

Another Busy Year for the CRRD

It's been a busy, productive, and fun time for the Centre since our last newsletter. Of greatest significance, the **Réseau Québécois en Reproduction** (RQR) was funded for an additional six years by the FRQNT (see page 3 for more details). The renewal effort was led by Dr. Derek Boerboom (Université de Montréal) who will direct RQR for the next two years. Leadership will then transition to McGill for two years before moving to Université Laval for the final two years.

As always, awarding of **trainee fellowships** has been and continues to be a major activity of the Centre. The CRRD Awards Subcommittee met regularly last winter and, in April 2017, launched a Trainee Fellowship Competition with a new and improved evaluation mechanism. Two trainees, Anne-Sophie Pépin and Enrique Gamero, were awarded \$10,000 each. We have an additional \$50,000 to award in 2018. To learn more about the new competition format, see Enrique's report of his experience (page 5). Changes came to **Travel Awards** as well with stipends now being offered for important workshops/courses, in addition to the traditional support for travel to national and international conferences. There are no set deadlines associated with these awards. Rather, trainees should apply for travel support upon learning the status of their submitted abstract (i.e., accepted for poster or oral presentation) or upon receiving acceptance to the course/workshop. Funds are awarded up to a maximum of \$500 each, with \$10,000 budgeted for the 2017-2018 year.

There was much laughter at CRRD's first **Trivia Night** on March 24, 2017 where four teams battled it out over questions in three categories: History & Geography, Movies, and - of course - Reproduction & Development! A big thank you to co-trainee rep Gauthier Schang for organizing the night - from a Costco run to writing the questions to tabulating the scores. Thanks also to Anne-Sophie and Enrique who helped sell tickets at the Macdonald and Glen campuses. And thank you, of course, to everyone who attended and helped make the evening a fantastic event! We will be hosting a second Trivia Night sometime in the New Year and hope you can attend.



~Continued on page 2

~Continued from page 1, Another Busy Year



Our first **Science Share and Social**, on April 12, 2017, was a great success. Fourteen members shared their research in 3-minute presentations, followed by mingling over wine and goodies in the Goodman atrium. The resulting videos can be found online at www.mcgill.ca/crrd/research/videos.



Our **9th Annual Research Day** was held on May 16, 2017. The Invited guest lecturers were Dr. Marisa Bartolomei, Co-Director, Epigenetics Program, University of Pennsylvania School of Medicine; Dr. Liliana Attisano, Department of Biochemistry, University of Toronto; and Dr. Marjorie Dixon, CEO & Medical Director, Anova Fertility & Reproductive Health, Toronto. We had 137 attendees, including faculty, fellows, graduate students, undergraduate students, and technical staff from the CRRD as well as Université de Montréal and the Douglas Hospital. In addition, Dr. Dixon's talk attracted specialists from Fertily's Fertility Clinic here in Montreal, some of whom came for the whole day. For the first time, we solicited sponsors for our Research Day, receiving financial support from Peprtech and IDT as well as giveaways from Sarstedt, Diamed, and the Advancement Office in the Faculty of Medicine. Trainees presented 6 talks and 42 posters. Special congratulations go to the award winners: Yining Li (Oral), Helen Maunsell (MSc Poster), Cayetana Vázquez-Díez (PhD Poster), and Chirine Toufaily (Postdoctoral Poster).



Be sure to mark your calendars for our 10th Annual Research Day on May 15, 2018.

~Continued on page 9

FRQNT Funding of RQR Network Granted Through 2023

As announced at CRRD Research Day in May 2017, the application by the Réseau Québécois en reproduction (RQR) for the 2017/2018 FRQNT Regroupements Stratégiques competition was successful. The RQR has been awarded funding to continue the RQR network for six years, through March 2023.



As additional good news, the amount awarded is substantially greater than in previous years, which will permit the RQR to further expand their training activities and research support for RQR members. For the CRRD, this means an additional \$27.5K annually towards scholarships for new CRRD trainees (graduate students and postdoctoral fellows) who are co-supervised by two or more regular members of the RQR. We will continue to receive \$45K annually for the administration of our Centre and CRRD Trainee Fellowships. This RQR funding brings matching funds from McGill and the Faculty of Medicine.

