



McGill

Faculty of
Medicine

Annual Reporting for Faculty Supported Research Centres, Core Facilities and Networks

All Centres (provisional Centres; McGill Centres), Research groups, Core facilities and Networks that receive funding from the Faculty of Medicine are required to provide two components of reporting:

- Annual Report of Activities, Outcomes
- End-of-Year Financial Report

The Annual and End of Year Reports covering the period from the 1st May until the 30th April are due on the **15th of June**. Future funding will be dependent on the prompt receipt of all documents as well as the evaluations made by the committee *and* the Faculty funds available.

The completed Annual Report and the Financial Statement should be forwarded by email to:

Dalia Soliman (riac.med@mcgill.ca)
Faculty of Medicine Research Office
Phone: 514-398-5815

Annual Report for Faculty of Medicine Funded Centres, Core Facilities and Networks

The Annual Report should be set in the context of the Centre's, Core facility's and Network's overall goals and objectives, programs and research priorities, performance indicators outlined in the application (or subsequently developed), activities and strategies.

Please provide the following:

1. Name of Centre, Unit or Institute:

Centre for the Study of Reproduction/Centre d'études sur la reproduction

2. Name and contact information of the Director and/or Administrative Assistant:

Director: Dr. Hugh Clarke hugh.clarke@mcgill.ca **934-1934 x34748**

Administrator: Ms. Aliea Jamal csr-cer@mcgill.ca **398-2584**

3. Is the centre recognized as an official Senate approved McGill Research Centre?

Yes No

4. The date the centre received Senate approval as an official McGill Research Centre: **1982**

5. A summary of the overall goals and objectives, programs and research priorities and any changes to these that may have occurred during the past year. Please indicate the extent to which the objectives have been met. **(limit 200 words)**

With over two dozen funded laboratories taking leading international roles, McGill holds an enviable position as one of the most comprehensive and intense sites for research in reproduction. The Centre for the Study of Reproduction (CSR) is the home-base for these highly diversified laboratories located across McGill campus. The CSR has four main objectives. First, by providing exceptional training opportunities for graduate students and post-doctoral fellows we build future research capacity in reproductive and developmental biology. Second, by supporting new research collaborations among our members, we increase the interactions among members thus strengthening reproductive research across McGill. Third, through our annual Research Day featuring internationally renowned scientists as keynote speakers, we increase the visibility of the CSR and its members at McGill and in the international community. Fourth, by our active participation in other networks (e.g., RQR, REDIH), we promote interactions with investigators elsewhere in Quebec, Canada, and internationally.

We have established these goals in 2008 and have continued to make them the focus of our efforts since then. These objectives respond to the expressed needs of our members and, as listed

below, we have been extraordinarily successful in achieving our ends. Notably, 16 different laboratories directly benefited from our support programmes in 2011-2012 alone, and members of 25 different labs attended our Research Day. These numbers illustrate that the CSR serves the needs and is an important component of the research activity of all of our members.

6. Please document **the major achievements** resulting from the use of the Funds from the Faculty, including any advances in knowledge, relevant publications, or international collaboration. You may select from the menu of reporting items/performance indicators in appendix 1 that may be relevant, noting that the menu list is not exhaustive. (Please limit your response to a maximum of **1 page**)

1. We awarded 9 new salary fellowships to trainees, following review of applications by CSR members not in potential conflict-of-interest. Most recipients of CSR fellowships subsequently obtain provincial or national fellowships, repaying many-fold the initial CSR investment.

2. We awarded 23 travel bursaries, double the number awarded in 2010-2011. These enable trainees to attend scientific conferences where they can receive critical feedback and build professional networks.

3. We supported one new research collaboration, following review of applications by qualified scientists who are not members of the CSR. This seed money enables members to acquire preliminary data to support full applications to CIHR.

4. We hosted our 3rd Annual Research Day in May 2011, attended by 135 CSR members and trainees. We have been able to attract internationally renowned reproductive and developmental biologists to participate, heightening the impact and reputation of the CSR. The 2011 speakers were Dr. Haifan Lin, Director of the Yale University Stem Cell Center, Dr. Daniel Carson, Schlumberger chair of Advanced Studies and Research at Rice University, and Dr. Catherine Klein of the NYU School of Medicine. Our trainees presented 8 talks and 18 posters.

5. Our 4th Annual Research Day was held in May 2012. 145 CSR members and trainees attended to hear talks by Dr. Jurrien Dean, NIDDK, NIH; Dr. Douglas Carrell, University of Utah School of Medicine; and Dr. Richard Behringer, MD Anderson Cancer Center, University of Texas. Our trainees presented 7 talks and 26 posters.

6. We continued our programme of hands-on workshops. Drs. Louis Hermo and Carlos Morales held a workshop on spermatogenesis, which was attended by 31 trainees.

7. We co-ordinated the preparation and submission of an application: 'Programme d'innovation intersectoriel québécois en procréation médicalement assistée (PIIQ-PMA)' to the Intersectoral Project Competition of the FRQ in March 2012. Dr. Sarah Kimmins of the CSR Executive is the lead researcher on this application.

8. We applied to the 2012 CIHR Café Scientifique program to host a series of Cafés on the subject of fertility and assisted reproduction. These will be held in French and English and in different neighbourhoods of Montreal in order to reach a broad range of linguistic and socio-economic communities. This application has been coordinated with the MUHC (contact: Julie Robert). As well, Dr. Hananel Holzer, Director of the MUHC Reproductive Centre, has expressed a keen interest in participating and providing financial support for these and additional public outreach events.

9. We continue to expand our bilingual website, adding regular updates of news, upcoming seminars and meetings, and a paper-of-the-month.

7. Please provide a **List of Members** (Full, Associate, Trainee noting whether graduate student or post-doctoral fellow) **if not already on your website** and all institutional affiliations current up to the date of the Annual Report. Add rows as necessary.

A list of members is available at http://www.medicine.mcgill.ca/csr-cer/members_en.htm

A list of trainees is available at

http://www.medicine.mcgill.ca/csr-cer/members_students_en.htm

8. Please describe how your activities align with the Academic or Research mission of the Faculty of Medicine and/or other Faculties at McGill focusing on the activities for the current year and strategic plans for the subsequent year (**limit 200 words**)

Reproductive and developmental biologists focus on understanding the processes of cellular proliferation, communication, and differentiation during the development of an organism. This knowledge also provides a framework for understanding genetics and epigenetics, the biology of stem cells, and complex multicellular systems. Moreover, understanding how these processes occur normally is essential in order to understand how they become perturbed in disease and cancer. Thus, reproductive and developmental biology underpin biological research.

The CSR supports a range of activities, described elsewhere in this report, that build research capacity in science by training highly qualified personnel. Our members work closely with the McGill-MUHC Reproductive Centre, where advances in basic science are translated to clinical practice. During the next year, we will extend our training mission by providing more technique-workshops. In addition, we will develop and present a series of public lectures on topics related to reproductive biology. These are especially pertinent in view of the new public funding for assisted reproduction, and will enable individuals considering this process to better understand it.

9. Please provide the **URL of the Research Centre's, Core Facility's or Network's web site.**

Note: The Research Centre's, Core Facility's or Network's website should contain the following information:

- all sources of funding support,
- the List of Members and their institutional affiliation,
- the activities supported by the Research Centre, Core Facility of Network, and
- the Annual Report.

URL: http://www.medicine.mcgill.ca/csr-cer/default_en.htm

10. Other information:

Please indicate how the Research Centre, Core Facility or Network has:

- Tackled or plans to tackle issues in a manner that may not otherwise have been achievable without the financial support of the Faculty of Medicine
- Increased or is planning to increase the scale and focus of research activities
- Facilitated multidisciplinary, multi-institutional or international collaborations
(Please limit response to **200 words**)

The financial support of McGill is essential to the CSR. The funding (\$55,000 annually) provided to us by the RQR is contingent on the support provided by McGill. The formal commitment made by McGill is explicit in the application that was funded by FQRNT (March 2011 – March 2017). The funding provided by McGill together with the funding from the RQR enables the CSR to maintain our activities. Importantly, this funding structure means that every dollar invested by McGill is more than matched by a contribution from the RQR.

During 2008-2011, the CSR focused on establishing core programmes and activities. Our aim now is to maintain these while expanding into new areas.

1. We coordinated the proposal ‘Programme d’innovation intersectoriel québécois en procréation médicalement assistée (PIIQ-PMA)’ to the Intersectoral Project Competition of the FRQ in March 2012. This proposal groups 21 researchers from 8 departments at McGill and 4 other universities and is budgeted at \$1.5 million annually.
2. We are pleased and proud that the CSR will host the 2013 annual meeting of the largest group of reproductive biologists in the world, the Society the Study of Reproduction. Organization is well underway, including tours of the Palais des Congrès, hotels and locales for satellite receptions, and meetings with Tourisme Montreal scheduled for early June.
3. We initiated development of our Café Scientifique programme, which will help to further the on-going initiative at McGill to reach and interact with the lay community.
4. We will increase the number of technique-workshops, adding New Techniques in Assisted Reproduction; Introduction to Bioinformatics; and How to Write a Scientific Manuscript.
5. We will institute a twice-annual guest-lecture program. Each spring and autumn, we will invite an internationally known scientist in the field of reproductive and developmental biology to speak at McGill.

The Year End Financial Report reports on:

- Expenditure of funding provided by the Faculty of Medicine and other sources, towards meeting the objectives of the Research Centre, Core Facility or Network; and
- Details of any in-kind contributions provided to the Centre, Core Facility or Network.
- See **Appendix 2** for the “Year End Financial Report” form to complete

Appendix 1

Menu of Performance Indicators

The following (non-exclusive) list contains possible activities on which Research Centres, Core Facilities or Networks might report.

Quantitative: Include, as appropriate

- Number of graduate and post-graduate students funded to do various activities;

Fellowships: (\$5,000 each)

14 applications received

9 awards

Name of trainee	Supervisor
Y. Aghazadeh	V. Papadopoulos
L. Dupuis	R. Duggavathi
N. Edwards	R. Farookhi
S. El-Hayek	H. Clarke
M-L Fillion	I. Gupta
D. Hou	L. Jerome-Majewska
Y. Li	D. Bernard
O. Sarkar	M. Culty
S. Wong	A. Ryan

Travel bursaries: (\$250 each)

23 applications received

23 awards

Name of trainee	Supervisor
G. Bardai	B. Hales
M. Collins	A. Ryan
L. Grenier	B. Robaire
G. Manku	M. Culty

J. Maselli	B. Robaire
F.-H. Paradis	B. Hales
C. Rejon	D. Bernard
A. Schlisser	B. Hales
S. Tran	D. Bernard
Y. Aghazadeh	V. Papadopoulos
S. Amani	Y. Yamanaka
S. Banh	B. Hales
R. Berger	B. Hales/B. Robaire
G. Chountalos	S. Kimmins
A.-M. Downey	B. Robaire
D. Hou	L. Jerome-Majewska
R. Lambrot	S. Kimmins
G. Manku	M. Culty
T. Revil	L. Jerome-Majewska
F.-H. Paradis	B. Hales
M. Rone	V. Papadopoulos
A. Schlisser	B. Hales
S. Tran	D. Bernard

- Number of proposals from participants to the Centre, Core Facility or Network and the number of activities funded;

New collaborations: (\$10,000)

2 applications received

1 award

Investigators	Title of proposal	Award
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C. O'Flaherty D. Cyr, L. Hermo	Impact of oxidative stress on sperm epididymal maturation	10,000
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- Governance: provide details of management meetings. For example, membership, frequency, attendance, the nature of the meetings and the outcomes.

Governance of the CSR is overseen by an Executive Committee, comprising the Founding Director, Director, Associate Director, and Members-at-Large. Executive members are elected at the annual general meeting (AGM) for a 3-year term. In June 2011, Dr. Clarke was elected as Director. Dr. Robaire, outgoing director, was named Founding Director. Dr. Culty, formerly Member-at-Large, was named Associate Director. In response to the substantial increase in CSR membership since 2008, the number of Members-at-Large was increased at the 2011 AGM from two to three.

This year, beginning in May 2012, we have added a trainee representative to the Executive Committee. This representative is a full member of the Executive, participating and voting in all matters. Nominations were solicited by emails set to all trainee members of the CSR, as well as by an announcement at the beginning of Research Day 2012. At the end of the day, Gurpreet Singh (PhD student) was selected as the trainee representative.

The Executive Committee meets regularly; 5 meetings were held during the 2011-2012 reporting period. All meetings are minuted, and the minutes are examined and modified if necessary prior to approval at the subsequent meeting. All decisions taken by the Executive are publicized by emails to CSR members and on the CSR website. Deadline dates for all competitions are clearly posted on the CSR website and reminder emails are sent to all members. All fellowship and grant applications are reviewed and ranked by individuals, within or without CSR, having no potential conflict of interest. Blinded rankings are used by the Executive to set cut-offs in accordance with the availability of funds.

The CSR holds an Annual General Meeting (AGM) to which all members are invited. Strategic directions and priorities are discussed at these meetings, after which the Executive carries out the mandate conferred by the membership. Seventeen members attended the 2011 AGM held on 17 June. The 2012 AGM is scheduled for 28 June.

- Number of workshops, conferences or seminars conducted and the number of attendees (include the number of early career researchers, graduate and/or post-graduate students attending);

Workshop

Staging spermatogenesis 15-16 May 2012 31 participants

Scientific conferences

CSR Research Day 2011 4 May 2011 135 attendees

CSR Research Day 2012 2 May 2012 145 attendees

- Number of visits, both by members to National or International destinations, events, and short and long term visits by visiting scientists to McGill;

Our members are frequently invited to speak at national and international conferences. We also host visitors, such as the guest speakers for our annual Research Day.

- Number of outreach activities including public lectures (or other forms of engagement with people outside the research community including schools, industry and government agencies);

We have submitted a proposal to CIHR to host Cafés Scientifiques on the subject of infertility, including environmental effects, and assisted reproduction. Cafés will be held (separately) in both French and English. The CSR will host these Cafés regardless of the outcome of the CIHR application.

- Number of publications produced, and their impact factors (only identify those publications that are directly related to the research centre, core facility or network activity);

Our members have published 106 manuscripts listed in PubMed since 2011-01-01. All relate to the research activities of our members; however it is not possible to define some as directly related and others indirectly related to the activities of the CSR. A list of the publications is appended.

- Number of targeted activities involving research interaction for graduate and postgraduate students

Staging Spermatogenesis workshop (May 2012)

Annual Research Days (May 2011, 2012)

Our travel bursaries (23 awarded) enable students to attend and present their research at scientific conferences

- Number of Federal and Provincial grant proposals and number of successful proposals as a result of membership in the Centre, Core Facility or Network;

Successful CIHR Operating Grant applications

March 2011 competition 2 (Naumova, Wing)

September 2011 competition 2 (Goodyer, Robaire)

- What/how much additional funding was generated that was directly attributable to activities of the Centre, Core Facility or Network;

\$55,000 awarded by the Réseau Québécois en Reproduction (RQR). The RQR includes many members from McGill and is supported (2011-2017) by the FRQ. This funding is contingent upon McGill maintaining its commitment, specified in the application to the FRQ submitted in 2010. The Human Reproduction and Development Axis of the MUHC Research institute will contribute half of the cost of Research Day 2012 (estimated \$6,000).

Qualitative: Describe, as appropriate, aspects of:

- Identify those activities/outcomes which may not have occurred without the formation of the Centre, Core Facility or Network.

Annual Research Day sponsored by the CSR, held each year since 2009, attended by 140-150

trainees and members of the CSR. In 2011, over 25 different labs were represented at the meeting.

Fellowship support to graduate students and post-docs (2012 applications due 15 July)

Travel bursaries to grad students and post-docs (next competition closes 30 September)

- **Technique workshops: Staging Spermatogenesis (2011); New Techniques in Assisted Reproduction (planned for 2012); Introduction to Bioinformatics (planned for 2012); How to Write a Scientific Manuscript (planned for 2012).**

Seed money to support new collaborations (2012 applications due 15 July).

- What sort of different sharing /collaboration (research ideas, facilities, etc) arose because of the Centre, Core Facility or Network;

	Investigators	Subject	Award
2009	R. Duggavathi	Molecular mechanisms of leptin-receptor signaling in ovarian granulosa cells	10,000
	M. Nagano P. Chan	Characterization of human spermatogonial stem cells	10,000
	H. Clarke J. Trasler	Role of early epigenetic modifications of histones in establishing correct patterns of DNA methylation during embryogenesis	5,000
	M. Culty S. Wing	Role of ubiquitin proteasome system in testicular gonocytes functions	5,000
	B. Hales D. Bernard	Elucidation of the molecular mechanisms by which warfarin ameliorates retinoid teratogenicity	5,000
	C. O'Flaherty P. Chan, A. Zini	Characterization of peroxiredoxins in patients with clinical varicocele or idiopathic infertility	5,000
2010	L. Majewska J. Majewski	Alternative splicing plays an important role during early mouse development	10,000
	S. Kimmins D. Bernard	Determining the function of the histone H3 demethylase, lysine specific demethylase 1(KDM1) in gonadotrope function and fertility	10,000

	V. Papadopoulos C. Rohlicek	Do di-(2-ethylhexyl) phthalate-induced changes in steroid production affect blood pressure in the adult rat?	10,000
2011	C. O'Flaherty D. Cyr, L. Hermo	Impact of oxidative stress on sperm epididymal maturation	10,000

- Different kinds of research generated – research building capacity, or removing impediments to research;
Our Fellowship, New Collaborations, and Travel Bursary programme all build research capacity.
- Breadth of Centre, Core Facility or Network - qualitative aspects;
We have more than 25 faculty members, whose research interests span a wide range of reproductive biology, and who are physically located throughout main campus and at MacDonald College. As shown in the Table above, we support a wide range of research initiatives.
- Multi-disciplinary collaboration
Supported through our New Collaborations programme.
- Increased or new collaboration and partnerships as a result of Centre, Core Facility or Network activities, and with different types of end users (e.g. industry, government and community groups);
Our New collaborations programme has been highly successful at achieving this aim.
- What workshops and similar meetings the Centre, Core Facility or Network provided financial support to – number, the level of engagement, the purpose and the outcomes (including the number of opportunities for inter-disciplinary research);
Workshop

Staging spermatogenesis	15-16 May 2012	31 participants
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Scientific conferences		
CSR Research Day 2011	4 May 2011	135 attendees
CSR Research Day 2012	2 May 2012	145 attendees
- What mechanisms are in place for communication within the Centre, Core Facility or Network membership (e.g. email, newsletters, website, etc);
We host a fully bilingual website that is regularly updated with news, announcements of upcoming competitions, seminars and meetings, and a paper-of-the-month published by a CSR member. All competitions, seminars and meetings are also advertised to members through email.
- National, International activities and/or visitor programs - information about the level of engagement at seminars and workshops (e.g. number of participants) and how these events have contributed or are likely to contribute to the strategic goals of the Centre, Core Facility or Network;
We invite internationally recognized speakers to participate in our annual Research Day. These

speakers also meet individually with CSR members and trainees. This enables our members to make new contacts and offers opportunities for new collaborations and research initiatives.

- What exceptional successes, if any, have occurred during the reporting period;
We are pleased that our members have been very successful at obtained major grant support (eg, CIHR) despite the current funding climate. We continue to be able to attract exceptional scientists from outside McGill to participate in our Research Day.
- What disappointments, if any, occurred during the reporting period;
We regret that we have insufficient funds to support more of our highly talented graduate students and post-docs, or to provide larger grants through our New Collaboration programme.
- How new skills have been acquired as a result of research technology;
Participants in our technique workshops acquire new and highly specialized skills. For this reason, we are forced to limit enrollment in each workshop.
- Linkages with international Research Networks;
We work closely with the Réseau Québécois en Reproduction (RQR) and the CIHR Training Program in Reproduction, Early Development and the Impact on Health (REDIH)