities; reviews and evaluates the progress of ICORD programs; provides advice on the management of programs, research support initiatives, collaborative research opportunities and funding prospects, at the regional, national, and international levels; and provides advice to the ICORD Director and Executive regarding ICORD’s responsibilities (locally and beyond).

After three years of dedicated service as members of ICORD’s International Advisory Panel, Drs. Mary Bunge and Carole Richards retired from the panel at the end of our 2005 Annual Research Meeting. Their suggestions and insights have been important as ICORD has grown over the years, and their encouragement has been much appreciated.

On October 3, 2006, at ICORD’s Annual Research Meeting, three new members were welcomed to the panel: Dr. Lynne Weaver from Robarts Research Institute in London, Ontario, Dr. Rob Brownstone from the Motor Control Laboratory at Dalhousie University in Halifax, and Dr. Serge Rossignol of the Université de Montréal.

Members of the International Advisory Panel:

- James Fawcett, PhD, MRCP, FRCP. [Chair, ICORD Int’l Advisory Panel. Brain Repair Centre, Cambridge University, Cambridge, UK]
- Rob Brownstone, MD, PhD, FRCSC [Motor Control Lab, Dalhousie University, Halifax, NS]
- Volker Dietz, MD, FRCP. [Institute for Rehabilitation and Research, University Hospital Balgrist, Zürich, Switzerland]
- John Ditunno Jr, MD. [Dept of Rehabilitation Medicine, Jefferson Medical College, Thomas Jefferson University, Philadelphia, PA]
- Michael Fehlings, MD, PhD. [Toronto Western Hospital,
Claes Hultling, MD, PhD. [Spinalis, Karolinska Hospital, Stockholm, Sweden]
• Daniel Lamertse, MD. [Craig Hospital, Denver, CO]
• Luc Noreau, PhD. [Département de réadaptation, Université Laval et Centre interdisciplinaire de recherche en réadaptation et intégration sociale de l’IRDPQ, Québec, QC]
• Arthur Prochazka, MD. [Div. of Neuroscience, University of Alberta, Edmonton AB]
• Serge Rossignol, MD, PhD [Director, Ctr for Research in Neurological Sciences, Faculty of Medicine, Université de Montréal]
• Mark H. Tuszynski, MD, PhD. [Department of Neurosciences, U. of California, San Diego, La Jolla, CA.]
• Lynne Weaver, DVM, PhD. [Robarts Research Inst., London, ON]

At the conclusion of the 2006 Annual Research Meeting, Drs. Luc Noreau, Mark Tuszynski and John Ditunno retired from the panel.

The Community Advisory Panel advises the ICORD Director on the development of the strategic vision for SCI research by ICORD (“cells to community”). This vision provides the basis for the development and operations of ICORD, criteria for the creation of new research themes or programs and the review of existing programs, ICORD research ethics and policies, ICORD’s international SCI research centre, as well as the proposed comprehensive SCI neighborhood community, and community and public education initiatives by ICORD.

Members of the SCI Community Advisory Panel:
• Mr. Mike Harcourt [Chair, ICORD SCI Community Advisory Panel]
• Dr. Gary Birch [Executive Director, Neil Squire Society]
• Dr. Jaimie Borisoff [Research Associate, Neil Squire Society]
• Ms. Stephanie Cadieux [Provincial Peer Coordinator, BC Paraplegic Association]
• Mr. Robb Dunfield [Artist]
• Dr. Bob Franken [Writer and consultant; Professor Emeritus, Psychology]
• Mr. Walt Lawrence [Vice-Chair, BC Rehabilitation Foundation]
• Ms. Sharon Lee [UBC Graduate Student]
• Mr. David Metcalf [Vocation Rehabilitation Counselor, GF Strong Rehab Centre]
• Hon. Sam Sullivan [Mayor, City of Vancouver]
• Mr. Dave Symington [Advisor, UBC Disability Resource Centre]
• Mr. Paul Tubbe [Chair, Special Advisory Committee on Disability Issues, City of Vancouver]

ICORD belongs to UBC’s new College for Interdisciplinary Studies. CFIS was created in October, 2006 by an act of the UBC Senate. It supports and cultivates world-leading interdisciplinary research and teaching at UBC that aims to find solutions to complex, real-world problems. ICORD is pleased to have the support of the dedicated CFIS team who are committed to enabling ICORD’s ongoing development and global excellence.

ICORD is also a research centre within the Vancouver Coastal Health Research Institute.
ICORD + the SCI community

The SCI Community exists at many levels, but more than ever, it is a global community. At its core are people with SCI, their families, friends and caregivers, with service and support organizations, health professionals, and researchers forming the broader constituency. ICORD is a proud citizen of the global SCI community and has played the role of partner and leader on many regional national and international initiatives.

New Resources for the SCI Community
ICORD leadership, funding, and support contributed to the publication of two sets of publicly available resources for the SCI Community. SCIRE (SCI Rehabilitation Evidence) was released in 2006 and the ICCP Clinical Trials Guidelines for SCI were released in early 2007. All of the documents are hosted on the ICORD website and have been made freely available to everyone. More information on SCIRE and the ICCP Clinical Trials Guidelines can be found on pages 8 and 9, respectively.

Canadian SCI Translational Research Network
ICORD, the Rick Hansen Foundation, the Ontario Neurotrauma Foundation and leading SCI researchers from across Canada have been working together to establish a Canadian SCI Translational Research Network (SCI-TRN). In late 2006, a proposal, prepared in part by ICORD Director, Dr. John Steeves and Associate Directors, Drs. Armin Curt and Marcel Dvorak (along with Dr. Michael Fehlings and the Rick Hansen Foundation), was submitted by the Rick Hansen Foundation to the Government of Canada. In February 2007, Prime Minister Stephen Harper announced $30 million over five years for the SCI-TRN in order to create a national network to accelerate the translation of innovative research discoveries into practical benefits for Canadians with SCI, generate savings in health and social services and accelerate scientific advances towards a cure. The TRN will focus on the following key priorities: (i) exploring new ways to reduce permanent paralysis; (ii) identifying priority areas for quality of life investments; (iii) implementing national best practices; (iv) completing the roll out of the national Rick Hansen SCI Registry as a reporting and tracking tool; and (v) building the infrastructure needed to keep Canada on the leading edge of spinal cord research. Details of how the funding will be allocated remain to be determined. Research directors of the Network include Drs. Armin Curt, Marcel Dvorak and Michael Fehlings.

