Brain-Heart Funding Opportunity 2021

Timelines:

- Notice of Intent deadline: February 4, 2021 (to allow establishment of external peer review committee)
- Application deadline: March 4, 2021
- Confirmation of application eligibility and completion to applicant: by March 12, 2021
- Committee review process: March – April 2021
- Notification of results and release of funds: May 2021

1. Background

The **University of Ottawa Brain and Mind Research Institute** (uOBMRI) is Ottawa's largest collection of interdisciplinary researchers focused on brain and mind related health. Its vision is to create one of the world's top neuroscience centres for the treatment of brain disorders. Its mission is to help develop new therapies for neurological and psychiatric disorders and inform new approaches for more integrated and precision care for patients based on research findings.

The **University of Ottawa Institute of Mental Health Research** (IMHR) **at The Royal** is one of Canada's foremost research institutes focused on mental health and addictions. The IMHR is home to a number of state-of-the-art facilities including the Brain Imaging Centre, the Neuromodulation Research Clinic and the Sleep Research Laboratory that enable innovative and integrated client- and family-oriented care, research and education.

The **Bruyère Research Institute** (Bruyère RI) creates and supports new knowledge and innovations and applies these for the improved health and quality of life of Canadians and people around the world. We focus on improving how we care for and treat people; improving and building capacity in the health care system; and developing, testing and implementing new technologies to keep people mobile and independent. We work with multiple stakeholders and focus on aging through a lens of equity. We have strengths in primary care, medically complex, aging and rehabilitation; palliative care**;** residential care; and global health.

The **University of Ottawa Heart Institute** (UOHI) is one of Canada's most distinguished heart health centres. UOHI leads a world-renowned research enterprise that brings science from bench to bedside, provides unparalleled cardiovascular care and is a major influencer in heart disease prevention. The UOHI's Ottawa Region for Advanced Cardiovascular Research Excellence (ORACLE) Strategic Plan 2.0 is aimed at maximizing regional and inter-disciplinary research to solve major questions in cardiovascular disease prevention and treatment. In disease areas with the greatest patient burden, UOHI has established and is supporting unique, problem-solving Innovation Hubs. The ORACLE Brain and Heart Innovation Hub is focused on addressing critical knowledge gaps in the neuro-cardio disease interface. The objective is to

better understand brain-heart comorbidities to improve the diagnosis, treatment and prevention of these prevalent, yet under-detected, linked conditions.

The UOHI, uOBMRI, IMHR and Bruyère RI have collaborated on several initiatives, including the "*Hub in CardioNeuro Mind Research*" (HNCMR) application to the CFI Innovation Fund for major infrastructure to support brain-heart research and the Brain-Heart Registry based at the Institute for Mental Health Research. The Institutes have recruited several new investigators that span Brain/Mind and Cardiovascular expertise. ***The UOHI, uOBMRI, IMHR and Bruyère RI are partnering on this funding opportunity to support novel, interdisciplinary, innovative pilot projects in the brain-heart interface.***

Summary of the Brain-Heart Funding Opportunity 2021:

- Proposals should emphasize ***novelty*** in brain-heart research ideas and directions which will enable the successful applicants to obtain preliminary data to go on to be funded by national agencies including CIHR, the New Frontiers in Research Fund and others. The following are **high priority** for this round of competition:
  - Projects with Equity, diversity and inclusion (EDI) considerations. This includes consideration to EDI in the research design and the team membership.
  - The inclusion of patient(s) as member(s) of the research team, as appropriate.
  - Interdisciplinary science to advance precision medicine.
- New COVID-19 pilot projects, as they relate to the goals of the UOHI Brain and Heart Innovation Hub, uOBMRI, IMHR and Bruyère RI are eligible.

An expectation and expected deliverable from the successful applications in this competition is that the teams will apply for external peer reviewed funding to support next steps.

2. Eligibility

- Each project must have two Co-Leads from the partnering Institutions. For example:
  - One Co-Lead will have a primary scientific appointment with the Ottawa Heart Institute Research Corporation (OHIRC), the research arm of the UOHI.
  - The other Co-Lead will be a full member (ie. not affiliate member) of the uOBMRI, IMHR, or Bruyère RI.
- One of the Co-Leads must be designated as the Nominated Principal Applicant who will be responsible for project funds administration and reporting.
- Linkage with the UOHI Heart Team clinician investigators is encouraged where appropriate.
- The following are examples of brain-heart research eligible in this competition – Note: This is not an exhaustive list.
  - Microvascular disease in stroke, dementia and cognitive impairment
  - Rhythm synchrony and dyssynchrony between brain and heart
  - Brain and heart axis in drug use/abuse
  - Impact of mental illness on cardiovascular disease
  - Psychological and behavioural interventions to improve mental and cardiovascular health
- All four CIHR pillars, ie. Biomedical; Clinical; Health Services; Population Health Research, are eligible.

