

Annual Report
Division of Hematology
Department of Medicine - Jewish General Hospital
January 1 - December 31, 2014

SUMMARY

General Considerations

In the September 2014 issue of *VITAL SIGNS*, the newsletter of the McGill University Department of Medicine, a Joint Editorial performed by Dr. James Martin, Chair, Department of Medicine and Dr. Ernesto Schiffrin, Vice-Chair Research, Department of Medicine, highlighted the possible impact of the imposed healthcare reforms on our academic institution, whose goals are highest quality of patient care, excellence in teaching and cutting-edge research. In this setting the Division of Hematology, Department of Medicine, Jewish General Hospital, had, on the one hand, to comply with governmental budgetary restrictions, but on the other hand, unconditionally to maintain excellence in patient care, teaching and research. All full and associated staff members of the Division of Hematology, both IPO nurses, the bone marrow transplant nurse, the head nurse of 7 NW as well as our administrative personnel, all have worked relentlessly to maintain our eight well established Clinical Programs and the 7NW ward teaching unit in order to fulfill these goals. From May to July 2014 several Hematology staff meetings took place in order to develop reasonable and realistic solutions to shorten the hospitalization time on the ward. From August 29 until September 26, 2014, evaluation workbooks for each of the 8 Clinical Programs (Stem Cell Transplant Program, Hematology-Oncology Clinic/Segal Cancer Center, CML Clinic, MPN Clinic, MDS Clinic, Gaucher Clinic, Anti-Coagulant Clinic, and Benign Outpatient Clinic) had to be completed and forwarded to the Co-Chairs of the Clinical Program Evaluation and Prioritization Executive Committee at the JGH. These considerable external and internal pressures brought our Hematology Division together and our team spirit is excellent.

1. Clinical programs

Autologous Stem Cell Transplant Program

This year, the Jewish General Hospital's Hematology Autologous Stem Cell Transplant (ASCT) Program was the focus of government budgetary restrictions and had to reduce the number of transplants performed. Thus, several candidates for autologous stem cell transplants had to be redirected to centers closer to their homes. However, under the leadership of Dr. Martin Gyger we convinced the Hospital Direction to maintain this strong component of the McGill Bone Marrow Transplant Program with an official designation from the Ministry of Health as an approved center for the performance of ASCT (Letter of the Ministry of Health March 23, 2007). Again, most of the transplant activity has been in multiple myeloma (>50%), Hodgkin's and non-Hodgkin's lymphoma. A total of 34 autologous stem cell transplants have been performed in 2014. This therapy increases significantly the survival of patients with relapsed disease or can even lead to a cure. Since the indications for ASCT are still increasing, this Clinical Program is primordial for the mission of the Jewish General Hospital, which is to offer our patients the best possible treatment. In this context it was unpleasant for us to have to accept a reduction of the number of hours of the Transplant Nurse to 0.5 FTE (full time equivalents). In order to further

decrease expenses, most of the transplant-related procedures will be performed on an outpatient basis, whenever possible.

Hematology-Oncology Clinic/Segal Cancer Center

With over 9500 patient visits, the hematology-oncology division of the Segal Cancer Center has the critical volume to sustain expertise and high quality outcomes in patient care. However, a major issue was the government's reduction of the pharmacy budget for oncology prescriptions. In regular meetings with the team of Dr. Gerry Batist, we found solutions to decrease expenses for Velcade and Vidaza without jeopardizing of patient care. Both of our hematology-oncology "infirmières pivots" (IPOs), Chantal Cloutier and Line Bourgeois, are very appreciated by the patients, their families and the treating physicians. In particular, for new patients and their families, IPOs provide teaching and counseling regarding illness and upcoming therapies, and consult community services as needed. In order to guarantee the time necessary for these IPO specific tasks, secretarial and administrative tasks (i.e. patient admissions and requests for "medicaments d'exception") have been transferred to secretaries and treating physicians, respectively.

CML Clinic

The CML clinic, headed by Dr. Sarit Assouline, followed 110 patients this year. This platform offers an excellent teaching opportunity for the hematology fellows to become familiar with the large range of clinical presentations, follow-up under treatment, and rare side effects of second generation tyrosine kinase inhibitors. It also offers a clinical trial that studies the third generation tyrosine kinase inhibitors.

