

# ANNUAL RESEARCH REPORT

2020 - 2021



THE UNIVERSITY OF BRITISH COLUMBIA

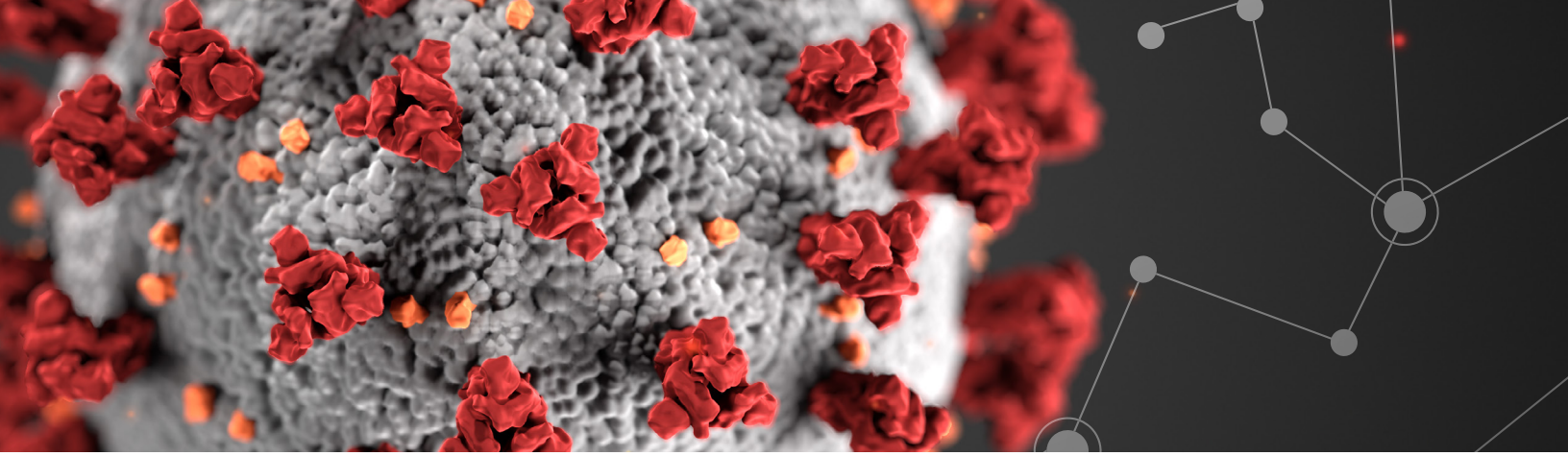
Department of Physical Therapy  
Faculty of Medicine

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# Research Impact Highlights

In 2020-2021, research activities were disrupted by the arrival of the **COVID-19 pandemic**. Our researchers were able to successfully pivot current research activities, including developing innovative ways to safely deliver virtual exercise programming to individuals with a variety of health conditions, as well as develop new lines of research.

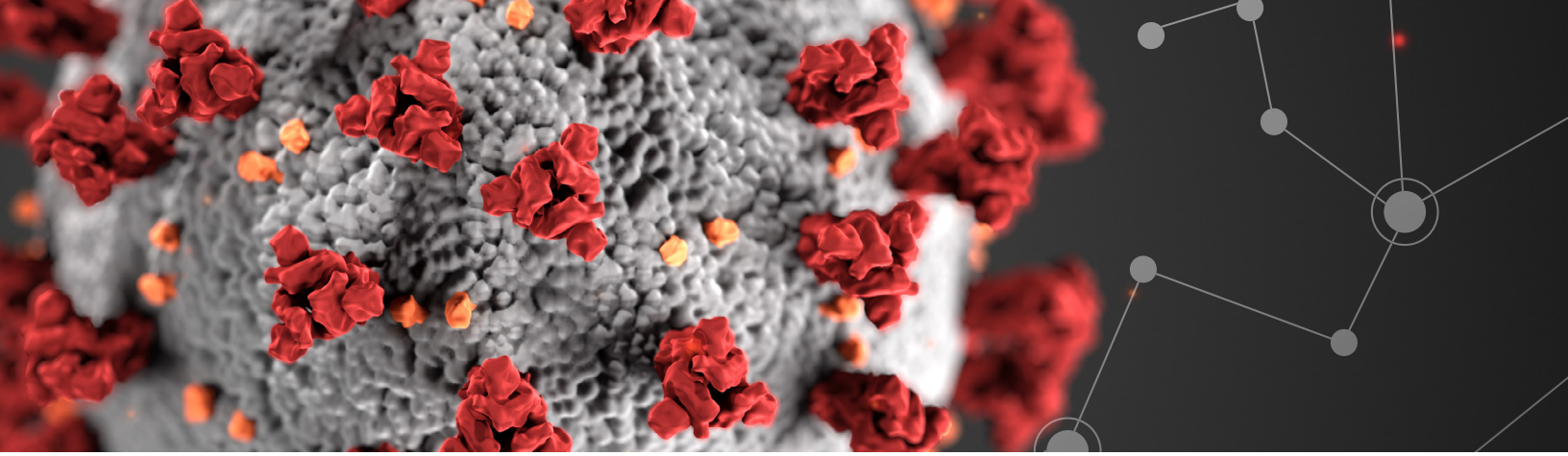
## Selected Contributions to Covid-19 research

