Annual Report Template for Organized Research Units

Annual reports for the Organized Research Units (ORUs) are to be prepared using the following format. The guidelines included in this template are provided for preparing the ORU Annual Report for fiscal year 2023-2024 due no later than **Friday, May 31, 2024. Board Meetings will be scheduled from June 10-July 30.**

ORU Directors are advised to review the Terms and Expectations of their current charter, their last Annual Report and address steps to fulfilling their mandate when completing the annual report. *Please note that the major purpose of the Annual Report and the Board Meeting is to review the mandate and strengthen your research centre. They also inform external reviewers at the time of rechartering.*

Institutional ORUs, please submit your Annual Reports to the Office of the VPRI (to the attention of the ORU Research Manager. **Faculty-based** ORUs submit their reports to the Dean's Office of their home Faculty, with a copy to the Office of the VPRI (c/o ORU Research Manager).

Muscle Health Research Centre (MHRC)
Annual Report
2023-2024

1. **Contact Information**: Include the following:

Name of Director(s)	Dr. Christopher Perry
Telephone number	(416) 736- 5100 Ext. 33232
Email address	cperry@yorku.ca
Campus address	351 Farquharson Life Sciences Building
Administrative contact	Adam Charnaw
ORU website	Yorku.ca/mhrc

2. **Original and Current Charter Dates:** July 1, 2008, re-chartered in 2014 and 2021

3. **Mandate** –

The MHRC is an organized research unit within the Faculty of Health dedicated to Biomedical Sciences, and more specifically to the study of "muscle", including skeletal, cardiac and vascular muscles, in its broadest terms. Its mandate is to provide a centralized and focused research emphasis on the importance of "muscle health" for the overall well-being of Canadians. The MHRC consists of a strong cohort of well-funded and highly productive scholars (including two Canada Research Chairs and two York Research Chairs) and graduate students from the Faculty of Health and the Faculty of Science. The revised vision statement of the MHRC incorporated following the re-Chartering exercise in 2021 is *"to be Canada's leader in exercise and muscle health research, training and education"*. We are achieving this through 1) innovative research, 2) the education of qualified trainees, and 3)

the translation of our findings for the benefit of all Canadians. In 2021 we spent considerable time analyzing and revising the vision and mandate of the MHRC for the purpose of the re-Chartering exercise, and this is reflected in our progress and goals for the future.

4. **2023-24 Outstanding Centre-specific Accomplishments** – 500 words maximum, *for the current year*, describe value-added accomplishments and outputs of the ORU that are a reflective of Centre synergies and resultant collaborations.

   NOTE: For the most part, publications and other creative scholarly contributions of individual members of the ORU are to be summarized in Appendix 1 and should not be included in this section. Additional relevant items can be added to Appendix 2.

   The 14th Muscle Health Awareness Day (MHAD) in May 2023 attracted over 100 attendees from multiple universities across Ontario. Attendees expressed appreciation of the opportunity to form new relationships and networks at this event.

   The MHRC held a Career Day in April 2024 which attracted approximately 70 attendees comprised mainly of graduate students within the Centre as well as undergraduate and graduate students from the Department of Biology. Several panelists from academia, industry, and clinical sectors provided roundtable and lecture style mentorship to students. The feedback from attendees indicated a general sense of improved certainty regarding potential career options and strategies to leverage their graduate training towards such careers.

   The MHRC Seminar Series included multiple speakers from across North America through virtual and in-person formats. There were over 250 attendees in total for all seminars including scientists from other institutions across Canada and some from the USA.

   In September 2024, the MHRC Student Executive Committee (SEC) met to draft a new governance plan that incentivizes and organizes executive student member opportunities for contributing to MHRC activities. As such, students developed leadership and planning skills through their organization of Career Day and participation in MHAD. The met several times to plan a new International Trainee Seminar series hosted by the MHRC (virtual) to provide knowledge dissemination and networking opportunities for trainees in our Centre and around the world. The SEC has also created a new graduate student featurette webpage on the MHRC main URL to highlight the credentials and research focus of our student members. This page continues to be developed. The SEC has also created a new LinkedIn page for the MHRC to further promote the activities and accomplishments of our graduate student members.

   The MHRC submitted a NSERC RTI grant for a new echocardiography instrument to measure cardiac function in mice which will support the research programs of multiple members. This grant was awarded in April 2024.

The MHRC formed a new relationship with the Interdisciplinary Canadian Collaborative Myalgic Encephalomyelitis (ICanCME). This network unites patient partners, clinicians and academic researchers to improve and expand research into ME (formerly known as 'chronic fatigue syndrome'). The MHRC provided a letter of support to their funding application to CIHR to extend their activities by 5 years and introduced MHRC membership to this network to learn of engagement opportunities and funding mechanisms.