- Allowable costs: Project costs must comply generally with the Tri-Agency Financial Administration Guide. As applicable, grantees must comply with institutional financial policies.

The following is not eligible in this competition:

- Projects that are not central to the goals of the UOHI Brain and Heart Innovation Hub, uOBMRI, IMHR or Bruyère RI.
- Applications for research infrastructure only (e.g., equipment), without a clearly indicated research question, will ***not*** be considered.

3. Funds available

A total of up to **$250,000** is being allocated from the funding partners to support highly ranked brain-heart pilot projects. UOHI is providing up to $100,000; uOBMRI is providing up to $50,000; IMHR is providing up to $50,000; Bruyère RI is providing up to $50,000 (pending availability of funds).

Budget request for each project is expected to be up to a maximum of $50,000.

For each approved project, funds are derived from two sources from the partners: UOHI, uOBMRI, IMHR, Bruyère RI. For each project, the two funding partners each will provide up to $25,000 to the Co-Lead with a full appointment with said organization. The matched ratio must be 1:1. Other partners, outside of the four Institute's included here, may join this opportunity.

Applicants must secure institutional approval prior to submission.

4. Review process

- Applications will initially be reviewed for i) completion (per section 5) and ii) eligibility (per section 2). Applicants will receive a notice by March 12, 2021 whether their application is eligible and complete and will move forward in the review process. Incomplete applications will not move forward to the peer review stage. Therefore, the onus is on the applicant to ensure a complete submission.
- The scientific review committee will be jointly established by the uOBMRI, IMHR, Bruyère RI and the UOHI Office of Research Services in consultation with the Institutes' Scientific Directors/Chief Scientific Officers. The committee will be chaired by an agreed upon Scientific Director/Chief Scientific Officer from one of the four funding partners; committee members are expected to be composed of external/regional scientists/investigators.
- Conflicts of interests will be jointly managed by uOBMRI, IMHR, Bruyère RI and the UOHI Office of Research Services (a staff member from UOHI Research Services will serve as Committee Secretary).
- The scientific committee review process will follow the traditional peer review format at the major funding agencies.
- The patient review committee will also be jointly established by the uOBMRI, IMHR, Bruyère RI and the UOHI Office of Research Services, and include patient representatives.
- Evaluation criteria will include (see Appendix II - Scientific Review Form and Appendix III - Patient Review Form):

1- Novelty and originality of project proposal, including linkage to interface of strategic research goals and priorities of the UOHI Brain and Heart Innovation Hub and those of either the uOBMRI, IMHR, or Bruyère RI.
2- The research approach: including clarity and feasibility of the project, and how the results can help to leverage national peer reviewed funding
3- The potential of the proposed project to develop into a research program that will be successful in obtaining external agency peer reviewed funding
4- Strength of the interdisciplinary participants
5- Appropriate Equity, Diversity and Inclusion considerations in the research design and/or team composition, including sex and gender and other equity seeking-groups such as visible minorities
6- To be reviewed by a committee of patient representatives: Clarity of the patient engagement plan, the lay summary including a clear description of how the proposed work is relevant to patients and the prevalence of the condition to be studied (see Appendix III – Patient Review Form for details). Comments from the patient representatives will then be assessed by the scientific reviewers in the scientific review process.

- A ranked list of all the applications reviewed will be tallied, and highly ranked projects will be funded from top down in order of ranking.

4.1 Post-award institutional review

- A progress and a final report will be required. These reports are crucial for ongoing monitoring of the projects by the uOBMRI, IMH and Bruyère RI Directors and UOHI Chief Scientific Officer, as well as reporting requirements to the respective Boards of Directors. Compliance with institutional requirements, such as these reports, will be required for ongoing and future project support, both financial and in-kind.

5. Application process:

Notice of Intent deadline: February 4, 2021

The following information is required for the Notice of Intent and ***cannot be changed at the application stage***. Please send to ResearchServices@ottawaheart.ca:

- Project title
- Names of the two Project Co-Leads; one must be assigned as the Nominated Principal Applicant

Application deadline: March 4, 2021

Application submission is via the UOHI FluidReview portal.

