

Annual Report
Division of Pulmonary Diseases
Department of Medicine - Jewish General Hospital
January 1 - December 31, 2018

SUMMARY

The Division of Pulmonary continues to pursue its goals of excellence in clinical care, research and teaching.

Clinical Activities:

The division consists of 9 full time GFT pulmonologists all of whom perform clinical activities in general pulmonary medicine on an outpatient basis. In addition, there are super-specialized, multi-disciplinary clinics in:

- 1) Severe asthma
- 2) COPD
- 3) Pulmonary Vascular Disease
- 4) Thrombosis
- 5) Tuberculosis
- 6) Pulmonary Oncology
- 7) Cancer Nutrition and Rehabilitation
- 8) Pulmonary Rehabilitation/ Tele-Rehabilitation
- 9) Sleep Medicine

These clinical activities take place in the out-patient pulmonary division, The Peter Brojde Lung Cancer Centre, and Mount Sinai Hospital.

In-patient activities center on our extremely busy in-patient consultation service. In addition, a full service respiratory physiology lab continues to provide a full range of pulmonary physiology testing, and the pulmonary procedure lab continues to provide invasive airway and pleural procedures. Dr. Nathalie Saad is a member of our internal medicine policy committee and chief administrator at Mount Sinai with respect to outpatient clinics, and the inpatient pulmonary rehabilitation floor.

The innovative Balloon Pulmonary Angioplasty Program was initiated by Dr. Andrew Hirsch along with the division of Cardiology for the treatment of distal chronic thromboembolic pulmonary hypertension. We are the only center in Quebec, and one of only two centres in Canada providing this novel therapy for this disease with limited treatment options.

1. Research and publications:

The division of Pulmonary Medicine continues to be active in research divided into sub-specialty sections including 1) Airway Center: Encompassing COPD and Asthma and Pulmonary Rehabilitation, 2) Pulmonary Oncology, 3) Pulmonary Vascular Disease, and 4) Epidemiology.

We currently have an active research program in severe asthma and in COPD. The division is participating in multiple multi-centre clinical trials focused on the treatment of patients with

these diseases. In COPD we continue our exciting investigator-conceived, multi-centre, research program looking at individualization of therapy based on inflammatory phenotypes. .

In Pulmonary Oncology we continue to offer a wide variety of clinical protocols to all stages of our lung cancer population. We are concentrating on cutting edge targeted and immunologic therapies in this extremely vulnerable patient group.

In pulmonary vascular disease we continue to be involved in clinical trials for pulmonary hypertension patients, as well as various trial in acute and chronic pulmonary embolism.

Dr. Ernst continues to be very productive in pharmaco-epidemiologic studies in a wide variety of diseases.

Select publications include:

- Archer-Lahlou E, Lan C, **Jagoe RT**. Physiological culture conditions alter myotube morphology and responses to atrophy treatments: implications for in vitro research on muscle wasting. *Physiological Reports*. 2018;6(12):e13726. <https://dx.doi.org/10.14814/phy2.13726>
- Gonzalez AV, Coulombe J, **Ernst P**, Suissa S. Long-term Use of Inhaled Corticosteroids in COPD and the Risk of Fracture. *Chest*. 2018;153(2):321-328. <https://dx.doi.org/10.1016/j.chest.2017.07.002>
- Kasymjanova G, **Jagoe RT**, **Pepe C**, **Sakr L**, Cohen V, **Small D**, Muanza TM, **Agulnik JS**. Does the presence of emphysema increase the risk of radiation pneumonitis in lung cancer patients? *Curr Oncol*. 2018;25(6):e610-e614. <https://www.ncbi.nlm.nih.gov/pmc/PMC6291283/>
- Ma KA, Kahn SR, Akaberi A, Dennie C, Rush C, Granton JT, Anderson D, Wells PS, Rodger MA, Solymoss S, Kovacs MJ, Rudski L, Shimony A, Hernandez P, Aaron SD, Pena E, Abikhzer G, **Hirsch AM**, for the ELOPE Study group. Serial imaging after pulmonary embolism and correlation with functional limitation at 12 months: Results of the ELOPE Study. *Res Pract Thromb Haemost*. 2018; 2(4):670-677. 2018 Jun 17. <https://doi.org/10.1002/rth2.12123>
- Makis W, **Palayew M**, Rush C, Probst S. Disseminated Multi-system Sarcoidosis Mimicking Metastases on 18F-FDG PET/CT. *Molecular Imaging and Radionuclide Therapy*. 2018;27(2):91-95. <https://dx.doi.org/10.4274/mirt.29200>
- Melosky B, Cheema P, **Agulnik J**, Albadine R, Bebb DG, Blais N, Burkes R, Butts C, Card PB, Chan A, Hirsh V, Ionescu D N, Juergens R, Morzycki W, Poonja Z, Sangh, R, Tehfe M, Tsao MS, Vincent M, Xu Z, Liu G. Canadian perspectives: update on inhibition of *ALK*-positive tumours in advanced non-small-cell lung cancer. *Curr Oncol*. 2018;25(5):317-328. <https://dx.doi.org/10.3747/co.25.4379>
- **Sakr L**, Hudson M, Wang M, Younanian E, Baron M, Bernatsky S. Interstitial lung disease is associated with an increased risk of lung cancer in systemic sclerosis: Longitudinal data from the Canadian Scleroderma Research Group. *Journal of Scleroderma and Related Disorders*. 2018;3(3):221-227. <https://dx.doi.org/10.1177/2397198318766825>
- Suissa S, **Ernst P**. Observational Studies of Inhaled Corticosteroid Effectiveness in COPD. *Chest*. 2018;154(2):257-265. <https://dx.doi.org/10.1016/j.chest.2018.04.006>

Drs. Sakr, Jagoe, Saad and Agulnik were all awarded the Department of Medicine Clinical Research Award in 2018.

2. Teaching and learning (undergraduate and graduate):

We continue to be very active in clinical teaching with a comprehensive pulmonary elective service for fellows, residents and students.

Dr. **Nathalie Saad** is Chair of Internal Medicine Undergraduate Medical Education at McGill.

Drs. Hirsch, Agulnik, Pepe, Sakr, Saad, Jagoe, Assayag all continue to teach on the Internal Medicine CTUs with excellent reviews from the residents and students.

Dr. Agulnik is the JGH site director for the TCP course.

Drs. Agulnik, Pepe, Sakr and Jagoe continue to teach the TCP undergraduate course.

Dr. Ernst teaches epidemiology 1st year medical students lectures and small groups as well as the advanced Pharmaco-epidemiology course.

Dr. Hirsch teaches the 1st year thrombo-embolism lecture.

Drs. Jagoe and Sakr participate in the first year small group respiratory physiology sessions.

Dr. Jagoe teaches a lecture in the Experimental Medicine Graduate course.

Drs. Ernst and Jagoe supervise MSc and PhD students.

Dr. Pepe teaches TCP core lectures, the internal medicine core lecture (academic half-day), and is the respirology elective JGH site supervisor.

3. Involvement in the community:

We continue to be very involved in the community. Under the direction of Dr. Nathalie Saad, our pulmonary rehabilitation program run out of Mount Sinai Hospital remains extremely active in the community, and continues to include a specialized group of patients with interstitial lung diseases. Furthermore, Quebec's only tele pulmonary rehabilitation program continues to grow under the leadership of Dr. Saad. Mount Sinai now offers a decentralized eight-week program to regional hospitals in eight different centres in Quebec, via the secure and free telemedicine system. Its format is the same as that of the outpatient program. The educational component and the muscle-strengthening component (half of the 60 minutes of exercise) are offered by our team through the telemedicine system. The cardio-vascular component, whether on stationary bicycle, treadmill or supervised walk, is supervised by the local team. These patients benefit from the same follow-up after pulmonary rehabilitation as the patients who come to Mount Sinai Hospital, and are seen after one, three, six and twelve months via the Telemedicine system. Via the same system, we offer tele-consultation across the province, thus offering support to primary care physicians and specialists in managing their more complicated COPD patients.

