



EDU:C Under Review	Heart & Stroke / Richard Lewar Centre of Excellence in Cardiovascular Research
Commissioning Officer	Professor Trevor Young, Dean
Review Date	June 15, 2022

Reviewers are asked to provide a report that satisfies the following:

- *Identifies and commends the EDU:C's notably strong and innovative attributes*
- *Describes the EDU:C's respective strengths, areas for improvement, and opportunities for enhancement*
- *Recommends specific steps to be taken to improve the EDU:C, distinguishing between those the unit can itself take and those that require external action*
- *Recognizes the institution's autonomy to determine priorities for funding, space, and faculty allocation*
- *Respects the confidentiality required for all aspects of the review process*
- *Addresses all elements of the terms of reference*

1. Relationships

- **scope and nature of relationships with cognate Departments/EDUs**
- **extent to which the EDU:C has developed or sustained fruitful partnerships with affiliated hospitals, research institutes, organizations, and other universities in order to foster research, creative professional activities, and education**
- **scope and nature of the EDU:C's relationship with external government, academic, and professional organizations**
- **social impact of the EDU:C in terms of outreach—locally, nationally, and internationally**

1. The H&S/Lewar Centre is led by Dr. Michael Farkouh, who clearly is regarded by members of the UT CV community interviewed as the hub for many of the key relationships within and outside of the UT that have been pivotal for many of the recent H&S/Lewar Centre accomplishments. He has served as Director since 2013. Based on the review, Dr. Farkouh was uniformly seen as a unifying figure, bringing together stakeholders from UT and hospital groups. Interviewees uniformly cited his warmth, enthusiasm and energy, which are all seen as critical for the H&S/Lewar Centre's success and ongoing relationships. Operations H&S/Lewar Centre programs are overseen by Liz Thuo, who alone manages research and educational program without additional help. Interviewees uniformly praised the amount of work she manages across different areas, including research and education, with limited resources.
2. The H&S/Lewar Centre serves as an umbrella program for CV research and education across the UofT, and has provided this function since it was established in 1999. In addition, outside of UT, in the last 5 years, it was also clear the H&S/Lewar Centre has made durable links with US and international groups, including the the Worldwide Network for Innovation in Clinical Research and Education – WNICR (a 400+ hospital network led by John Brooks), which has led to collaborations including a trial network, as well as partnerships with Ottawa Heart Institute, Munich, Mayo, Harvard & Joslin, Mt Sinai NY, and others. At a national level, Shaun Goodman (H&S/Lewar Exec) and the Canadian Cardiovascular Research Collaboratory (C³) have worked with investigators around the country together to build trials / outcomes research / translational research capacity and to mentor faculty (CJC 2020;36:1183-85).
3. At a more local level, relationships with UofT hospital research institutes have led to the innovation-related program (committee leads Bradley Strauss, Harry Rakowski, Barry Rubin) and an innovation competition whereby funding is linked with participating institutes along with funding raised by H&S/Lewar Centre. The Centre also has relationships with basic science and clinical departments at UofT, as well as the Banting and Best Diabetes Centre (BBDC), for example, in collaboration for the join Pilot and Feasibility Competition formed in 2014. Importantly, for relationships with funders, current funding sources for H&S/Lewar Centre are external to UofT, including philanthropy and expansion of original gift. These relationships have also helped to support competitions such as the CCS/HSRLCE/BI-Lilly Cardiometabolic Award.
4. For relationships with the original gift, the established the H&S/Lewar Centre, the HSF is not able to support EDUs, and no current Lewar family descendants are involved in raising new funds for the centre. New relationships, therefore, need to be developed to raise funds for the Centre, and limited financial resources were consistently regarded as a threat to the longevity of the H&S/Lewar Centre across the different interview groups and by H&S/Lewar Centre leadership.
5. Other important relationships reviewed with Dr. Farkouh include those related to social outreach, such as involvement in the Ride for the Heart, the Toronto marathon, and other links established through the sports medicine Uof T network and the HSF.

