

Mental Health and Physical Activity Research Centre (MPARC)

Extra-Departmental Unit: D

Final Document Submitted by Catherine Sabiston

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1. Background and Rationale

There are tremendous physical and mental health benefits of participating in physical activity (including sport and exercise). However, the physical health benefits are often highlighted and prioritized and the mental health benefits are largely understudied. Furthermore, the characteristics of physical activity that may undermine or enhance participation are understudied. Given that: (i) the majority of the Canadian population is inactive; (ii) mental illness will be the leading cause of disability in the world by 2020; and (iii) combined physical inactivity and mental illness are significant economic burdens with estimated world-wide healthcare expenditures of over \$100 billion, studying and acting upon the link between physical activity and mental health has never been more important.

Researchers within the Faculty of Kinesiology of Physical Education (FKPE) at the University of Toronto are at the nexus of physical activity and mental health by investigating the reasons for the low levels of physical activity, examining the patterns of physical activity and sedentary behaviour, and specifically examining the effects of exercise, sport and sedentary behaviour on a variety of psychosocial, emotional, and cognitive outcomes. Our research faculty are also interested in understanding the mental health consequences of sport participation, at both high performance and recreational levels. Our Faculty's exceptional leadership in this area and our long-term goal of increasing opportunities for physical activity, improving the sport environment for maintained participation, and reducing symptoms of mental illness has informed the proposed establishment of the **Mental Health and Physical Activity Research Centre (MPARC)**.

MPARC is situated at the University of Toronto and serves to address key University priorities by *leveraging the infrastructure location* (e.g., central on the St. George campus) while also being embedded within the FKPE serving students and the broader community, and governing recreational and high performance sport. The well-defined strategic focus of physical activity and mental health also *strengthens key international partnerships*. The multidisciplinary members with broad research, clinical, and practical expertise guide the *advancement of undergraduate and graduate education* through scholarship, internships, and shared research lab exposure. No other university has the breadth and depth of resources, knowledge, and expertise to carry out the mission of MPARC. Furthermore, the research conducted within MPARC is situated within the University of Toronto's Strategic Research Theme "PROMOTE: Healthy People, Healthy Communities, Healthy World".

Vision

To be the leading multidisciplinary centre for physical activity, sport, and mental health knowledge, research, and service impacting local and global initiatives aimed at improving physical activity and mental health across the lifespan.

Mission

To formalize, develop, and build sustainable research and practice capacity in the area of physical activity, sport, and mental health; attract and train top undergraduate and graduate students and postdoctoral fellows in this specialty; and foster institutional and community collaborations for population-level policy, advocacy, knowledge translation, and dissemination.

Goals

To excel with this vision and mission, MPARC will focus on collaborative models that integrate education, research, and key professional and community stakeholders to:

- (i) better understand the psychosocial determinants of physical activity, sport, and sedentary behaviour;
- (ii) identify the impact of physical activity, sport and sedentary behaviour on mental health;
- (iii) test physiological, psychological, and social mechanisms that explain the association between physical activity, sport, and mental health;
- (iv) build feasible, effective, and sustainable interventions to improve physical activity and sport participation and experiences and/or mental health;
- (v) inform policies focused on physical activity, sport, and/or mental health

Given the specific goals above, the main outcomes of the MPARC EDU focus on *mechanisms, intervention design and evaluation, and policy and practice*.

The MPARC EDU will be hosted within the Faculty of Kinesiology and Physical Education. While the EDU is an establishment of a network of individuals with multidisciplinary expertise, MPARC members will also benefit from established MPARC infrastructure which is a leading facility already linking research, academics and co-curricular initiatives for physical activity and mental health. See Appendix A for a description of this physical space. The establishment of an MPARC EDU will help facilitate the transfer of knowledge among disciplines and the development of new extra-departmental collaborations and breakthroughs in the areas of mental health and physical activity. Furthermore, the MPARC EDU will provide a forum to advocate for and leverage policy changes that support the availability, accessibility, affordability, and uptake of these lifestyle interventions by addressing the needs, interests, goals, and preferences of a variety of at-risk populations. Finally, with the establishment of new and sustaining of existing national and international partnerships, the MPARC EDU will be able to realize substantive impact in the policies that advocated for and govern physical activity for mental health.

