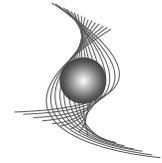




# PHYSICAL THERAPY

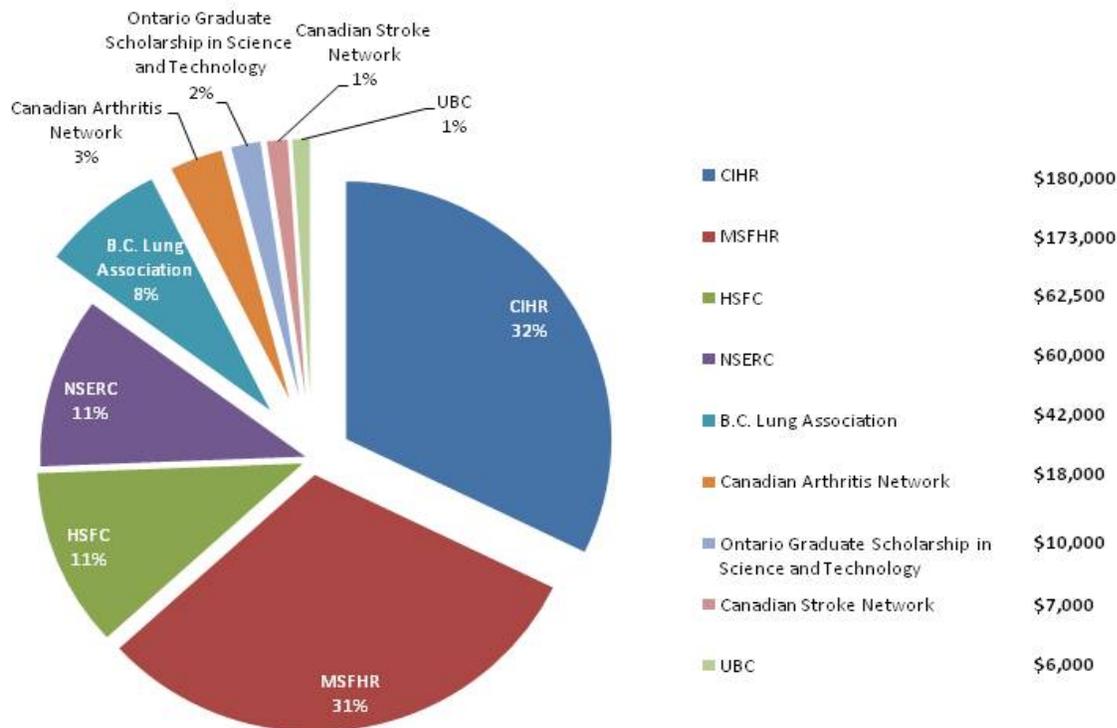
FACULTY OF MEDICINE



2009 RESEARCH SUMMARY HIGHLIGHTS DEPARTMENT OF PHYSICAL THERAPY

Research and training in the Department of Physical Therapy would not be possible without the generous support not only from the funding agencies listed but of our health authority partners, Vancouver Coastal and Providence Health Care Research Institutes, Canadian Breast Cancer Foundation BC/Yukon and Canadian Cancer Society BC/Yukon as well as our affiliated research centres-Brain Research Centre, Centre for Hip Health, International Collaboration on Repair Discoveries and The Arthritis Research Centre

## Sources of Research Trainee Funding 2009 Total = \$592,500



### SUMMARY RESEARCH TRAINEE STATISTICS (JAN 1, 2009—DEC 31, 2009)

#### FUNDING

- TOTAL TRAINEE FUNDING IN 2009 (OVER THE TENURE OF THE GRANT) = **\$592,500**

#### NUMBER OF TRAINEES SUPERVISED BY PT FACULTY IN 2009

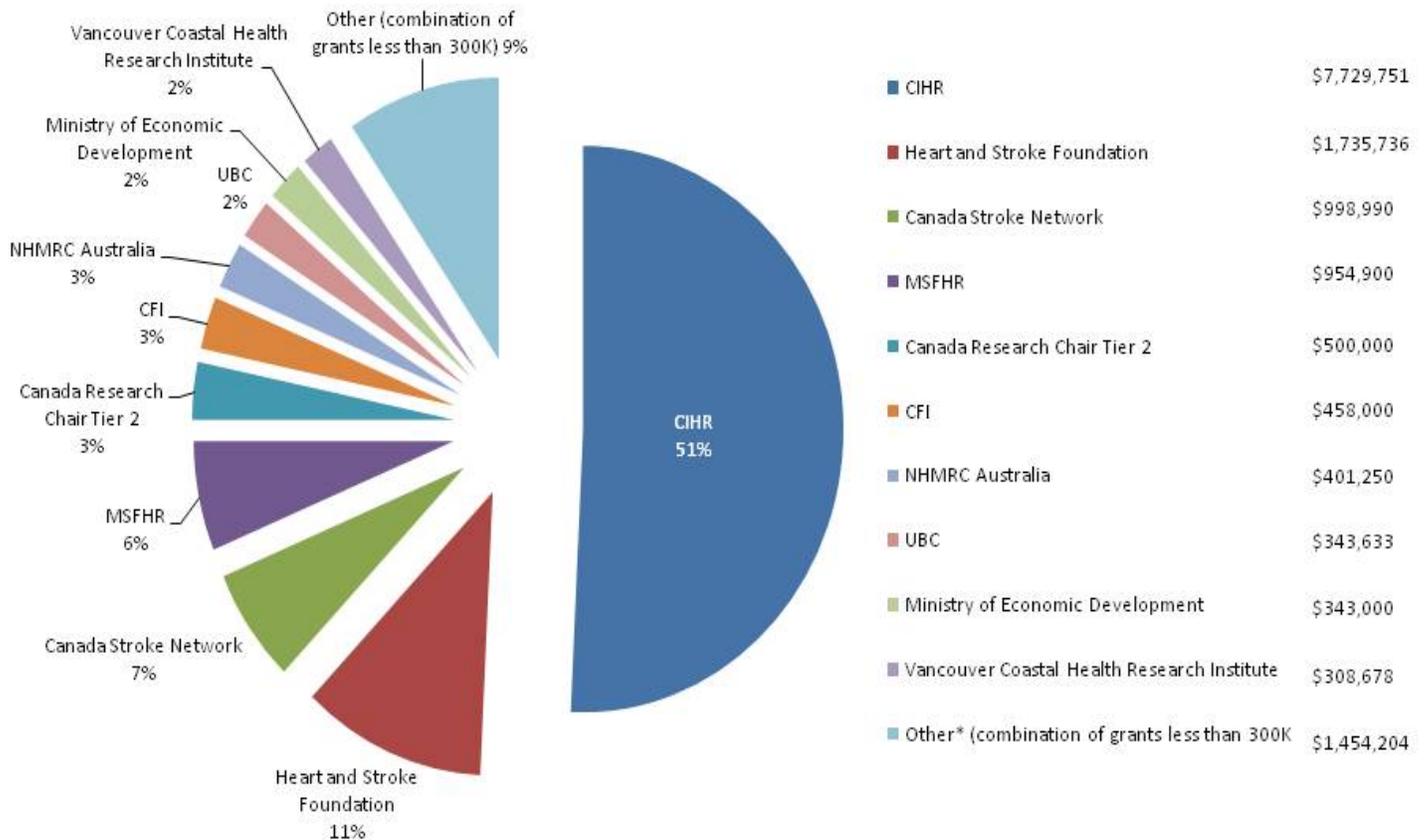
- M.SC STUDENTS = **12 (3 GRADUATES 2009)**
- PH.D STUDENTS = **14 (1 GRADUATE 2009)**
- POST-DOCTORAL FELLOWS = **6**





## Sources of PI Funding 2009

Total = \$15,228,142



\* Contributing granting agencies: SCI Solution, National Institutes of Health US, Cystic Fibrosis Foundation, Vancouver Foundation, BCKDF, NSERC, Pacific Alzheimer Research Foundation, Canadian Arthritis Network - Networks of Centres of Excellence, University of Melbourne, BC Lung Association, BC Women's Hospital Auxiliary, CRHP, BC Lung Association, Technology Enhanced Knowledge Translation Investigative Centre, Physiotherapy Foundation of Canada

### SUMMARY RESEARCH STATISTICS (JAN 1, 2009—DEC 31, 2009)

#### FUNDING

- Total PI Grant Funding in 2009 (over the tenure of the grant) = **\$15,228,142**
- Total Grant Funding (PI + Collaborative over the tenure of the grant) = **\$31,353,774**

#### PUBLICATIONS

- Peer Reviewed Publications in 2009 = **61**
- "In Press" = **28**

#### CAREER INVESTIGATOR AWARDS AND ENDOWED CHAIRS

- Dr. Janice Eng**, Michael Smith Foundation for Health Research Senior Scholar,
- Dr. Teresa Liu-Ambrose**, Michael Smith Foundation for Health Research Scholar
- Dr. Lara Boyd**, Canada Research Chair in Neurobiology of Motor Learning, Michael Smith Foundation for Health Research Scholar
- Dr. Linda Li**, Harold Robinson-Arthritis Society Chair in Arthritic Diseases, CIHR New Investigator and an American College of Rheumatology Research & Education Foundation Health Professional New Investigator .

## **Neural Control of Force Production and Movement**

**Faculty: Dr. Jayne Garland, [jayne.garland@ubc.ca](mailto:jayne.garland@ubc.ca)**

On top of her duties as department head, Dr. Garland maintains a very active research laboratory. Her research has two main foci: neural control of force production and movement, particularly under conditions of muscle fatigue; and recovery of motor control following stroke, with emphasis on postural control. She employs sophisticated single motor unit analysis to investigate fundamental motor control principles as well as force platform technology to measure postural sway and isokinetic equipment to measure force production.

## **Biomechanics of Pathological Joints**

**Faculty: Dr. Michael Hunt, [michael.hunt@ubc.ca](mailto:michael.hunt@ubc.ca)**

Dr. Hunt's research focus is in the area of clinical biomechanics with a particular emphasis on knee injuries. His previous work has examined the effectiveness of surgical and exercise interventions on knee biomechanics and quality of life in patients with knee osteoarthritis. He typically uses various testing methods for his research, including motion analysis and strength assessment, he plans evaluate and implement the use of visual feedback mechanisms to improve gait re-training strategies for patients with varying pathologies. His clinical and teaching interests lie in the areas of clinical and orthopaedic biomechanics as well as musculoskeletal injuries.

## **Exercise and Chronic Disease**

**Faculty: Dr. Kristin Campbell, [kristin.campbell@ubc.ca](mailto:kristin.campbell@ubc.ca)**

Dr. Campbell's research interests are focused on the role of physical activity in the prevention and rehabilitation of chronic disease, particularly cancer. She has investigated the role of physical activity in cancer prevention by examining the effect of exercise on proposed biomarkers of breast and colon cancer risk, such as sex hormones, inflammatory markers and tissue protein expression. In terms of rehabilitation from cancer treatment and cancer survivors, her research has focused on examining the benefits of physical activity on physical function, quality of life, fatigue and lymphedema, and is interested in starting to examine the emerging evidence for the role of physical activity in lowering risk of cancer recurrence. Her research spans a range from small scale intervention studies to multi-center randomized controlled trials and large cohort studies.

## **Health, Lifestyle and Cultural Diversity**

**Faculty: Dr. Elizabeth Dean, [elizabeth.dean@ubc.ca](mailto:elizabeth.dean@ubc.ca)**

Dr. Dean has a primary interest in a paradigm of physical therapy practice that is consistent with global epidemiological indicators in the 21st century including the promotion of health, and the effectiveness of non invasive interventions (e.g., health education and exercise) vis a vis the prevention of lifestyle conditions, in some cases their cure as well as their management. Her research focuses on health and the global crisis of lifestyle conditions (heart disease, smoking-related conditions, cancer, hypertension and stroke, obesity, diabetes, an osteoporosis), their epidemiology and means of maximizing health outcomes secondary to health education and exercise in culturally diverse populations. She conducts research internationally including the Middle East and Asia as well as multicultural Canada. Currently she is focusing on knowledge translation of existing and new knowledge that promotes health and wellbeing, and the integration of this knowledge by physical therapists globally in their practices to address the health care needs of their countries in the 21st century at both the health policy and individual levels.

## **Rehabilitation Aimed at Muscle Performance & Muscle Biophysics Laboratory**

**Faculty: Dr. Darlene Reid, [darlene.reid@ubc.ca](mailto:darlene.reid@ubc.ca)**

The Muscle Biophysics Laboratory located on the 6th floor of the Research Pavilion at VCHRI, examines muscle performance using a variety of techniques including in vitro skinned fibre preparation and isolated vessel preparation to analyze immunohistochemical features of skeletal muscle. The Rehabilitation Aimed at Muscle Performance (RAMP) research team is exploring the dose-response of rehabilitative exercise protocols in the elderly with chronic disease(s) across the spectrum from molecular to clinical studies. The team is a core group of clinical and basic scientists with established collaborative links to the Orthopedics, Geriatrics, Human Kinetics, Sports Medicine and Respiratory Medicine at Vancouver Coastal Health and UBC.