The MHRC submitted a proposal to Southlake Regional Health Centre to build a satellite lab for the Centre. This followed several meetings with their leadership team and VPRI to develop this initial plan. Ongoing discussion will develop this plan in alignment with strategic priorities of Southlake, the MHRC, the Faculty of Health, and VPRI.

The MHRC awarded several trainee scholarships and a seed grant for faculty.

The MHRC also partnered with the Myology Institute at the University of Florida to exchange links to our respective virtual speaker seminars as an initial activity that forms the foundation for future partnerships.

The MHRC welcomed new members Drs. Michael Paris and Devin Phillips.

5. **Challenges and Areas for Improvement** – 500 words maximum. Summarize the major challenge(s) faced by your ORU in the past year. Reflect on the reasons and circumstances that contributed to the situation(s) and describe how you have addressed and/or aim to address the challenge(s) in the future.

   Our largest challenge relates to budget. The rising costs of all activities and budget items constrains our ability to sustain current activities that benefit our members. Increased efforts to fundraise for MHAD and Seminar include providing sponsors with the ability to speak to our members during MHAD and seminars, at the beginning of research presentations by invited faculty, to increase net sponsorship funds raised. This will help somewhat, but will likely be insufficient in scale to other rising costs. Increasing registration fees for MHAD will bring in ~$1,000 per $10 raised (~100 attendees/year), but this will in turn decrease accessibility for student attendees and must therefore be limited. Additional strategies for fundraising will be critical.

   We are also limited on laboratory space both in terms of clinical and wetlab formats. A CFI-IF NOI will be submitted May 2025 to equip a clinical exercise and nutrition facility in partnership with the School of Kinesiology & Health Science (internal review due June 2024). Additional wet lab space beyond this application will be required given the increased funding realized by several members that has led to new recruitment of post-doctoral fellows and graduate trainees. There is also an increase in the number of collaborations by our members with international laboratories that leads to an increase in visiting scientists and new projects. Our members also have identified new funding opportunities through industry and foundations that will guide new funding applications.

Success in these initiatives will require new space. The emerging School of Medicine is an opportunity for hosting medical students for inclusion in research projects but this will also require more space.

6. **Charter Goals** – What progress has been made toward the goals of the ORU's current charter? (500 words maximum) *For the current year* describe any initiatives, events, outputs, and/or projects that show achievement or steps to reaching the research objectives stated in your charter.

   In September 2024, Christopher Perry became the new Director of the ORU. In this capacity, the Director has crafted new initiatives as part of a 5 year vision plan that will increase funding through team grant applications (CFI-IF, NSERC CREATE, other), integrate MHRC members to national networks focused on specific diseases, introduce patient partners as keynote speakers at MHAD and seminar for sharing lived experiences that can influence the design of our research questions and experimental design, work with not-for-profit organizations to create a patient advisory panel to review grants and project proposals of our members, link our members to clinical collaborators and infrastructure at local hospitals, develop strategies that integrate our members with the emerging School of Medicine, and introduce our members to national and international academic researchers through new partnerships with parallel muscle research centres abroad. Each of these processes were initiated through discussions between the Director and relevant parties, with some taking action as noted in section 5. These initiatives will continue to be developed in 2024-2025.

7. **Charter Challenges** – What are the challenges your ORU has faced in making progress towards the goals stated in your charter? (500 words maximum) Specify the challenges and how your ORU plans to address them.

   The challenge for all of us is financial constraint, fitting priorities that are important into a fixed budget. Fundraising initiatives with a focus on "Muscle Health" in its broadest terms would help alleviate these constraints. We are also becoming limited on space and seek to build a satellite lab at local hospitals as well as acquire new space at York University through CFI-IF applications and discussions with the University.

8. **Financial Position[1]:** Complete fully the "Financial Position" template for your ORU (the excel file consists of 4 worksheets total) and attach as **"Appendix 4"**

[1] The Annual Report financial template is directly related to the Statement of Operations, submitted for budget review in April each year. You will notice that the expense categories correspond directly to the expense subtotals on the Statement of Operations.
The only figures not found in the Statement of Operations are some revenue items, which may have been received through journal entries, e.g. grants and contracts.

When inputting the funds received from grants and contracts in the Revenue section, the corresponding amount must be added to the expense line so that the balance (Revenue - Expense) remains the same

NOTE: Any funds allocated by the VPRI must be used for the intended purpose of funding a coordinator and essential operating expenses. Any deviation from the intended purpose must be discussed and approved **prior to** the use of the funds by the office of VPRI. The committed financial support from VPRI to the ORUs is subject to review on an annual basis. For example, an ORU budget surplus at year end will be discussed prior to allocation of annual/new funding.

Chandra Persaud (cpersaud@yorku.ca), Financial Officer, is available to assist ORUs in preparing worksheets as needed. If you or your Coordinator have any questions or concerns, please do not hesitate to contact her.

9. **Graduate Diplomas and Non-Degree Activities** - Provide a brief list of all **current** graduate diplomas, courses, non-credit, and/or non-degree activities whether revenue generating and "other" offered by the ORU in the chart below. Be sure to indicate the home Faculty of any credit-assigned courses or diplomas. Please see related Senate policies for non-degree activities. (IF APPLICABLE)

   Continuing Education: A Graduate Diploma in "Muscle Health and Exercise" was forwarded to the Graduate Executive Committee in the School of Kinesiology for further consideration. Initial feedback was provided early 2024 and is now being considered in greater detail. The plan is to move forward with this by Fall 2024, if possible.

As Director, I attest that I have liaised with the lead and sponsoring Faculties of the ORU re: suitability and quality of our non-degree activities (yes, no, n/a): __yes__

List all current activities:

	Activity Type	**# Attendees**	**Affiliation**
1.	MHRC Seminar Series (10 speakers)	30- 45/seminar	Internal & External
2.	MHAD 15	100- 120	Internal & External
3.	Career Day	60- 75	Internal & External
4.	Paper of the Month (website research article by Faculty Member)		Internal & External

10. **Space Utilization -** Provide a list of current space usage data as appropriate to your ORU in the charts and space provided in Appendix 3.

11. **Objectives for Upcoming Year** – 500 words maximum. Please describe below your plans and objectives for the coming year.

as in the Statement of Operations. ORUs can determine the amounts received from grants and contracts by looking at their recovery journals.

The following objectives will be pursued for 2024-2025

- Submit CFI-IF co-application with KHS
- Submit NSERC CREAT spring 2025
- Offset rising costs of MHAD with increases sponsorship strategies.
- Increase engagement of members within the MHRC through additional hybrid in-person/virtual seminars
- Increase engagement of our members with international muscle research centres
    - Expand on new partnership with Myology Institute at the UF to share seminar links
    - Extend this strategy with CMRC in Copenhagen
- Continue building on existing relationships with Southlake and new relationships with local hospitals to increase clinical collaborations with our members and work towards integration of MHRC with the medical school
- Advance plans for a MHRC satellite lab at Southlake
- Increase MHRC exposure:
    - Work with communications & public affairs division to increase media exposure for our MHRC members' accomplishments
    - Actively facilitate linking MHRC members to Y-file for internal communications of achievements and new funding.
- Increase industry partnerships
- Develop an international trainee seminar series
- Design and hold a 'Day at York' for children with physical disabilities to visit the MHRC

Where appropriate, please comment on any relevant details below.

(a) **FUNDING PROPOSALS**: anticipated for submission by **April 30, 2025** by active members of the ORU

Funding Proposal (with tentative title)	**Funder**	**Value**	**Type (grant, contract, other)**	**Role of ORU**
1.CFI-IF: Centre for Innovation in Healthy Living (CIHL)	CFI	$4.2 million	Grant	Co-lead
2.CREATE	NSERC	$1.65 million	Grant	Lead
3. Industry partnership with Aurora Scientific	NSERC Alliance	$60,000	Grant	Mentor (Dr. Arthur Cheng lead applicant), build relationship with partner

(b) **PLANNED EVENTS**: List conferences, workshops, exhibits or other events to be hosted or organized by **April 30, 2025**, and target audience(s).

	Events (Workshop, Exhibit, Conference, Other)	**Target Audience(s)**
1.	Muscle Health Awareness Day (MHAD16)	Internal & External
2.	MHRC Seminar Series (8x)	Internal & External
3.	MHRC Career Day	Internal & External
4.	The Neuromuscular Disease for Canada (NMD4C) graduate training Summer School, hosted by MHRC	Internal & External

(c) **PLANNED ACTIVITIES**: List knowledge mobilization/engagement/outreach/technology transfer activities planned

	Activities (Knowledge Mobilization, Engagement, Outreach, Technology Transfer, Other)
1.	MHRC Seminar Series
2.	Muscle Health Awareness Day (MHAD)
3.	Muscle Health Career Day
4.	Paper of the month series (website research article by faculty member)
5.	Develop a 'Day at York' event for children with disabilities to immerse themselves in lectures and research labs via the MHRC

(d) All specific **visitors** invited or anticipated (visiting faculty or other)– please list

	Visitor	**Purpose**
1.	Dr. Daike Watanabe, Osaka, Japan	Visiting researcher collaborating with Dr. Arthur Cheng

APPENDIX 1 – Active Members and Governance

Membership - List **active** faculty members of the ORU. Arrange ***active*** members according to their Faculty with name, department and Faculty in this order.

Active Member Name	**Faculty**	**Department**
1. Dr. Chris Perry	Health	KAHS
2. Dr. David Hood	Health	KAHS
3. Dr. Olasunkanmi Adegoke	Health	KAHS
4. Dr. Angelo Belcastro	Health	KAHS
5. Dr. Olivier Birot	Health	KAHS
6. Dr. Rolando Ceddia	Health	KAHS
7. Dr. Arthur Cheng	Health	KAHS

8. Dr. Michael Connor	Health	KAHS
9. Dr. Janessa Drake	Health	KAHS
10. Dr. Heather Edgell	Health	KAHS
11. Dr. William Gage	Health	KAHS
12. Dr. Sharri Grace	Health	KAHS
13. Dr. Tara Haas	Health	KAHS
14. Dr. Mazen Hamadeh	Health	KAHS
15. Dr. Lorianne Hynes	Health	KAHS
16. Dr. Andrea Josse	Health	KAHS
17. Dr. Jennifer Kuk	Health	KAHS
18. Dr. Michael McDermott	Science	Biology
19. Dr. Michael Paris	Health	KAHS
20. Dr. Devin Phillips	Health	KAHS
21. Dr. Michael Riddell	Health	KAHS
22. Dr. Emilie Roudier	Health	KAHS
23. Dr. Anthony Scime	Health	KAHS
24. Dr. Gary Sweeney	Science	Biology
25. Dr. Peter Backx	Science	Biology
26. Dr. John McDermott	Science	Biology
27. Dr. Robert Tsushima	Science	Biology

***Other Members*:** List all other members, designating the ORU's own categories and criteria for membership (e.g. members- affiliate or associate, student, external or community, non-active).

Other Member Name	Department/ Unit	Membership category
1. Dr. Imogen Coe	TMU	Adjunct
2. Dr. Thomas Hawke	McMaster U	Adjunct
3. Dr. Ira Jacobs	U of Toronto	Adjunct
4. Dr. Robert Laham	Appletree Medical Clinic	Adjunct
6. Dr. Sean Wharton	Wharton Medical Clinic	Adjunct

Following these lists, for each ***active*** member, include a bullet point list of up to five notable contributions **directly associated** with their membership in the ORU in the fiscal year. For this purpose, "contributions" should be read broadly to include publications, grants, contracts, funding proposals, events organized or attended, presentations, exhibits or other activities and outputs which were associated with their membership in the ORU. Following this information, clearly indicate equivalent information, if desired for members who are not York full-time faculty (e.g. students, part-time, contract faculty, external members).

Governance: List members of the Executive Committee, sub-committees of the Executive (if any), other special committees, any external advisory body or other governance bodies, indicating their affiliation (e.g. faculty member, student of York University, community

representative, fellow, etc.). Including meetings dates for 2023-24. Please copy and paste tables as needed for additional committees. Refer to your Terms and Expectations document to see expected governance bodies.

Executive Committee	
Meeting Date(s):	
Member	**Affiliation**
1. Dr. Christopher Perry (Director)	Faculty of Health, KAHS
2. Dr. David Hood	Faculty of Health, KAHS
3. Dr. Janessa Drake	Faculty of Health, KAHS
4. Dr. Rolando Ceddia	Faculty of Health, KAHS
5. Dr. Michael Connor	Faculty of Health, KAHS
6. Dr. Peter Backx	Faculty of Science, Biology
7. Ms. Emily Fraschetti	Student Representative
Sub-Committee Type: Student Executive Committee	
Meeting Date(s): Monthly	
Member	**Affiliation**
1. Emily Fraschetti	Graduate Student
2. Daniel Da Eira	Graduate Student
3. Stephen Mora	Graduate Student
4. Matthew Russell	Graduate Student
5. Tania Pereira	Graduate Student
6. Priyanka Khemraj	Graduate Student
7. George Nader	Graduate Student
8. Aris Kheirandish	Graduate Student
9. Sabrina Champsi	Graduate Student
10. Stephen Boulanger	Graduate Student
11. Nathaniel Andrews	Graduate Student
12. Madison Garibotti	Graduate Student
13. Shahrzad Khajehzadehshoushtar	Graduate Student
14. Victoria Sanfrancesco	Graduate Student

APPENDIX 2 – Additional **Centre-specific** accomplishments. Do not repeat information already included elsewhere in this report. **Examples may include:**

(a) **Funding proposals submitted** for tri-council, large scale or team activities in which the PI is an active member of the ORU or the ORU will play a role in the project (for example as grant administrator, research partner, provider of space or other resources, or in some other capacity); indicate outcome of proposals if known; indicate peer reviewed or non-peer reviewed.

Funding Proposal Submitted	Name of Member (PI)	Type (tri-council, other grant, contract, etc.)	Role of ORU	Status/ Outcome	Peer Reviewed Y/N
1.					
2.					
3.					

(b) **Events hosted or organized,** list totals below using the categories

Total Count – Events:		
Category	**Total Number Hosted/ Organized**	**Number Attending**
Conference	2	180
Workshop		
Short Course		
Lecture	10	~400 total
Exhibit		
Other		

(c) **Activities-** Knowledge mobilization/engagement/outreach/technology transfer activities and accomplishments – please list. Examples could include: joint projects or initiatives with non-academic partners (including public, private, non-profit, community), new texts, tools, web features, or other products developed for the ORU's non-academic community or audience, media engagement, provision of research expertise to non-academic users

	Type of Activity	**Number Attending**
1.		
2.		
3.		

(d) **Facilitating** faculty or student research through mentorship, development or support programs or services (e.g. in-house workshops, grant preparation support, writing workshops)

	Type of Activity	**Number Attending**
1.	Grant preparation support: Mentoring Arthur Cheng in MITACS with industry partner that approached the MHRC	1
2.		
3.		

(e) **Other research leadership** activities of the unit: identify the ORU member(s) who served as academic lead for the activity.

	Type of Activity	ORU lead member
1.		
2.		
3.		

In addition, list all visitors hosted by the ORU during the report period in this section (indicate each visitor's home institution, whether they are faculty, student, community representative, or other category, the duration of their visit and whether the ORU provided space to the visitor).

	Visitor	Home Institution	Position	Visit length	Space provided Y/N
1.	Dr. Takashi Yamada	Sapporo Medical University	Professor	1 day	no
2.	Dr. Daiki Watanabe	Osaka University of Health & Sports Medicine	Professor	1 day	no
3.	Dr. Irena Rebalka	McMaster University	Professor	1 day	no
4.	Dr. Jeffrey Dilworth	University of Wisconsin	Professor	1 day	no
5.	Dr. Jerome Dempsey	University of Wisconsin	Professor	1 day	no
6.	Dr. Jorge Ruas	University of Michigan	Professor	1 day	no
7.	Dr. Kristi Adamo	University of Ottawa	Professor	1 day	no
8.	Dr. Marni Boppart	University of Illinois	Professor	1 day	no
9.	Dr. Robert Ross	Queen's University	Professor	1 day	no
10.	Dr. Russel Hepple	University of Florida	Professor	1 day	no
11.	Dr. Walter Lee Murfee	University of Florida	Professor	1 day	no
12.	Dr. Amy Kirkham	University of Toronto	Professor	1 day	no
13.	Dr. Ewan Goligher	University Health Network/ UofT	Researcher/ Professor	1 day	no

14.	Dr. Nota Klentrou	Brock University	Professor	1 day	no
15.	Dr. David MacLean	Northern Ontario School of Medicine	Professor	1 day	no
16.	Dr. Jamie Melling	University of Western Ontario	Professor	1 day	no
17.	Dr. Michaela Devries- Aboud	University of Waterloo	Professor	1 day	no
18.	Dr. Tyler Churchward-Venne	McGill University	Professor	1 day	no

APPENDIX 3

(a) **Office Space –** fill out the table below indicating the utilization of office space within your ORU.

Room #	Name of Occupant	Occupant Affiliation[1]	Type of Workspace[2]	Length and Frequency of Occupancy[3]	Notes[4]
332	Adam Charnaw	Coordinator	Office	2.5 days/ week	
333	Dr. Christopher Perry	Director	Office	5 days/ week	

[1] Choose from the following: faculty, staff, graduate student, undergraduate student, visiting scholar, post-doctoral fellow, volunteer, other (please specify).
*If known please indicate whether faculty also has another office in faculty space.

[2] Choose either open workspace or closed office.
[3] Choose either unspecified or list a *realistic* period (starting and ending) regarding how often this room gets used (e.g. 4 days a week, 3 days a week, etc.)
[4] Explain if there is an agreement in place and how this room is being utilized.

(b) **Shared Space/Equipment –** fill out the table below indicating the utilization of shared space and equipment within your ORU.

Room # [5]	**Type of Space/Equipment**[6]	**Access**[7]	**Length and Frequency of Occupancy**[8]	**Notes**[9]
043 Farquharson	Lab, vivarium	MHRC members, key	Unspecified key access 5/d week	Shared space agreement in place
320 Farquharson	Core facility, large shared equipment lab	MHRC members, key	Unspecified key access 5/d week	Shared space agreement in place
322 Farquharson	Exercise and biopsy lab	MHRC members, key	Unspecified key access 5/d week	Shared space agreement in place
330 Farquharson	Meeting room	MHRC members, key	Unspecified key access 5/d week	Shared space agreement in place

[5] If no room number, indicate where it is located.
[6] Choose the type of space: meeting room, cubicle, reception, open space, resource centre, supply room, storage, coat closet, kitchen, photocopier room, break room, lab, etc.
[7] Choose type of access: open access, key badge, key, etc.
[8] Choose unspecified or list a *realistic* period (starting and ending) regarding how often this room gets used (e.g. 4 days a week, 3 days a week, etc.)
[9] Explain if there is an agreement in place and how this room is being utilized.