Derek Boerboom, who lead the writing of the FRQNT grant proposal, took over as director of the RQR from Bruce Murphy this summer. Bruce founded the RQR in 2008 and served as its director since that time. We all owe Bruce thanks for his years of service and for creating a network that has had a profound and lasting impact on the Quebec reproductive biology community. Directorship responsibilities are now being shared between Derek and two co-directors, Daniel Bernard and Janice Bailey. These three, along with the axis leaders (Daniel Cyr, Claude Robert and Yojiro Ymanaka) now form the new Executive Committee that is responsible for day-to-day management and decision making. Derek will lead the RQR for the next 2 years and leadership will then rotate every 2 years, with individuals at McGill and Laval taking the helm after Derek.

A big thank you to the CRRD members who helped with the grant proposal preparation and with the site visit last winter: Yojiro Yamanaka, Sarah Kimmins, Océane Albert, Anne-Sophie Pépin, Gauthier Schang, and Chirine Toufaily.

This is a time for celebration! The reproductive and developmental biology research communities in Quebec are strong and will continue to lead nationally and internationally with this important FRQNT support.

**Fonds de recherche
sur la nature
et les technologies**

Québec 

We are pleased to announce the winners of our Spring 2017 Trainee Fellowship Competition!

To learn how the competition changed in 2017, see the article on page 5.

Anne-Sophie Pépin, MSc fast tracked into PhD with S. Kimmins - \$10,000

Enrique Gamero, PhD with A. Ryan - \$10,000



Anne-Sophie Pépin



Enrique Gamero

We are currently holding an RQR Fellowship Competition and will be holding our next CRRD Fellowship Competition in January 2018.

Thank you!

Determining the recipients of Scholarships is a big job, particularly under the new format. A huge thank you to Makoto Nagano, who spearheaded the new format and gave individual, written feedback to each applicant.

Thanks also to the following members for their help with the spring competition: Simon Wing, Dan Bernard, Aimee Ryan, Raj Duggavathi, Cristian O'Flaherty, and Aaron Kwong.

2016-2017 Travel Stipend Recipients

In addition to support for travel to national and international conferences, the CRRD now offers Travel Stipends for workshops/courses deemed necessary to advance training. Congratulations to the 2016-2017 winners:

Keith Siklenka, PhD with S. Kimmins, and **Gauthier Schang**, PhD with D. Bernard
49th Annual Meeting of the Society for the Study of Reproduction (16-20 July 2016)

Alex Yu, MSc with C. O'Flaherty
Canadian Fertility and Andrology Society Meeting: "ART in the Era of Personalized Medicine" (22-24 September 2016)

Karina Gutierrez, PhD with V. Bordinon
43rd Annual Conference of the International Embryo Technology Society, (14-17 January 2017)

Kristina Mullahoo, MSc with H. Weiler
CNPRM conference (14-17 February 2017)

Luisina Ongaro, PDF with D. Bernard
ENDO 2017 (1-4 April 2017)

Neil Brett, PhD with H. Weiler
Experimental Biology 2017 (22-25 April 2017)

Dominic Hou, PhD with L. Jerome-Majewska, **Fatima Tokhmafshan**, MSc & **Simon La Charité-Harbec**, MSc with Indra Gupta, and **Amanda Baumholtz**, PhD with Aimee Ryan
NESDB 2017 (27-30 April 2017)

Aileen Yan, PhD with B. Hales
BFR 2017 (7-10 May 2017)

Melanie Guigueno, PDF with J. Head
Canadian Society of Zoologists Meeting (15-19 May 2017)

Matthew Ford, PDF with Yojiro Yamanaka
Developmental Biology Gordon Research Conference (24-30 June 2017)

Oceane Albert, PDF & **Anne Marie Downey**, PhD with B. Robaire, **Werner Glanzner**, PDF with V. Bordinon, and **Yasmin Schuermann**, PhD with R. Duggavathi
50th Annual Meeting of the Society for the Study of Reproduction (13-16 July 2017)

Deepak Tanwar, MSc with S. Kimmins
Epigenomic Data Analysis Workshop (15-16 June 2017)

Ejimedog Madogwe, PhD with R. Duggavathi
Canadian Fertility and Andrology Society's 63rd annual Meeting (14-16 September 2017)

Apply now for 2017-2018 Travel Stipends!

The New CRRD Trainee Fellowship Competition - A Radically Different Approach

Enrique Gamero (PhD with Dr. Ryan)

As you may have heard, the CRRD changed the format of the fellowship award competition. Instead of a traditional application, where evaluation focuses on the applicant's CV and his/her project's potential impact, the CRRD has dared to try something different! Applicants write an exam and those that rank highest have an interview; the intention being to assess the applicants' scientific insight and analytical capability as well as their passion for science, which is lost in common studentship competitions.

As a winner of one of the spring studentships under the new format, and as current co-trainee representative on the CRRD Executive, I would like to convey to you my support of this new competition!

