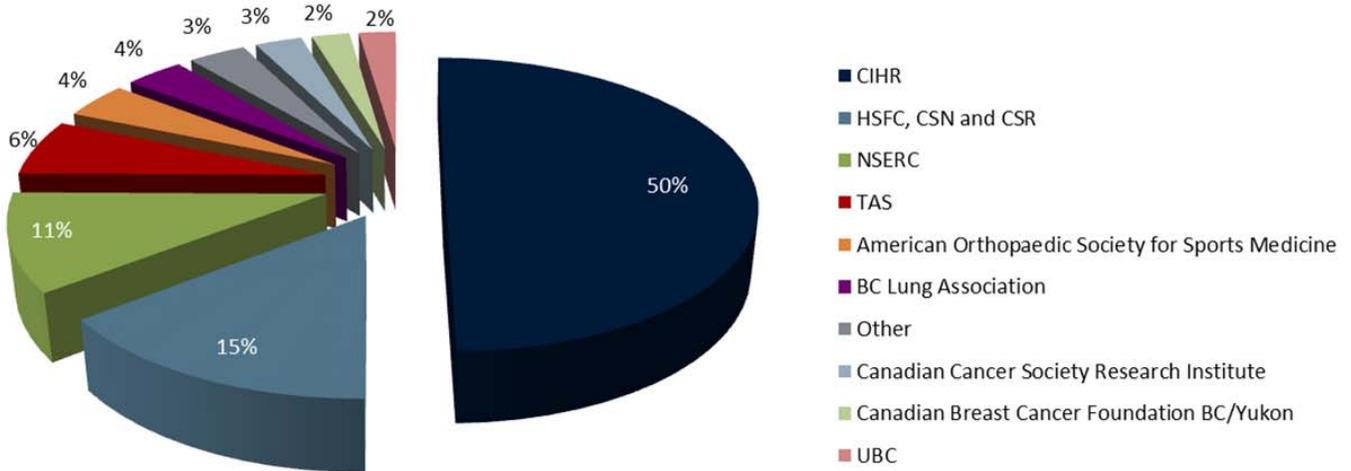


## 2013 RESEARCH SUMMARY HIGHLIGHTS

### SOURCES OF PI OPERATING GRANT FUNDING\* 2013 = \$6,327,186



Other Agencies: Andison Family Foundation, Arthritis Health Professionals Association, BC Cancer Foundation, GRAND NCE (Graphics, Animation & New Media), ICORD, International Primary Care Respiratory Group, Physiotherapy Foundation of Canada, PHCRI, Provincial Government and the Peter Wall Institute

\* Calculated over the tenure of the grants

## SUMMARY RESEARCH STATISTICS (JAN 1, 2013 - DEC 31, 2013)

### OPERATING GRANT FUNDING

Total PI Grant Funding = **\$6,327,186**

Total Operating Grant Funding = **\$12,834,168**  
(PI + Collaborative)

**TOTAL FUNDING \*\* = \$92,769,837**  
(PI + Collaborative)

\*\* Includes funding held in Operating grants, for equipment and team grants over the tenure of the grants