(c) **Suggestions regarding space** - If additional ORU space is required, please indicate below a detailed statement of need, with rationale related to academic, administrative and/or strategic goals.

As noted in section 5 above, new wet lab space is required to support MHRC faculty interests in applying for new industry and foundation funding, in addition to tri-council. The emerging School of Medicine will bring new opportunities for hosting medical students in our research projects. The MHRC, in collaboration with VPRI, will also be hosting a symposia in Fall 2024 to introduce our members to clinicians at Southlake Regional Health Centre to form new collaborations. The discussions for a satellite lab at

Southlake will partially support these new collaborations, but certain research activities will require additional space at York University.

Muscle Health Research Centre (MHRC)
Annual Report 2023/ 2024
Member Contributions

Arthur Cheng

1. **Award:** Canadian Foundation for Innovation – Infrastructure Operating Fund

Project title: Investigating the role of intracellular calcium dynamics on skeletal muscle function in aged muscle
Amount: 46,*009 CAD*
Date Awarded: 02/24
Primary applicant: Dr. Arthur J. Cheng

2. Elghobashy, M.E.*****, Richards, A.J.*****, Malekvadeh, R., Patel, D., Turner, L.A., Burr, J.F., Power, G.A., Laham, R., Riddell, M.C., **Cheng, A.J**.# (2024). Carbohydrate ingestion increases interstitial glucose and mitigates neuromuscular fatigue during single-leg knee extensions. Medicine & Science in Sports & exercise. Accepted Mar. 18, 2024)
3. Hinks, A., Dalton, B.E., Mashouri, P., Flewelling, L.D.*****, Pyle, W.G., **Cheng, A.J**., Power, G.A. (2024). Time-course changes in in vivo muscle mechanical function and Ca2+ regulation of force following VCD-induced gradual ovarian failure in mice. *Experimental Physiology*. Accepted Feb. 5, 2024.
4. Tokuda, N., Watanabe, D., Naito, A., Yamauchi, N., Ashida, Y., **Cheng, A.J.**, Yamada, T. (2023). Intrinsic contractile dysfunction due to impaired sarcoplasmic reticulum Ca2+ release in compensatory hypertrophied muscle fibers following synergist ablation. *American Journal of Physiology – Cell Physiology*. https://doi.org/10.1152/ajpcell.00127.2023
5. Leijding, C., Viken, I., Bruton, J.D., Andersson, D.C., **Cheng, A.J.**†, Westerblad, H.† (2023). Increased tetanic calcium in early fatigue of mammalian muscle fibers is accompanied by accelerated force development despite a decreased force. *FASEB Journal*. https://doi.org/10.1096/fj.202300401R

Heather Edgell

Publications:

1. Ahuja H, *Badhwar S, **Edgell H**, Sergio LE, and Litiou M (2024) Machine learning algorithms for detection of visuomotor neural control differences in individuals with PASC and ME. Frontiers in Human Neuroscience – Brain-Computer Interfaces. 18:1359162

2. *Bouakkar J, *Pereira TJ, Johnston H, Pakosh M, Drake JD, and **Edgell H** (2024) Sex differences in the physiological responses to cardiac rehabilitation: a systematic review. BMC Sports Science, Medicine and Rehabilitation. 16(1):74

3. *Pereira TJ, *Bouakkar J, Johnston H, Pakosh M, Drake JD, and **Edgell H** (2023) The effects of oral contraceptives use on the female autonomic nervous system: a systematic review. Clinical Autonomic Research 33(6): 859-892

Funding as a co-applicant:

4. Heart and Stroke Grant in Aid (2024; Co-applicant) Cardiovascular Physiology of the Active Stand Test - **$239,352**

5. Long COVID Web (2023; Co-applicant) – Neuro-thrombo-inflammation and corticosteroid treatment in Long COVID - **$100,000**

Tara Haas

1. Renewed NSERC discovery grant – April 2024

2. Publication Svensson, M., A. Lovric, T. Åkerfeldt, D. Hellsten, T. Haas, T. Gustafsson and E. Rullman. Discordant gene expression in subcutaneous adipose and skeletal muscle tissues in response to exercise training. Physiol. Rep. April 2024 12(7):e15995; doi:10.14814/phy2.15995

Conference abstracts:

3. Danesh, M.A, J. Lee, J. Hsiung, L. Campagna, A. Pislaru, C. Martone, T.L. Haas and A. Scimè. High fat diet and gonadectomy reprogram muscle stem cell activation and fate decisions. Till and McCulloch Stem Cell Network Conference, Toronto, October 2023.