Note: The portal will remain open for submissions until 11:59 p.m. on the deadline date; application and technical support are available up to 5 p.m.

Preliminary data are not required. Projects are expected to take one year to complete, and at most up to two years if there are delays due to COVID-19 pandemic measures.

The application shall include the following information:

1. Names of the two Co-Leads, and the Co-Applicants as applicable

Sections 2 and 3 will be reviewed by patients' representatives. Review feedback from the patient panel will be provided to the scientific committee members and will be discussed.

2. Lay summary, including a lay title, and relevance to patients (*half a page*)
   Provide a lay description of how the proposed work is relevant to patients, including the prevalence of the health condition to be studied, and the anticipated or future potential for improving patient care.

3. Patient engagement (*one page maximum*)
   i) Discuss how patients may be engaged, as appropriate, in the design and conduct of the study and interpretation of the results. Describe concrete activities that will take place, ie., indicating that 'patients will be engaged' is not sufficient. In the description, include whether the patient partner(s) have lived or are living with the condition being studied, and the relevant experience that the patient partner(s) will bring to the project e.g., study design, recruitment, data interpretation, discussion of patient- relevant outcomes, etc.
   ii) Patient partners are to be listed on the application as patient co-applicants and should have input into the preparation of the proposal.

4. Research proposal – Note: The proposal is to address the objective of this competition which supports one-year ***pilot projects***. ***Condensed versions of full grants will not be accepted***.
   3 pages maximum not including references – preliminary data not required

   a. Title
   b. Background and novelty of the research question (*1 page maximum*). Includes: hypothesis; need for proposed research; link to the priorities of the UOHI Brain and Heart Innovation Hub and those of either the uOBMRI, IMHR, or Bruyère RI.
   c. Research approach. Includes: description of the research methods, including statistical analysis and sample size calculations as appropriate; participants who are involved in the project and the specific role of each.
   d. **Discuss the interdisciplinary expertise of the project team** and strategies to ensure multidisciplinary interactions.
   e. **Discuss the appropriate Equity, Diversity and Inclusion considerations, including considerations to the *research design* as well as *team membership*.** For example, regarding research design, is sex as a biological variable, or gender as a socio-cultural factor, taken into account in the research methods, analysis and interpretation, and/or dissemination of findings? See Appendix I - Sex and Gender-based Research Checklist for UOHI Researchers for details. Regarding considerations in team membership, consult the EDI resources made available by CIHR.
   f. **Feasibility.** Includes: description of how the project team will ensure successful attainment of results in a ***one- to two-year*** time frame, including timelines for project milestones as well as a potential back up plan.

g. **Expected outcomes and pathway forward.** Includes: description of expected pilot project results; how the results can be leveraged to obtain national peer reviewed funding, and additional potential future collaborations (including industry).

5. Strategic importance of the proposed project in reference to the long-term goals of the UOHI Brain and Heart Innovation Hub and those of either the uOBMRI, IMHR, or Bruyère RI (*half a page*)
6. Project budget (*one page*)
    a. Budget request, associated budget itemization and justification
    b. Financial and in-kind contributions. These additional contributions could include: access to databases, equipment, technologies, expertise; employee salaries for dedicated time to the pilot project.
7. CV (e.g., free-form, NIH biosketch two-page format, Common CV, or completed UOHI performance evaluation report template) of the Project Co-Leads, and co-applicants (except for patient partner co-applicants). CV page limit: maximum 5 pages for each CV.

6. Who to Contact

For general questions related to the funding opportunity, application submission, the FluidReview portal; and for questions from UOHI researchers:
UOHI Office of Research Services: Ann Nguyen, annguyen@ottaweaheart.ca, 613 696 7000 ext. 18940

For questions from uOBMRI researchers:
uOBMRI: Candace Fortier, cfortie2@uottawa.ca

For questions from IMHR researchers:
IMHR: Tammy Beaudoin, Tammy.Beaudoin@theroyal.ca

For questions from Bruyère RI researchers:
Bruyère RI: Trish DeFazio, tdefazio@bruyere.org

Sex- and gender- based research checklist for UOHI Researchers

CANADIAN WOMEN'S HEART HEALTH CENTRE
CENTRE CANADIEN DE SANTÉ CARDIAQUE POUR LES FEMMES

1. For all UOHI researchers and trainees:

1a. Know your terminology! **SEX** pertains to biology (chromosomes, gene expression, hormones, physical features, anatomy… XX or XY). **GENDER** pertains to socially-constructed roles, behaviours, expressions and identities of girls, women, boys, men and gender diverse people. Use the appropriate terms accordingly. Avoid upsetting reviewers by using the term *gender* when *sex* should have been used instead (most common mistake).