Myeloproliferative Neoplasia (MPN) Clinic

In its fifth operating year, the MPN clinic, co-directed by Drs. Jaroslav Prchal and Shireen Sirhan, is still growing by increasing the number of patients. Compared to the preceding year the total number of patients visits increased by 20%. The clinic offers innovative clinical trials for patients with polycythemia vera, essential thrombocythemia as well as primary or secondary myelofibrosis. Molecular Diagnostics have advanced the diagnostic accuracy through the introduction of CALR mutation testing in collaboration with our Molecular Diagnostics Laboratory. This clinic is well appreciated by the hematology fellows for it offers focused exposure to complex treating problems. Both MPN Clinic leaders, Drs. Shireen Sirhan and Jaroslav Prchal had in November the unique possibility to discuss *in loco* forthcoming therapeutic and diagnostic developments with Dr. William Vainchenker, the discoverer of the JAK2 mutation and co-discoverer of the Thrombopoietin gene.

Myelodysplastic Syndrome Clinic (MDS) Clinic

This nationally recognized teaching program opened in December 2012 and is run by Dr. April Shamy. In its second year, it has grown to include over 350 patient visits and offers clinical training to two hematology residents and two medical students. In the rapidly evolving field of molecular and cytogenetic sub-classification of MDS, a specialized clinic represents a major asset in the teaching of next generation hematologists.

Gaucher Clinic

For the past 17 years, this specialized program has been mandated by the government of Québec

and includes 30 patients with this rare storage disease. The increase in patients corresponds to the transfer of pediatric patients from Hôpital Sainte-Justine when they reach adulthood. Dr. Sarit Assouline is responsible for the treatment of these adult patients. The highly specialized treatment program for patients with Gaucher's disease includes established relationships with designated specialists, a research nurse, and a pharmacist for assistance with the dispensation of medication with its side effects as well as a Gaucher's disease website in order to ensure optimal patient care.

Anticoagulation Clinic

The anticoagulation clinic is staffed by all the hematologists and the overall conduct of the clinic is organized and supervised by the director, Dr. Mark Blostein. The clinic manages anticoagulation for all patients requiring such therapies and includes many patients with atrial fibrillation as well as patients with venous thromboembolic disease and mechanical heart valves. Traditionally, the complicated management of coumadin care has been the primary mandate of the clinic but more recently, with the plethora of new oral anticoagulants entering the market, expertise in the management of these drugs has become an additional role of the anticoagulation clinic. Another very important mandate of the clinic is the perioperative management of anticoagulation for surgical procedures, endoscopies, dental extractions, and other invasive procedures. The anticoagulation clinic is an integral part of the nationally and internationally recognized Centre for Thrombosis and Anticoagulation Care (headed by Dr. Susan Kahn) and collaborates with VECTOR, a consortium of Thrombosis/Anticoagulation Researchers across Eastern Canada. This clinic is also the educational "plaque tournante" for house staff during their thrombosis rotation and for hematology residents during the coagulation laboratory rotation. The anticoagulation clinic hosts regularly guests from foreign university hospitals and staff members/future staff members of other Québec hospitals in order to broaden their knowledge in the management of clinically demanding anticoagulation problems. This clinic, which participates regularly in national/ international research trials, represents a cornerstone in the optimal functioning of many surgical and medical services of the Jewish General Hospital.

Benign Outpatient Clinic

All hematologists and hematology fellows participate in the benign hematology clinic, the most involved being Dr. Arthur Rosenberg with 391 new consultations this year. He is responsible for the hemoglobin electrophoresis, primordial for a patient cohort with a high percentage of Asian, Middle-Eastern and African descent. Patients diagnosed with severe hemoglobin disorders are forwarded to the specialized thalassemia/sickle cell clinic at RVH-MUHC for regular follow-up. The benign hematology clinic is very interactive with primary care physicians and regularly identifies malignant hematologic disease at an early stage where patients often present with anemia or thrombocytopenia.

Molecular Diagnostics Laboratory

The molecular diagnostics laboratory is located in the 6th floor of the Segal Cancer Center and is run by Yuri Monczak, PhD, and Tina Haliotis, MD, PhD, both associate members of the Division of Hematology. This facility represents a cornerstone for our clinical programs and serves as the referral laboratory for molecular diagnostics for the entire McGill hematology university network. Also, in 2014, it rapidly integrated new molecular tests and was engaged in cutting-edge teaching of molecular diagnostics to hematology and pathology fellows and in the performance of tests for other Québec university hospitals. In particular, the CALR and C/EBP α

gene mutation analysis were successfully implemented and the CAP accreditation procedures and SOPs were initiated and finalized respectively.