4. Danesh, M.A., G. Nader, E. Nwadozi, A. Scimè, T.L. Haas. The contribution of pericytes to hallmark features of ischemic myopathy. Muscle Health Awareness Day, Toronto, May 2023. (*Poster Award)

Invited presentations:

5. March 2024: Invited speaker: Keystone Symposium on Unraveling Vascular Layers to Understand Human Disease, Buck Institute, California, USA (March) *"Metabolic Signaling Cascades Regulating Skeletal Muscle Angiogenesis"*

David Hood

Funding

Canadian Institutes for Health Research (CIHR) Research Grant entitled "Regulation of mitochondria-lysosome interactions in muscle: effects of age, biological sex and exercise" ($1,067,175).

Publications

Wong, J., A. N. Oliveira, P. Khemraj and D.A. Hood. The role of TFE3 in mediating skeletal muscle mitochondrial adaptations to exercise training. J. Appl.. Physiol. 136: 262-273, 2024.

Bhattacharya, D., M.B. Slavin and D.A. Hood. Muscle mitochondrial transplantation can rescue and maintain cellular homeostasis. Am. J. Physiol. Cell Physiol. doi:

10.1152/ajpcell.00212.2023.

Oliveira A.N., Y. Tamura, J.M. Memme, and D.A. Hood. Role of TFEB and TFE3 in mediating lysosomal and mitochondrial adaptations to contractile activity in muscle cells. Mitochondrial Commun. 1: 73-87, 2023.

Memme J.M., V.C. Sanfrancesco, and D.A. Hood. ATF4 regulates mitochondrial content, morphology, and function in skeletal muscle cells. Am. J. Physiol. Cell Physiol. 325:C224-C242, 2023.

John McDermott

1. 2023-2027 **NSERC Alliance grant,** *"Genomic Analysis of Virus Infected Cultured Cells", with Sanofi Pasteur Limited*

2. 2024-2029 **NSERC Discovery grant** *Nucleolar Regulation and Function in Myogenic Cells*

Published papers:

3. FoxP1 Represses MEF2A in Striated Muscle. Steiman S, Miyake T, McDermott JC. **Mol Cell Biol.** 2024, 14 Mar, 44 pp57-71 doi: 10.1080/10985549.2024.2323959.

4. The MEF2A transcription factor interactome in cardiomyocytes.

Moustafa A, Hashemi S, Brar G, Grigull J, Ng SHS, Williams D, Schmitt-Ulms G, McDermott JC. **Cell Death Dis**. 2023 Apr 5;14(4):240. doi: 10.1038/s41419-023-05665-8.

5. Re-organization of nucleolar architecture in myogenic differentiation.

Miyake T, McDermott JC. **J Cell Sci.** 2023 Feb 2: jcs.260496. doi: 10.1242/jcs.260496.

Michael Paris

Funding received

1. Junior Faculty Funds and Minor Research Grant 2023 - 2024
   Title: Investigating the neural and muscular determinants of grip strength
   Faculty of Health, York University
   $5 000

Publications

2. Paris MT, Kulkarni SV, Rice CL. Electrically evoked isotonic plantar flexion contractions are impaired less than voluntary following a dynamic fatiguing task. *Medicine & Science in Sports& Exercise*. 2023; 55: 2097-2102.

3. Paris MT, Zero AM, Rice CL. Test-retest repeatability of electrically-evoked isotonic power and isometric torque in the plantar flexors. *Applied Physiology, Nutrition, and Metabolism*. 2023; 48: 91-95.

4. Paris MT and Rice CL. Voluntary activation of human knee extensors during isotonic shortening contractions. *European Journal of Applied Physiology*. 2024, In Press.

Invited research presentation

5. Nutrition Science and Practice Conference, Florida 2024

American Society for Parental and Enteral Nutrition
Title: Muscle matters – Bedside ultrasound for assessing muscle mass and composition

Christopher Perry

1. PI, Infrastructure: NSERC Research Tools and Instruments Grant
   04/2024

Title: A core high-frequency ultrasound imager for non-invasive measures of cardiac structure and function as well as muscle structure in mice
CO-PI: Ali Abdul-Sater, York University.
Total Award: $150,000

2. Co-Applicant, Operating: CIHR-IMHA Network Grant
   2023-2028

Title: NMD4C: the neuromuscular network for Canada
PI: Hans Lochmuller, CHEO Research Institute, Ottawa
Co-Applicants: 60 additional neuromuscular disease researchers
Total: $1,000,000 CAD

3. **Bellissimo CA, Gandhi S, Castellani LN**, Murugathasan M, **Delfinis LJ, Thuhan A, Garibotti MC, Seo Y**, Rebalka IA, Hsu HH, Sweeney G, Hawke TJ, Abdul-Sater AA, Perry CGR. The slow-release adiponectin analogue ALY688-SR modifies early-stage disease development in the D2.mdx mouse model of Duchenne muscular dystrophy. *Am J Physiol Cell Physiol*, 2024 April 1, 326(4): C1011-1026.
   1. Editor's highlight for distinction in scholarship in *APS Select* https://journals.physiology.org/apsselect

4. Miner SES, McCarthy MC, Ardern CI, Perry CGR, Toleva O, Nield LE, Manlhiot C, Cantor WJ. The relationships between acetylcholine-induced chest pain, objective measures of coronary vascular function and symptom status. 2023 Aug 31;10: 1217731, *Front Cardiovasc Med*.