1b. What is in it for you?

- Accounting for gender and sex in health research has the potential to make health research more just, more rigorous and more useful.

- Note that CIHR expects that all research applicants will integrate gender and/or sex into their research designs when appropriate. CIHR is placing great emphasis on this; your grant will be scored on this item and there will be sex/gender research experts at most if not all Review Committees.

- In addition, the Heart and Stroke Foundation highlights that all applicants (irrespective of proposal focus) to the GIA and NNI programs are required to include a sex and gender-based analysis in their research design (or provide rationale as to why it would not be relevant to their project).

- Having sex and/or gender-based hypotheses in your research allows you to be eligible for specific research calls/ priorities, and for additional funding sources (Institute of Gender and Health, for example) that you would not otherwise be eligible for. CIHR and HSF have had several sex/ gender-based grant competitions in the last couple of years.

- When it is time to publish your data, performing sex and/or gender- based analyses will strengthen your paper and increase external validity, helping you reach a higher-impact journal. In some occasions, it may lead to a second paper out of the same dataset, increasing your productivity.

- In summary, appropriately incorporating sex and/or gender-based hypotheses and analyses in your research will **give you a better chance at receiving a grant, will enhance your academic impact and productivity, and will lead to more rigorous and useful Science!**

1c. How can you do this?

Here are some simple steps to help you incorporate sex and/or gender as important variables in your research:

☐ Take the CIHR Online Training modules: http://www.cihr-irsc-igh-isfh.ca/course/index.php
(1 module pertains to biomedical research; 2 modules pertain to human/ clinical research. Save certificates)

☐ Check additional resources from CIHR: http://www.cihr-irsc.gc.ca/e/32019.html (TONS of resources for biomedical and clinical researchers – bookmark this page and refer back when writing your grants/ protocols/ manuscripts)

☐ Incorporate the concepts you learn in your study design, experiment protocols and statistical analyses.

☐ The Canadian Women Heart Health Centre at UOHI, and the UOHI's Women's Heart Health Team have several researchers who are well versed in sex- and gender-based research. Feel free to contact us if you need help with your proposals or manuscripts. In addition, the Cardiovascular Research Methods Centre is always a great resource for study design and analyses when planning sex- and gender-specific hypotheses.

2. For ongoing research (post-design phase), when sex- or gender-based hypotheses were not part of the original study design:

Even if you did not consider sex/ gender in your original study design, we recommend that you still explore your data to determine whether sex is an important variable for your research question. There are simple ways to do this:

Step 1. Provided the sample is large enough, test an interaction term between sex and your predictor variable of interest in a model to predict your outcome variable of interest. For example, you are researching whether systolic blood pressure (SBP) is associated with left ventricular hypertrophy (LVH). Your next step is to add a sex*SBP interaction term in your model to predict LVH. If the interaction term is significant ($P \leq 0.05$), this means that sex is a significant effect modifier of the association of SBP with LVH, justifying stratification of the sample based on sex. Note that some agencies/ reviewers will consider a higher *P* value (e.g. $P<0.15$) indicative of an interaction, because of sample size and power issues – although this is not uniformly accepted.

Step 2. If the interaction term is significant, you now have a solid justification for sex-specific analyses, although you still need to provide caveat that this is a post-hoc subgroup analysis and is considered exploratory. You may report your findings as follows: *"We tested the sex*___ interaction term in the models, and determined that sex is a significant effect modifier of the association between ___ and ___. Thus, we performed sex-specific models and determined that _____ (Table ____)."*

Step 3. If the interaction term is not significant, this could be because (1) the association you are exploring is not different in men and women, or (2) your sample size is not large enough to detect a significant interaction (the sample size needed to detect an interaction is larger than the sample size needed to detect main effects). If this is the case, we recommend the following:

- Run your models separately in men and women (or male and female animals/ tissues/ cells) separately, and compare the results. If results do not appear to be different based on sex, report the following: *"We tested the sex*___ interaction term in the models, and determined that sex is not a significant effect modifier of the association between ___ and ___."*