Overall, MPARC will act as a formal research hub aimed at increasing visibility of multidisciplinary research and collaborations, which will ultimately attract new researchers and practitioners to this area of work and its associated fields. Such networks and opportunities do not exist anywhere else in the world, making the timing and location of MPRAC crucial for this time-limited opportunity.

Governance and Structure

MPARC will be established as a **Level D, Extra-Departmental Unit (i.e. EDU:D)** in accordance with the University of Toronto Guidelines for Administrative Functions and Protocols of Extra-Departmental Units. Specifically, a Level D EDU is defined as:

- A group of scholars who have come together for the purpose of pursuing specific research objectives or offering courses in an area of academic interest.
- May be multidisciplinary or it may arise within a single discipline or department
- Does not administer research funds
- The Director is *not* appointed under the University's *Policy on Appointment of Academic Administrators* and consequently the Director does not have signing authority

Over the next 4 years, MPARC will evolve to a Level C EDU.

Director:

The MPARC Director(s) (inaugural 3-year term, renewable pending performance evaluation or strategic considerations) will be appointed by the Dean of the Faculty of Kinesiology & Physical Education. The Director(s) will be responsible for the administrative and financial operations of MPARC. Specifically, the Director(s) will report to Faculty Council, oversee conferences, workshops, guest speakers, develop and oversee training programs, hire and train research and technical personnel, and mentor trainees and junior faculty. The Director(s) will also be expected to represent MPARC externally within national and international organizations, government agencies, and funding agencies related to mental health and physical activity.

Executive Committee:

An Executive Committee will be founded within the first year of the establishment of the MPARC EDU and will consist of leader representatives in clinical, research and education initiatives representing scholarly initiatives with overarching focus of mechanisms, intervention design and evaluation, and/or policy and practice in mental health or physical activity. The Executive committee will include **at least:**

- one Director,
- three core members representing diversity in research focus,
- two extra-departmental members,
- two community partner members,
- one stakeholder.

The Executive Committee will meet once per year (Spring). The Executive Committee is responsible for evaluating the progress of MPARC aligned with the mission and vision, and overseeing MPARC educational and research initiatives.

Advisory Committee:

The Advisory committee will consist of FKPE professors who will meet three times per year (Fall, Winter, Spring) or more frequently as required. The mandate of the advisory committee is to oversee the development and growth of the EDU and it will approve new members. The advisory committee informs the executive committee.

Additional Members:

MPARC members are researchers, clinicians, practitioners, and key stakeholders working in key areas of physical activity and mental health and comprising Psychology, Psychiatry, Epidemiology, Public Health, Sociology, Economics, Social work, Rehabilitation, and Oncology. Members align with the vision and help support the mission of MPARC by participating in research, practice, education, and/or public outreach focused on physical activity and mental health. The members are included in MPARC for their scholarly initiatives focused on mechanisms, intervention design and evaluation, and/or policy and practice in mental health or physical activity.

Individuals are eligible for MPARC membership if they meet one or more of the following eligibility criteria:

- Faculty and other academic staff working in physical activity, sport, or mental health;
- Graduate students working in physical activity, sport, or mental health;

- Postdoctoral fellows and research associates involved in physical activity, sport, or mental health research projects;
- Clinicians and counsellors with primary area of practice in mental health;
- Qualified exercise professionals (e.g., Registered Kinesiologists, certified personal trainers, coaches);
- At the discretion of the Advisory Committee:
 - Patient and/or community representatives who demonstrate commitment to MPARC vision and mission;
 - Members of professional organizations and non-profit organizations with a core focus on physical activity or mental health;
 - Current and/or former athletes.