I truly believe this is a great way of evaluating trainees. Both the exam and the interview are designed to measure the critical thinking and the "fit" of the trainee's motivation within the range of CRRD topics. In the exam, there is a choice of open answer questions that can be solved with any biological background. Also, the evaluators are looking for answers that make sense and demonstrate a good and clear critical thinking

process more than for the correct answer itself. In the interview, the questions are focused on gaining insight into the trainee's motivation in the field and the passion driving him/her to be a scientist.

To me, the best part of this new format, compared to other competitions, is the feedback that was given to every applicant; it was very detailed and constructive criticism that I found helped me to really think and improve as scientist.

Overall, I would like to encourage all trainees – even if you feel nervous or uncertain about being evaluated by an exam and interview – to try this competition because it really is a great experience. Moreover, there is nothing to be nervous about. Just do your best! We all have bad days and bad answers sometimes; this doesn't reflect on how good at science you are or how people see you. Furthermore, the interview is a great chance to let the reviewers get to know you and your motivations. Finally, don't forget that the feedback you will receive will be priceless!

In conclusion, I encourage every trainee to give it a try. Don't be shy! Even if you don't win, you will definitely learn from the experience.

CRRD Fellowship Awardees in Good Standing for Other Awards!

Emilie Brûlé, MSc with D. Bernard, and Laleh Abbassi, PhD with H. Clarke, two winners of the Fall 2016 CRRD Fellowship Competition, went on to win a 2017 NSERC MSc Fellowship and an internal Faculty of Medicine Award, respectively. Enrique Gamero, PhD with A. Ryan, also won an internal Faculty of Medicine Award after winning a scholarship in our Spring 2017 Competition.

Congratulations Emilie, Laleh, and Enrique!

NOTES FROM THE ROAD

The Society for Developmental Biology Northeast Regional Meeting 2017, held in Woods Hole, MA April 27-30, 2017, and the Society for the Study of Reproduction 50th Annual Meeting, held in Washington, DC July 13-16, were both very well attended by CRRD Members. We awarded stipends to support the travel of eleven trainees from seven different labs to present at these conferences. Below, two trainees describe their experiences.

Fatima Tokhmafshan (MSc with Dr. Gupta)

As a M.Sc. student in Dr. Indra Gupta's lab, I recently attended the 2017 Northeast Regional Meeting of the Society for Developmental Biology, with funding from the Centre for Research in Reproduction and Development (CRRD). This was my first international conference and an outstanding opportunity to learn about the stellar research being performed in the field of developmental biology.



The meeting started with an interesting session on how to communicate one's science. Nancy Serrell, a writer, editor and communications consultant at Dartmouth College, gave an engaging talk on the importance of proper science communication and provided us with simple tips in doing so. I found this session quite intriguing and helpful because as scientists our ultimate hope should be to provide a stronger understanding of our work and more importantly its relevance to society. Excellent science communication can pique interest, spark debate and lead to collaborations that in turn help science progress further. Also at this conference, I witnessed many examples of excellent science communication by the senior scientists and the trainees alike.

Presenting my poster on the link between developmental defects in the extracellular matrix in the urinary tract and pathologies such as vesicoureteral reflux and bladder diverticula was a great opportunity for me to showcase my research, receive feedback from peers, and discuss future endeavours. During the poster sessions and oral presentations, I was struck by the level of student engagement and enthusiasm. This enthusiasm stirred conversation among trainees and senior scientists—a conversation that is essential in maintaining the flow of ideas for new and exciting research in developmental biology.

Thank you to the CRRD for supporting me in this enriching experience!

Anne Marie Downey (PhD with Dr. Robaire)

As a Ph.D student in Dr. Bernard Robaire's lab, I had the pleasure of receiving support from CRRD to attend the 50th annual meeting of the Society for the Study of Reproduction (SSR), which was held in Washington, D.C. in July 2017. This was my first time attending this meeting and I was very impressed.

The meeting covered all aspects of research in reproduction ranging from our basic understanding of both male and female gamete biology, fertility, and embryo development to more translational research such as novel contraceptives and reproductive technologies. The research presented stimulated great discussions and emphasized the importance of research in reproductive biology. What was most surprising for me was the variety of species studied: human, rodents, and cow but also large cats, elephants, and even manatees!