- However, if results appear to be different in men vs. women (or in male vs. female animals/ tissues/ cells), it may still be helpful for you to report results in males and females separately after you report your main results, which will add information to your paper and serve as a basis for future hypotheses. This will allow you to design future studies that are powered to definitively answer the sex-based question. You may report your findings as follows: *" Although our sample size was not large enough to detect an interaction between sex and ___ in the prediction of ___, in exploratory analyses we performed sex-specific models and observed that _____ (Table ___). This remains amenable to testing in future studies."*

Step 4 (optional): For both Human and Biomedical research, mediation modeling may be appropriate in some scenarios. If you consider this, we recommend you follow the principles outlined by Baron and Kenny (Baron RM and Kenny DA. *The moderator-mediator variable distinction in social psychological research: conceptual, strategic, and statistical considerations.* Journal of personality and social psychology. 1986;51:1173-82). When in doubt, consult with the Cardiovascular Research Methods Centre.

The aforementioned steps pertain to exploring sex-based results in research data that has already been collected, which can be done by everyone. Performing gender-based analyses will be less straightforward in this scenario and can only be done if you collected relevant sociodemographic data as part of your study. Refer to the CIHR modules for this.

3. For new research (design phase):

- If you are currently designing a research protocol or writing a new grant proposal, you have the opportunity to control the design, the sample size and the planned statistical analyses to explore sex and/or gender-based hypotheses when appropriate.

- The first step is to perform a literature review, which will serve to justify your hypotheses and plans.

- After a literature review, if you do not think a sex- or gender-based hypothesis is appropriate for your research design, try to at least have a good plan for statistical analyses ('sensitivity' or 'exploratory' analyses – plan to explore interaction terms and/ or perform sex-specific analyses in addition to your main analyses as described in page 2 above). This will give you a competitive edge and your application will be judged on this.

- On the other hand, if you have done a literature review and think it is appropriate to include a sex- and/or gender-based hypothesis in your research design, this will give you an even better competitive advantage at the grant review level. A few tips on how to accomplish this:

3.1. Human research:

☐ Include gender-based socioedemographic variables or validated gender role/ identity/norms questionnaires in your research data collection to have the ability to do gender-based analyses (Refer to the aforementioned CIHR modules and resource page for a list).

☐ Consider recruitment strategies that will allow you to recruit your desired numbers of men and women.

☐ In the design stage of a RCT, considering sex/gender as a stratification factor in the randomization is one of the best ways that to incorporate sex or gender in your clinical trial.

☐ If your research hypothesis is based on a sex difference, consult with the Cardiovascular Research Methods Centre in order to calculate the required sample size and power your study effectively for this hypothesis.

☐ Have a solid statistical analysis plan to address your research question (i.e.: interaction term analyses, sex-specific analyses, incorporation of gender variables into the model, etc – see page 2 above).

☐ Incorporate sex and gender in your Knowledge Translation plans.

3.2. Biomedical research:

In biomedical research, gender will not be assessed, but you should include sex as a biological variable if (1) the disease in question occurs in men and women; (2) inclusion of animals/ tissues/ cells of different sexes will strengthen the study and (3) there is an opportunity to include animals/ tissues/ cells of different sexes. If so:

☐ Include male and female animals in your research. If using cells or tissues, consider male and female donors, and identify donors properly.

☐ Explain methods for documenting/ controlling the hormonal status of experimental animals. Note that expert consensus indicates that controlling for gonadal hormones is unnecessary in most conditions, unless there is clear evidence that reproductive hormone variability affects the dependent measure considered in the research.

☐ Have a solid statistical analysis plan to address your research question (i.e.: interaction term analyses, sex-specific analyses – see page 2 above).

Appendix II

Scientific Committee Review Form

Conflict of Interest and Confidentiality
For the purpose of this review, a conflict exists if you would benefit from the outcome of this application, or if you are not in a position to provide an objective assessment of the application for other reasons (this includes but is not limited to: having a professional or personal relationship with the applicant or long-standing scientific or personal differences with the applicant). **By agreeing to sit on this committee, you agree to abide by standard peer review panel confidentiality rules. For example, committee members must not discuss with applicants, or anyone outside of the committee, any information relating to the review of a specific application.** ☐ **I confirm that I *DO NOT* have a conflict of interest with this application.** ☐ **I confirm that I will abide by the confidentiality rules.**

NOTE TO REVIEWERS: You are reviewing a proposal for a *pilot* project. The applicant is proposing a small scale, preliminary study – ***that should be completed in one year*** – to evaluate feasibility, time, cost, adverse events, statistical variability, etc., prior to formulating a full-scale research proposal. ***We ask that you evaluate the proposal accordingly***.