Membership Expectations:

Members are expected to demonstrate commitment to the MPARC vision and mission through participation in MPARC activities and initiatives. Members may be requested to report on their physical activity and mental health activities, and may identify affiliation with MPARC on publications and presentations when the research has been supported by MPARC infrastructure.

Membership Benefits:

The benefits of membership include: notification of MPARC publications, seminars, lectures, workshops, and employment opportunities through an established MPARC newsletter and Members listserv; priority access to MPARC research infrastructure and clinical and practical resources; and opportunities for collaborating on research, education, and service in the area of physical activity and mental health.

Application for Membership:

Membership may be offered at the discretion of the MPARC Director(s) or Advisory Committee to individuals who meet the eligibility criteria. Individuals may also apply directly to the advisory committee for membership or be recommended for membership by another MPARC member. MPARC membership will normally cease when individuals leave their appointment or position in the area of physical activity or mental health. Membership appointments will be reviewed by the Director and advisory committee each year to ensure standards of diversity and equity.

Membership Renewal:

Individuals will renew their membership every year with a summary report of research, education, and service activities provided to the advisory committee. There is no other formal renewal process.

Proposed Inaugural Membership:

Director

Dr. Catherine Sabiston is a professor in the FKPE and holds a Tier II Canada Research Chair in Physical Activity and Mental Health. She has nearly 200 peer-reviewed publications, over 400 presentations, and has held over 19 million dollars in funding for her research broadly focused on physical activity and mental health. Dr. Sabiston has also trained 8 post-doctoral fellows, 6 PhD students to completion, and 23 Master-level students to completion, as well as over 50 undergraduate students working on independent research programs. She has built international collaborations and has worked on multidisciplinary teams aimed at enhancing physical activity opportunities and experiences. Her mixed-methods research expertise is also an added value to her role as Director of MPARC. Dr. Sabiston is currently President-elect of the North American Society for the Psychology of Sport and Physical Activity.

As Director, Prof. Sabiston will:

- Report to Faculty council (2019-2020 and 2020-2021)
- Develop governance plan and membership structure
- Organize and oversee one conference or workshop per year
- Organize one keynote/invited talk per year
- Lead the hiring of researchers and technicians
- Represent MPARC externally in national and international organizations; government agencies and funding bodies related to mental health
- Mentor trainees and junior faculty
- Lead the Advisory Committee meetings

Advisory Committee

All advisory committee members are leading experts in sport and exercise science in FKPE and have various local, national, and international collaborations. They hold leadership positions in research and clinical practice, are well-funded, and publish consistently and regularly in high-impact journals. The Advisory Committee consists of: Dr. John Cairney, Dr. Kelly Arbour-Nicitopoulos, Dr. Daniel Santa Mina, Dr. Linda Trinh, Dr. Katherine Tamminen.

Dr. John Cairney is a professor in the FKPE and is currently Director of the Infant and Child Health (INCH) Research lab (McMaster University and UofT). He is also cross-appointed at the Department of Psychiatry at UofT and the Department of Family Medicine at McMaster. Dr. Cairney is currently the President-elect of the North American Society for Pediatric Exercise Medicine and is Past-President of the Canadian Academy of Psychiatric Epidemiology. He is the author of more than 220 peer-reviewed publications, 4 books including *Mental Disorder in Canada: An epidemiological perspective* (UofT Press) and has secured over 10 million dollars in funding in the last 5 years. Dr. Cairney's research explores the intersections of movement (dis)ability, physical activity and mental health in children and youth. He has also served as a consultant researcher on several large-scale Ministry projects in the province including the evaluation of the Child and Youth Mental Health Strategy in the Province of Ontario. He brings expertise in external national and international collaborations and a multi-disciplinary approach to the study of physical activity and mental health.

Dr. Kelly Arbour-Nicitopoulos is an Assistant Professor in Faculty of Kinesiology and Physical Education at the University of Toronto, an Adjunct Scientist at Holland Bloorview Kids Rehabilitation Hospital, and the Director of Research for the Active Living Alliance for Canadians with a Disability. Her research program focuses on the interplay of physical activity and mental health across the lifespan in clinical and community-based populations living with disabilities. Dr. Arbour-Nicitopoulos' research program focuses on the development and testing of theory-based physical activity interventions that reach persons with disabilities, demonstrate effectiveness for promoting mental health and physical activity behaviour, and can be adopted and implemented into practice for promoting long-term behaviour change. Dr. Arbour-Nicitopoulos has also provided service to numerous community-based health promotion initiatives such as the Canadian Mental Health Association's Minding Our Bodies Evaluation and Advisory Committees, and the Ontario Trillium Foundation's Get Active Toronto Research Committee Board.

Dr. Katherine Tamminen is an Assistant Professor in the FKPE. Her research focuses on athlete wellbeing at competitive and recreational levels of sport, with a specific focus on parental influence in youth sport and the social processes influencing athletes' stress, coping, and emotion. Dr. Tamminen has a well-funded research program from the Social Sciences and Humanities Research Council of Canada (SSHRC), the Province of Ontario Ministry of Research and Innovation (Early Researcher Award), the Canadian Foundation for Innovation (John R. Evans Leaders Fund) and the Ontario Research Foundation, and by the University of Toronto (Connaught New Researcher Award). She is currently an Associate Editor for the International Review of Sport and Exercise Psychology and she serves on the Editorial Board of Psychology of Sport and Exercise.

Dr. Linda Trinh is an Assistant Professor in the FKPE. Her research agenda is focused in the development of evidence-based and theoretically-driven physical activity and sedentary behavior interventions for cancer control and survivorship. Dr. Trinh's main research interests include examining: a) the effects of physical activity in cancer survivors on symptom management (e.g., quality of life, fatigue, cognitive function) and health-related fitness outcomes (e.g., cardiorespiratory fitness, muscular strength/endurance, physical function); b) behavior change interventions for increasing physical activity and reducing sedentary behavior in cancer survivors; and c) profiling physical activity levels, patterns, and determinants in cancer survivors. Her secondary line of research is a focus on sedentary behaviour and establishing how these patterns (i.e., volume; bout length; breaks in sitting time) are related to physical and psychosocial health outcomes.

Dr. Daniel Santa Mina is an Assistant Professor at the University of Toronto in the Faculty of Kinesiology and Physical Education and the Faculty of Medicine in the Department of Surgery. Dr. Santa Mina is also a Scientist in the Cancer Rehabilitation and Survivorship Program at the Princess Margaret Cancer Centre where he is the Lead for Exercise Programming. Dr. Santa Mina's main areas of clinical-research focus are on the physiological, functional, and psychosocial effects of exercise for cancer survivors, and in particular, the role of prehabilitation prior to cancer treatment. Dr. Santa Mina is also heavily involved in exploring implementation strategies for exercise into standard cancer care.

Additional Members:

Current collaborating University-wide researchers are from cognate units including rehabilitation sciences, medicine, psychology, and public health. The leaders in these units have been informed of the establishment of MPARC in writing. Current collaborators will be invited as MPARC members. See Appendix B for a list of current collaborators.

The proposed EDU members are researchers and clinicians in hospitals, clinics, wellness centres, non-profit organizations, community outreach programs, and universities. As we move towards a Level C EDU, further collaborations will be fostered with University of Toronto academic units and researchers including: Department of Computer Engineering, Rotman School of Management, Munk School of Global Affairs, Departments of Psychiatry & Psychology, Sociology, Anthropology, and Faculties of Public Health Sciences, Social Work, and OISE. Leaders in these cognate units have been informed of the establishment of MPARC. Additional formal affiliations will be made with National and International researchers, academic units, and research centres.

Overall, MPARC members at the University of Toronto bring added value in research and practice. Many members are medical doctors with clinical and research expertise in areas related to mental health and physical activity who can also oversee some of the higher risk, medically supervised training protocols and data collections in the lab. Additional expertise is brought by technical skills and equipment, patient outreach (and participant recruitment), program evaluation, and technology and social media. MPARC members who are not at the University of Toronto will benefit from collaborative spaces, shared equipment for larger studies, and knowledge implementation and dissemination opportunities. The outreach for programs and services is heightened.

Funding

There is no request for permanent budgetary support from the host or collaborating units. When deemed appropriate, financial support may be sought from a variety of sources including: the host and collaborating academic units, EDU members, government agencies, industry partners, and private donors and philanthropists.

Funding agencies to be pursued for funding:

- 1) Canadian Institutes of Health Research (CIHR)
- 2) Social Sciences and Humanities Research Council of Canada (SSHRC)
- 3) Women's Exchange
- 4) Bell Let's Talk
- 5) National Institutes of Health
- 6) Agency and Foundation funding (e.g., Canadian Cancer Society, Canadian Mental Health Association, Craig H. Neilsen Foundation, Goodlife Kids Foundation, JumpStart, Kids Brain Health Network, Weston Brain Institute, Heart and Stroke Foundation, Ontario Trillium Foundation)
- 7) Provincial governments (Ministry of Health; Ministry of Education; Ministry of Child and Youth Services; Ministry of Culture, Tourism and Sport)
- 8) Philanthropic organizations and donations

In addition, MPARC may request some initial and ongoing administrative support from the host Faculty's Research Services Officer. The Director(s) will work with the Research Services Officer to

coordinate efforts aimed at achieving the immediate and long-term goals of MPARC. These tasks include but are not limited to: forming collaborative relationships and building bridges between members, organizing a symposium and other knowledge translation initiatives, developing and promoting innovative MPARC programs, and finding and developing the space and technological resources needed as MPARC evolves over time. The role and contributions of the Director(s) will be recognized in her/his academic workload.

Pending approval from the host unit, MPARC will be established during the 2018-19 academic year. The Director(s) will report to the FKPE Council. At the end of the first three years, a comprehensive review of MPARC will take place to assess progress and shape future activities. Indicators and deliverables for this review will include: principal investigator and student memberships, indicators of research productivity (publications, presentations, etc.), training opportunities, review of knowledge translation initiatives, review of new co-curricular programs and physical activity programs stemming from MPARC, symposium/workshop development and attendance, feedback from MPARC events, and a survey of collaborative efforts facilitated via MPARC networks.

MPARC Activities

MPARC will serve multiple purposes in addition to supporting research on physical activity, sport, sedentary behaviour, and mental health. These purposes include providing a shared technological and equipment platform as well as a collaborative and interdisciplinary training environment. It is also envisioned that MPARC will be able to act as a conduit by which research impact is translated in the future (for example: research discipline-to-discipline, research-to industry, research-to-community and research-to-society). To achieve its goals, objectives, and primary purpose, MPARC members will participate in a number of knowledge synthesis and translation activities that will serve to heighten awareness and educate the community, build multidisciplinary research and practice among researchers and key stakeholders, and train potential highly qualified individuals. For example, we plan on applying for strategic partnership grant (through SSHRC or CIHR) to create an international network of researchers and practitioners interested in this field. As well, we have a number of systematic/meta-analyses planned, which will identify key knowledge gaps in the field. A more complete list of short and long-term objectives are presented below. An MPARC member will also represent the centre vision and mission on University of Toronto advisory panels/boards for timely interests (e.g., body composition, strength and conditioning review, etc.). This member will be responsible for ensuring that mental health and physical activity research, education, and service are appropriately being addressed and this member will report to the advisory committee.

Short-term (Years 1 & 2)

1. Establish the formal governance of MPARC (e.g., executive committee and any working groups);
2. Develop a five-year strategic plan;
3. Deliver a pre-conference workshop on mental health and physical activity at two (or more) professional conferences (e.g., ECSEPS, SCAPPS, NASPSA, CAPE, NASPEM, DCD International, Sport4Life Summit and BOK);
4. Host a physical activity, sport, and mental health conference at the University of Toronto;

5. Build sustainable programming for the Master of Professional Kinesiology program SELO in mental health;
6. Build and deliver sustainable training for mental health in the co-curricular programs;
7. Explore opportunities for International student exchanges through MITACS Globalink programs and the Michael Smith Foreign Student Travel Awards

Longer-term goals (Years 3-5 and onwards)

The short-term goals will carry forward. In addition we plan to:

1. Develop co-curricular collaboration for program design, implementation, and evaluation (e.g., MoveU.HappyU, Think Pink events, MoveU, Igniting Fitness Possibilities, S.M.I.L.E., RiseTx);
2. Develop and implement placement opportunities for undergraduate students in the MPARC lab;
3. Develop and deliver a workshop on positive psychology (mindfulness, self-compassion) for students and teachers aimed at building resilience skills;
4. Submit a SSHRC Partnership Grant or equivalent to focus on sustaining community partnerships focused on mental health (partnerships with non-profit organizations, TDSB, ParticipACTION, Opeha, Hart House, Canadian Parks and Recreation Association);
5. Explore commercialization opportunities for programs such as MoveU.HappyU and ActiveMatch (both current programs in MPARC);
6. Advocate for policies that ensure mental health is a focus in all Kinesiology-relevant professions, training, and practice;
7. Develop, pilot and deliver a web-based online course in physical activity and mental health (with a vision for advancing the EDU to a level C).

Alignment with the Strategic Academic Plans

A) Faculty of Kinesiology and Physical Education

- 1) Education of students
 - a. Unique program offering and focus (mental health, sedentary behaviour).
 - b. Pedagogical tools that emphasize mental health.
 - c. Placement opportunities for experiential learning within MPARC projects and initiatives.
 - d. Strengthening partnerships within other Faculties and Divisions at the University of Toronto to offer inter-professional education.
 - e. Developing and implementing specialized course(s) in mental health and physical activity for delivery in other divisions and education centres.
 - f. Embracing technology through training on specialized equipment related to measurement and assessment of mental health and physical activity.
 - g. Global exchanges through partnership research centres and/or MITACS opportunities.
- 2) Strengthen research
 - a. Building and supporting research collaborations Provincially, Nationally, and Internationally.
 - b. Directly addressing the strategic plan, #3b *“establish and nurture extra-departmental units in the area of... centre for physical activity and mental health”*
 - c. Strengthening intra-faculty collaborations.
 - d. Endorsing and supporting the Faculty’s first Canada Research Chair position.
- 3) Improve Participation Rates

- a. Formal links to co-curricular programming, particularly through the on-going collaborative program called MoveU.HappyU, and we will improve participation in physical activity with a direct objective of improving mental health among students at the University of Toronto.
- b. Evaluation of any new or re-designed co-curricular programs that emanate from MPARC.
- c. Accepting students with roles in co-curricular programming.
- d. Building initiatives for on-going programs to improve physical activity.

4) Build Capacity

- a. Build new partnerships outside of the Faculty by inviting U of T-affiliated and non U of T members into MPARC to increase innovative collaborations and visibility.
- b. Optimizing scientific environment in terms of infrastructure to provide the necessary support, equipment, and physical resources for grant applications and funding.
- c. Fostering collaborations with non-profit organizations, public health agencies, schools, and industry including Apple and Fitbit.

B) University of Toronto

Establishing MPARC as a Level D EDU is strongly aligned with the objectives of the University of Toronto's Strategic Research Plan. The vision, mission, and goals align specifically with the Strategic Research Theme "PROMOTE: Healthy People, Healthy Communities, Healthy World". Physical inactivity is one of the most pressing public health challenges facing humanity in the 21st century, and the MPARC members *"are addressing the importance of physical inactivity, a leading cause of many chronic diseases, and how physical activity and sport can be an important part of disease prevention"* (U of T Strategic Research Plan 2018-2023, p. 19). Additionally, MPARC members *"are relating the importance of mental health to the notion of health in general"* (p. 19).