### PEER REVIEWED PUBLICATIONS

- Published = 113
- "In Press" = 47
- In Submission = 57

Department of Physical Therapy

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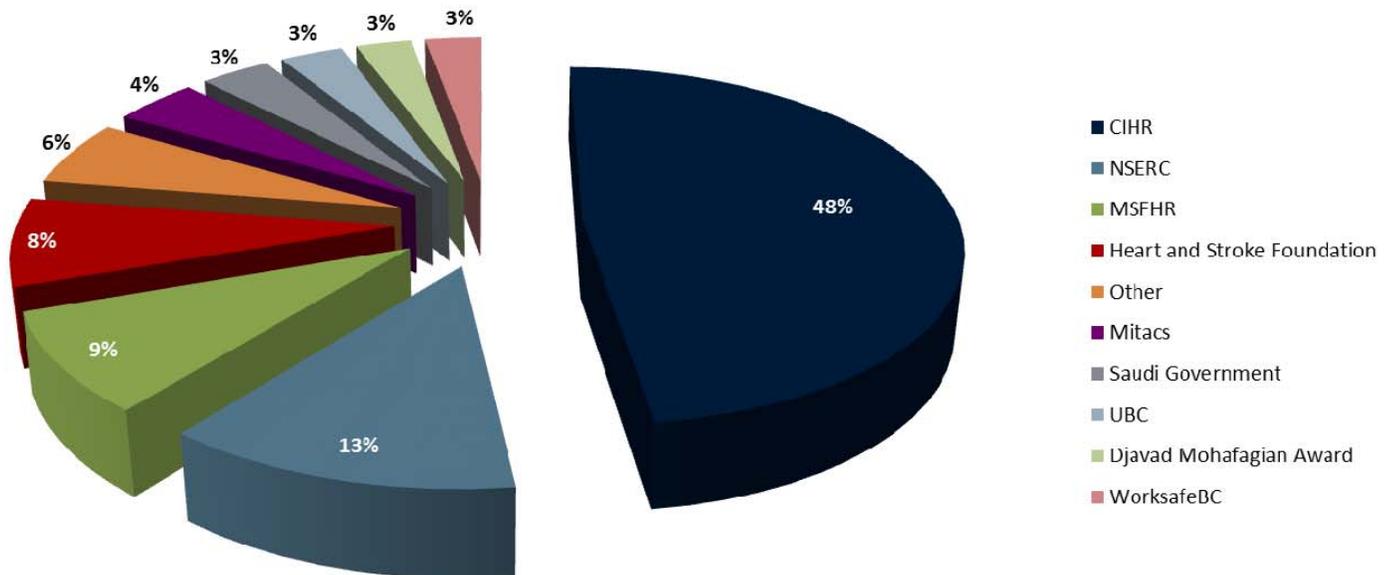


**FACULTY OF MEDICINE**

## 2013 RESEARCH SUMMARY HIGHLIGHTS

The Rehabilitation Sciences Graduate Program strives to create outstanding learning and research experiences for occupational therapists, physical therapists and others with interests in health. Through these opportunities, graduates advance the science of rehabilitation which aims to promote physical, mental and social well-being among people of all levels of ability. Our collaborative initiatives result in a reciprocal transfer of new knowledge among academic, clinical, and community settings. Graduates from our programs go on to become research scientists, clinical scientists and consultants to government, health authorities and other organizations with interests in rehabilitation. Our trainees are well supported by funding from various sources.

### SOURCES OF RESEARCH TRAINEE FUNDING\* 2013 = \$2,830,500



Other Agencies: Saudi Government/Cultural Bureau/King Saud University, Alzheimer’s Society of Canada, Conselho Nacional de Desenvolvimento Científico e Tecnológico, BC Lung, Arthritis Health Professions Association, Vancouver Coastal Health Research Institute, American College of Sports Medicine

\* Calculated over the tenure of the grants

## SUMMARY RESEARCH STATISTICS (JAN 1, 2013 - DEC 31, 2013) for trainees supervised by PT faculty

### Funding held by trainees in 2013 (over the tenure of the awards)

- M.Sc. Students = \$156,000
- Ph.D. Students = \$1,447,000
- Post-Doctoral Fellows = \$1,227,500

### Number of trainees in 2013

- M.Sc. Students = 24
- Ph.D. Students = 28
- Post-Doctoral Fellows = 13

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, our professional organization and affiliated research centres:

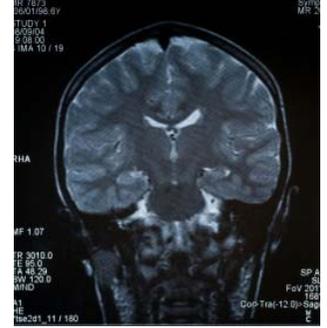
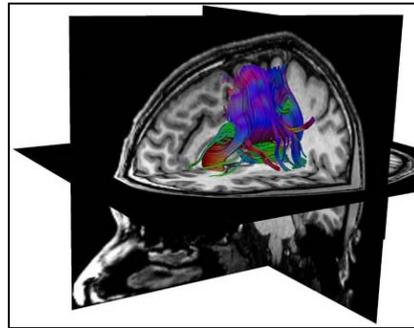
- ◆ Arthritis Research Centre
- ◆ Biomedical Research Centre
- ◆ The Brain Research Centre
- ◆ Canadian Breast Cancer Foundation BC/Yukon and Canadian Cancer Society BC/Yukon
- ◆ Cancer Control Program at British Columbia Cancer Research Centre
- ◆ Centre for Hip Health and Mobility
- ◆ Child and Family Research Institute
- ◆ Computing, Information and Cognitive Systems
- ◆ International Collaboration on Repair Discoveries
- ◆ James Hogg iCAPTURE Centre
- ◆ Northern Health Authority
- ◆ Providence Health Care Research Institute
- ◆ Physiotherapy Association of British Columbia
- ◆ Robert H.N. Ho Research Centre
- ◆ Vancouver Coastal Research Institute

The Department is home to three Canada Research Chairs:

- \* Lara Boyd, Canada Research Chair in Neurobiology of Motor Learning.
- \* Teresa Liu-Ambrose, Canada Research Chair in Physical Activity, Mobility, Cognitive Neuroscience
- \* Linda Li, Canada Research Chair in Patient-oriented Knowledge Translation

In 2013 Several faculty members were supported by Michael Smith for Health Research Scholar Awards:

Lara Boyd, Pat Camp, Michael Hunt, Linda Li, Teresa Liu-Ambrose and Alex Scott all are supported by MSFHR Scholar awards and Janice Eng a Senior Scholar award. Teresa Liu-Ambrose and Linda Li are also CIHR New Investigators. Linda Li is supported by the only Chair in arthritis rehabilitation research in Canada, The Harold Robinson-Arthritis Society Chair in Arthritic Diseases and is also an American College of Rheumatology Research & Education Foundation Health Professional New Investigator.



## Aging, Mobility and Cognitive Function Laboratory

*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. Dr. Liu-Ambrose's research program focuses broadly on defining the role of targeted exercise training and physical activity to improve the health and quality of life of older adults. The Aging, Mobility, and Cognitive Neuroscience Lab collaborates extensively with colleagues in Psychology, Neurology, Geriatric Medicine, and Epidemiology.

## Neurological Rehabilitation

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

Dr. Eng's 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, the Canada Stroke Network, ICORD (International Collaboration on Repair Discoveries) spinal cord research centre, and the Brain Research Centre to develop collaborative research projects which include mechanistic research, clinical trials and best practice implementation.

## Neural Control of Force Production and Movement

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

Dr. Garland's 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.

## Brain Behaviour Laboratory

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

The Brain Behaviour Laboratory, directed by Dr. Lara Boyd, examines the relationships between brain function and behaviour 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.

## Brain Development: Perception to Action

*Faculty: Dr. Naznin Virji-Babul, [naznin.virji-babul@ubc.ca](mailto:naznin.virji-babul@ubc.ca)*

Dr. Virji-Babul is a physical therapist and a neuroscientist. Her group uses a combination of behavioural and brain imaging tools such as MRI and EEG to probe the brain and investigate the patterns of brain activation as they relate to perceptual-motor and social-emotional development in children and adults with developmental disabilities. Her group also employs advanced brain imaging tools and behavioral tests in the study of the consequences of concussion in the developing brain.