2. Research and publications

Dr. Sarit Assouline has built up, in past years as Director of Clinical Research in Hematology-Oncology as well as Associate Director of the Clinical Research Unit, a strong Clinical Research Program in leukemia and lymphoma. As the McGill representative of the Investigational New Drug group of the NCIC, she is currently the PI of 1 phase I and 7 phase II clinical trails at the Jewish General Hospital. In collaboration with Dr. Nathalie Johnson, she finished the QCROC-02 phase II study of rituximab and panobinostat or panobinostat alone for the treatment of relapsed and refractory DLBCL. In this trial, correlative biopsies were analyzed for mutations, in particular mutations of p53 and histone modifying enzymes, as well as for gene signatures associated with response to therapy. Two manuscripts resulting from this translational study are being prepared for submission. Dr. Assouline also has succeeded in initiating, early in 2015 a clinical trial with buparlisib, a PI3K inhibitor, in CLL. For this trial she is the designated study lead at the NCIC. During 2014, Dr. Assouline was involved in 12 published or accepted peer reviewed manuscripts, either as a first-, senior-, or co-author.

Dr. Mark Blostein is director of the Clinical Investigator Program at McGill University, head of the Anticoagulation Clinic and Associate Chief of the Division of Hematology. Despite this considerable clinical and administrative workload, he manages to continue to operate a basic science thrombosis laboratory and to run several clinical trials. At ASH 2014 his laboratory had 1 oral presentation and two posters. He also was senior- or co-author of 4 peer-reviewed manuscripts and a graduate student from his laboratory obtained a PhD degree from the Department of Physiology at McGill University. The Anticoagulation Clinic was also chosen as one of five sites in Canada to test an antidote for the new oral anticoagulant Dabigatran. Dr. Blostein has become a Canada wide recognized leader in the field of anticoagulation and a major teacher/role model for the trainees in hematology and thrombosis at McGill.

Dr. Nathalie Johnson, MD, PhD, heads a basic science laboratory with a research program focused on the molecular hematopathology of malignant lymphoma, in particular DLBCL and Hodgkin's lymphoma. She also runs the Flow-Cytometry Laboratory and has introduced new lymphoma and leukemia panels in collaboration with EURO-Flow. Despite stringent budgetary conditions she succeeded in establishing high quality panels for the diagnosis of leukemias, lymphomas and myelodysplasias. She is the PI at McGill for an NCIC phase III randomized study comparing the efficacy and safety of rituximab plus lenalidomide versus rituximab plus chemotherapy followed by rituximab, in patients with previously untreated follicular lymphoma. In collaboration with Dr. Sarit Assouline she performed the molecular arm of the QCROC-02 phase II study of rituximab and panobinsotat or panobinostat alone for the treatment of relapsed and refractory DLBCL. As mentioned above, two manuscripts resulting from this translational study are being prepared for submission. In 2014, Dr. Johnson was co-author of 5 peer-reviewed manuscripts, either published or in press.

Dr. Hans Knecht joined the Division of Hematology on April 1, 2014, from Université de Sherbrooke, where he had a translational research group associated with the basic telomere

research laboratory of Raymund Wellinger, PhD. He also worked regularly as a visiting scientist in the 3D laboratory of Sabine Mai, PhD, at the Genomic Center for Cancer Research and Detection (GCCRD) at the University of Manitoba. His group recently succeeded in developing a 3D model for EBV-associated Hodgkin's lymphoma. This model is currently being tested by Drs. Knecht and Johnson on primary Hodgkin- and Reed-Sternberg cells. In 2014 Dr. Knecht was co-author or senior author of three peer-reviewed manuscripts, either published or in press.

3. Teaching and learning:

All doctors in the Division of Hematology participate in teaching activities, whether through the consultation service (Hematology and Thrombosis), clinics, Introduction to Internal Medicine, Senior Physician Rounds or Clinical Teaching Unit on 7NW. Particularities in teaching are listed as follows:

Dr. Sarit Assouline has been actively involved in Hematology Research trainee supervision (Ashley Marton, Tanja Skamene, Carolyn Elbaz), the new rotation of Hematology Fellows in the Clinical Research unit, and teaching in the Simulation Centre. She also gave the annual lymphoma lecture to Oncology residents and helped mentor fellows for career development. She also taught about clinical drug development at McGill (EXMD 625, 5 hours).

Dr. Mark Blostein taught Approach to Anticoagulation throughout the year (8 hours) to undergraduate medical students, Bridging Anticoagulation to GIM fellows (1 hour), Coagulation to Hematology fellows (10 hours a week for 8 weeks, i.e. 80 hours/year), and management of Coumadin to residents rotating through the Anticoagulation clinic (2 hours/week). His research trainee supervision includes 2 graduate PhD students, a post-doctoral fellow, a Hematology resident, and a GIM fellow.

Dr Stephen Caplan coached a team composed of 2 senior-, 3 junior residents and 2 medical students as a Medicine Ward Attending on 7NW for a 2 weeks' period.

Dr. Chantal Cassis who had been appointed Program Director of the McGill University Teaching Program effective July 1, 2013 was on Maternity leave from May until November 2014. Notwithstanding, she prepared, in collaboration with all McGill Hematologists, an excellent 60 page Residency Training Program for Adult Hematology. Thus, the Division of Hematology, McGill Department of Medicine, will be well prepared for the audit of February 4th, 2015. In summer 2014 our Division welcomed Drs. Kim Ma, Ashley Marton and Anna Nikonova as new Hematology fellows.

Dr. Martin Gyger who regularly has several patients hospitalized on 7 NW, discusses these patients every day with the 7NW team. He also spent many hours teaching the residents and Hematology fellows blood and bone marrow morphology and cytology at the microscope.

Dr. Nathalie Johnson has been actively involved in teaching students at the undergraduate, graduate and post-graduate levels at McGill (total of 13 hours) as well as in teaching of Hematology fellows (7 hours). In addition to the clinical teaching mentioned above, she supervised in her laboratory two research trainees who are enrolled in their Master's degree in the

Department of Experimental Medicine. Pierre Sesques, a Hematology resident from Lyon, France, performed a 14 months traineeship under the guidance of Dr. Johnson in her laboratory. She also supervised one summer research bursary student. Jointly with Drs. Patenaude and Knecht she was responsible for teaching flow cytometry to the Hematology fellows.

Dr. François Patenaude has twice given a 2 hours seminar on flow-cytometry to Hematology-oncology fellows dealing with basic principles, CD classification, panels of surface markers and their clinical applications. He also offered 3 seminars to oncology and surgical oncology fellows covering the basic principles of immune-oncology, immunotherapies and future perspectives.

Dr. April Shamy is an Osler Fellow in Medicine since 2009. As a role model she introduced 6 students into Physicianship and Healing in this McGill Medicine course (3 hours/month). She also taught in the McGill physical exam course in January 2014 (20 hours). As an Inpatient Ward Attending on 7NW (twice a 2 weeks' period) she supervised a team composed of 2 senior and 3 junior residents as well as 2 medical students.

4. Involvement in the community:

Dr. Sarit Assouline has participated in the Ethics committee and the Pharmacy Budget Committee of the Jewish General Hospital. She also participated at INESSS in the expert group of drug review (3 meetings) and gave lectures for Lymphoma Canada. She participated in the steering committee of GEOQ concerning the consensus guidelines to how to treat lymphomas in Québec.

Dr. Mark Blostein was an invited speaker at the University of British Columbia and acts as a member of the Thrombosis and Lipids Committee of the Heart & Stroke Foundation of Canada. He also serves as a member of the Advisory Committee for the Clinical Investigator Program at the Royal College.

Dr. Stephen Caplan succeeded in the establishment of the Jewish General Hospital as one of 11 Canadian Centers in the Canadian PNH-network. He aided Dr. Johnny Mack organize a Transfusion fellowship at Harvard.

On six occasions, Dr. Martin Gyger was invited as a guest speaker for updates in myeloma treatment at other Québec university hospitals and in Toronto. He was also invited to give the opening lecture of the 20th Congress of the AMHOQ at the end of April 2015 in Québec City. As a pioneer of bone marrow transplantation in Québec he will give a state of the art lecture on bone marrow transplantation from its beginning to present.

Dr. Nathalie Johnson acted as a member of the Medical Oncology Training Program Committee as well as a member of the PGAC at McGill where she reviewed 20 applications for the Internal Studentships and Postdoctoral Fellowships. She is the director of the provincial lymphoma tissue banking activities at the Banque de Cellules Leucémiques du Québec, where she initiated and directed the integration of lymphoma tissue throughout Quebec. She was an invited clinician-scientist at a 2 days workshop at the Terry Fox Young Persons' Cancer Research Program in Toronto at end of March. She was also invited to participate in the GEOQ consensus meeting on malignant lymphomas held on October 25th in Montréal.

Dr. Hans Knecht was an invited speaker at the McGill University-Department of Medicine Research Symposium, Montréal, May 2nd as well as at the International Imaging Symposium to celebrate the 15th Anniversary of the GCCRD at the University of Manitoba, Winnipeg. He was also invited to participate in the GEOQ consensus meeting on malignant lymphomas that was held on October 25th in Montréal

Dr. Yuri Monczak was an Advisor to the Québec Régie de la Santé, section biologie moléculaire. He also acted as a jury member for the yearly science competition of a private high-school.

Dr. François Patenaude was an invited speaker au Symposium Québécois du Cancer du Sein 2014 and at the Canadian Kidney Cancer Forum in Toronto. He also gave 4 CME lectures and acted as Co-Chair at the Montreal Immuno-Oncology Summit.

Dr. April Shamy was a member of the Organizing committee of the 2014 CCMDS International Conference in Banff, Alberta. She was mainly involved in the updating of CLEARPATH, a web based tool for the management of MDS. She also organized a memorable surprise party for Dr. Stephen Caplan to honor his outstanding performance over 16 years as Chief of the Division of Hematology at the Jewish General Hospital.

5. Partnerships:

Due to budgetary restrictions the division of Hematology had to limit its out-reach program by declining to serve as a “corridor de service” for AML patients from St. Cabrini-, Valleyfield- and Jean Talon Hospital.

However, with Jean Talon, an “Entente de Services en Hématologie” was signed October 20th 2014 indicating that patients in need of an ultra-specialized treatment will be transferred to the Jewish General Hospital.

Due to budgetary restrictions the division of Hematology was forced not to accept patients living in the 450 telephone area code unless they insisted to be treated at the Jewish General Hospital.

6. Milestones: new hires, highlights, promotions, and retirements:

Dr. Hans Knecht, Professor of Medicine at the University of Sherbrooke and a member of the Hematology division at CHUS was selected to replace Dr. Stephen Caplan, effective April 1, 2014. Dr. Knecht has also been appointed by the Chairman of the Department of Medicine to become the University Division Director. Dr. Caplan prepared a seamless transition allowing him to continue the high quality clinical, teaching and research programs of the Division.

Dr. William Vainchenker, MD, PhD, was the honored guest speaker at the First Clinical Arthur Rosenberg Lecture, entitled “Myeloproliferative Neoplasms and JAK2 Activation” held November 3rd at the Jewish General Hospital. In 2007 Dr. Vainchenker had been awarded *The William Dameshek Prize* of the ASH for his discovery of the JAK2 v617f mutation. He also was a co-discoverer of thrombopoietin. The Clinical Arthur Rosenberg Lecture was initiated to honour outstanding Hematologists for their accomplishments. This lecture is possible thanks to a

donation from the Jonathan Goodman Family Foundation to Dr. Arthur Rosenberg.

Dr. Sarit Assouline was promoted to the rank of Associate Professor of Medicine at McGill 1st of December 2014.

6. Honours, awards, and prizes: None reported

SECTION I - DIVISION STATUS UPDATE

1. Mission and objectives of the Division: The principle goals for the next years will be:

- to offer cutting-edge treatment to the very sick hematology patients,
- to increase patient recruitment for phase I and II trials, to progress in our Hematology Fellowship program,
- to strengthen and expand laboratory hematology,
- to increase the collaboration with the other Hematology McGill sites,
- to increase top-level research production in basic, translational and clinical research,
- to solidify the administrative (secretarial) domain of the Division and
- to improve our Clinical Programs despite forthcoming financial restrictions and reorganization of the current healthcare system.

Concerning the recruitment of new young staff Hematologists the vision remains exactly the same as that formulated by Dr. Stephen Caplan in the 2013 Annual Report, as follows (verbatim): The principle goals for the future will be to recruit young physicians with academic ambition and appropriate training to accomplish their goals. This requires identification early on of residents during their training, assisting them in finding the best academic programs to further their goals, and providing an attractive environment to which they could be recruited and flourish as clinical or laboratory researchers. The success of clinician-scientists hinges on planning to ensure mentoring by senior physicians or scientists, protected time for research and a strong financial base to support their research activities.