Of particular interest to me were the many presentations touching upon toxicology and gamete preservation. I had the opportunity to present my research and received valuable feedback and advice from top researchers and other trainees. The work I presented provides evidence that zinc can help protect male germ cells against cyclophosphamide, an alkylating agent commonly used in chemo- and immunosuppressive therapies and a known germ cell toxicant. Zinc is an essential trace element that is important for enzymes involved in DNA repair and oxidative stress defence. Our data show that zinc supplementation can help protect male germ cells against cyclophosphamide toxicity by reducing the levels of DNA damage and reactive oxygen species.



As I am finishing my studies, I am grateful for the funding CRRD has consistently provided over the years to attend this and other meetings. Support from CRRD has significantly contributed to my development as a researcher.

Looking for a Mentor? Look no further!

The new CRRD Mentorship Program was designed to pair CRRD trainees with a PI or Postdoctoral mentor in an informal setting. It is up to the paired mentor and trainee to determine when, where, and how frequently they would like to meet but we suggest you start with 1-2 meetings per year. Undergraduates, graduate students, and postdoctoral fellows are welcome to apply. Go to <https://www.mcgill.ca/crrd/mentor-program> for more information!

FIR Report

Gauthier Schang



I am very excited to write about my experience at the 2017 Frontiers in Reproduction (FIR) course, held in Woods Hole, Massachusetts. FIR is a 6-week-long course, which symbiotically merges lectures with laboratory training. The course is split into three 2-week sections, with each one covering a broad and general topic. Section 1 focuses on signal transduction, section 2 on gametogenesis and fertilization, and section 3 on the development of the reproductive tract. Given this wide spectrum of subjects, all trainees from all backgrounds are welcome. It was a pleasure to go through this experience with graduate

students, post-doctoral fellows, veterinarians, and bioinformaticians who work (or have worked) with fly, fish, frog, mouse, cow, or pig animals models, others on human populations, and others who have never worked with in vivo models!

FIR provides a unique setting to interact with individuals you may otherwise never have crossed paths with, and to learn a great deal in the process. If I had to highlight some of the experiments I enjoyed most, it would have to be *Xenopus* egg microinjection, spermatogonial stem cell transplantation, micro-laser dissection, and ICSI. One of the groups even got the chance to see live offspring following zebrafish IVF!

While FIR is meant to be a scientific training, it is also a human experience. The relationships you build at this course are long-lasting. You are basically interacting with your future “conference pals,” colleagues, collaborators, etc. You also get the chance to interact with pioneers in the field of reproduction, putting your name out there, and expanding your professional network.

FIR is a unique experience which has no equivalent in terms of academic development and career prospect and I encourage everyone to apply!

Next FIR Course:

Apr. 29-June 9, 2018

<http://www.mbl.edu/fir/>

Applications due in January 2018

Research Day 2018

Breakthroughs in Reproduction and Development

May 15, 2018, 8am - 5:30pm at McGill's New Residence Hall

Guest Speakers: Lee Niswander and Sylvie Breton



Inaugural Dr. Yves Clermont Lecture

One hundred people, including faculty, students, clinicians, as well as members of the public and Clermont's family, attended the inaugural Dr. Yves Clermont Lecture given by Dr. Bernard Robaire on Wednesday, October 4th at the McGill Faculty Club. Dr. Robaire's insightful talk, titled "The Time-Space Continuum of Spermatogenesis," was enthusiastically received.



The Inaugural Clermont Lecture



Dr. Yves Clermont

This Memorial Lecture was established to honour the numerous outstanding contributions made by Dr. Yves Clermont to the field of Reproductive Biology during his many years at McGill. The discoveries made by Dr.

Clermont during his doctoral studies at McGill, which he completed in 1953, have defined our understanding of how male germ cells are organized within the complex architecture of the testis. Since then and until his retirement, he and his numerous outstanding trainees and collaborators consistently made remarkable contributions that have defined many aspects of male reproduction as well as the organization and functioning of the Golgi apparatus. His outstanding skills as a teacher left indelible marks in the memory of thousands of students who had the opportunity to have him as a Professor. Dr. Clermont passed away on October 10, 2014.

Dr. Robaire was chosen as the inaugural lecturer because he is an internationally-recognized leader in male reproduction with a personal link to Dr. Clermont. Dr. Robaire has been President of both the Canadian Fertility and Andrology Society and the American Society of Andrology (ASA). He currently chairs the Executive Committee of the North American Testis Workshop and is Chair of the next International Conference on the Epididymis. Dr. Robaire has received numerous awards in recognition of this scientific achievements, including election to the Royal Society of Canada and the Distinguished Andrologist award from the ASA. Notably, Dr. Clermont shared these distinctions during his career. Dr. Robaire learned testis biology as a student of Dr. Clermont's at McGill. Later, over their many years as McGill colleagues, they shared their excitement for the fields of spermatogenesis and sperm maturation. Dr. Robaire's Clermont Lecture paid tribute to their common research interests and passion.

