



Annual Report

2020/2021

Rehabilitation Research Program

A decorative graphic featuring a large dark blue circle on the left and a large light green circle on the right. In the top right corner, there is a stylized white figure of a person with arms raised, set against a light green background. The figure is partially enclosed by a dark blue curved line.

CONTENTS

- 1 Message from the Director
- 2 RRP 2020 at a glance
- 3 COVID-19 Impact
- 5 Faculty Highlights & Awards
- 6 Trainee Recognitions & Standouts
- 7 Funding
- 9 Investigators

The Rehabilitation Research Program is one of VCHRI's three programs. In partnership with VCHRI, the University of British Columbia, and G.F. Strong Rehabilitation Centre, the RRP aims to discover innovative solutions to optimize the outcomes of rehabilitation and improve the lives of those with disabilities and their families. The knowledge generated through the Rehabilitation Research Program is an essential component of Vancouver Coastal Health's mandate to advance knowledge and practices that help people to maximize their abilities after injury or disability.

Message from the Director

This has been an unprecedented time with COVID-19 impacting every aspect of our lives. I write with an optimistic outlook as cases in Canada have fallen in most places and vaccinations are rising quickly. However, we cannot forget that new daily cases are still occurring in the hundreds of thousands in developing countries.

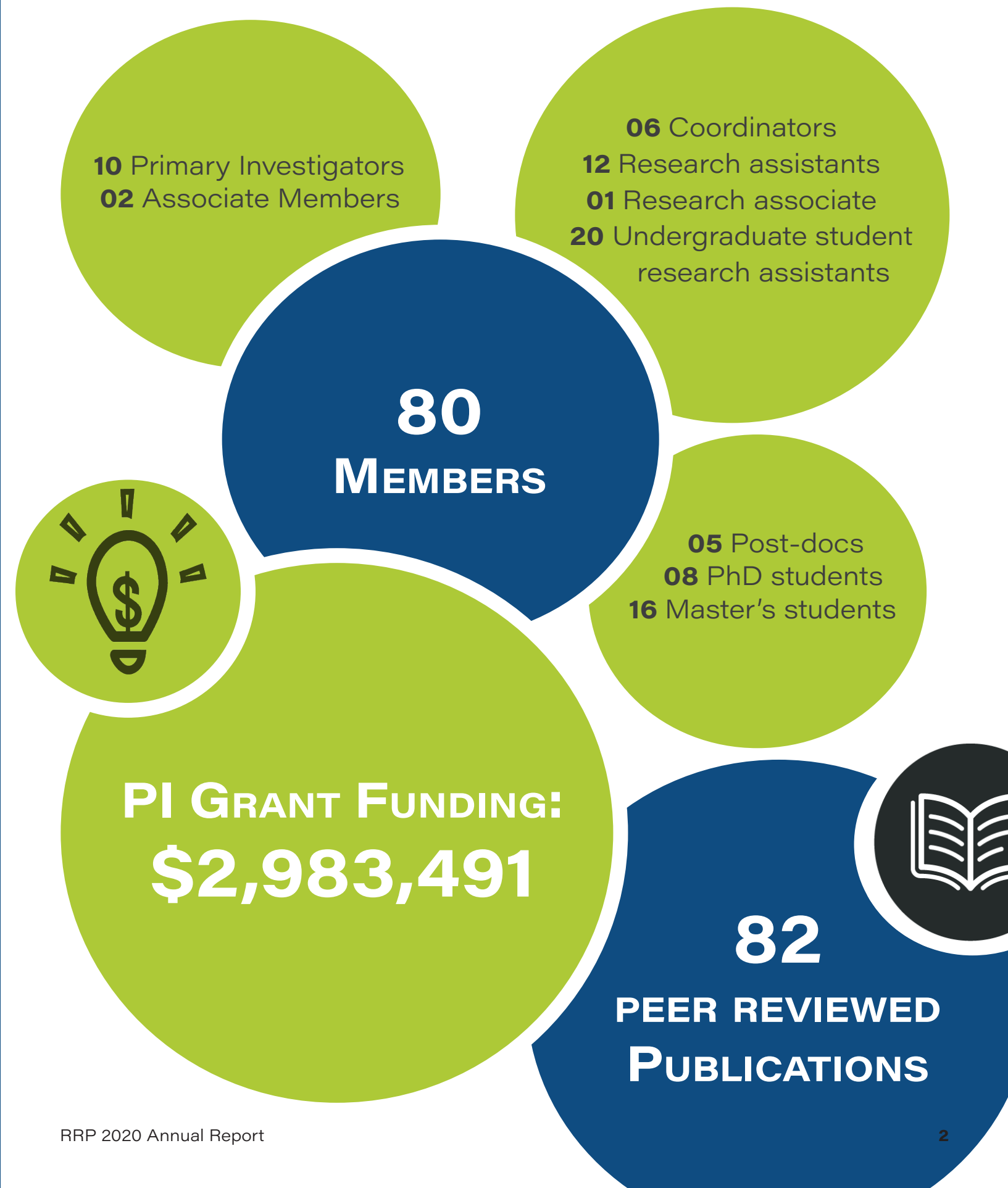
RRP research activities closed in March 2020 and then re-opened months later with severe restrictions and much uncertainty. Despite these setbacks, RRP faculty made the most of this past year. As this Annual Report shows, grant success was at an all-time high over the past year, as was national recognition for our faculty. Faculty also presented their findings world-wide; advances in virtual conferencing due to the pandemic helped increase the reach of their research to a global audience. Faculty worked diligently with graduate students to ensure that their students would continue to progress in their degrees. While wearing multiple hats, faculty spent much energy on redesigning their university teaching as in-person classes were limited.

The pandemic has been especially challenging for the most vulnerable, including individuals with disability and their families. As the Annual Report outlines, faculty led a number of new and important initiatives that may help to reduce some of the negative impacts of COVID-19 in rehabilitation populations. RRP faculty are making the most of this opportunity to be of service and make a positive difference.

Stay safe and stay well.

Janice Eng, PhD
Killam University Professor and Canada Research Chair
Director, Rehabilitation Research Program

RRP 2020: At a Glance



COVID-19 Impact

Members of the RRP pivoted adroitly in the face of COVID related pandemic restrictions. Most of them began to work from home with their pets, children and spouses, some of whom made guest appearances during their now ubiquitous online video conferencing meetings. The PIs were able to move to virtual recruitment and data collection for the majority of their studies. In a few cases through perseverance and rigid application of safety protocols a few longitudinal and clinical trial studies were able to continue in person data collection throughout the pandemic.

Dr. Noah Silverberg is part of a team led by investigators in pathology and critical care that was awarded \$1.5M by the Weston Brain Institute to study neurological outcomes of COVID-19.



After some initial attempts to secure funding, Dr. Bill Miller spearheaded, a primarily unfunded, yet ambitious, prospective, 9 month long study looking exploring the experiences of COVID related restrictions on over 80 individuals from three groups (i.e., people with disabilities, older adults without disabilities and families). Data were collected, and transcribed and analyzed by a large number of volunteer interviewers including current Masters of Occupational Therapy students, recent occupational therapy graduates and graduate students at the RRP. Including faculty, over 40 individuals have contributed to the ongoing success of this project.

After COVID-19 shut down the in-person community GRASP programs for stroke to improve upper extremity function, Dr. Janice Eng partnered with the Stroke Recovery Association of BC (SRABC) to develop Virtual GRASP, using the Zoom platform and showed it to be just as effective in improving arm and hand recovery. It is now a regular program of the SRABC. The Spinal Cord Injury Research Evidence (SCIRE) Project (scire-project.com) which is led by a number of RRP investigators (Eng, Miller, Mortenson, Townson) developed educational modules, infographics and videos for people living with spinal cord injury and their families on topics related to COVID-19, including respiratory function, mental health support, guidance for caregivers and physical activity at home.



Dr. Brodie Sakakibara is principal investigator (PI) on a study funded by the Interior University Research Coalition to examine chronic disease management and prevention among older adults during COVID-19.

COVID-19 Impact

Faculty Highlights

As Chair of the American Congress of Rehabilitation Medicine's mild traumatic brain injury Task Force, Dr. Silverberg continues to lead an international, interdisciplinary expert consensus group towards updating the case definition of concussion.

Dr. Courtney Pollock worked with Vancouver Coastal Health (VCH) clinical leadership to survey Physical Therapists to understand how VCH can optimize tele-rehabilitation (e.g., use it to serve underserved areas with limited access to physical therapy). Dr. Pollock adapted five widely used clinical measures to be able to safely measure mobility and balance in people with stroke over video-conferencing platforms. This work supported a nationwide feasibility trial examining telerehabilitation for people with sub-acute stroke (TRAIL) completed by RRP PIs Sakakibara, Eng and Pollock. Drs. Eng (PI) and Pollock (site lead) continued their work on the CanStroke Recovery Trials platform, which is an eight-site national clinical trials platform in stroke recovery, funded by the Canadian Partnership for Stroke Recovery and Brain Canada, which supports clinicians and researchers across Canada to test new approaches (e.g., therapies, therapeutics and technologies) to stroke recovery.

Dr. Ben Mortenson received the Award for Innovative Practice from the Canadian Association of Occupational Therapists (CAOT) and was recognized as an Elite Reviewer for 2020 by Archives of Physical Medicine and Rehabilitation. He published 37 peer-reviewed papers last year, many of which included other RRP members as co-authors.

Dr. Eng was appointed as a University Killam Professor, which is UBC's highest faculty honour. She also received an honorary doctorate from the University of Laval.



Trainee Recognitions

Dr. Eng's two post-doctoral fellows were both successful in attaining faculty positions: Dr. Sue Peters commenced as Assistant Professor, Western University, Ontario and Dr. Chieh-ling Yang commenced as Assistant Professor, Chang Gung University, Taiwan.

Dr. Mortenson's trainee Mike Prescott, PhD successfully defended his doctoral thesis on developing a conceptual framework of navigation for people who use wheeled mobility devices in the community.

Dr. Eng's trainee, Riley Louie, successfully defended his doctoral thesis which was a 3-province randomized controlled trial on using robotic exoskeletons to improve walking after stroke. One of her other trainees, Shannon Lim received a CIHR fellowship for her doctoral studies examining brain activation while walking.

Dr. Julia Schmidt's trainee, Rebecca Tsow received a Faculty of Medicine Summer Student Research Program award to conduct an implementation study.

Drs. Mortenson and Schmidt's trainees, Anika Cheng, Sharon Jang and Katrina Moorthy were admitted into the Occupational Therapy program at UBC.

Dr. Sakakibara's MSc trainee, Michelle Yang, led the investigation of the student-delivered Community Outreach Telehealth program for COVID education and Health promotion. His MSc trainee Sarah Park, placed first for best oral presentation at the UBCO virtual Interdisciplinary Health Conference.

Dr. Mortenson's Master's student, Ethan Simpson, was awarded with a first-place presentation award at the annual G.F. Strong Rehabilitation Research Program Research Day in 2020.

Funding

Despite the funding related trials and tribulations of the last year, RRP investigators were extremely successful in 2020.

Dr. Mortenson received a \$1.2 million grant to inform the development of accessibility standards for Canadian National Parks.

He was also awarded a \$2.5 million 7-year SSHRC partnership grant (Co-I, Dr. Miller). This is the first SSHRC partnership granted awarded to anyone in Faculty of Medicine at UBC.

SSHRC CRSH
Social Sciences and Humanities Research Council of Canada
Conseil de recherches en sciences humaines du Canada

Dr. Schmidt received funding from the Vancouver Foundation for a participatory study entitled, "What are the rehabilitation and research priorities for improving quality of life among people with traumatic brain injury (TBI)?"

The goals of this project are to bring together people with TBI, caregivers, clinicians, researchers, and policy makers to identify key priority areas for research and rehabilitation and, and transform community rehabilitation to help improve the quality of life of individuals with TBI and their caregivers.

vancouver
foundation

Dr. Silverberg received a Canadian Institute of Health Research (CIHR) Project Grant to study the effectiveness of an intervention to support family physicians in identifying and initiating treatment for mental health complications following concussion. The study is now recruiting from 8 emergency department and urgent care clinics in the Greater Vancouver Area (<https://clinicaltrials.gov/ct2/show/NCT04704037>).