2. A nominative list of academic staff, their academic rank

Dr. Sarit Assouline	Assistant Professor Active
Dr. Mark Blostein	Associate Professor Active
Dr. Stephen Caplan	Associate Professor Active
Dr. Chantal Cassis	Faculty Lecturer Active
Dr. Martin Gyger	Full Professor Active
Dr. Nathalie Johnson	Assistant Professor, tenure track Active
Dr. Hans Knecht Full	Professor Active
Dr. François Patenaude	Assistant Professor Active
Dr. Jaroslav Prchal	Associate Professor Active
Dr. Arthur Rosenberg	Associate Professor Active
Dr. April Shamy	Assistant Professor Active
Dr. Shireen Sirhan	Faculty Lecturer Active

SECTION II - GRANTS, PUBLICATIONS, AND SERVICE OUTSIDE OF MCGILL

1. Grants and awards received

Dr. Sarit Assouline

- 2010-2014 Fonds de Recherche en Santé du Québec, chercheur clinicien boursier Junior 1
2013-2017 Co-applicant with Dr. Wilson Miller on CIHR grant; \$150,000 for 4 years
2014-2017 Co-applicant with Dr. Nathalie Johnson for “Optimizing therapy for STAT6-mutant DLBCL”, CCSRI, \$ 199,600 for three years.
2014-2016 Co-investigator with Katherine Borden on a grant from The Leukemia & Lymphoma Society of Canada.

Dr. Mark Blostein

- 2012-2014 Co-investigator of a clinical trial 5%, Heart and Stroke Foundation of Canada; \$140,000; 3 years; A prospective cohort study on the safety of interruption of dabigatran therapy for invasive procedures
2014-2016 Principal Investigator: Operating Grant of the Heart and Stroke Foundation of Canada. \$440,000 for 3 years
2014 Site Investigator: Clinical trial for perioperative management of warfarin. CIHR funded
2014 Site Investigator: Clinical trial for perioperative management of warfarin. NIH funded. \$ 34,000
2014 Site Investigator: Clinical trial for perioperative management of ITP. Funded by Glaxo.
2014 Site Investigator for PAUSE, a CIHR funded clinical trial that uses a standardized protocol for peri-operative management for all three novel anticoagulants
2014 Funding from Bayer for the development of an INR measurement for rivaroxaban based on patient samples

Dr. Nathalie Johnson

- 2011-2015 Fonds de Recherche en Santé du Québec (FRSQ), chercheur clinicien boursier Junior 1
2013-2016 CIHR; Principal Investigator. Overcoming therapeutic resistance in lymphoma. \$449,166.00
2013-2018 CIHR; co-PI; (PI Dr. Ryan Morin); \$612,720 total but \$22,500 for her work Investigating the mutations driving non Hodgkin lymphomas and developing plasma-based assays for tumour detection and monitoring
2014-2016 Co-PI. (PI Dr Koren Mann) RASGRP4 mutations in R-CHOP resistant DLBCL. The Leukemia & Lymphoma Society of Canada. \$ 120,000
2014-2016 Merck, Sharp & Dohme Corp./McGill Faculty of Medicine Grant. (PI Dr. Jerry Pelletier). Conditional Genome Engineering in Mice. Dr. Johnsons’ part is sequencing of human Burkitt lymphoma exomes (4,000/year)

2015-2017 CCSRI Innovation Grant; Principal Investigator. “Optimizing therapy for STAT6- mutant DLBCL”, CCSRI , \$ 199,600 for three years.

Dr. Hans Knecht

2012-2014 Co-PI. (PI Dr Donna Wall). 3D telomere structure as a biomarker in Hodgkin lymphoma. The Leukemia & Lymphoma Society of Canada. \$ 120,000

2014-2015 Principal Investigator : Nouvelles cibles thérapeutiques dans le lymphome de Hodgkin réfractaire. Pilot project \$ 15,000. CRC Étienne-Le Bel, CHUS.

2. Scholarly works published in the 2014 calendar year (*in press* not included):

Dr. Sarit Assouline

- Varga C, Holcroft C, Kezouh A, Bucatel S, Johnson N, Petrogiannas-Haliotis T, **Assouline S**. Comparison of outcomes among patients aged 80 and over and younger patients with diffuse large B cell lymphoma: a population based study. *Leuk Lymphoma*. 2014 Mar; 55(3):533-7.

- Nielsen T, Diaz Z, Christodoulopoulos R, Charbonneau F, Qureshi S, Benlimame N, Camlioglu E, Constantin A, Klein K, Crump M, Morin R, Cerchietti L, Johnson N, Haliotis TP, Miller WH, Jr, **Assouline S**, Mann KK. Methods for biomarker acquisition from serial blood and tumor biopsy collections in multi-center diffuse large B-cell lymphoma clinical trials. *Cancer Epidemiol Biomarkers Prev*. 2014 Dec;23(12):2688-93.

- Damlaj M, **Assouline S**. Is there a role for omacetaxine in the management of CML in the era of the TKIs? *Leuk Lymphoma* 2014;25:1-2.

- Kuruvilla J, **Assouline S**, Hodgson D, MacDonald D, Stewart D, Christofides A, Komolova M, Connors J. A Canadian Evidence Based Guideline for the treatment of Follicular Lymphoma: Joint Consensus of the Lymphoma Canada Scientific Advisory Board. *Clin Lymphoma Myeloma Leuk*. 2014 Aug 2. pii: S2152-2650(14)00310-3. doi: 10.1016/j.clml.2014.07.015. [Epub ahead of print] Review.

- Gambacorti-Passerini C, Brümmendorf TH, Kim DW, Turkina AG, Masszi T, **Assouline S**, Durrant S, Kantarjian HM, Khoury, Zaritskey A, Shen ZX, Jin L, Vellenga E, Pasquini R, Mathews V, Cervantes F, Besson N, Turnbull K, Leip E, Kelly V, Cortes JE. Bosutinib efficacy and safety in chronic phase chronic myeloid leukemia after imatinib resistance or intolerance: minimum 24-month follow-up. *American Journal of Hematology – Am J Hematol*. 2014 Jul;89(7):732-42.

- Zahreddine HA, Culjkovic-Kraljacic BB, **Assouline S**, Gendron P, Romeo AA, Morris SJ, Cormack G, Jaquith JB, Cerchietti L, Cocolakis E, Bergeron J, Leber B, Becker MW, Pei S, Jordan CT, Miller WH, Borden KLB. The sonic hedgehog factor Gli1 imparts drug resistance through inducible glucuronidation. *Nature*. 2014: 511:90-93.

- Damlaj M, **Assouline S**. Bosutinib for the Treatment of Ph+ Chronic Myelogenous Leukemia. Where Does It Fit? *The Journal of OncoPathology*. 2014;2, 53-62.

- Gambacorti-Passerini C, Brummendorf TH, Kim DW, Turkina AG, Masszi T, **Assouline S**, Durrant S, Kantarjian HM, Khoury HJ, Zaritskey A, Shen ZX, Jin J, Vellenga E, Pasquini R, Mathews V, Cervantes F, Besson N, Turnbull K, Leip E, Kelly V, Cortes JE. Bosutinib efficacy and safety in chronic phase chronic myeloid leukemia after imatinib resistance or intolerance: minimum 24-month follow-up. *Am J Hematol*. 2014; 89:732-742.

- Fanale M, **Assouline S**, Kuruvilla J, Solal-Céligny P, Heo DS, Verhoef G, Corradini P, Abramson JS, Offner F, Engert A, Dyer MJ, Carreon D, Ewald B, Baeck J, Younes A, Freedman AS. Phase IA/II, multicentre, open-label study of the CD40 antagonistic monoclonal antibody lucatumumab in adult patients with advanced non-Hodgkin or Hodgkin lymphoma. *Br J Haematol.* 2014 Jan;164(2):258-6.

Dr. Mark Blostein

- Rodger MA, Hague WM, Kingdom J, Kahn SR, Karovitch A, Sermer M, Clement AM, Coat S, Chan WS, Said J, Rey E, Robinson S, Khurana R, Demers C, Kovacs MJ, Solymoss S, Hinshaw K, Dwyer J, Smith G, McDonald S, Newstead-Angel J, McLeod A, Khandelwal M, Silver RM, Le Gal G, Greer IA, Keely E, Rosene-Montella K, Walker M, Wells PS; TIPPS Investigators. (**Blostein M** included). Antepartum dalteparin versus no antepartum dalteparin for the prevention of pregnancy complications in pregnant women with thrombophilia (TIPPS): a multinational open-label randomised trial. *Lancet.* 2014 Nov 8;384(9955):1673-83.
- Laurance S, Aghourian MN, Jiva Lila Z, Lemarié CA, **Blostein M**. Gas6-induced tissue factor expression in endothelial cells is mediated through caveolin-1-enriched microdomains. *J Thromb Haemost.* 2014;12(3):395-408.
- Kahn SR, Shapiro S, Wells PS, Rodger MA, Kovacs MJ, Anderson DR, Tagalakis V, Houweling AH, Ducruet T, Holcroft C, Johri M, Solymoss S, Miron MJ, Yeo E, Smith R, Schulman S, Kassis J, Kearon C, Chagnon I, Wong T, Demers C, Hanmiah R, Kaatz S, Selby R, Rathbun S, Desmarais S, Opatrny L, Ortel TL, Ginsberg JS; SOX trial investigators. (**Blostein M** included). Compression stockings to prevent post-thrombotic syndrome: a randomised placebo-controlled trial. *Lancet.* 2014 Mar 8;383(9920):880-8.
- Mfoumou E, Tripette J, **Blostein M**, Cloutier G. Time-dependent hardening of blood clots quantitatively measured in vivo with shear-wave ultrasound imaging in a rabbit model of venous thrombosis. *Thromb Res.* 2014 Feb;133(2):265-71.