Thank you to our donors!

Thanks to our generous donors, we have made encouraging progress towards our goal of establishing a fund in Dr. Clermont's name to host an annual, named lecture at our Research Day, but our fundraising efforts continue. All contributions will be used to bring to McGill leading investigators in the field of men's fertility and health to share their knowledge and to inspire new generations of young investigators to continue to push the frontiers of knowledge in a field that is so central to biology and medicine.

If you wish to help us reach this goal, contributions can be made online at www.alumni.mcgill.ca/give. It is important that you select "other" in the "I want to support" box and provide the following instructions: "This gift is specifically designated for the Clermont Lectureship, Centre for Research in Reproduction and Development."

~Continued from page 2, Another Busy Year

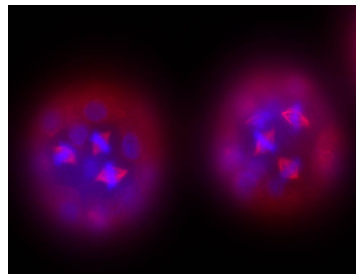
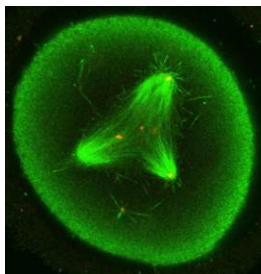
In other news, we saw **turnover on the CRRD Executive Committee** this summer. Sarah Kimmins, Aimee Ryan, and Rima Slim ended their three year terms. We welcome Dr. Cristian O'Flaherty, who replaced Sarah as Associate Director, Loydie Jerome-Majewska and Jacquetta Trasler, who replaced Aimee and Rima as Elected Members, starting July 1. We would also like to welcome Enrique Gamero from the Ryan Lab, who is replacing Aaron Kwong (from the Yamanaka lab) as co-Trainee Rep with Gauthier Schang, who is serving a second year. We look forward to the fresh ideas the new committee members will bring to the table! A big thank you to Sarah, Aimee, Rima, and Aaron for their dedication and support. We also thank Dr. Terry Hébert, our external member, who has agreed to serve a second three year term.



**Thank you Sarah, Rima,
Aimee and Aaron!**

**Welcome Cristian, Loydie,
Jacquetta and Enrique!**

We also welcome **Dr. Greg FitzHarris**, adjunct professor in the Department of Pharmacology and Therapeutics at McGill, as the newest addition to the CRRD. Dr. FitzHarris' group, located in the Research Centre at the University of Montreal Hospital Center (CRCHUM), aims to understand the cellular basis of infertility by unravelling how healthy oocytes (eggs) and embryos are made. They specialize in live cell imaging and cell biology approaches.



At the same time, we bid farewell to Dr. Ri-Cheng Chian, a longtime member of the Centre, who is retiring this year. If you have suggestions for new recruits to the Centre, be sure to let Charlotte know!

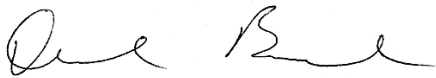
~Continued on page 10

~Continued from page 9, Another Busy Year

Looking ahead, we continue to fundraise for the **Clermont Endowment**. The Inaugural Clermont Lecture, delivered by Centre founder and colleague Bernard Robaire, was held on October 4th (see page 8 for more details). The **RQR Fellowship competition** was launched this fall and awardees will be announced soon. The CRRD Fellowship Competition will be launched in January 2018. We will welcome **Dr. Jon Draper**, from McMaster University, for a CRRD/CHHD (Child Health and Human Development) co-sponsored lecture at the Research Institute of the McGill University Health Centre on Monday, March 12, 2018. The Draper lab (www.thedraperslab.com) studies human stem cells, with a focus on identifying the cell fate mechanisms that control the switch between self-renewal and differentiation in both normal and cancerous populations. Please mark your calendars and plan to attend.

On behalf of the Executive Committee, I want to thank you all for past, present, and future contributions to the success of our Centre.

Sincerely,



Daniel Bernard, Director CRRD



**Order CRRD T-Shirts and
Sweatshirts Today!!**

www.mcgill.ca/crrd/files/crrd/crrd_clothing_sales_sep_2017_0.pdf

**Do you have ideas for the
next newsletter?**

Please send your feedback and
suggestions to Charlotte at crrd@mcgill.ca.