Dr. Jordan Guenette published an influential manuscript on the physiological and perceptual effects of face masks during exercise. This COVID-19 related manuscript was published at a time where many believed there were dangers associated with wearing face masks during exercise. His team demonstrated that there is no adverse physiological effects of wearing face masks during exercise. This publication received substantial media attention (110 international media outlets) with an Altmetric score of 984 (retrieved April 12, 2021), which is the 2nd highest in the history of this high impact journal). The

study was tweeted to over 320,000 people from prominent organizations such as the National Institutes of Health (>69,500 followers), American Nurse (>45,000 followers), and American Thoracic Society (>32,000 followers), among others

*Hopkins SR, Dominelli PB, Davis CK, Guenette JA, Luks AM, Molgat-Seon Y, Sá RC, Sheel AW, Swenson ER, Stickland MK. Face Masks and the Cardiorespiratory Response to Physical Activity in Health and Disease. Ann Am Thorac Soc. 2021 Mar;18(3):399-407. doi: 10.1513/AnnalsATS.202008-990CME. PMID: 33196294; PMCID: PMC7919154.*





# Research Impact Highlights

## Selected Contributions to Covid-19 research

Keeping track of symptoms and treatment is important for people with rheumatoid arthritis (RA) to live well. This is why Dr. Linda Li developed an online tracking tool, OPERAS (On-demand Program to Empower Active Self-management) that is now being tested in a randomized control study. Dr. Li's team has heard from patient partners and study participants about the new challenges to managing their health during the pandemic. Given the situation, she recently released a part of this online program for people with RA to track their symptoms, medication use, and self-care goals. If they use a Fitbit, they can also synchronize it with the online tool and view their physical activity data alongside other data such as medication use and symptoms over time. Users can use the information to inform self-care decisions and share it with their

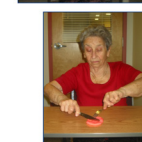
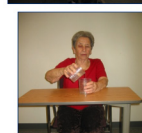
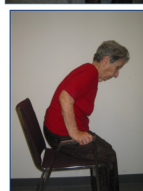
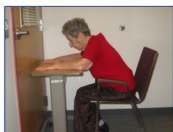
rheumatologists during telehealth consults. This [video](#) explains how health tracking works.