All physicians continue to support the community with educational talks to family doctors in multiple topics within respirology. In Pulmonary Oncology we have our annual Zavalkoff lecture, which this year was given by Dr. Magali Lecavalier-Barsoum.

4. Partnerships:

Our Pulmonary Oncology team continues to partner with the Rossy Cancer Network and Dr. Agulnik is a co-leader for the Disease Site Group for lung cancer. The partnership includes research initiatives across McGill hospitals which include our Pulmonary Oncology team. Dr. Saad works in partnership with at the MUHC where she conducts out-patient clinics. The thrombosis clinic continues to be a model of inter-disciplinary cooperation with Internal, Medicine, Hematology, Respiriology, nursing and research partners across Canada.

5. Milestones: New hires, promotions, and retirements: None to report.

6. Honours, awards, and prizes:

Dr Jason Agulnik was the recipient of the TCP Clinical Teacher of the Year Internal Medicine.
Anh-Thi Tran: Mona Zavalkoff Grant for Pulmonary Oncology

7. Fundraising: None to report.

SECTION I - DIVISION STATUS UPDATE

1. Mission and objectives of the Division

The Division of Pulmonary Diseases continues to provide excellence in patient care and teaching. The mission of the Division of Pulmonary Diseases is to increase accessibility to respiratory services and to provide optimal care to patient suffering from respiratory diseases.

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

Full-time (GFT) members:

Dr. Andrew Hirsch, Chief of the Division of Pulmonary Diseases, Associate Professor, McGill University

Dr. David Small, Associate Professor, McGill University

Dr. Mark Palayew, Assistant Professor, McGill University

Dr. Pierre Ernst, Professor, McGill University

Dr. Jason Agulnik, Assistant Professor, McGill University

Dr. Carmela Pepe, Assistant Professor, McGill University

Dr. Thomas Jagoe, Associate Professor, McGill University

Dr. Lama Sakr, Assistant Professor, McGill University

Dr. Nathalie Saad, Assistant Professor, McGill University

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

1. Grants and awards received

Dr. Jason Agulnik

EGFR testing on liquid biopsy samples for Non-Small Cell Lung Cancer: feasibility, results, turnaround time and impact on cost and patient

Agency: Department of Medicine, JGH

BMS-936558

TSF-CDRB436E2460

D5165C00001

CDRB436E2406

Dr. Andrew Hirsch

Investigator Initiated:

CanVECTOR (Canadian Venous Thromboembolism Clinical Trials and Outcomes Research) Network

Agency: Canadian Institutes of Health Research (CIHR), Fonds de recherche Santé Québec, JGH Foundation, McGill University

Role: Co-investigator

Predicting disease progression and mortality in myositis-associated interstitial lung disease

Agency: Fonds de recherche Santé Québec

Role: Primary investigator

D-dimer testing, tailored to clinical pretest probability, to reduce use of CT pulmonary angiography in suspected pulmonary embolism: A management study. (PE Graduated D-dimer [PEGeD] Study)

Agency: Canadian Institutes of Health Research (CIHR)

Role: Co-investigator

Apixaban for the Prevention of Venous Thromboembolism in Cancer Patients (AVERT)

Agency: Ottawa Hospital Research Institute and Canadian Institutes of Health Research (CIHR)

Role: Co-investigator

Prevalence of Post-Thrombotic Syndrome in Deep-Vein Thrombosis (DVT) Patients Treated With Dabigatran (DABI-PTS)

Agency: Oslo University Hospital

Role: Co-investigator

A study to evaluate the safety of withholding anticoagulation in patients with subsegmental PE who have a negative serial bilateral lower extremity ultrasound (SSPE)

Agency: Ottawa Hospital Research Institute

Role: Co-investigator

Active Industry sponsored:

SAVER Pilot Study: 2016-present
STEP-CAT: 2016-present
MARINER: 2015-present
PREDICTORS: 2015-present
RASET: 2015-present
AVERT: 2014-present
RAPS: 2014-present
EPCAT 2: 2013-present
LIBERTY: 2016-present
TRITON: 2015-present
GRIPHON: 2010-2018
PATENT-1 and 2: 2009-present

Dr. Pierre Ernst

Canadian Network for Observational Drug Effect Studies (cNODES)
Agency: CIHR

Statistical Methods in Pharmacoepidemiology and Perinatal Epidemiology
Agency: CIHR (Foundation Scheme)

Dr. Nathalie Saad

Development of a predictive model of sputum eosinophil in COPD patients
Agencies: Genome Canada, Genome Quebec
Role: Site PI

Clinical Implementation and Outcomes Evaluation of Blood-Based Biomarkers for COPD Management
Agencies: Genome Canada, Genome Quebec
Role: Co-Investigator

Chronic Obstructive Pulmonary Disease (COPD) and Pulmonary Rehabilitation
Agency: Department of Medicine, JGH

Dr. Lama Sakr

Algorithm for the management of empyema and complicated pleural effusions
Agency: Department of Medicine, JGH

Thomas Jagoe

Does the gut microbiome determine response to dietary intervention in cancer cachexia?
Agencies: Department of Medicine, JGH; LDI CliPP competition
Role: PI

Using multimodal prehabilitation to improve outcomes for frail patients undergoing resection of colorectal cancer

Source of Funding: Rossy Cancer Network Grant

Role: Co-Investigator

Dr. Carmela Pepe

LUSTER II: 2016 – 2018

SPIRIT: 2017- present

Dr. Mark Palayew

NTHi-MCAT002: 2017 – present

200879: 2017-2018

2. Research Trainees

Dr. Pierre Ernst

Tanja Tran Co-supervisor, PhD in Epidemiology and Biostatistics 2014-

Dr. Thomas Jagoe

Tom Zakharov Supervisor, MSc in Experimental Medicine

Noor Mady Supervisor, MSc in Experimental Medicine

Rima Nasrah Supervisor, PhD in Experimental Medicine

Monica Parmar Thesis committee member, PhD in Nursing

3. Scholarly works published in the 2018 calendar year:

- Akaberi A, Klok FA, Cohn DM, **Hirsch A**, Granton J, Kahn SR. Determining the minimal clinically important difference for the PEmbQoL questionnaire, a measure of pulmonary embolism-specific quality of life. *J Thromb Haemost.* 2018 Dec; 16(2):2454-2461. doi: 10.1111/jth.14302. [Epub 2018 Nov 2] <https://dx.doi.org/10.1111/jth.14302>
- Archer-Lahlou E, Lan C, **Jagoe RT**. Physiological culture conditions alter myotube morphology and responses to atrophy treatments: implications for in vitro research on muscle wasting. *Physiological Reports.* 2018;6(12):e13726. <https://dx.doi.org/10.14814/phy2.13726>
- Coyne ES, Bedard N, Wykes L, Stretch C, Jammoul S, Li S, Zhang K, Sladek RS, Bathe OF, **Jagoe RT**, Posner BI, Wing SS. Knockout of USP19 Deubiquitinating Enzyme Prevents Muscle Wasting by Modulating Insulin and Glucocorticoid Signaling. *Endocrinology.* 2018;159(8):2966-2977. <http://dx.doi.org/10.1210/en.2018-00290>
- **Ernst P**. Blood eosinophils in COPD and the future risk of pneumonia. *Eur Respir J.* 2018;52(1):1800981. <https://dx.doi.org/10.1183/13993003.00981-2018>

- Hicks BM, Fillion KB, Yin H, **Sakr L**, Udell JA, Azoulay L. Angiotensin converting enzyme inhibitors and risk of lung cancer: population based cohort study. *BMJ*. 2018;k4209. <https://dx.doi.org/10.1136/bmj.k4209>
- Kapchinsky S, Vuda M, Miguez K, Elkrief D, De Souza AR, Baglolle CJ, Aare S, Macmillan NJ, Baril J, Rozakis P, Sonjak V, Pion C, Aubertin-Leheudre M, Morais JA, **Jagoe RT**, Bourbeau J, Taivassalo T, Hepple RT. Smoke-induced neuromuscular junction degeneration precedes the fibre type shift and atrophy in chronic obstructive pulmonary disease. *The Journal of Physiology*. 2018;596(14):2865-2881. <https://dx.doi.org/10.1113/JP275558>
- Kasymjanova G, Tran A-T, Cohen V, **Pepe C, Sakr L, Small D, Agulnik JS, Jagoe RT**. The use of a standardized Chinese herbal formula in patients with advanced lung cancer: a feasibility study. *Journal of Integrative Medicine*. 2018;16(6):390-395. <http://www.sciencedirect.com/science/article/pii/S2095496418300980>
- Kasymjanova G, **Jagoe RT, Pepe C, Sakr L, Cohen V, Small D**, Muanza TM, **Agulnik JS**. Does the presence of emphysema increase the risk of radiation pneumonitis in lung cancer patients? *Curr Oncol*. 2018;25(6):e610-e614. <https://www.ncbi.nlm.nih.gov/pmc/PMC6291283/>
- Gonzalez AV, Coulombe J, **Ernst P**, Suissa S. Long-term Use of Inhaled Corticosteroids in COPD and the Risk of Fracture. *Chest*. 2018;153(2):321-328. <https://dx.doi.org/10.1016/j.chest.2017.07.002>
- Klil-Drori AJ, Coulombe J, Suissa S, **Hirsch A**, Tagalakis V. Temporal trends in outpatient management of incident pulmonary embolism and associated mortality. *Thrombosis Research*, 2018 Jan; 161: 111-116. doi: 10.1016/j.thromres.2017.10.026. Epub 2017 Nov 6. PMID: 29132688 <https://dx.doi.org/10.1016/j.thromres.2017.10.026>
- Ma KA, Kahn SR, Akaberi A, Dennie C, Rush C, Granton JT, Anderson D, Wells PS, Rodger MA, Solymoss S, Kovacs MJ, Rudski L, Shimony A, Hernandez P, Aaron SD, Pena E, Abikhzer G, **Hirsch AM**, for the ELOPE Study group. Serial imaging after pulmonary embolism and correlation with functional limitation at 12 months: Results of the ELOPE Study. *Res Pract Thromb Haemost*. 2018; 2(4):670-677. 2018 Jun 17. <https://doi.org/10.1002/rth2.12123>
- Makis W, **Palayew M**, Rush C, Probst S. Disseminated Multi-system Sarcoidosis Mimicking Metastases on 18F-FDG PET/CT. *Molecular Imaging and Radionuclide Therapy*. 2018;27(2):91-95. <https://dx.doi.org/10.4274/mirt.29200>
- Melosky B, Cheema P, **Agulnik J**, Albadine R, Bebb DG, Blais N, Burkes R, Butts C, Card PB, Chan A, Hirsh V, Ionescu D N., Juergens R, Morzycki W, Poonja Z, Sangh, R, Tehfe M, Tsao MS, Vincent M, Xu Z, Liu G. Canadian perspectives: update on inhibition of ALK-positive tumours in advanced non-small-cell lung cancer. *Curr Oncol*. 2018;25(5):317-328. <https://dx.doi.org/10.3747/co.25.4379>
- Nasrah R, Kanbalian M, Van Der Borch C, Swinton N, Wing S, **Jagoe RT**. Defining the role of dietary intake in determining weight change in patients with cancer cachexia. *Clin Nutr*. 2018;37(1):235-241. <https://dx.doi.org/10.1016/j.clnu.2016.12.012>