### Clinical Exercise Physiology Laboratory

*Faculty: Dr. Kristin Campbell, 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 effect of exercise on proposed biomarkers of breast and colon cancer risk, such as sex hormones, inflammatory markers and tissue protein expression. Her research has also investigated the benefits of physical activity on physical function, quality of life, fatigue and lymphedema, and is starting to examine the emerging evidence for the role of physical activity in lowering risk of cancer recurrence.

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

*Faculty: Dr. Darlene Reid, darlene.reid@ubc.ca*

Dr. Reid's research program is directed towards investigating muscle performance and muscle injury in chronic disease with a special focus on people with respiratory disease in pulmonary rehabilitation. Research has included non-invasive evaluations of muscle that reflect tissue oxygenation (i.e. near infrared spectroscopy), regional atrophy (i.e. MRI, CT), force measurements (i.e. Biodex and hand held dynamometry) and plasma markers of muscle injury.

### Epidemiology and Management of Chronic Obstructive Pulmonary Disease

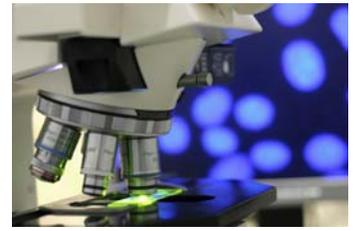
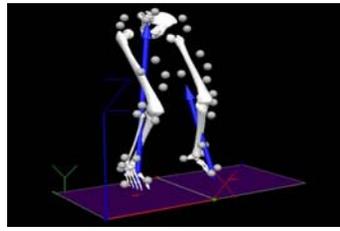
*Faculty: Dr. Pat Camp, pat.camp@hli.ubc.ca*

Dr. Pat Camp is a physical therapist and clinician-scientist at St. Paul's Hospital. As the clinical-specialist for the Respiratory Rehabilitation Program at St. Paul's Hospital, Dr. Camp directs the clinical care and research activities associated with the program. Dr. Camp's research interests focus on the diagnosis and management of individuals with chronic obstructive pulmonary disease (COPD). Her research pursuits in COPD include epidemiology and health outcomes, gender differences, gaps in care, and the development of clinical decision-making tools for exercise prescription for patients with COPD.

### Pulmonary Rehabilitation and Exercise Physiology Laboratory (PREP)

*Faculty: Dr. Jordan Guenette, jordan.guenette@hli.ubc.ca*

The focus of Dr. Guenette's PREP lab is to better understand the physiological factors that limit exercise tolerance across the spectrum of health and chronic lung disease. The lab uses a number of novel techniques to simultaneously assess the respiratory, cardiovascular, muscular and neuro-physiological responses to dynamic exercise. This integrative approach allows us better understanding of how these various physiological systems interact to cause exercise intolerance in humans. Novel rehabilitation interventions to reduce symptoms and improve exercise performance are then designed and tested, as well as improve quality of life for patients suffering from chronic lung diseases.



## 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. 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.

## Tendon Pathophysiology, Injury Prevention and Rehabilitation

*Faculty: Dr. Alex Scott, [alex.scott@ubc.ca](mailto:alex.scott@ubc.ca)*

The goal of Dr. Scott's research group is to understand the influence of movement on tendon biology, and to incorporate this knowledge into new clinical strategies for tendinopathy. New treatments currently being examined include movement based therapies, physical therapy modalities, and novel drug strategies.

## Motion Analysis and Biofeedback Laboratory

*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, evaluates, and implements the use of visual feedback mechanisms to improve gait retraining strategies for patients with varying pathologies.

## Interprofessional Education and Practice

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

Dr. Bainbridge is the Director of Interprofessional Health Education, Faculty of Medicine, and Associate Principal, College of Health Disciplines. Her research program is aimed primarily at understanding interprofessional education (IPE) and collaborative practice in health.

## 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 promoting 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) and the prevention of lifestyle conditions. She focuses on multicultural populations in Canada and internationally.

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**FACULTY OF MEDICINE**