6. One of the challenges raised over the day was the differentiation between the H&S/Lewar Centre vs the Ted Rogers Centre vs PMCC. Dr. Farkouh was very clear that the H&S/Lewar Centre involves all university affiliated hospitals and all aspects of cardiovascular education and research. For example, for the specific field of heart failure related research and education, the Ted Rogers Centre is the proposed hub, The roles and differences between these entities were not clear for many of the interviewees. Close collaboration between these groups was viewed as being important as a means of achieving research synergy, routes for funding and future success.

2. Research

- **scope, quality, and relevance of research activities**
 - **appropriateness of research activities for learners**
 - **appropriateness of the level of research activity and funding relative to national and international comparators**
1. The research focus of H&S/Lewar Centre members and the UofT CV community is very broad – from basic / experimental work to translational work, to clinical trials and population health. Faculty have been competitive in local/national/international funding competitions. The role of the H&S/Lewar Centre has been important for promoting collaborations, including for junior faculty, and involvement at the national/international level. Clinical research collaboration and network building were commented to be a particular strength of Dr. Farkouh’s leadership, and his role in raising the global profile of H&S/Lewar Centre was recognized on multiple occasions. For the focus of the H&S/Lewar Centre, including both research and education, it was felt that this has tended to evolve over time, and that right now has been more of a clinical emphasis under the current leadership. Interestingly, even basic science interviewees saw this as a strength because of the prominent profile and productivity of the CV community at UofT in this field. Given the EDU structure of the H&S/Lewar Centre, comparisons with other programs were seen as difficult to do in an objective “like-with-like” fashion.
 2. H&S/Lewar Centre operating grant competitions were noted to be especially important for junior faculty support, including seed money and pilot/feasibility grants. Efforts around innovation and commercialization, such as the H&S/Lewar Centre–BBDC competition and Canada–Israel competition, were singled out as having great value. There was a significant emphasis placed on the passion and emphasis of H&S/Lewar Centre on innovation and commercialization as both areas that have the potential to garner partnered funding (e.g. from philanthropy, industry, government), and as an area for future growth and survival of H&S/Lewar Centre in an increasingly competitive funding environment.
 3. One of the challenges that arose several times during interviews was the role of H&S/Lewar Centre “behind the scenes” in obtaining funds by individual labs. Even though there is a tremendous breadth of research, how many labs are dependent on H&S/Lewar Centre for ongoing operations and productivity? Nevertheless, there are clear examples where H&S/Lewar Centre has facilitated the development and nurturing of multidisciplinary research teams, such as Sports Cardiology Toronto, launched in 2019, which includes foci on research, education, advocacy and facilitation of clinical care through expert clinics in the UT system. The CICI competition, now in its second iteration with a grant deadline of May 15, 2022, is another example of a successful cross-collaborative effort run out of the Lewar with Dr. Bradley Strauss and administered by Liz Thuo. Other Innovation efforts have been funded through the Michael R. Freeman Innovation Award Competition (2017-2019). The challenges, here again, involve how to include and involve local research institutes in future competitions and how to raise external funding to support programs at this level in a sustainable way.
 4. For research focus, there was discussion around areas of focus for H&S/Lewar Centre vs Ted Rogers Centre vs PMCC and how narrow (e.g. heart failure for Ted Rogers) vs. how diffuse the H&S/Lewar Centre should be, and whether having a more narrow focus would help with fund-raising and with operations using very limited resources. This includes the research and education branches of the H&S/Lewar Centre which both require support. Nevertheless, given the critical mass of CV researchers at UofT across different institutes, establishing viable and sustainable collaborations between these different entities (H&S/Lewar Centre/Rogers/PMCC) was felt to be critical. Accordingly, strategic planning in the near term is important to determine the future direction of the H&S/Lewar Centre in these areas, especially in light of upcoming transitions in leadership.
 5. For both research and education programs, communication from the H&S/Lewar Centre was seen as having been less frequent over the last 2-3 years, although COVID may have played a role given the lack of education programs and off-site workflow.