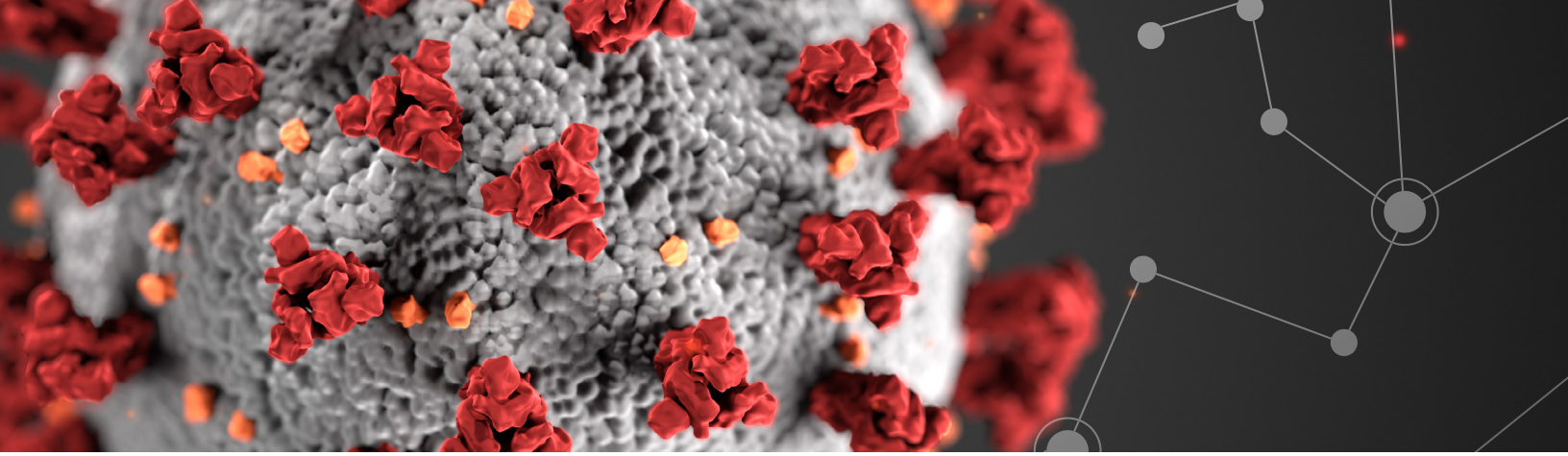
Dr. Janice Eng and her team partnered with the Stroke Recovery Association of BC, quickly assisting them to pivot their GRASP (Graded Repetitive Arm Supplementary Program; developed by Dr. Eng and her team) Stroke Program normally held at the Templeton Community Centre to a virtual program due to the pandemic. They were able to get this program up and running by May, ran two cohorts, evaluated the program and published a paper showing the virtual program showed similar effects to the in-person program. The Stroke Recovery Association of BC is continuing to run this program serving all of BC.

*Chieh-ling Yang, OT, PhD, Seonaid Waterson, Janice J Eng, PhD, BSc (PT/OT), Implementation and evaluation of the virtual Graded Repetitive Arm Supplementary Program (GRASP) for individuals with stroke during the COVID-19 pandemic and beyond, Physical Therapy, 2021,; pزاب083, <https://doi.org/10.1093/ptj/pزاب083>*

GRASP has 3 exercise levels to accommodate different levels of stroke severity. Below are some examples of exercises

- Range of motion exercises
- Strengthening exercises
- Weight-bearing exercises
- Functional tasks
- Fine motor skills

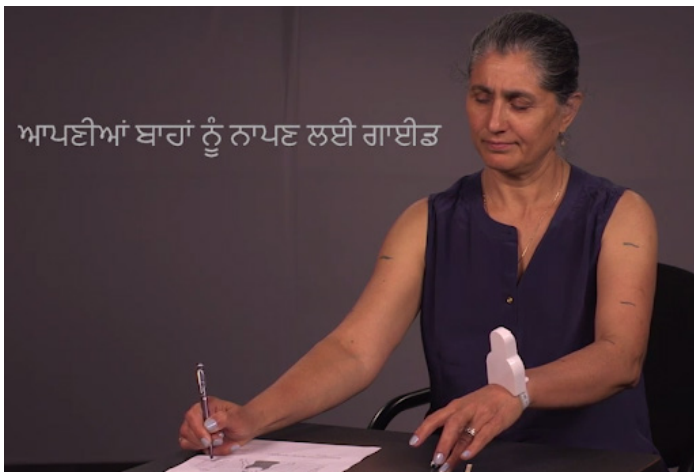




# Research Impact Highlights

## Selected Contributions to Covid-19 research

Dr. Campbell provided needed resources to therapists who were providing virtual care to women who are undergoing or have completed treatment for breast cancer. Her team makes the resource, "How to measure your arm" available on her lab website. This resource is a validated approach that her lab team developed and tested for women to measure their own arm for tracking lymphedema. Since March 2020, it has been used by clinicians around the world.





# Partnerships with First Nations

In 2016, Dr. Pat Camp started working in collaboration with the Carrier Sekani Family Services, a group of 11 First Nations communities scattered across North Central BC to expand lung health awareness across the Carrier Sekani Tribal Council. She works with Indigenous leadership to ensure research findings are translated into treatments and increase the real-life impact of research and improve the lives of people living with COPD in remote communities. A video, *Improving Life Through Research: Bayis Ilh Tus (A Strong Breath) Project* was produced to inform the community about their partnership and the project.