- Nurgali K, **Jagoe RT**, Abalo R. Editorial: Adverse Effects of Cancer Chemotherapy: Anything New to Improve Tolerance and Reduce Sequelae? *Front Pharmacol.* 2018;9. <https://dx.doi.org/10.3389/fphar.2018.00245>
- **Sakr L**, Hudson M, Wang M, Younanian E, Baron M, Bernatsky S. Interstitial lung disease is associated with an increased risk of lung cancer in systemic sclerosis: Longitudinal data from the Canadian Scleroderma Research Group. *Journal of Scleroderma and Related Disorders.* 2018;3(3):221-227. <https://dx.doi.org/10.1177/2397198318766825>
- Suissa S, Dell'Aniello S, **Ernst P**. Comparative effectiveness of LABA-ICS versus LAMA as initial treatment in COPD targeted by blood eosinophils: a population-based cohort study. *The Lancet Respiratory Medicine.* 2018;6(11):855-862. [https://doi.org/10.1016/S2213-2600\(18\)30368-0](https://doi.org/10.1016/S2213-2600(18)30368-0)
- Suissa S, **Ernst P**. Observational Studies of Inhaled Corticosteroid Effectiveness in COPD. *Chest.* 2018;154(2):257-265. <https://dx.doi.org/10.1016/j.chest.2018.04.006>
- van Kempen LC, Wang H, Aguirre ML, Spatz A, Kasymjanova G, Vilacha JF, Groves MR, **Agulnik J**, **Small D**. Afatinib in Osimertinib-Resistant EGFR ex19del/T790M/P794L Mutated NSCLC. *J Thorac Oncol.* 2018;13(9):e161-e163. <https://doi.org/10.1016/j.jtho.2018.04.020>
- Wang H, **Agulnik J**, Kasymjanova G, Wang A, Jiménez P, Cohen V, **Small D**, **Pepe C**, **Sakr L**, Fiset PO, Auger M, Camilleri-Broet S, Alam El Din M, Chong G, van Kempen L, Spatz A. Cytology cell blocks are suitable for immunohistochemical testing for PD-L1 in lung cancer. *Ann Oncol.* 2018;29(6):1417-1422. <http://dx.doi.org/10.1093/annonc/mdy126>

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

Dr. Andrew Hirsch

- PHA Canada medical advisory board
- Reviewer CIHR Project Grant Fall 2018
- Chair: CTS Pulmonary Vascular Sub-Committee

Dr. Pierre Ernst

- Member, CIHR College of reviewers
- Reviewer, CIHR Project Grant: Spring 2018 competition
- President, comité d'excellence clinique en usage optimal du médicament, INESSS
- Member, Board of Directors, Transplant Quebec
- Reviewer, Editorial or manuscript reviews for multiple scholarly journals including Chest, Thorax and ERJ.
- Medical expert, Régie de l'assurance automobile du Québec.

Dr. Carmela Pepe

- Royal College examiner

Nathalie Saad:

- Chair, CIUSSS Centre-Ouest-de-l'Ile-de-Montréal; CIUSSS Committee for assessment of medical acts (CAMA) (nominated) Chair, CIUSS
- Chair of Internal Medicine Undergraduate Medical Education at McGill
- Member of the Board, College des Médecins du Québec
- Member, Agence de Santé et des services sociaux de Montréal; Implementation Committee, screening and chronic management of COPD in primary care program: integrated care model
- Medecin Expert, Ministère de la Santé et des services sociaux bureau de Montréal; Implementation Committee, screening and chronic management of COPD in primary care program: integrated care model

Mark Palayew

- McGill representative for the Association des pneumologues de la province de Québec

SECTION III - CONFIDENTIAL INFORMATION

- 1. Consulting activities:** Nothing to report.



Submitted by:

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