Principal Applicants	
Project Title	
Amount requested	

Evaluation Criteria	Provide rating and rationale for rating
I. Originality of Proposal (/25)	☐ Outstanding (21-25) ☐ Excellent (16-20) ☐ Very good (11-15) ☐ Acceptable (6-10) ☐ Needs revision (1-5)
• 'Out-of-the-box' novelty of the research idea • Need for the proposed research • Originality in terms of the hypotheses/research questions addressed, novel technology/methodology, and/or novel applications of current technology/methodology	Rating: /25
II. Research Approach (/25)	☐ Outstanding (21-25) ☐ Excellent (16-20) ☐ Very good (11-15) ☐ Acceptable (6-10) ☐ Needs revision (1-5)
• Clarity of the research question & ***feasibility* of the research approach, including *feasibility of completion in one year*** • Appropriateness of the research design & methodology • Linkage of the proposed project to the long term goals of the UOHI Brain and Heart Innovation Hub and those of either the uOBMRI, IMHR, or Bruyère RI • Anticipation of difficulties that may be encountered in the research and	Rating: /25

plans for management As applicable: • Sex and gender considerations: Is sex as a biological variable, or gender as a socio-cultural factor, taken into account in the research design, methods, analysis and interpretation, and/or dissemination of findings? Reference materials for reviewers: Sex and Gender-based Research Checklist for University of Ottawa Heart Institute Researchers. • Linked with the sex and gender considerations, does this project have a significant potential to advance understanding and/or care of cardiovascular issues in women? • Patient engagement	

III. Applicant(s) & Interdisciplinary Strength (/25)	☐ Outstanding (21-25) ☐ Excellent (16-20) ☐ Very good (11-15) ☐ Acceptable (6-10) ☐ Needs revision (1-5)
• Appropriateness of the applicant(s) to carry out the proposed research in terms of expertise, experience, track record (publications, grants/awards held) – relative to career stage • Considerations for Equity, Diversity and Inclusion in the team membership • Appropriate/optimal leveraging of resources/expertise outside of the applicant's group - whether in or beyond Ottawa • Interdisciplinary strength in terms of complementary expertise and synergistic potential of applicants	Rating: /25

IV. Impact (/25)	☐ Outstanding (21-25) ☐ Excellent (16-20) ☐ Very good (11-15) ☐ Acceptable (6-10) ☐ Needs revision (1-5)
• ***Likelihood of the project results to form preliminary data for a strong grant application at a national funding agency (e.g., CIHR, New Frontiers in Research Fund, etc.) in the next two years*** • Potential of the proposed project to develop into a research program that will enable the researchers to assume national or international leadership	Rating: /25
Comments on the patient review of the lay summary & patient engagement:	
Comments on the budget request:	
Overall impression/priority:	**Rating (/100):**

Appendix III

Patient Review Form

Principal Applicants	
Lay Title	

Applicants have been asked to write a lay summary of the proposed project. This lay summary should describe – in plain language – how the proposed work is relevant to patients, the prevalence of the health condition to be studied, and the anticipated potential for improving patient care.

For patient reviewers' considerations:

Lay Summary:

- How well did the applicant describe the study in lay language? Do you have suggestions to improve the readability of this description?
- Did the applicant include the prevalence of the health condition to be studied in the proposed project?
- Did the applicant describe the potential impact of the project on patient care?
- How are patient-relevant outcomes addressed?

Patient Engagement:

- Comment on how patients have been or will be engaged in the design, conduct, interpretation of the results, and knowledge translation of the study.
- Did the applicant describe concrete activities that will take place, ie., indicating that 'patients will be engaged' is not sufficient.
- Did the applicant include a description whether the patient partner(s) have lived or are living with the condition being studied, and the relevant experience that the they will bring to the project, e.g., study design, recruitment, data interpretation, discussion of patient- relevant outcomes, etc.
- Is/Are the patient partner(s) listed on the application as co-applicant(s)?
- Is there evidence that the patient co-applicant(s) had input into the proposal preparation?
- Do you have suggestions for the applicant on how to meaningfully engage patients in their research process?

Please provide your comments taking into consideration the above points.

Score out of 10: