

What's New

McGill-CIHR Drug Development Training Program

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The DDTP thanks the following McGill offices for contributing to the prizes granted to the awardees:

The Faculty of Medicine
The Department of Pharmacology
The Department of Oncology

The DDTP is grateful to the proud corporate sponsors of the Research Retreat 2012:



The DDTP Research Retreat 2012: a success story

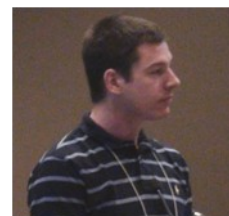
The first research retreat of the DDTP was held on March 30, 2012 at the Queen Elizabeth Hotel in Montreal. The program began with a keynote lecture presented by Dr. Robert Hoffman, an expert in fluorescence imaging. Professor Hoffman, the founder of the biotech company AntiCancer Inc., which is specialized in *in vivo* imaging, pioneered the field of clinically relevant *in vivo* models. He published over 500 articles and his work was referred to by the 2008 nobel committee to illustrate the impact of green fluorescence protein (GFP) on cancer research.



From left to right: Dr. Bertrand Jean-Claude and Dr. Robert Hoffman during question period.



Paolo Schiavini presenting his work during the student oral presentation session.



Christopher Ablenas answering questions during the student oral presentation session.

The participants were impressed with the videos presented by Dr. Hoffman demonstrating the movement of GFP-labeled cancer cells as clear evidence of their migratory or invasive capacity. Despite the plurality of disciplines represented by the students and mentors attending the lecture, all comments from participants were laudatory. The participants from the three major departments of the program (e.g. chemistry, Pharmacology, Medicine) appeared to understand the topic and were very pleased with Dr. Hoffman presentation. The keynote lecture was followed by two student oral presentation sessions. The Research Retreat being primarily a student's Research day, 10 oral presentations by DDTP students from diverse departments were included in the program. The first session (10:00-11:15) was chaired by Professor Youla Tzantrizos (Chemistry) and the second (11:30-12:45) by Professor John DiBattista (medicine, pharmacology). The presentations were carefully scrutinized by a panel of 10 judges who had the mandate to select the best candidates for the prizes offered by our sponsors (Boehringer-Ingelheim, Sigma-Aldrich, Pharmasciences,

(Continued on page 2)



From left to right: Dr. Robert Hoffman, Dr. Bertrand Jean-Claude, Dr. Wolfgang Renz, Dr. Phil Gold, Dr. Johans Fakhoury, Rory Sleno, Christopher Ablenas, Dr. Youla Tzantrizos, Hala Abou Assi, Paolo Schiavini, Yih-Shyan Lin, Maria Ait-Tihyaty, Dr. Emelia Awuah

The DDTP Research Retreat 2012: a success story (continued)

(Continued from page 1)

Canadian Life Science) and the following Offices of McGill: the Department of Oncology, the Department of Pharmacology and the Faculty of Medicine.

The oral presentations were followed by an information session (12:45-1:30) animated by Dr. Philip Oldfield who described the activities of the American Association for Pharmaceutical Sciences (AAPS) and launched an invitation to create a student chapter at McGill. A representative of MITACs described the guidelines and impact of a program that offers students training opportunities in the industrial milieu.

The information session was followed by the 'meet-the-industry' roundtable (13:30-14:45) that included members of McGill University and the pharmaceutical industry. Members of the pharmaceutical industry were: Dr. Denis Labrecque from Astra Zeneca, Dr. Cyrille Kuhn from Boehringer-Ingelheim, Dr. David Goodman from Pharmascience, Dr. Mireille Vega from Novartis, Dr. Wolfgang Renz from Boehringer-Ingelheim. Members from McGill were Dr. Vassilios Papadopoulos (Executive and Scientific Director of the MUHC) who opened the session with a lecture on university-industry interactions, Dr. Youla Tsantrizos (Professor of Chemistry and Chair of the DDTP workshop and seminar development committee), Dr. Bertrand Jean-Claude (Director of the Cancer Drug Research Laboratory and moderator of the roundtable). The topics addressed by the roundtable were diverse from innovation in industry to relationship between industry and academia. A summary of the Q&A period prepared by Maria Ait-Tihyaty, a DDTP student, is presented on page 3.

Important Dates:

- May 17, 2012
DDTP Symposium:
Biological Therapeutics
- October 15, 2012
DDTP Fall Competition
Deadline



From left to right: Frame 1, Dr. Bertrand Jean-Claude introducing the panel during the "meet-the-industry" session; Frame 2, Dr. Nektaria Markoglou, Dr. Cyrille Kuhn, Dr. Wolfgang Renz, Dr. Vassilios Papadopoulos giving the opening lecture of the 'meet-the-industry' session; Frame 3, Dr. Cyrille Kuhn (Boehringer-Ingelheim) presenting his lecture.

The meet-the-industry discussion was followed by a poster session that included 35 posters from almost all mentors of the program. The session was very animated and each poster was carefully scrutinized by the judges for a score on the presentation, the quality of the poster and the potential impact of the research.




The Research day ended with a courtesy cocktail organized as an award ceremony. Scores were compiled by Ms. Aube Mamias, administrator of the program and the prizes announced by Dr. Bertrand Jean-Claude, DDTP co-Director and Dr. Hugh Bennett, Director of the Division of Experimental Medicine. First prize for the Best oral presentation category was awarded to Mrs. Shuo Xing (Gleason's Laboratory, Department of Chemistry). The 2nd prize went to Maria Ait-Tihyaty (Cancer Drug Research Laboratory, Department of Medicine) and the 3rd to Rory Sleno (Hebert's Laboratory, Pharmacology). The first prize in the Best Poster Category was awarded to Jovanka Bogojeski. The complete list of awardees (oral and poster sessions) is summarized on page 3. The 4th and 5th prizes were selected primarily on the basis of the score for potential impact on disease treatment.



Selected views of the poster session.

The DDTP Research Retreat was considered a success by many. We expected around 50 participants but interestingly, a total of 103 registrants showed up from many departments including chemistry, pharmacology, biochemistry, physiology, and oceanography. The DDTP is grateful to all the participants, and particularly the judges whose work has contributed to the selection of the awardees. We are grateful to all the sponsors and hope to see you all at the DDTP Research Retreat 2013. Please visit our [DDTP Research Retreat 2012 photo gallery](#).

Students awarded a prize during the DDTP Research Retreat 2012.

Best Oral Presentation	Name	Mentor	Title
1st Prize	Shuo Xing 	James Gleason (Chemistry)	Design and Synthesis of RAR Agonist/HDACI Hybrid Molecules in the Treatment of Breast Cancer
2nd Prize	Maria Ait Tihyaty 	Bertrand Jean-Claude (Medicine)	Inhibition of EGFR Phosphorylation in a Panel of Human Breast Cancer Cells Correlates with Synergistic Interactions between Gefitinib and 5'-DFUR, the Bioactive Metabolite of Xeloda
3rd Prize	Rory Sleno 	Terrence Hébert (Pharmacology)	Characterizing the Roles of Distinct T Gβγ Binding Sites on KIR3 Channels
Best Poster Presentation			
1st Prize	Jovanka Bogojeski 	Masad Damha (Chemistry)	Novel siRNA-Amino Acid Conjugates Exhibit Improvements in Cellular Uptake to Reduce DRR Expression in Tumor Cells
2nd Prize	Katherine Castor 	Hanadi Sleiman (Chemistry)	Design and Optimization of Effective G-Quadruplex Binders.
3rd Prize	Mitra Heravi	Thierry Muanza (Medicine)	Combination of Ionizing Radiation and EGFR/DNA Binary Targeting Molecule Delays DNA Repair Process
4th Prize	Yih-Shyan Lin 	Youla Tsantrizos (Chemistry)	Design and Synthesis of Active Site Inhibitors of the Human Farnesyl Pyrophosphate Synthase—Apoptosis and Inhibition of ERK Phosphorylation in Multiple Myeloma Cells
5th Prize	Maryam Habibian	Masad Damha (Chemistry)	Studies on Oxepane-Based Nucleosides and Oligonucleotides

Meet-the-Industry session (Q&A)

By Maria Ait-Tihyaty

Q: What would it take for a graduate student to be successful in the field of drug design and development?

A: You have to be bold, full of determination, be daring.

Q: How does the drug design and development in academia measure up to the industry?

A: The work done in academia in drug design and development is not of the same nature as in the industry. It is missing the high throughput capacity and other means to be really considered a full spectrum drug design and development that can result in the introduction of a drug in the market. However, in academia there is more room for creativity and innovation. Thus, the work in industry and academia are more complementary than antagonistic.

Q: How would you answer to the feeling that in this new “ying and yang trinity” model (government-industry-academia), each component seems to have different priorities? Namely profits for the industry and recognition for the academia, economics for the government. It may sound cliché but don't we forget that the real priority is the patient?

A: This is a complex issue. The patient is the first priority, but the reality is complex. The industry for instance needs to achieve profits to maintain its existence and the same goes for academia with the publication pressure. In this trinity, for example the money accumulated by the companies is returned as paid taxes that support health care for patients or future patients.

Q: We, PhD students, spend a lot of years studying and when we get to the workplace it seems unfair to be asked to study again to get this or that training. What can you offer us to alleviate this burden?

A: There are many training programs offered to the employees within the companies. For academia-industry, there are programs such as MITACS that support the work of a student in industry on an academic-industry collaborative program. These are opportunities to acquire industrial experience while being enrolled in a university program.

DDTP Symposium: Professor Lipinski, the father of the Lipinski rule of 5 was among us.