In just four years, her team has revealed a lot about the state of lung health across Carrier Sekani's member First Nations (CFSN). This teamwork has improved community's health services' knowledge about the existence of lung conditions and has led to the hiring of a chronic disease nurse who moves the team's research results to improve COPD care.

Continuing their partnered research, Dr. Camp has secured funding to develop and evaluate an emergency preparedness and response strategy for First Nations people living with chronic lung disease, their community, and the local health care services in CSFN. The project will involve collection of information data on the extent and impact of the fires, air quality data, and the experiences of the community members and agencies. The project also aims to develop and evaluate an emergency preparedness and response strategy that will include a "citizen's science" approach by using local deployment of air quality sensors. This project will

be the first to create and evaluate a novel emergency preparedness and response strategy that is designed for people with chronic lung disease living in remote and rural First Nations communities.

*Turner J, Holyk T, Bartlett K, Rathburn B, Karlen B, Ervin F, Wilson J, Camp PG. "Bayis Ilh Tus – A Strong Breath": A community-based research project to estimate the prevalence of chronic obstructive pulmonary disease in remote and rural First Nations communities in Canada: research protocol. Int J Equity Health 2020; 19(1):1-7. DOI: 10.1186/s12939-020-01240-12019. PMID: 32709235*





## Faculty Awards

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Professor, Lara Boyd received the 2020 UBC Killam Research Award. Dr. Boyd was also named a 2020 Peter Wall Scholar. Wall Scholars are chosen among leading UBC researchers from all academic disciplines, with the objective of creating a dynamic and diverse intellectual community at the Institute.



Associate Professor, Pat Camp was the recipient of the American Thoracic Society Pulmonary Rehabilitation Assembly Career Recognition Award. The award is given in recognition of a career of service to the field of Pulmonary Rehabilitation and the American Thoracic Society Pulmonary Rehabilitation Assembly.



Professor, Kristin Campbell received the Faculty of Medicine's Distinguished Achievement award for Overall Excellence in the Mid-Career category.



Professor, Janice Eng was named a University Killam Professor, the highest honour that UBC can confer. A University Killam Professorship recognizes exceptional teachers and researchers who are leaders in their fields, and who have received international recognition for their talents. Dr. Eng was also awarded an honorary doctorate in Rehabilitation Sciences from Laval University.



Professor, Teresa Liu-Ambrose was awarded the 2020 John McNeill Excellence in Health Research Mentorship Award. The award recognizes one individual who demonstrates outstanding mentorship.



Assistant Professor, Jackie Whittaker, received a 2020 Michael Smith Foundation for Health Research Career Investigator award.



## Highlights of Faculty Leadership and Service

**Dr. Lara Boyd** continued to serve as the Health Research Advisor to the Vice President of Research and Innovation/CIHR delegate and was elected to the CIHR delegate executive leadership team, a role she has held since 2014. In this role, she worked closely with CIHR staff during the cancellation and then re-start of the spring project grant competition. Also, in 2020 she: Co-chaired the VP Research Emergency Funding Committee that reviewed applications and distributed funds to research labs to ensure continuity of funding for graduate students and essential staff; attended several extraordinary associate deans of research meetings (March- June) where research shut down and resumption procedures and policies were developed; and sat on the shared facilities emergency funding committee which ensured that core resources at UBC continued to operate without user funds during the shutdown.

**Dr. Kristin Campbell** chaired the American College of Sports Medicine/American Cancer Society Certified Cancer Exercise Trainer Certification Exam committee. This exam will be the international standard certification for exercise professional and available in late 2021.

**Dr. Michael Hunt** continues to serve as Associate Dean, Graduate and Postdoctoral Education in the Faculty of Medicine.

**Dr. Janice Eng** co-leads the CanStroke Recovery Platform, this national platform hosts stroke recovery clinical trials across eight sites in Canada. She serves as a member of a group of experts who are developing Canadian Spinal Cord Injury Clinical Practice Guidelines and as a member of the Board of Directors for the Heart and Stroke Foundation/Canadian Partnership for Stroke Recovery.

**Dr. Jordan Guenette** continues to serve as the Associate Director of the Centre for Heart Lung Innovation (HLI). He also serves on the Advisory Board for the development of a state-of-the-art research building to be built at the new St. Paul's Hospital.

**Dr. Linda Li** continues to serve as the lead for the KT and Implementation Science (IS) Methods Cluster for the BC SUPPORT Unit. In this role she fosters a community of KT and implementation methodologists in BC who advance the science of KT and implementation methods applied in the context of patient-oriented research, promote the use of knowledge generated by the Methods Cluster and the field of KT/IS, particularly in the context of patient-oriented research.





## Highlights of Faculty Leadership and Service

**Dr. Teresa Liu-Ambrose** continues to hold leadership roles in national research efforts in aging and brain health. She leads the Canadian Longitudinal Study on Aging (CLSA) Data Collection Site at UBC and the CLSA Neuroimaging Working Group, and the CLSA COVID-19 Brain Health Study and efforts to permanently embed neuroimaging within the CLSA until 2033. Within the Canadian Consortium on Neurodegeneration in Aging, she leads the Exercise Working Group for the Brain Health Support Group and co-leads the Intervention Working Group for Canadian Therapeutic Platform for Multidomain Interventions to Prevent Dementia.

**Dr. Alex Scott** served as the President of PABC (Term - April 2019 - May 2021). This role involves stakeholder meetings with ICBC and WorksafeBC, Presentations at Branch Presidents' Forum (Canadian Physiotherapy Association) and Advocacy with Allied Health Workforce Planning office (MOH) and College of Physical Therapists of BC, Steering committee on modernization of healthcare regulation (MOH).

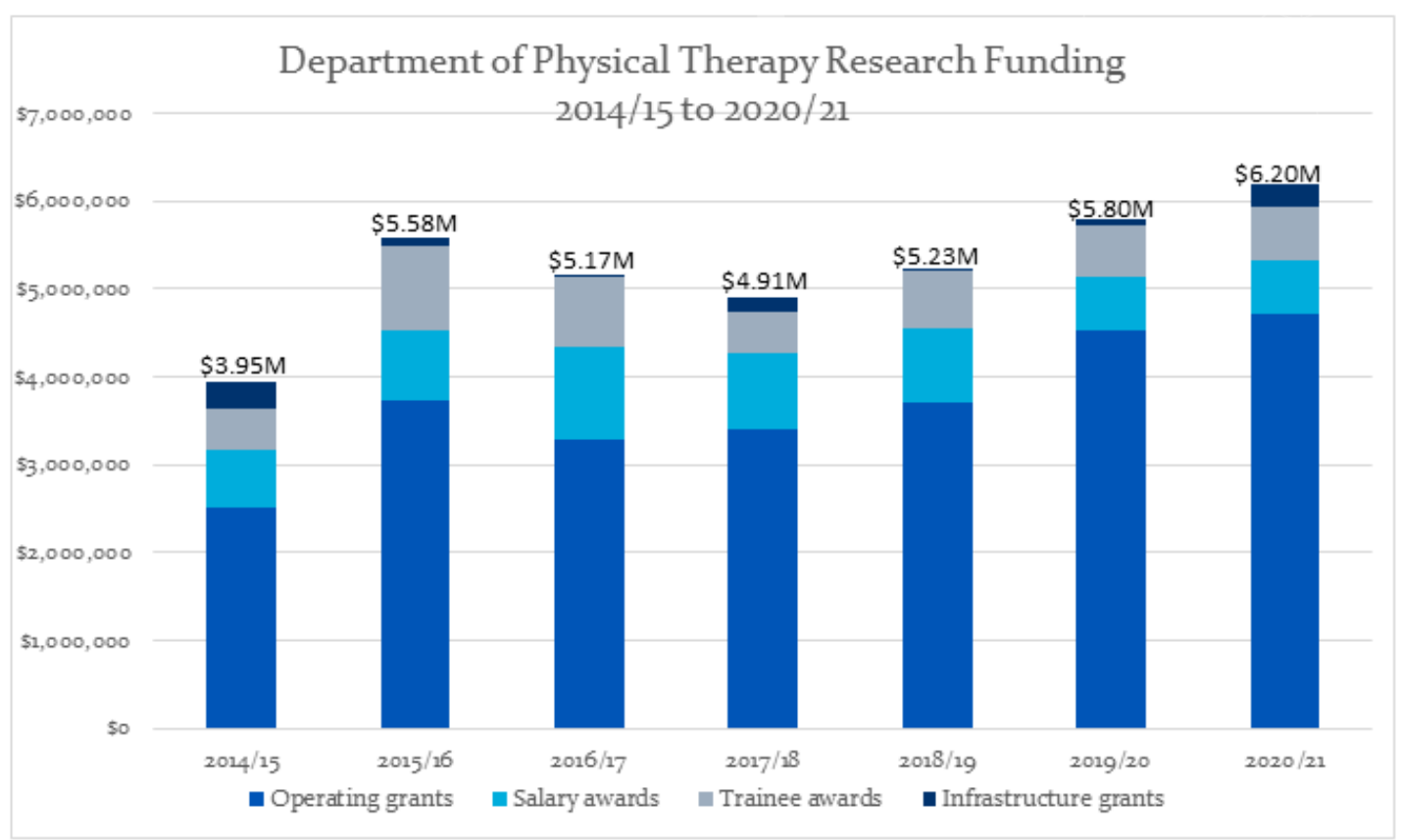
**Dr. Naznin Virji-Babul** was appointed as Senior Advisor to the Provost on Women and Gender-Diverse faculty in January 2020. The mandate of this role is to develop and lead efforts to enhance the profile and opportunities for women and gender-diverse faculty.

**Dr. Jackie Whittaker** initiated and leads OPTIKNEE, an international consensus exercise to standardize definitions outcomes and methods for rehabilitation-based clinical trials for osteoarthritis prevention. Dr. Whittaker leads a team of >30 international research who along with patient, clinician, and advocacy stakeholders, are conducting 7 systematic reviews (meta-analyses). Activities will culminate in a consensus meeting with delegates from 10 countries, including five patients (Roskilde Denmark January 30-February 1, 2022), a consensus paper (2022), clinical guidelines (2023), and a research agenda (2023) that will shape the field of osteoarthritis prevention, inform clinical practice and stimulate strategic inquiry.



# Research Funding

In the 2020/21 fiscal year, faculty members were successful in securing **\$4,718,471** to support their research projects, **\$605,000** in scholar awards and infrastructure awards totaling **\$263,535**.

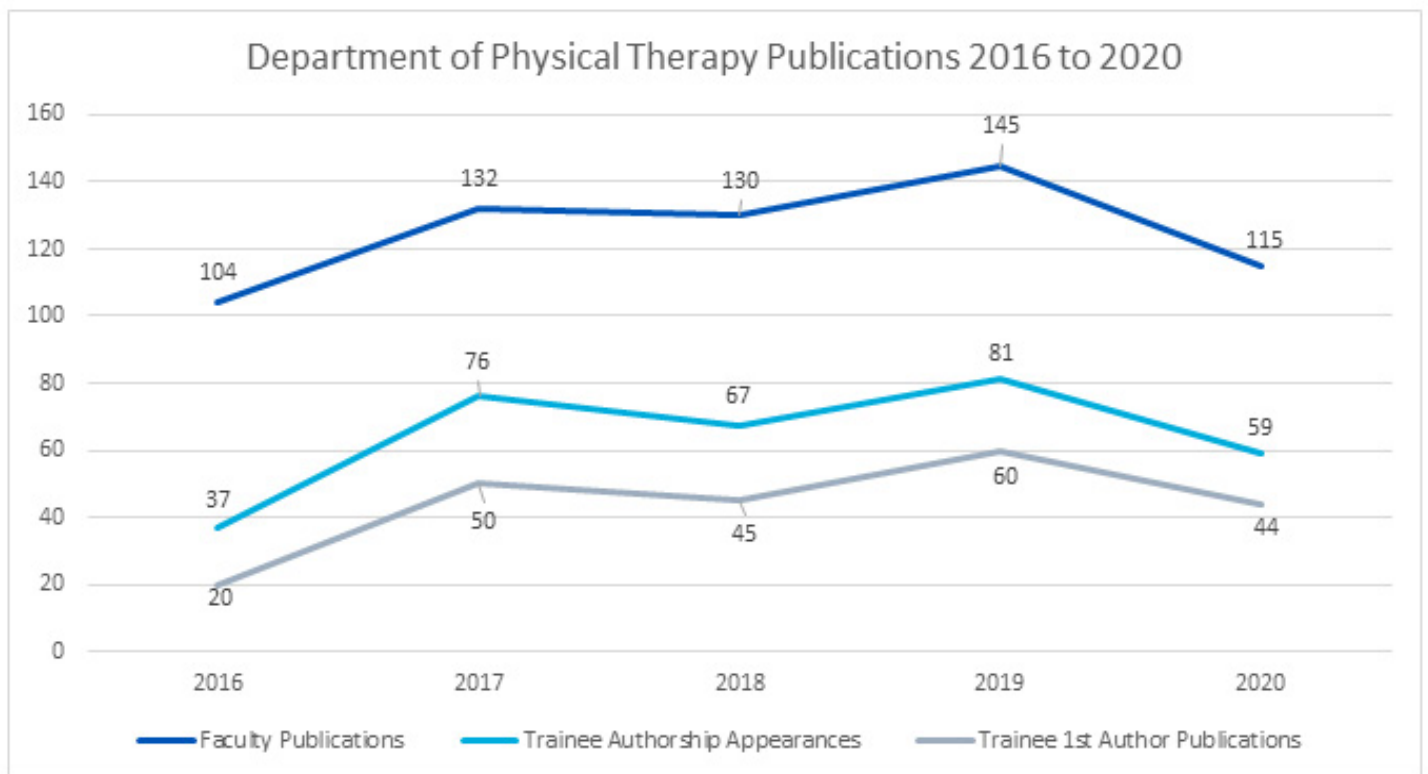


Students of the Rehabilitation Science Program and Postdoctoral Fellows supervised by Department faculty members received over **\$600,000** to support their training in 2020/21.



# Publications

In 2020, Department faculty members generated **115** peer-reviewed publications; two included students in the Masters of Physical Therapy program, **59** featured research trainees as co-author and on **44** of faculty publications, trainees appeared as first author.





## Trainee Highlights

In 2020, the Department was home to exceptional research trainees, **14** Post-doctoral Fellows, **38** Doctoral students and **20** Research focused Master's students. There were also **20** undergraduates supervised in research.

Total dollar amount of trainee scholarships = \$605,000

# Pubs with trainee as first author = 44

# Pubs with trainee as an author (includes as first author) = 59

### Selected Trainee Research Highlights

Jasmin Ma was awarded a 3-year CIHR Post-doctoral Fellowship Award. Dr Ma's project aims to enable patients with rheumatoid arthritis to participate strength training to improve general health and prevent age-related cognitive decline. Dr Ma is also translating her knowledge; she presented in a webinar hosted by the Michael Smith Foundation for Health Research, KT Connects in June. Her presentation was titled, "Knowledge Translation and Behaviour Science Change: Building Communities in a pre- and post-pandemic world". She discussed the interplay between knowledge translation and behaviour change science, shared specific examples of knowledge translation and behaviour change science projects,. Her partnered and systematic approach not only sets the stage for more relevant research, but also is an important part of building community in a pre- and post-pandemic world. Dr Ma is supervised by Dr. Linda Li.





# Trainee Highlights

## Selected Trainee Research Highlights

Doctoral student in Dr. Lara Boyd's lab, **Cristina Rubino**, was awarded a UBC Public Scholars Initiative award that will allow her to address the lack of knowledge about the interaction between visual and motor function during movement. Ms Rubino will engage with clinicians and people with stroke to unpack the needs of the stroke community and address the lack of understanding of their unique impairments of visuomotor function. She will address several important questions in her doctoral thesis using qualitative and quantitative measures. These include understanding the perceived visuomotor deficits of people living with stroke, current strategies for visuomotor rehabilitation, and tools needed to adequately address visuomotor function in rehabilitation. Combined with neuroscientific experiments of eye-hand function, her goal is to improve the quality of life of those living with stroke.



**Narlon Cassio Boa Sorte Silva**, started in the Department as a post-doctoral fellow supervised by Dr. Liu-Ambrose. He was awarded a Banting fellowship with the Canadian Institutes of Health Research (CIHR). These awards provides funding to the very best postdoctoral applicants, both nationally and internationally, who will positively contribute to the country's economic, social and research-based growth. Dr Silva will be participating in research to examine whether a resistance training program will minimize myelin loss in adults with mild sub-cortical ischemic vascular cognitive impairment, compared to a group undertaking a balance and tone (control) program.



# Trainee Highlights

## Selected Trainee Research Highlights

Three Minute Thesis (3MT) competitions are held in over **350** universities across **59** countries worldwide. Two doctoral students supervised by Janice Eng successfully presented their research in the 2020 competition. You can view their presentations [here](#).



PhD Candidate, Riley Louie, (Exoskeleton for Post-stroke Recovery of Ambulation – ExSTRA trial) was the winner of the 2020 UBC 3MT, which required three rounds of judging.



PhD Candidate Shannon Lim (Brain Activation during Simple and Complex Walking Post-Stroke)



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