5. **Bellissimo CA, Castellani LN,** Finch MS, Murugathasan M, **Gandhi S,** Sweeney G, Abdul-Sater AA, MacPherson REK, Perry CGR. Memory impairment in the D2.mdx mouse model of Duchenne muscular dystrophy is prevented by the adiponectin receptor agonist ALY688. *Experimental Physiology*, 2023 Sept; 108(9):1108-1117. PMID: 37415288.

Cumulative Financial Statement

Intructions: Operating cost centre, present information for each 200 cost centre. Do not combine cost centre financial data, duplicate the template to present data for another cost centre as necessary. **Ensure project names are listed on all worksheets**. The bottom line must be aligned with the statement of operations from e-reports (i.e. Total Rev-Total Exp; Cfwd and Balance).

NOTE: provide necessary explanation for the worksheets in the notes & comments section of the appropriate worksheet. Include comments to explain any committed expenditures or expected revenues that appear in the reporting of the accounts, along with all supporting documentation, so that the worksheet provides a complete picture of the ORU's financial position.

ORU: Muscle Health Research Centre (MHRC)

Cost Centre: 200- 157001

						3 Year Rolling Budget			
Account Description	**2021-2022 Actuals**	**2022-2023 Actuals**	**2023-2024 Actuals**	**Notes:**	**Comments**	**2024-2025**	**2025-2026**	**2026-2027**	**Additional Comments**
Revenue:									
Base Allocation from Central									
VPRI support (CR, stipend, operating)									
Faculty support	$65,000.00	$80,000.00	$65,000.00		Faculty of Health	$ 65,000.00	$ 65,000.00	$ 65,000.00	2026- 2027 re-charter year (2022- 2023 one time additional top up of $15,000)
Endowment Revenue									
Indirect Costs (Overhead)									
Support from Grants and Contracts									
Other Internal Revenue	$650.00	$5,500.00	$500.00		Internal MHAD Support	$ 750.00	$ 800.00	$ 800.00	
Other External Revenue		$4,400.00	$6,501.49		External MHAD Support	$ 7,000.00	$ 7,500.00	$ 7,500.00	
TOTAL REVENUE	**$65,650.00**	**$89,900.00**	$72,001.49			**$72,750.00**	**$73,300.00**	**$73,300.00**	
Expenses:									
Total Faculty Admin. Sal & Ben	$7,930.44	$8,171.44	$9,693.88		MHRC Director Stipend	$ 9,943.88	$ 10,193.88	$ 10,443.88	
Total Research Staff Sal & Ben	$1,931.06		$1,306.00		MHRC Centre Coordinator salary PT				
Total Support Staff Sal & Ben	$28,615.27	$40,932.76	$41,645.30		MHRC Centre Coordinator salary FT	$ 42,900.00	$ 44,000.00	$ 46,000.00	
Total Other Salaries & Ben									
Total Equipment		$2,097.74	$4,985.17		MHRC Lab equipment maintenance	$ 5,000.00	$ 5,500.00	$ 5,500.00	
Total Other Expense	$22,265.77	$9,104.16	$9,342.17		MHRC honoraria, awards and grants	$ 6,000.00	$ 6,500.00	$ 6,500.00	
Total Travel & Hospitality		$1,727.49	$10,107.18		In person MHRC Seminar expenses & MHAD	$ 10,500.00	$ 11,000.00	$ 11,000.00	
Total Supplies		$5,650.86	$3,360.82		MHRC Lab equipment and supplies	$ 3,000.00	$ 3,000.00	$ 3,500.00	
Total Telephone & Power			$335.19		MHRC Centre Coordinator Telephone	$ 573.00	$ 573.00	$ 573.00	
TOTAL EXPENSES	**$60,742.54**	**$67,684.45**	$80,775.71			**$77,916.88**	**$80,766.88**	**$83,516.88**	
Total Revenue Less Total Expenses	$4,907.46	$22,215.55	-$8,774.22	Deficit due to MHAD Journal entries this FY, but revenues entered previous FY		-$5,166.88	-$7,466.88	-$10,216.88	
Carryforward from Previous Year	$0.00	$4,907.46	$27,123.01			$ 18,348.79	**$ 13,181.91**	**$ 5,715.03**	
Balance (cwfd to next year)	$4,907.46	$27,123.01	$18,348.79			$13,181.91	$5,715.03	-$4,501.85	
Notes:									
Actuals must match bottom line in ereports - that is TR-TE, Cwfd and Balance must be the same as in ereports									
A separate spreadsheet for each cost centre (no roll up).									