CIHR IRSC
Canadian Institutes of Health Research
Instituts de recherche en santé du Canada

Dr. Eng received a \$400,000 grant from CIHR and NSERC to partner with engineers to develop i-GRASP, a glove sensor coupled with games to improve hand recovery after stroke.

NSERC CRSNG

As PI, Associate member (and former RRP post-doc) Dr. Sakakibara was successful in the Canada Foundation for Innovation competition to develop the Stroke Management and eHealth Innovation lab at the Southern Medical Program, UBC-Okanagan.

This lab will expand the RRP's stroke research capacity into the southern interior of BC. He is also coinvestigator on a project funded by the UBCO Vice Principal of Research: Eminence Program to develop the Aging in Place research cluster at UBCO, which has a multidisciplinary focus for optimizing active and healthy aging at home.

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CANADA FOUNDATION FOR INNOVATION
FONDATION CANADIENNE POUR L'INNOVATION

Dr. Miller received a CIHR Project Grant for a research project entitled: Self-Management for Amputee Rehabilitation Using Technology (SMART), which included his doctoral candidate Elham Esfandiari, and Dr. Ben Mortenson as co-investigators (Co-Is).

CIHR IRSC
Canadian Institutes of Health Research
Instituts de recherche en santé du Canada

Principal Investigators

Dr. Janice Eng | PhD, BSc(PT/OT), Professor and Canada Research Chair, Physical Therapy, UBC.| Focus: neurological rehabilitation, clinical trials and implementation science.

Dr. Bill Miller | PhD, OT, Professor, Occupational Science and Occupational Therapy, UBC.| Focus: mobility disability and participation of older adults; wheeled mobility devices, measurement tools and assistive technology.

Dr. Ben Mortenson* | PhD, Associate Professor and CIHR New Investigator, Occupational Science and Occupational Therapy, UBC| Focus: assistive technology, social participation, caregiving and outcome measurement.

Dr. Courtney Pollock | PhD, PT, Assistant Professor, Physical Therapy, UBC.| Focus: mechanisms and treatments of walking and balance from neurological changes associated with aging, disease and injury.

Dr. Julia Schmidt | PhD, OT, Assistant Professor, Occupational Science and Occupational Therapy, UBC.| Focus: traumatic brain injury, cognition, activities of daily living, quality of life.

Dr. Noah Silverberg | PhD, R Psych, ABPP, Clinical Associate Professor and Michael Smith Health Professional Investigator, Physical Medicine and Rehabilitation, UBC; Acquired Brain Injury Program, GF Strong Rehab Centre| Focus: prognosis and treatment of mild traumatic brain injury.

Dr. Andrea Townson | MD FRCPC, Clinical Professor, Physical Medicine and Rehabilitation, UBC.| Focus: spinal cord injury rehabilitation, health provider education and competency.

Dr. Jennifer Yao | MD FRCPC, Clinical Associate Professor, Physical Medicine and Rehabilitation, UBC.| Focus:Stroke, brain injury and neurorehabilitation

Dr. Patricia Mills | MD FRCPC, Clinical Associate Professor, Physical Medicine and Rehabilitation, UBC.| Focus: management of spasticity in spinal cord injuries, multiple sclerosis, stroke, and brain injury.

*50-50 time between RRP and ICORD

Associate members

Dr. Brodie Sakakibara | PhD, OT, Assistant Professor and Michael Smith Scholar, Occupational Science and Occupational Therapy and Southern Medical Program, UBC| Focus: chronic disease self-management; secondary prevention of stroke and cardiovascular disease.

Dr. Kathleen Martin Ginis | B.Sc., M.A., Ph.D., O.M.C., Professor and director of Faculty of Medicine Centre for Chronic Disease Prevention and Management, UBC.| Focus: physical activity participation in community-dwelling people living with spinal cord injury; exercise psychology and behavioural science to improve physical activity participation.

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Thank you for reading our 2020 Annual Report.
Prepared by: Ben Mortenson & Tasha Klotz

For additional copies of this report or any other RRP publications, please call 604-714-4108.

Contact us:
Rehab Research Program
GF Strong Rehab Centre,
4255 Laurel Street, Vancouver,
BC V5Z 2G9
604-714-4108

www.rehabresearchprogram.com

Twitter: @GFStrongRRP