3. Education

- **scope and quality of educational activities and initiatives (e.g., courses, programs, communication strategies)**
 - **extent to which the EDU:C is fulfilling its education mandate**
1. The H&S/Lewar Centre education activities and initiatives were uniformly praised during the review process, especially the seminar series and Distinguished Speaker series, which were at a high international level. It was also noted that, even prior to COVID, the lecture series and education activities were not as frequent. These programs have been

tremendously challenging to maintain during COVID even with virtual learning. Nevertheless, it is possible to raise funds for education moving forward through unrestricted educational grants.

2. The CSCP includes 6+ courses taken by students doing CV research and includes physiology-related topics popular with CV scientists. While the program is now led by Dr. Gramolini (physiology), the CSCP still has a relationship with H&S/Lewar Centre in terms of fellowship support programs.
3. Similar to comments about research overlap, there was a lack of clarity regarding the role of H&S/Lewar Centre vs. PMCC and TRC for educational activities in the CV area in Toronto.
4. Other research activities such as the Annual Research Day were thought to be of value to the CV community at UT by H&S/Lewar Centre members and students.
5. The students interviewed were also appreciative of opportunities to obtain scholarships/stipends from H&S/Lewar Centre, which were seen as being critical for early success in their training. Students especially cited the ability to network at H&S/Lewar Centre events, including the Annual Research Day, as well as informal networking at national and international meetings through H&S/Lewar Centre linked supervisors and social gatherings.

4. Organizational + Financial Structure

- **appropriateness and effectiveness of the EDU:C's organizational and financial structure, and its use of existing human, physical, and financial resources**

[In making this assessment, reviewers must recognize the institution's autonomy in determining priorities for funding, space, and faculty allocation.]

- **appropriateness with which resource allocation, including space and infrastructure support, has been managed**
- **opportunities for new revenue generation**

1. The HSRLCE is led by the Director, Dr. Farkouh, who reports to the Vice Dean, Research & Innovation; and the Dean, Temerty Faculty of Medicine. The Director works with the Business, Communications and Programs Manager, Ms. Liz Thuo. The Executive & Operations Committee (EOC), the Centre's main governing body, broadly represents the cardiovascular sciences community within the Toronto Academic Health Science Network (TAHSN). The committee met monthly with the Director to provide guidance and decision-making on various functional and administrative issues, educational activities and strategic scientific and research-related directions. The Director also works with the Donor's Due Diligence Committee, consisting of representatives of the original Donors and representatives from the Temerty Faculty of Medicine. The meeting frequency decreased during the COVID pandemics.
2. The Centre has an excellent and very efficient Business, Communications and Programs Manager, Ms. Liz Thuo, who manages all aspects of the Centre, from the Awards and Grants processes, organizing the educational and networking activities, accounting, and other Centre-related responsibilities. She is a significant asset to the Centre. The HSRLCE received its initial investment of \$13 million from the Heart & Stroke Foundation of Ontario and the Lewar family in 1999. The initial budget of the Centre was planned for 10 years; however, the Centre is now in its 23rd year of operation. Over the past five years (2017-2022), the Centre's average annual expenditure has been around \$911,000, covering the administration/business operation (21% of the budget), education and training (34% of the budget), and research (45% of the budget). The Centre's annual average revenue has been \$675,000, with \$3.04 million over the last 5 years. The primary sources of revenue have been investment income from short-term investments, income from endowments, and programmatic sponsorship (unrestricted grants) from the industry.
3. The Centre has been proactive and exploring fundraising activities. The Centre held a fundraising event, "Closer to the Heart," on June 12, 2019, where they showcased their research and educational initiatives to over 200 guests. They were developing relationships with the potential donors with the help of UofT's Office of Advancement when COVID started and dampened the progress. They plan to revitalize these relationships and pursue other funding avenues. The Centre has been successfully fundraising for specific educational and research programming and collaborating with other institutions.
4. The HSRLCE should explore other potential funding avenues (government, industry) besides its philanthropic efforts. Presenting a business case for the Centre guided by the Canadian Academy of Health Sciences preferred framework and indicators to measure returns on investment (ROI) in health research might be beneficial to quantifying the value of the Centre. The Centre has been operating for 23 years, so it is mature in its lifecycle to showcase its ROI and societal value that could attract potential donors and other stakeholders. Given that the HSRLCE is the EDU of the University of Toronto, it would be great to see the University of Toronto taking the leadership role in collaboration with other TAHSN institutions and exploring different funding opportunities. As a part of the business case and given its strong national and international relationships and multi-disciplinary focus, the Centre could present itself as a perfect platform/incubator for bringing promising, system-disruptive innovations related to CV care into the clinical context for the evaluation, creating a learning healthcare system. This could be further expended by the policymakers' engagement to support adopting the evaluated technologies into the healthcare system.
5. To support the Centre's fundraising and sustainability efforts, stronger branding and media presence would be highly beneficial. The Centre is very accomplished; however, its achievements must be more broadly showcased.

6. Long-Range Planning Challenges

- clear articulation of a strategic academic plan that is consistent with the University's and Faculty's academic plans
- management, vision, and leadership challenges in the next 5 years
- consistency with the Faculty's commitment to inclusion, equity, and diversity to attain [Excellence Through Equity](#)
- planning for advancement and leadership in approaching alternative sources of revenue, and appropriateness of development/fundraising initiatives
- space and infrastructure considerations

1. Speaking with the interviewees, we could not fully appreciate if the Centre's strategic academic plan is aligned with the Temerty Faculty of Medicine's academic plan. Given that the Centre is in its 23rd year of existence and a new funding model is needed to support the Centre's sustainability and accomplishments, the new strategic academic plan is warranted. A strategic planning exercise is an excellent opportunity to revisit the Centre's mission, vision and priorities that will align with the academic plans of the University of Toronto and other relevant TAHSN institutions. It will be a great venue to map and present the HSRLCE in relation to other institutions in the CV context (e.g. TRCHR, PMCC, Schulich Heart Centre at Sunnybrook, Keenan Centre at St. Michael's) to showcase the incremental value that the Centre brings and strategize on how to capitalize on that further. One of the incremental values that the Centre brings, acknowledged and highly appreciated by many interviewees, is how this Centre nurtures the connections within and across the other networks/centres. The strategic planning needs to be rooted in intentionality and strategic thinking, envisioning the future of the HSRLCE together with TAHSN institutions with the defined relationships. This approach would promote the ownership of the Centre's priorities and activities and not just buy-in.
2. The most critical challenges in the next 5 years will be the Centre's sustainability, leadership and priority setting/strategic academic plan. A strategic planning exercise with a well-articulated mandate and follow-up activities presents a great venue to address the mentioned challenges. In addition to the Centre's strategic academic plan, different funding and leadership models could be evaluated and adopted. For example, shared leadership (e.g. board of directors) presents a great alternative to balance the leadership responsibilities and workload while diversifying and strengthening the Centre's portfolio (e.g. education, research, management and administration, fundraising). In addition, there is an opportunity to explore different funding models (philanthropy, academia, industry, government) at the local, provincial, national and international levels.
3. The HSRLCE needs to further its commitment to inclusion, equity and diversity. The Centre's international collaborative activities strongly build on that commitment, with a diverse representation. That being said, there is always room for improvement. It is recommended to bring additional members to the EOC that will further the Centre's inclusion, equity and diversity portfolio and develop a set of initiatives to attain and strengthen the excellence through the equity. One of the potential initiatives that might be beneficial to conduct is the Health Equity Impact Assessment of the Centre itself and some of its educational and research initiatives.
4. Many different funding models and alternative sources of revenue could be explored, as discussed above. With the help of UofT's Office of Advancement, the Centre held a fundraising event, "Closer to the Heart," on June 12, 2019, with over 200 guests. They presented some of their research and educational initiatives and accomplishments. They were developing relationships with the potential donors, but the COVID pandemic started and slowed down the progress. The Centre has been successfully fundraising for specific educational and research programming, some supported by the industry and some collaborating with other institutions. The Centre needs to pursue these activities further and explore other alternative opportunities. Strategic planning, exploration and execution of different funding models should be a collaborative effort with other TAHSN institutions and other provincial, national and international entities.
5. Space and infrastructure are tied to the Centre's funding and sustainability. Currently, the Centre has only one employee, a very efficient Business, Communications and Programs Manager, Ms. Liz Thuo. She manages all aspects of the Centre, from the Awards and Grants processes to organizing educational and networking activities, accounting, and other Centre-related responsibilities. Pending on the Centre's new strategic academic plan and its priorities, additional human resources might be needed.

7. International Comparators

- assessment of the EDU:C under review relative to the best in Canada/North America and internationally, including areas of strength and opportunities

Given the current somewhat unique structure of the HSRLCE, it is hard to compare it to other programs in the CV area, and many interviewees also pointed out this notion.

In the self-study, the HSRLCE benchmarked itself against Harvard, UCLA, University College London, University of British Columbia, and McGill University. The following statistics were presented in the report, and while being impressive, it challenging to attribute these accomplishments solely to the Centre specifically.

Citation from the report:

“...In the period between 2016 to 2021, HSRLCE scientists specifically:

- Published 6,745 papers across multiple subject areas (not just cardiology), with 176,105 citations and a field-weighted citation impact of 3.05;
- Held 53 patents;
- Commercialized 14 inventions;
- Filed invention disclosures to commercialize an additional 44 inventions; and
- Secured over \$496 million in peer-reviewed funding.”

8. Conclusions

▪ overall assessment of strengths and concerns, and recommendations for future directions

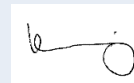
1. Numerous strengths were identified as described in this reported. As noted by many interviewees, the Centre has been and remains a vital part of the UofT cardiovascular community, playing a significant role in research, education, and network building and as an innovation incubator. Dr Farkouh has been an inspiring and enthusiastic leader, who promoted the clinical research at the local, national and international level.
2. Review participants raised some consistent themes that would help to strengthen the Lewar centre. The first set of themes that was articulated involved the challenges around funding and the sustainability of the Centre, e.g. employing different fundraising strategies and approaching different stakeholders. The second set of themes related to better alignment with the other CV entities within the UofT landscape. The final set of themes involved the organization and the succession planning with the Centre.
3. To address the identified challenges, please see below some of the recommended activities:
 - a) A strategic planning exercise to determine which of the current areas operated by the Lewar should continue in the future. For example, should the focus be on research support, vs. education, vs investment in recruiting new faculty?
 - b) A mapping exercise to clearly position the HSRLCE to align and provide a synergy with other institutions in the CV context (e.g. TRCHR, PMCC, Schulich Heart Centre at Sunnybrook, Keenan Centre at St. Michael’s) and to showcase the incremental value that the Centre brings.
 - c) The operations of the Lewar require a significant amount of work, dedication and enthusiasm, as exemplified by Dr. Farkouh and Liz Thuo. The concept of shared leadership with a board of directors that can focus on individual areas (e.g. research vs education vs philanthropy) was discussed as a possible future leadership model.
 - d) Funding remains the single greatest challenge for the Lewar, including the involvement of the UofT and the ongoing need to work with advancement offices to take advantage of even small opportunities to attract funds. In the longer term, will the Lewar become the hub for larger international programs (current version), or will it shift to be one centre within larger international networks?

REVIEWERS

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SIGNATURES



July 13, 2022