## Arthritis Health Services Research and Knowledge Translation

**Faculty: Dr. Linda Li, [lli@arthritisresearch.ca](mailto:lli@arthritisresearch.ca)**

Dr. Li's research program is located at the Arthritis Research Centre of Canada (ARC). Affiliated with UBC and VCHRI, ARC conducts patient/consumer driven clinical and health services research related to arthritis diagnosis, prognosis, prevention, care outcomes and quality of life issues. Dr. Li is also an affiliated investigator at the Arthritis Community Research & Evaluation Unit (ACREU) in Toronto. Her research focuses on two areas: development of cost-effective *health services interventions for arthritis care*, and the development and evaluation of *knowledge translation strategies*. The main goal of her work is to improve the care and quality of life of people living with arthritis.

## Brain Behavior Laboratory

**Faculty: Dr. Lara Boyd, [lara.boyd@ubc.ca](mailto:lara.boyd@ubc.ca)**

The Brain Behavior Laboratory, led by Dr. Lara Boyd is located in Department of Physical Therapy, on the third floor of UBC Hospital. The Brain Behavior Laboratory examines the relationships between brain function and behavior after central nervous system damage from stroke. The Lab integrates two fields of study: the neurobiology of motor learning and the neural science of stroke recovery, in order to understand how best to stimulate neural plasticity to facilitate motor learning and recovery of function after stroke or other forms of acquired brain injury. Ultimately, the goal of this work is to understand how the stroke-damaged brain learns in order to inform rehabilitation interventions.

## Older Adult Fall Prevention and Rehabilitation Program

**Faculty: Dr. Teresa Liu-Ambrose, [teresa.ambrose@ubc.ca](mailto:teresa.ambrose@ubc.ca)**

Dr. Liu-Ambrose is a member of the UBC Brain Research Centre and a principal investigator of the CFI-funded Centre for Hip Health, located on the 3<sup>rd</sup> floor of the Willow Chest Centre at VCHRI. The Centre brings together researchers from a wide range of disciplines to investigate and treat persons with hip fractures and osteoarthritis, and create new surgical solutions. Dr. Liu-Ambrose's research program focuses on reducing the incidence of falls and fall-related fractures in older adults, using a transdisciplinary approach, and collaborates with experts in psychology, neuro-imaging, geriatrics, kinesiology and health care and epidemiology.

## Educational Research

**Faculty: Dr. Lesley Bainbridge, [lesleyb@interchange.ubc.ca](mailto:lesleyb@interchange.ubc.ca)**

Lesley Bainbridge is Director of Interprofessional Education in the Faculty of Medicine and Associate Principal of the College of Health Disciplines. Her office is located on the 4<sup>th</sup> floor of the Woodward Instructional Resources Centre (IRC) at UBC. Her research program is aimed primarily at understanding interprofessional education (IPE) and collaborative practice in health. Specific research initiatives include the testing of an interprofessional education model that enables integration of IPE into any curriculum using pain management as the pilot, examining the role of patient or community teachers in an IPE context, exploring the role of narrative to break down interprofessional barriers and examining the links between interprofessional collaboration and health human resource issues such as retention and recruitment.

## Neurological Rehabilitation

**Faculty: Dr. Janice Eng, [janice.eng@vch.ca](mailto:janice.eng@vch.ca)**

Dr. Eng's program is located in the Rehabilitation Research Laboratory (GF Strong Rehab Centre, Vancouver Coastal Health). This Laboratory serves as a multi-user, interdisciplinary facility dedicated to excellence in rehabilitation research. Dr. Eng's clinical trials have measured the effects of rehabilitation treatments on mobility, arm and hand function, cardiovascular fitness, balance, falls, bone density and quality of life in people with stroke and spinal cord injury. She works closely with clinicians, Canada Stroke Network, International Collaboration on Repair Discoveries (spinal cord research centre) and the Brain Research Centre to develop collaborative research projects which span mechanistic research, clinical trials to best practice implementation.