Dr. Nathalie Johnson

- Varga C, Holcroft C, Kezouh A, Bucatel S, Johnson N, Petrogiannas-Halioitis T, Assouline S. Comparison of outcomes among patients aged 80 and over and younger patients with diffuse large B cell lymphoma: a population based study. *Leuk Lymphoma.* 2014 Mar; 55(3):533-7.
- Chambwe N, Kormaksson M, Geng H, De S, Michor F, Johnson NA, Morin R, Scott DW, Godley LA, Gascoyne RD, Melnick A, Campagne F, Shaknovich R. Variability in DNA methylation defines novel epigenetic subgroups of DLBCL associated with different clinical outcomes. *Blood.* 2014 Mar 13;123(11):1699-708.
- Nielsen TH, Diaz Z, Christodoulopoulos R, Charbonneau F1, Qureshi S, Rousseau C, Benlimame N, Camlioglu E, Constantin AM, Oros KK, Krumsiek J, Crump M, Morin RD, Cerchietti L, Johnson NA, Halioitis TP, Miller, Jr. WH, Assouline S, Mann KK.. Methods for sample acquisition and processing of serial blood and tumour biopsies for multi-center diffuse large B-cell lymphoma clinical trials. *Cancer Epidemiol, Biomarkers Prev.* 2014 Dec;23(12):2688-93.
- Chan FC, Telenius A, Healy S, Ben-Neriah S, Mottok A, Lim R, Drake M, Hu S, Ding J, Ha G, Scott DW, Kridel R, Bashashati A, Rogic S, Johnson N, Morin RD, Rimsza LM, Sehn L, Connors JM, Marra MA, Gascoyne RD, Shah SP, Steidl C. An RCOR1 loss-associated gene

expression signature identifies a prognostically significant DLBCL subgroup. Blood. 2014 Nov 13. pii: blood-2013-06-507152.

Dr. Hans Knecht

- Righolt C, Guffei A, Knecht H, Young IT, Stallinga S, van Vliet LJ, Mai S. Differences in nuclear DNA organization between lymphocytes, Hodgkin and Reed-Sternberg cells revealed by structured illumination microscopy. J Cell Biochem. 2014, 115:1441-8.

- Kongruttanachok N, Cayre YE, Knecht H, Mai S. Rapid separation of mononuclear Hodgkin from multinuclear Reed-Sternberg cells. Laboratory Hematology 2014, 20:2-6.

3. Academic and community engagement service outside of McGill by individual members of the unit

Dr. Sarit Assouline

International research collaboration with Dr. Carlo Gambacorti, Italy, within the International CML Registry, where she acts as head of research for the Québec CML Registry.

Dr. Nathalie Johnson

12/2014 Nominated by the NCIC Clinical Trials Group to be on the joint US NCI NCTN Correlative Sciences Committee

6/2014 AACRC Mini-Symposium on Therapeutic Resistance. Invited speaker

12/2014 Post ASH South American meeting organized by Roche International. Invited speaker

Dr. Hans Knecht

18/4/2014 University of Manitoba, Faculty of Medicine, Promotional Committee, external evaluator

18/8/2014 CHUS, Clinical Sciences, PhD thesis defense external examiner

Dr. Yury Monczak

-Guest lecturer in Molecular Biology at the Ukrainian Catholic University in Lviv (10 hours)
Dawson College Program in Medical Technology (3 hours)

-University of Montreal, first year medical program, hematology and pathology (MMD1231, 1229 40 hours)

SECTION III - CONFIDENTIAL INFORMATION

1. Consulting activities: None reported

Respectfully submitted,



Hans Knecht, MD, FRCPC, FMH, FMAH
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