Canadian SCI Alliance
In parallel with the development of the Canadian SCI-TRN, the Rick Hansen Foundation facilitated the creation of the Canadian SCI Alliance, a network comprising people with SCI, community support and service groups, and researchers, all with a common goal of enabling innovative and customized solutions for people with SCI. By ensuring seamless coordination of the many agencies that serve SCI and that translational research informs evidence-based best practice at each point along the care, support and service continuum, the SCI Alliance will accelerate improvements in quality of life of people with SCI. ICORD has played a leadership role in the development of this new initiative, with ICORD Managing Director, Dr. Chris McBride sitting on the SCI Alliance Executive.

BC SCI Strategy
ICORD continued to work closely with the Rick Hansen Foundation and leaders of BC SCI service and support organizations on the development of an integrated, province-wide strategy for delivering evidence-based best practices to British Columbians with SCI. Organizations involved include the BC Paraplegic Association, Neil Squire Society, BC Wheelchair Sports Association, BC Wheelchair Basketball Association, Sam Sullivan Disability Foundation, and interested parties from Vancouver Coastal Health. Research is at the core of the strategy, which, ultimately, aims to make BC the best place to live for people with SCI.

Rick Hansen Wheels In Motion
ICORD, along with the BC Wheelchair Sports Association and BC Paraplegic Association, remained a proud community partner of the Rick Hansen Wheels In Motion Vancouver Event. For the second consecutive year, ICORD’s Chris McBride Co-Chaired the event with Kathy Newman, Executive Director of BC Wheelchair Sports. Over 1,200 participants came out to enjoy the event, which raised over $90,000 for SCI research and local quality of life programs. Nationally, the 2006 events raised over $2 million.
SCIRE (Spinal Cord Injury Rehabilitation Evidence): providing objective information for the SCI community

Over the past few years, the volume of publications encompassing a broad definition of rehabilitation after spinal cord injury (SCI) has expanded exponentially. As in all rapidly expanding research fields, it is helpful, from time to time, to review what has been published and assess the quality of the data and conclusions of these reports.

Released in October 2006, SCIRE (Spinal Cord Injury Rehabilitation Evidence) is the first comprehensive synthesis of the published evidence on rehabilitation strategies and community-based programs designed to improve the functional outcomes and quality of life for people living with a spinal cord injury. SCIRE aims to provide SCI health care professionals, researchers, and people living with SCI (and their families) with the necessary objective information to make better-informed decisions as to the strength and validity of current rehabilitation programs and emerging strategies, as well as to identify gaps in the knowledge and possible research priorities.

The SCIRE Research Team has been delighted at the reception the project has received, and that the project has had such an immediate impact. It has been widely disseminated, reaching clinicians as well as consumers world-wide. In addition, the rigor and quality of the work has been recognized by the academic community with invitations to submit the work to their journals. With seven papers already published, thirteen currently in peer-review, twenty conference presentations and more than 200,000 hits on the web site (an average of 850 a day), the SCIRE project is clearly fulfilling its knowledge translation mandate. For the SCIRE project to remain useful, it will be critical to keep the work updated, in addition to adding new topics which emerge as practice evolves.

SCIRE was funded through a partnership between ICORD and the Ontario Neurotrauma Foundation. It was led by Vancouver PIs Drs. Janice Eng, Bill Miller, and Andrea Townson, and London, Ontario PIs Drs. Robert Teasell, Dalton Wolfe, and Ms. Jane Hsieh, and involved more than forty expert reviewers from across Canada.

To access SCIRE online, go to www.icord.org/scire

“Thank you. I have read several of the chapters since it has come out. I commend you and the research team for this great addition to the spinal cord injury literature.”

Thomas N. Bryce, MD
Assistant Professor
Department of Rehabilitation Medicine
Mount Sinai Medical Center New York, NY

“We used the site in Neurorehab this fall in the entry level curriculum. It is excellent! Hats off to those who developed this!”

Andrea Behrman, PhD, PT
Associate Professor
Department of Physical Therapy
University of Florida, Gainesville, FL

“Thank you very much for giving us such a very useful information. We at JSCF would like to link this page soon [so that] researchers and clinicians in Japan can access and get this page.”

Toshiyuki Chiba
Japan Spinal Cord Foundation
Update: international collaborations

ICCP Clinical Trials Guidelines: a resource for the international SCI community

Increasingly, advances in SCI research are finding their way into clinical practice. Many of these experimental therapies are currently undergoing clinical trials or are preparing to enter the clinical trial phase of their development. However, a number of experimental therapies, such as cellular transplants, are being introduced into clinical practice without a valid clinical trial program being completed, leaving their safety and efficacy untested. This is a great concern to researchers, clinicians, and most importantly people with SCI.

For people with SCI, their families, friends and caregivers, the decision to receive an experimental treatment or enter a clinical trial is a challenging one. In order to establish a set of guidelines for the design and conduct of valid clinical trials for SCI, an expert panel of researchers and doctors with extensive scientific and clinical experience in SCI was formed in 2004. The panel, supported through the ICCP (International Campaign for Cures for spinal cord injury Paralysis), developed a set of 4 papers outlining the guidelines for the conduct of SCI clinical trials, which have been published in the Nature journal Spinal Cord. In addition to these peer-reviewed publications, the panel summarized these guidelines in an easy-to-read booklet which outlines the basics of clinical trial design, ethics, and the benefits and risks involved in participating in a trial. Some experimental approaches to SCI currently being studied are introduced in the booklet, along with a list of questions that a potential trial participant could pose to a researcher, which might assist in the decision whether or not to participate in the trial.

The booklet is currently available in English and Spanish, and is also being translated into German, Japanese and Chinese.

ICORD has provided leadership and logistical support for the series of panel meetings as well as for the production of the summary booklet. Drs. John Steeves and Armin Curt were key members of the panel and are co-authors of the four Spinal Cord papers.

International Meetings supported by ICORD, 2006-7

- Reparing the Injured Spinal Cord, April 2006, Banff, AB
- Northwest Biomechanical Symposium, May 2006, Vancouver, BC
- International Society for Developmental Neuroscience (ISDN), August 2006, Banff, AB
- Toronto Rehab Institute 2nd National Spinal Cord Injury Conference, October 2006, Toronto, ON

World Health Organization International Classification of Functioning

Optimal acute and long-term management of SCI requires a thorough understanding, systematic consideration and sound measurement of the impact of SCI on health and health-related domains. Such is the philosophy behind the World Health Organization (WHO)'s International Classification of Functioning, Disability and Health (ICF) and the development of internationally accepted, evidence-based, reliable and valid ICF Core Sets for SCI.

ICORD/GF Strong was selected as one of three study sites representing the Americas. The other sites are Craig Hospital in Colorado and the University Hospital of Sao Paolo in Brazil. Dr. Andrea Townson, Clinical Assistant Professor, UBC Division of Physical Medicine and Rehab and Medical Manager for SCI at GF Strong Rehab Centre is leading the local study. Funding provided by ICORD was key to leveraging Canadian involvement in this truly international project.
Spotlight on innovation

Lokomat®: getting rehab research moving

Earlier this year, ICORD researcher and School of Human Kinetics Assistant Professor, Dr. Tania Lam introduced the local research and clinical communities to “El Loko,” the latest in body weight-supported treadmill training technology. More formally referred to as the Lokomat®, this $300,000 robotic gait device (one of only two in Canada) will allow Dr. Lam and her collaborators to develop and assess new rehabilitation strategies for people with spinal cord injury and stroke. She was able to purchase the equipment through a successful application to the Canada Foundation for Innovation Leaders Opportunity Fund, with partner funding provided by ICORD and the School of Human Kinetics. Dr. Lam and El Loko have already created quite a buzz of excitement. She was highlighted in the April 5 edition of UBC Reports and was featured on Global TV’s News Hour.

The “iBrator”: in development and in the news

A Canadian Press article on an ICORD-funded project to develop and commercialize vibrostimulation devices (VSD) for people with spinal cord injury was picked up and published by several media outlets, including the CBC, in September, 2006. The Rick Hansen Man In Motion Foundation Research Fund project, led by ICORD researcher Dr. James Watzke, BCIT’s Dean of Applied Research and Director, Technology Centre & Dr. Tong Louie Living Laboratory at the British Columbia Institute of Technology, has produced 8 prototypes of a vibrator, nicknamed the “iBrator,” designed for men and women with spinal cord injury. The prototypes will undergo clinical testing starting in October. The project team, which includes ICORD researcher Dr. Stacy Elliott, is addressing one of the highest priority areas for people with spinal cord injury—namely, sexual function, which ranks higher than walking and bladder and bowel function. Once clinical testing is completed, the research team will focus on bringing the product to market, providing a novel and affordable device that will certainly improve the quality of life for people with spinal cord injury, as well as others with mobility related disabilities.

“According to a 2004 survey of 681 spinal-cord injured people in the United States, paraplegics ranked regaining sexual function as their highest priority, above improving bladder and bowel function. The survey results were published in the Journal of Neurotrauma.”

- Canadian Press (quoting a 2004 paper by Dr. Kim Anderson published in the Journal of Neurotrauma)
ICORD’s Annual Research Meeting

ICORD’s 2006 Annual Research Meeting took place on October 3 at the Morris J. Wosk Centre for Dialogue in downtown Vancouver. 145 ICORD principal investigators, staff members and trainees gathered with International and Community Advisory panel members and invited guests to discuss the ongoing progress of ICORD research. In addition to two plenary lectures, eleven researchers gave short presentations about the work going on in their labs and clinics. Thirty four posters (involving more than a hundred individual authors) were presented by trainees and considered by members of the International Advisory Panel for the new ICORD, Aaron Moser and Gordon Hiebert Trainee Awards (see page 19).


Invited speaker: Dr. Bill Coleman (Buffalo, NY). Statistical Considerations in Designing a Trial in Spinal Cord Injury with ASIA Motor Score as the Outcome.
From cells to community, ICORD researchers are working together to discover and implement solutions for the complex and multifaceted impacts of SCI. Currently, ICORD brings together 51 Principal Investigators from basic science, education, engineering, clinical, rehabilitation, and community-based research. ICORD Principal Investigators research three major areas: Basic Discovery Science (pre-clinical discovery research), Human Discovery Science (minimal intervention, human-based research, including Community-based research), and Clinical Care Research (human-based intervention).

Research Chairs
ICORD currently has five endowed research chairs (see page 3 for funding information):
The John and Penny Ryan BC Leadership Chair, held by Dr. John Steeves
The BC Neurotrauma Professorship, held by Dr. Matt Ramer
The Edie Ehlers Chair, held by Dr. Wolfram Tetzlaff
The Spinal Cord Rehab Chair, held by Dr. Armin Curt, and
The Cordula and Guenter Paetzold Chair in Spinal Cord Clinical Research, held by Dr. Marcel Dvorak.

Honoured faculty
A number of ICORD PIs were recognized nationally and internationally for their research, publications and presentations over the past year. Dr. Matt Ramer was awarded both a Michael Smith Foundation for Health Research (MSFHR) Senior Scholar Award and a CIHR New Investigator award. Dr. Janice Eng also received an MSFHR Senior Scholar award. Drs. Bill Miller, Bill Sheel and Darren Warburton hold CIHR New Investigator Awards.

In addition to Drs. Ramer and Eng, ICORD is honoured to have seven other MSFHR Career Investigator Award recipients among our faculty: Kerry Delaney, Heather McKay, Stephen Robinovitch, Jane Roskams, William Sheel, Darren Warburton and Paul Zehr.

Grant funding
Between them, ICORD Principal Investigators hold more than $12 million in individually awarded, competitive research grants (see page 23 for more information).

Institutions represented
As a multi-institutional partnership, ICORD has Principal Investigators representing the following institutions:
• the University of British Columbia (UBC)
• Vancouver Coastal Health (VCH)
• Simon Fraser University (SFU)
• the British Columbia Institute of Technology (BCIT)
• the Neil Squire Society
• the University of Victoria (UVic)
• the University of Northern BC (UNBC)
• the University of Alberta
• Sir Wilfrid Laurier University
ICORD’s Principal Investigators

Dr. Hubert Anton  
Clinical Associate Professor, Div. Physical Medicine and Rehabilitation, UBC  
Research interests: fatigue, functional evaluation, assessment of outcomes, rehabilitation.

Dr. Romeo Chua  
Associate Professor, Department of Human Kinetics, UBC  
Research interests: Human motor control, visual perception and action.

Dr. Peter Cripton  
Assistant Professor, Department of Mechanical Engineering, UBC  
Research interests: Injury biomechanics, orthopaedic biomechanics, injury prevention.

Dr. Armin Curt  
Associate Director of ICORD. Associate Professor, Neurology, Rehab Sciences and ICORD, UBC  
Research interests: Neurophysiology and rehabilitation.

Dr. Kerry Delaney  
Professor, Biology, UVic  
Research interests: Synaptic physiology, dendritic integration, neuronal growth, fluorescence imaging technologies.

Dr. Anita Delongis  
Associate Professor, Psychology, UBC  
Research interests: Stress and coping; social relationships and health; health psychology.

Dr. Marcel Dvorak  
Associate Director of ICORD. Associate Professor, Department of Orthopaedics, Division of Spine, UBC & VCH  
Research interests: SCI trauma, quality assurance and surgical outcome studies.

Dr. Gary Birch  
Exec. Director, Neil Squire Society; Adjunct Professor, Dept of Electrical and Computer Engineering; Principal Investigator, ICORD; Member, Ins. for Computing, Information and Cognitive Systems (ICICS), UBC  
Research interests: robotic control systems, EEG signal processing, digital signal processing, human-machine interface systems, direct brain-computer interface, biological signals, biological systems, assistive technology, accessible wireless technology, real-world application design for persons with disabilities.

Dr. Carole Bishop  
Clinical Assistant Professor, Faculty of Medicine, Department of Orthopaedics, Division of Spine, UBC & VCH  
Research interests: rehabilitation psychology, SCI pain, coping.

Dr. Michael Boyd  
Clinical Assistant Professor, Department of Orthopaedics, Division of Spine, UBC & VCH  
Research interests: reconstruction of injured spine; neuroprosthetic and clinical relief of spinal pain and spasticity.

Dr. Susan Cadell  
Associate Professor, Social Work, Wilfrid Laurier University.  
Research interests: Posttraumatic growth; stress and coping in health care.

Dr. Mark Carpenter  
Assistant Professor & Tier II Canada Research Chair, Department of Human Kinetics, UBC  
Research interests: balance deficits and falls associated with age, Parkinson’s disease, vestibular loss and spinal cord injury; exercise, training and treatment strategies to improve age and disease-specific balance deficits and reduce the occurrence and impact of falls.

Dr. Hubert Anton  
Clinical Associate Professor, Div. Physical Medicine and Rehabilitation, UBC  
Research interests: fatigue, functional evaluation, assessment of outcomes, rehabilitation.
Dr. Stacy Elliott  
**Clinical Director, BC Centre for Sexual Medicine; Co-Director, Vancouver Sperm Retrieval Clinic; Sexual Medicine Consultant GF Strong Rehab Centre, UBC & VCH.** Research interests: Sexual dysfunction and subfertility following SCI, autonomic disorders after SCI.

Dr. Janice Eng  
**Professor, Rehabilitation Sciences, UBC & VCH**  
Research interests: neurorehabilitation.

Dr. Charles Fisher  
**Assistant Professor, Department of Orthopaedics, Division of Spine, UBC & VCH.** Research interests: SCI trauma, surgery and epidemiology of SCI.

Dr. Susan Forwell  
**Clinical Instructor, Neurology; Senior Instructor, Occupational Therapy, UBC**  
Research interests: participation measures and outcomes for adults and older adults with neurological disability, quality of life and life satisfaction, invisible symptoms impacting performance, ie. fatigue, pain, cognition, depression.

Dr. Thomas Grigliatti  
**Professor, Biology, UBC**  
Research interests: human functional genomics, Pharmacogenetics, cell signaling and drug discovery, chromatin architecture and epigenetic regulation.

Dr. Andy Hoffer  
**Professor, Kinesiology, SFU**  
Research interests: Neuromuscular rehabilitation, neuroprosthetics, neuroimaging, biomechanical energy harvesting.

Dr. Barbara Hughes  
**Clinical Assistant Professor, Physical Medicine & Rehabilitation, UBC & VCH**  
Research interests: SCI rehabilitation outcomes, wheelchairs.

Dr. Timothy Inglis  
**Professor, Human Kinetics, UBC**  
Research interests: Human neurophysiology, balance and postural control, brainstem contributions to movement, rehabilitation.

Dr. David Koo  
**Associate Professor, Physical Medicine and Rehabilitation, Department of Medicine, UBC & VCH**  
Research interests: Spinal cord injury outcomes, epidemiology, rehabilitation.

Dr. Piotr Kozlowski  
**Assistant Professor, Departments of Radiology and Urologic Sciences, UBC**  
Research interests: MRI in animal models of spinal cord injury, MRI in cancer research.

Dr. Andrei Krassioukov  
**Associate Professor, Division of Physical Medicine and Rehabilitation, Department of Medicine, UBC & VCH**  
Research interests: Autonomic dysfunctions following SCI.

Dr. Brian Kwon  
**Assistant Professor, Department of Orthopaedics, Division of Spine, UBC & VCH.** Research interests: Spine and spinal cord injury.

Dr. Tania Lam  
**Assistant Professor, Human Kinetics, UBC.** Research interests: Neural control of locomotion, gait rehabilitation in neurological disorders

Dr. Alex MacKay  
**Professor, Radiology, UBC**  
Research interests: magnetic resonance imaging and spectroscopy.
Dr. Bill Miller  
Associate Professor, Rehabilitation Science, UBC  
Research interests: mobility disability, aging, participation, fatigue, measurement.

Dr. Wayne Moore  
Clinical Professor, Pathology and Laboratory Medicine (Neuropathology), UBC; Consultant Neuropathologist.  
Research interests: neuropathology and pathology-MRI correlation in multiple sclerosis; neuropathology of spinal cord injury.

Dr. Ramesh Sahjpaul  
Clinical Associate Professor, Neurosurgery, UBC & VCH  
Research interests: epidemiology and clinical trials related to neurotrauma, clinical neurogenetics and molecular genetics.

Dr. Mark Nigro  
Clinical Professor, Urologic Sciences, UBC & VCH  
Research interests: male infertility, spinal cord and neurogenic bladder.

Dr. Tim O’Connor  
Associate Professor, Cellular & Physiological Sciences, UBC  
Research interests: neurite outgrowth and regeneration.

Dr. Tom Oxland  
Professor, Orthopaedics and Mechanical Engineering, UBC & VCHRI  
Research interests: biomechanics of spinal cord injury; orthopaedic biomechanics.

Dr. Scott Paquette  
Clinical Assistant Professor, Department of Orthopaedics, Division of Spine, UBC & VCH  
Research interests: Resection of intra and extra-dural spinal tumors, reconstruction of injured spine, surgical treatment of spinal pain and spasticity, surgical education.

Dr. Matt Ramer  
Assistant Professor, Zoology & ICORD, UBC  
Research interests: Pain, sensory physiology, plasticity, spinal cord regeneration.

Dr. Steve Robinovitch  
Assistant Professor, Kinesiology, SFU  
Research interests: Dynamics and control of human movement, postural stability and balance; osteoporosis and hip fracture prevention, orthopedic biomechanics; rehabilitation engineering.

Dr. Jane Roskams  
Associate Professor, Zoology, UBC  
Research interests: Interests: olfactory ensheathing cells and neural stem cells and CNS repair.

Dr. David Sanderson  
Professor, Human Kinetics, UBC  
Research interests: Amputee locomotion, lower-limb muscle mechanics, wheelchair propulsion mechanics.

Dr. Bonnie Sawatzky  
Assistant Professor, Orthopaedics, UBC & VCH  
Research interests: Biomechanics of wheelchair propulsion in SCI.

Dr. William Sheel  
Associate Professor, Human Kinetics, UBC  
Research interests: Respiratory, cardiovascular and exercise physiology.
Dr. Peter Soja  
Professor, Pharmacology, UBC  
Research interests: spinal sensory pathways during distinct behavioral states (e.g. pain).

Dr. John Steeves  
Director of ICORD. Professor, Zoology, Surgery, Cellular & Physiological Sciences, UBC & VCH. Research interests: neurodevelopment and CNS regeneration; preclinical validation and clinical trials design.

Dr. Wolfram Tetzlaff  
Associate Director of ICORD. Professor, Zoology, UBC  
Research interests: spinal cord disease, neuroanatomy, plasticity, regeneration, transplantation, trauma, nervous system, developmental neurobiology.

Dr. Andrea Townson  
Clinical Assistant Professor, Physical Medicine and Rehabilitation, UBC; Medical Manager SCI Program GF Strong Rehab Centre, VCH  
Research interests: Spinal cord injury, high tetraplegia, ventilator dependency, outcome measures, fatigue.

Dr. Don Voaklander  
Associate Professor, University of Alberta  
Research interests: injury epidemiology.

Dr. Darren Warburton  
Assistant Professor, Human Kinetics, UBC  
Research interests: clinical exercise rehabilitation, cardiovascular disease.

Dr. James Watzke  
Director, Technology Centre, Research Services Office and Living Laboratory; Dean, Applied Research, BCIT. Research interests: aging, disability, assistive technology, human factors and product evaluation.

Dr. Claire Weeks  
Clinical Assistant Professor, UBC & VCH  
Research interests: SCI outcome measures.  
*Dr Weeks retired in 2006.*

Dr. David Wilson  
Associate Professor, Orthopaedics, UBC  
Research interests: orthopaedic biomechanics, medical imaging.

Dr. Peter Wing  
Clinical professor, Orthopaedics, Division of Spine, UBC & VCH  
Research interests: Prevention, treatment and rehabilitation of spine trauma.

Dr. E. Paul Zehr  
Associate Professor and MSFHR Biomedical Research Scholar, Kinesiology & Neuroscience, UVic  
Research interests: Neural control of movement, neurotrauma, rehabilitation.
ICORD staff: moving research forward

Support staff help keep ICORD research moving forward. From administrative personnel paying invoices and organizing meetings, to lab technicians helping with experiments, research associates designing projects and clinical research staff working with patients and collecting data, each staff member is an important member of the research team. Here are just a few of the 113 staff members who worked on ICORD research and administration this year:

Caroline Abramson worked on the SCIRE project

Arlene Bernardo is a Spine Educator at the VGH Spine Unit

Donna Chan is a registered nurse at the VGH Spine Unit

Tracey Chang is ICORD’s finance clerk

Jeremy Green is ICORD’s Administrative Assistant

Keely Johnston is a Research Assistant with the Spine Division of UBC Orthopaedics

Clarrie Lam is senior technician and manager of Dr. Tetzlaff’s lab

Jie Liu is a Research Associate with Dr. Tetzlaff

Chris McBride is ICORD’s Managing Director

Lowell McPhail is responsible for Facilities and Operations for the Blusson Pavilion

Cheryl Niamath is ICORD’s Administrative Manager

Philippa Taylor is an electrophysiology technician working with Dr. Curt

Tom Pfeiffer is a Research Associate with Dr. Grigliatti

Shannon Sproule is the Clinical Practice Leader and an SCI physiotherapist at the GF Strong Rehab Centre

Jeff Tan is a research assistant at Dr. Eng’s Rehab Research Lab
ICORD trainees: the future of SCI research

The success of ICORD’s current and future research depends to a great extent on trainees. They actively participate, not only in research projects and experiments, but also in our Annual Research Meeting and other national and international scientific and clinical conferences, in fundraising initiatives like Rick Hansen Wheels In Motion, and by supporting and encouraging each other in their research goals.

Since last year, the number of trainees working with ICORD investigators has increased by more than twenty percent. There are currently 273 ICORD Trainees (139 Graduate Students, 24 Postdoctoral Fellows, 48 Residents, and 62 Undergraduate or other trainees), with 103 of these trainees starting with ICORD in the past year.

ICORD Trainees continued to earn awards and honours in the past year, as the list on the opposite page illustrates. Twenty-four trainees took advantage of ICORD’s Trainee Travel Supplement to offset the cost of travel to conferences to present their research. This has been the fifth year that this program has been in operation, and it continues to be popular.
Annual Poster Award Competition

Poster awards are an important and valued part of the ICORD Annual Research Meeting. Last year, through the support of generous donors, three named poster awards were presented to ICORD trainees whose posters were judged by ICORD’s International Advisory Panel to be the best in each of the following categories:

- **The Gordon Hiebert Award** for the best poster presented by an ICORD trainee at the Postdoctoral Fellow level
- **The Aaron Moser Award** for the best poster presented by an ICORD trainee at the Doctoral Student level
- **The ICORD Trainee Award** for the best poster presented by an ICORD trainee at the Masters Student level

Award recipients received $750 each to support conference travel or research-related expenses.

The first ICORD Poster Prizes were awarded at the 2006 ICORD Annual Research Meeting for the best posters presented by trainees. Amy La France (right) received the ICORD Award, Joe Sparling (left) received the Aaron Moser Award, and Frédéric Bretzner (centre) received the Gordon Hiebert Award.
The Blusson Pavilion: building a new home for SCI research + care
The future home of ICORD’s spinal cord injury research centre received a major boost and a new name last November. In recognition of the generosity of Dr. Stewart and Marilyn Blusson for their $10 million donation to the project through the Rick Hansen Foundation, ICORD’s future home will now be known as the Blusson Pavilion. On November 7th, 2006, an impressive list of dignitaries was on hand to celebrate the naming and commencement of construction (see photo, below). “This new facility will serve as a beacon to help attract and retain outstanding researchers from many disciplines,” said UBC president Stephen Toope during the ceremony. “With support from both federal and provincial governments and from our donors, we can also provide a unique venue to train the next generation of spinal cord researchers.”

During the ceremony, the platform party unveiled the project signs, which have taken their place on the Northeast corner of the construction site at the corner of 10th Avenue and Willow Street (see photo, left). The Blusson Pavilion is expected to be completed in the Fall of 2008. Once completed, the centre will house over 35 of ICORD’s principal investigators, a clinical floor, and gathering spaces for researchers and members of the SCI community. The building aims to be one of the most accessible facilities in the world, and will itself be a living laboratory for the design and assessment of accessible environments.

R-L: Honorable Gordon Campbell, Premier of BC; Mrs. Marlyn Blusson; Mr. Rick Hansen, President and CEO of the Rick Hansen Foundation; Dr. John Steeves, John and Penny Ryan BC Leadership Chair in SCI Research and Director of ICORD; Dr. Stewart Blusson; Professor Stephen Toope, President and Vice Chancellor of UBC; Ms. Suzanne Corbiel, VP External Relations for the Canada Foundation for Innovation; Ms. Ida Goodreau, President and CEO of Vancouver Coastal Health; Dr. Bernie Bressler, Executive Director of the VCH Research Institute and Vice President Research of VCH.
The Blusson Pavilion: construction details

Building size: approx. 11,000 m²

Project cost: $45 million

- Canada Foundation for Innovation: $ 12.9 million
- BC Knowledge Development Fund: $ 12.9 million
- University of British Columbia: $ 8.15 million
- Rick Hansen Foundation: $ 8.75 million
- Vancouver Coastal Health (VCH): $ 2.0 million
- VCH Research Institute: $ 330,000

Project Team:

Architects:
Musson Cattell Mackey Partnership; Smith Carter

Project Manager: Stantec Consulting

Construction Services: Ledcor Construction

Consultants:
Electrical Engineering: RA Duff and Associates
Mechanical Engineering: Stantec
Structural Engineering: Read Jones Christoffersen
Research funding

Since its creation in January 2002, ICORD has accumulated close to $50 million in awards, endowments and overhead commitments. In addition, ICORD’s principal investigators currently hold more than $12 million in individually awarded grants.

Building construction funds ($45 million - see previous page for details). These funds will support the establishment, at the Blusson Pavilion, of ICORD’s international SCI research centre, its six thematic programs, and core facilities to support them. The CFI award also provides for an additional $772,083.00/year to cover operating overhead over 5 years.

Endowments
ICORD currently holds close to $18.4 million in endowments:

- The John and Penny Ryan BC Leadership Endowment, (endowed chair held by Dr. John Steeves, Professor and Director of ICORD): $6.35 million
- The BC Neurotrauma Professorship Endowment (Rick Hansen Man In Motion Foundation; endowed chair held by Dr. Matt Ramer): $2 million
- The Rick Hansen Spinal Cord Endowment (includes Edie Ehlers Chair in SCI Research held by Dr. Wolfram Tetzlaff): $4 million
- The Cordula & Günter Paetzold Endowed Chair in Clinical Spinal Cord Research, held by Dr. Marcel Dvorak: $3 million
- The Spinal Cord Rehabilitation Endowed Chair, held by Dr. Armin Curt: $3 million
- The Trainee Endowment, providing annual poster awards to ICORD Trainees: $48,700

Endowment capital is invested; only the interest earned each year is available for spending.

Research funding awarded to ICORD Principal Investigators
Collectively, ICORD’s principal investigators currently hold approximately $12 million in external operating funds awarded by provincial, national and international funding agencies to support their individual research programs. These agencies include:

- BC Knowledge Development Fund
- BC Medical Services Foundation
- BC Rehab
- BCIT
- Canada Foundation for Innovation
- Canadian Institutes of Health Research
- Canadian Physiotherapy Foundation
- Canadian Stroke Network
- Cancer Research Foundation
- Christopher & Dana Reeve Foundation
- Health Canada
- Heart and Stroke Foundation, BC & Yukon
- Heart and Stroke Foundation of Canada
- International Institute for Research in Paraplegia (Switzerland)
- International Spinal Research Trust (UK)
- Medtronic Inc.
- Michael Smith Foundation for Health Research
- Natural Sciences & Engineering Research Council of Canada
- Network Centres of Excellence
- Neuroscience Canada
- Ontario Neurotrauma Foundation
- Paralyzed Veterans of America
- Public Health Agency of Canada
- Rett Syndrome Research Foundation
- Rick Hansen Foundation
- Swiss National Science Foundation
- Toronto Rehab Institute
- Vancouver Coastal Health Research Institute
- Vancouver Foundation
- Wings for Life (Austria)
Funding for ICORD’s annual research competition has been provided through support delivered through the Rick Hansen Foundation. Through the BC Neurotrauma Fund/Rick Hansen Man In Motion Research Fund, ICORD has provided $3.2 million in internal research grant funding since 2002. However, due to extenuating circumstances concerning the timing of this year’s funding support, ICORD was not able to hold a research competition for its members. Instead, the funds were used to support renewals of previously awarded grants and strategically applied to a small number of new, collaborative initiatives. A total of $494,000 was awarded to these research initiatives.

Renewal funding was provided primarily to retain key research talent involved in the following ongoing projects (ICORD Principal Investigators/project leaders indicated in brackets):

- **Senior Technician for ICORD’s Animal Behaviour Assessment facility** (with matching funding from external grants held by Dr. Wolfram Tetzlaff) – provided behavioural outcome assessments in animal models of SCI and training for ICORD basic scientists in these techniques.

- **Spinal Cord Injury Proteomics (Grigliatti/Tetzlaff)**. This project seeks to identify and validate biomarkers to monitor the severity of spinal cord injuries (SCI), and allow the “real time” ongoing evaluation of candidate drugs in human clinical trials. Matching funding to support Dr. Tom Pfieffer, Research Associate and proteomics/genomics team leader, from external grants held by Dr. Tom Grigliatti.

- **SCI Models and Imaging (Oxland/Kozlowski)**. Funding to finish preliminary work on the development of novel models that more accurately mimic and image the pathophysiology and functional consequences of human SCI. This work has yielded novel approaches to accurately modeling SCI and formed the basis for external grant applications to fund this avenue of ICORD research. Understanding the mechanisms of SCI will facilitate the development and translation of therapeutic interventions for SCI and enhanced assessment techniques for people with SCI, resulting in more targeted and effective clinical treatment.

- **SCIRE (Eng/Miller/Townson)**. Continued funding for SCIRE was provided for further development, synthesis and dissemination of the SCIRE book. The 22 chapter book was released in paper, cd and electronic (online) format. Currently, 21 peer-reviewed papers emerging from the book have or are in the process of being published. Please see page 8 for further details on SCIRE.

- **Stress and Coping among People with SCI (DeLongis/Cadell)**. This project is examining how people with SCI cope with stressful events and how they and their careers could identify possible positive outcomes. Facilitation of coping strategies and positive changes may assist people with SCI and their caregivers to better adjust to the changes in their lives. Renewal funds were used to maintain support for trainees involved in the project and to expand the subject pool for increased power for analysis. Through their interactions at ICORD, Drs. DeLongis and Cadell combined their research projects to create a new collaboration between psychology and social science research teams in order to better address the study’s goals. The project also involves a partnership with the BC Paraplegic Association.

- **Shoulder Pain in Manual Wheelchair Users (Wilson)**. Renewal funding for continued support of the trainee leading the project. The findings of this study will be used to improve training programs for new manual wheelchair users and to make recommendations for modifications to the activities of existing wheelchair users. The results will be presented to insurance boards to justify the need for assistive devices, such as wheelchair lifts into cars, and power wheelchairs, which lessen the loads on the shoulder joint. The initial stages of the project were completed this year and have formed the basis for external funding opportunities to further elucidate the specific causes of shoulder pain in manual wheelchair users, ultimately leading to the development of preventative techniques.
New funding was provided for the following strategic initiatives (ICORD Principal Investigators/project leaders indicated in brackets):

- **Director of Autonomic Research** – In partnership with UBC’s Department of Medicine and the Rick Hansen Foundation, ICORD is providing salary support for Dr. Andrei Krassioukov, who will act as ICORD’s Director of Autonomic Research. An international search for a permanent faculty member for this position was undertaken, and Dr. Krassioukov is expected to officially be offered the position in the Fall of 2007. The partners are currently in the process of creating a $3 million endowed chair. Dr. Andrei Krassioukov is a world leader in the study and care of the autonomic consequences of SCI, the leading cause of ongoing medical complications for people with SCI. He will continue leadership of ICORD’s developing autonomic research program and facilitate development one of the world’s first integrated autonomic clinical and research unit.

- **Development of ICF Core Sets for SCI (Townson).** World Health Organization’s International Classification of Function (ICF) Core Sets for SCI aims to optimize acute and long-term management of spinal cord injury (SCI) through in-depth understanding, systematic consideration and sound measurement of the impact of SCI on health and health-related domains. ICORD and the GF Strong Rehabilitation Centre will be the Canadian study centre, one of 3 such centres in the World Health Organization’s Region of the Americas and one of 9 centres from around the world. For more on this project, see page 9.

- **Imaging and assessment of incomplete SCI (Curt, Dvorak, McKay).** Incremental funding for a Cervical Spine Research Society-funded project that will evaluate the benefits of a combinatorial assessment approach that combines new spinal MRI techniques developed at UBC with clinical and electrophysiological measures. The outcomes are expected to improve clinical assessments of people with SCI, leading to better informed and targeted surgical and therapeutic interventions. This collaborative project involves a partnership between ICORD physicians, surgeons, clinicians, researchers and the UBC High Field MRI Centre.

- **Hand function assessment in SCI–GRASSP (Curt).** Dr. Curt is heading an international, multi-centre and multi-network study that will develop and test a novel hand assessment that can be applied to a current Novartis-sponsored clinical trial, and may serve as an important tool for future clinical trials. This project represents an ICORD partnership with the Christopher and Dana Reeve Foundation and Novartis.

- **Preclinical assessment of every other day fasting as a neuroprotective strategy (Tetzlaff).** As reported in last year’s annual report, preclinical studies on the neuroprotective effects of fasting on alternate days have shown some promising results. Support was provided for Dr. Femke Streijger, a newly recruited postdoctoral fellow from the Netherlands. Dr. Streijger was recently awarded a Christopher and Dana Reeve Foundation fellowship to continue her work in this novel area of translational research.
The generosity of those who donate their time and money in support of SCI research has played a critical role in ICORD’s ongoing success. We are grateful to all who have contributed to helping ICORD in realizing its potential as a world leader in SCI research.