On March 2, the DDTP held its 5th symposium on "Biophysics on drug development". Chaired by Dr. Anthony Mittermaier, the symposium included a lecture by Dr. Ernesto Freire entitled "*Achieving Extremely High Affinity and Selectivity in Drug Design*" and by Dr. Elizabeth Vadas "*Selection of a Drug Development Candidate and Dosage Form Design – Know Thy Physical Chemistry!*". Our keynote speaker was Dr. Lipinski, the father of the Lipinski rule of 5 who discussed extensively the hard lessons learnt from the industry over the past decade. Overall the symposium was well attended with a record number of participants (129). Everyone was well informed on the biophysical characteristics for enhancing the 'drugability' of a given molecule and on the pitfalls in drug development.

The Lipinski rule is one of the most popular ones in medicinal chemistry and drug discovery. It stipulates that there are 4 major reasons for a given molecule to show poor absorption or permeation: 1) It contains more than 5 H-bond donors, 2) The molecular weight is > 500, 3) The Log P is >over 5, 4) The sum of N's and O's is > over 10. It is called rule of 5 because the major parameters contain the figure 5.

The DDTP thank the participants and hope to see everyone at the next symposium on Biologics on May 17, 2012.



From left to right Dr. Ernesto Freire, Dr. Anthony Mittermaier, Dr. Lipinski, Dr. Elizabeth Vadas, Dr. Wolfgang Renz, Dr. Youla Tsantrizos, and Dr. Bertrand Jean-Claude.



Dr. Anthony Mittermaier (session chair) and Dr. Elizabeth Vadas during the question period.

Invitation on behalf of Dr. Laurent Lecanu, DDTP mentor and Board member of the Club de Recherche Clinique du Québec (CRCQ)



As a CRCQ executive member and counselor for McGill University, I am pleased to announce our 54th meeting to be held next October. As it happens every year, we ask for generous donors among our peers to be able to pursue our activity.

For this purpose, please see a [detailed letter](#) about our activity, the next meeting and how we would like you to contribute. In addition, please see [the flyer](#) of the meeting and [a letter of the secretary of CRCQ](#), Michele Brochu.

DDTP symposium : The drug development process

The 4th DDTP symposium took place on October 12, 2011 at the McGill Faculty Club and focused on molecular recognition in drug discovery. Chaired by Dr. Youla Tsantrizos, the symposium included three invited lecturers from industry. Dr. Wolfgang Jahnke (Novartis, Basel, Switzerland) discussed the fragment-based approach in drug discovery research. Dr. Patricia Schroeder (AstraZeneca, Boston) presented a lecture on the impact of drug-drug interactions and pharmacokinetic variability on PK/PD endpoints. Dr. Ann Kwong (Vertex, Boston, MA) described the path towards the discovery of Telaprevir: a novel protease inhibitor for the treatment of Hepatitis C virus.

The symposium was well attended with a total number of participants of 107 participants including students, mentors, and visitors. The DDTP thanks all attendants for their participation and the speakers for their excellent lectures.

DDTP symposium : The drug development process (continued)



From left to right: Dr. Bertrand Jean-Claude, Dr. Wolfgang Jahnke, Dr. Ann Kwong, Dr. Youla Tsantrizos, Dr. Anthony Mittermaier, Dr. Phil Oldfield, Dr. John DiBattista.



From left to right: Dr. Wolfgang Jahnke, Dr. Patricia Schroeder, Dr. Bertrand Jean-Claude, Dr. Phil Oldfield, Dr. Anthony Mittermaier, Dr. John DiBattista

DDTP Mentors win the CQDM Explorer grant competition



We are pleased to announce that Dr. Terrence Hebert (DDTP mentor and member of the Scholarship and Fellowship committee) won the CQDM Explore competition 2011 with his project entitled "FIAsH-Walk Mapping: A Step-by-Step Approach to GPCR Conformation Cartography". The project seeks to generate a library for G-protein coupled receptor sensors for the analysis of the conformational mapping of receptor dynamics upon binding and activation. Dr. Stephane Laporte (a co-investigator in this project) is also a DDTP mentor and member of the Mentorship and Membership committee. On behalf of the DDTP, we congratulate Dr. Hebert and Dr. Laporte. We wish them success in their project.

Winners of the fall 2011 competition

A total of 27 applications were reviewed for our fall 2011 competition. Of the 27 applicants, 20 were granted an award, for a success rate of 74%. Seventeen of the applications came from the Department of Chemistry (63%), 6 from the Department of Pharmacology (22%) and 4 from the Department of Medicine (15%). The awards were granted to 3 Master's, 14 Ph.D. students and 3 post-doctoral fellows.

The award supported by the Oncology Training Fund, which was created with a donation from Pfizer, was attributed to Joris De Schutter, a Ph.D. student from the Department of Chemistry (mentor: Dr. Youla Tsantrizos), who received the highest score in his category.

The current competition brings the total number of DDTP awards since the inception of the program to 72. We welcome our new trainees to the program and wish them a very productive year.

[Click here for full results.](#)

We thank the Scholarship and Fellowship committee members for their excellent contribution to the selection of the successful candidates. We are also grateful to the [Canadian Institutes of Health Research \(CIHR\)](#), Pfizer, and the MUHC Research Institute for funding the awards granted in this competition.