Within the PROMOTE theme of the University of Toronto's Strategic Research Plan, MPARC fits the Plan's sub-theme of *"Human Development and Health through the Lifespan"*, as it will allow for development and execution of ground-breaking research, education, and service that crosses disciplinary and methodological boundaries. MPARC research will also *"help people maintain optimal health and quality of life, whatever age they happen to be"* (U of T Strategic Research Plan 2018-2023, p. 20). Overall, research on physical activity and mental health interventions and subsequent implementation into practice will lower the cost of health care to the Canadian public.

Another key focus of the University's Strategic Research Plan is *"to recruit and retain the world's top faculty, staff, graduate students and other trainees"* (U of T Strategic Research Plan 2018-2023, p. 42). The establishment of MPARC will support this goal by providing opportunities for training in key areas of physical activity and mental health. The combination of the Directors and the advisory committee members of MPARC form what is now viewed by others outside of the University of Toronto as the strongest sport, exercise, and health psychology group in Canada. MPARC will strengthen this research unit's productivity, capacity, and reputation, allowing MPARC to attract the highest caliber of trainees and provide personnel with the best quality education and training opportunities.

Appendix A. MPARC Lab Infrastructure

There is no other fully-accessible centre in Canada that houses this breadth of physical activity equipment for in-clinic and in-community use with facilities and technology for assessment of mental and physical health. The >2500 square foot MPARC lab consists of two dedicated spaces devoted to structured and supervised physical activity (suites 1 and 2), a testing area for cardiorespiratory and musculoskeletal fitness (suite 3), psychophysiological, emotional, and cognitive testing (suite 4), interview and focus group infrastructure (suite 5), and data analysis (suite 6) as well as storage for equipment and ambulatory assessment (suite 7). The equipment consists of specialized items for supporting physical activity intervention research suitable for populations with chronic physical and mental health conditions both in the lab and in the community. A fundamental novelty of this centre is the focus on centre-based physical activity programming and tailored strategies that can foster seamless transitions to the community, and/or can be implemented and tested in the community for sustainable physical activity participation.

Specific MPARC equipment includes:

Fitness Testing:

- research-grade treadmill
- research-grade bicycle
- metabolic carts (1 at Goldring, 1 at Athletic Centre)
- ECG
- Biodex (muscular strength and endurance)

Fitness Training:

- training bicycles (including 4 Sci-Fit, 1 upright, and 1 recumbent)
- 3 training treadmills
- free weights (ranging from 1lb to >90lbs)
- Keiser resistance training systems
- 4 resistance training machines for large upper and lower body muscle groups (push-pull)
- 6 TRX body weight resistance training bands
- resistance bands, balls, mats
- heart rate monitors

Psychosocial Testing and Training:

- Muse headbands (mindfulness)
- iMotions system (EEG, heart rate, galvanic skin response, facial recognition, emotions)
- 10 iPads for apps and data collection

Social Observation:

- Noldus system

Biological Samples Collection and Storage:

- Blood donation chair
- 80 Freezer

Ambulatory Testing and Training:

- inclinometer devices (Actipal)
- accelerometers (Actigraph)
- pedometers (StepCount)
- Wearable fitness tracker (Jawbone)

Appendix B.

Inaugural confirmed MPARC professional members, who have been invited because of their scholarly research aligning with the MPARC objectives of mechanisms, intervention design and evaluation, and/or policy and practice with of focus on physical activity or mental health. Of note, formal invitations have not been sent to individuals without an affiliation to Ontario institutions/organizations. Also, no athletes (current or former) or trainees have been invited to date.

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We have also confirmed strong general support for the MPARC EDU from the following departments/faculties at the University of Toronto:

- Psychiatry
- Social Work
- Rehab Sciences
- Psychology
- Public Health
- Nursing
- Anthropology