Fundraising Goals

ICORD, in collaboration with the Rick Hansen Foundation, UBC and VCHRI, is working to establish three $3 million endowed research chairs in Autonomic Consequences of SCI, Sexual Health and Reproduction and Bladder Function. Further funding for trainees, equipment, and research projects are additional fundraising priorities. With construction of ICORD’s new research centre underway, ICORD will look to establish industry and private partners to help provide research equipment and operational infrastructure. In aid of ICORD’s goal to make the Blusson Pavilion one of the world’s most accessible buildings, we will also continue to seek industry partners interested in testing and/or supplying technology for the building that will help create the most accessible environment possible.

Reserved

The spectacularly successful third annual Reserved gala, hosted by John and Penny Ryan, was held at Whistler’s Four Seasons Resort on April 29, 2006. The Ryans put on an amazing evening with wonderful food, wine, and entertainment. Honoured guests included Vancouver Mayor Sam Sullivan, Rick Hansen, Brandy Cook, several Paralympic Athletes, and ICORD Director Dr. John Steeves.

Since 2004, the Reserved gala, with matching funds from the Regeneration Tour Society, has raised $578,000 for the John and Penny Ryan BC Leadership Chair in SCI Research, held by ICORD Director, Dr. John Steeves. The Chair was established through the efforts of the Rick Hansen Foundation and the Province of BC’s Leading Edge Endowment Fund. Funds from the chair’s endowment interest are essential for supporting ICORD’s activities. The $273,710 raised at this year’s event was enough to realize the full capitalization of the Chair at $6.35 million, making the John and Penny Ryan BC Leadership Chair one of Canada’s largest endowed research chairs.
Appendices
Appendix 1: Financial statement

Balance at April 1, 2006 767,164
Funding in 2006 (including endowment income) 1,910,725

Total available Apr 1, 06 to Mar 31, 07 2,677,889

Expenses
Research related costs (including research salaries & benefits, supplies & equipment, meeting expenses) 1,159,955
Annual Research Meeting (including travel costs for international panel members) 56,709
Contributions to SCI-related conferences 13,774
Transferred out to ICORD research projects (see pages 24 + 25 for details) 494,293
Operational costs (including administrative salaries & benefits, telecom, supplies & equipment) 383,959

2,108,690

Commitments
Remaining payments on 2006 contracts 56,174
Endowment interest reserved for equipment and start up 472,788
Contingency 30,477

559,439

Balance available March 31, 2006 9,760

Spine Registry balance at April 1, 2006 209,121
Spine Registry operations 607,303
Committed for existing spine registry contracts 173,389

Spine Registry balance at March 31, 2007 -571,571

Overhead Commitments
a. CFI: As a component of ICORD’s $12.9 million CFI award, the CFI Operating Fund will provide an additional $772,083.00/year over the first 5 years of operation. This figure reflects 30% of total CFI award, over 5 years. Activation of this money will be initiated approximately 6 months prior to completion of the new building (scheduled for Summer, 2008).
b. Vancouver Coastal Health (VCH): VCH has committed to an ongoing yearly operating allowance of approximately $1.2 million to fund utilities and building maintenance costs.

Note regarding funding for ICORD’s new International SCI Research Centre:
The total Project Budget is 45,000,000. As a part of this total project budget, 2 new accounts were opened during 2005/6, representing the CFI/BCKDF contribution to the project: Construction funding (39,426,840) and Equipment funding (3,500,000). The balance of the total project cost has been committed by the partners (see page 22).
Appendix 2: Selected publications

**Gary Birch**


**Mark Carpenter**


**Romeo Chua**


**Peter Cripton**
Interface Strength between Interbody Device and Vertebra Body. Spine, 32(3) 334-41.


Armin Curt


Kerry Delaney


Anita Delongis


Marcel Dvorak


Stacy Elliott

Janice Eng
Harris JE, Eng JJ. (2006). Individuals with the dominant hand affected following stroke demonstrate less impairment than those with the nondominant hand affected. Neurorehabilitation and Neural Repair, 20 380-389.


Charles Fisher


Sue Forwell

Tom Grigliatti


Andy Hoffer


Tim Inglis


Piotr Kozlowski

Andrei Krassioukov


Brian Kwon


Tania Lam

Bill Miller


Wayne Moore


Tim O'Connor


Tom Oxland


Matt Ramer


John Steeves


Wolfram Tetzlaff


Andrea Townsend


Don Voaklander


Darren Warburton


James Watzke

David Wilson


Peter Wing

Paul Zehr
Stoloff R, Zehr EP, Ferris DP. (2007). Recumbent stepping has similar but simpler neural control compared to walking. Exp Brain Res, 178 427-438
Hundza SR, Zehr EP. (2006). Cutaneous reflexes during rhythmic arm cycling are insensitive to asymmetrical changes in crank length. Exp Brain Res, 168 165-177.

Additional copies of the ICORD Annual Report 2006/7 may be obtained by contacting the ICORD Administrative Office: 1.604.822.2673 or admin@icord.org

Edited by: Chris McBride
Designed by: Cheryl Niamath
All photos courtesy of Wendy Niamath / Delicious Photography, except p4: John Steeves; p5 (top) Peter Wing; p10 (left) Chris McBride, (centre, right) Global TV; p20 (top) Linda Niamath, p 20-21 (bottom sequence) Laura Harvey; p21 Martin Dee; p22 Cheryl Niamath; p26 (left and right) Chris McBride, (centre) Stacy Elliott.
The *art* of research:
ICORD Photo Contest entries for 2006

The quality and variety of photographs submitted for the 2006 ICORD Life Photo Contest was again fantastic. Congratulations to Jaimie Borisoff, who submitted the grand prize-winning photo. The other prize-winning photographers were Miranda Richter (*Artistic Science*), Jie Liu (*Cool technology*), Peter Cripton (*ICORD in Action*), and Anita Delongis (*Faces of ICORD*).
This page, clockwise from top left: Jaimie Borisoff (untitled); Clarrie Lam (Anthony at the Society for Neuroscience Conference - detail); Jason Plemel (untitled); Lowell McPhail (untitled); Jason Plemel (Axons - detail).

Previous page:
Above, clockwise from left: Peter Cripton (Researchers at work in the Cripton Lab); Anita Delongis (Delongis Lab Trainees at the Rick Hansen Wheels in Motion event); Jie Liu (Rat spinal cord - detail).
Below: Miranda Richter (left: Cortical neuron and astrocyte in ciliary neurotrophic factor; right: Cortical neuron)