

Meakins-Christie Laboratories 50th Anniversary Symposium and Respiratory Research Day



Wednesday, May 17 – Thursday, May 18, 2023

InterContinental Hotel, Old Montreal
360 Saint-Antoine St. West, QC, H2Y 3X4
Room: Sarah Bernhardt

DAY 1 – Wednesday, May 17, 2023

07:30 *Workshop Registration & Light Breakfast*
Room: Foyer S. Bernhardt

08:00 **Welcome Remarks: Basil Petrof & David Eidelman**
Historical perspective on the Meakins-Christie Laboratories

SESSION 1

Chairs: Simon Rousseau, Sushmita Pamidi

08:30 **Peter Calverley**, University of Liverpool, UK
The past is a foreign country – Life lessons from the Meakins-Christie

09:00 **Benjamin Smith**, McGill University
Airway imaging and the developmental origins of COPD

09:20 **Joaquim Gea**, Universitat Pompeu Fabra, Hospital del Mar
Metabolomic biomarkers in COPD and its phenotypes

09:50 **Erwan Pernet**, University of Quebec – Trois-Rivieres
A new player in alveolar macrophages development: neutrophils

10:20 *Health Break*

Room: Foyer S. Bernhardt

SESSION 2

Chairs: Arnold Kristof, Nicole Ezer

10:50 **Tony Eissa**, University of California at Irvine, USA
Lessons in mentorship and career development

11:20 **Sabah Hussain**, McGill University
Discovery of new autophagy genes regulating skeletal muscle health

11:40 **Alexandre Demoule**, Sorbonne University, France
Diaphragm dysfunction in the critically ill: of mice, men, beer and gym

12:10 *Lunch*

Room: Nordheimer

SESSION 3

Chairs: Anne-Marie Lauzon, Gregory Fonseca

13:10 **Jason Bates**, University of Vermont, USA
Understanding lung disease using agent-based models

13:40 **Jun Ding**, McGill University
Lung research in a computational laboratory

14:00 **Eva Kaufmann**, Queens University
Trained immunity in infectious and non-infectious pulmonary diseases

14:30 **Carolyn Baglole**, McGill University
Got your head in the clouds?

SESSION 4: Trainee Oral Presentations I

Chairs: John Kimoff, Mara Ludwig

15:00 **Amanda Marino** Supervisor: Deborah Assayag
Racial Disparities in Lung Biopsies for Interstitial Lung Diseases in Canada

- 15:15 **Kriti Agarwal** Supervisor: Tania Janaudis-Ferreira
Feasibility of an animated video intervention post-acute exacerbation of COPD
- 15:30 **Paola A Rojas-Gutierrez** Supervisor: Larry Lands
Development of aerosolized pH-switchable lipid nanoparticles for the delivery of nucleic acids for the treatment of lung disease

SESSION 5: Trainee Poster Presentations I

Room: Sherwood/Stratton

Health Break Served during Poster Session

Poster Instructions and Interactive Poster Session

View the abstracts online: <https://event.fourwaves.com/meakins50th/schedule>

17:45 *Day 1 Adjourned*

18:00 **SPiRE Trainee and PDF Social Event**

Details to be announced

18:30 **Banquet Dinner – By Invitation Only**

Basil Petrof, McGill University & **Thomas Similowski**, Inserm-Sorbonne University
Tribute to Joseph Milic-Emili

James Martin, McGill University & **Qutayba Hamid**, University of Sharjah
How the Meakins brought science and different cultures together for 50 years

Michiaki Mishima, Kyoto University & **Satoru Ebihara**, Tohoku University
Influence of the Meakins-Christie on respiratory research in Japan

DAY 2 – Thursday, May 18, 2023

07:30 *Light Breakfast*

Room: Foyer S. Bernhardt

2023 MACKLEM LECTURE

Chair: Basil Petrof

- 08:00 **Darcy Wagner**, Lund University
Building a lung from scratch: a new frontier to study human disease and to generate transplantable tissue units

SESSION 6

Chairs: James Martin, Deborah Assayag

- 08:45 **Thomas Similowski**, Inserm-Sorbonne University, France
Breathe with your brain, think with your lungs: the Meakins-Christie as a beacon for out-of-the-box navigation
- 09:15 **Maziar Divangahi**, McGill University
Unlocking the power of innate immunity against pulmonary infections
- 09:35 **Geoffrey Maksym**, Dalhousie University
Respiratory mechanics – in“sights” into respiratory function

10:05 *Health Break*

Room: Foyer S. Bernhardt

SESSION 7

Chairs: Irah King, Jonathon Campbell

- 10:40 **Malcolm King**, University of Saskatchewan
A personal journey from mucus rheology and mucociliary clearance to Indigenous respiratory health and disease
- 11:10 **Dao Nguyen**, McGill University
Host-pathogen interactions in chronic *Pseudomonas aeruginosa* infections
- 11:30 **Esther Barreiro**, Hospital del Mar Medical Research Institute, Spain
Differential clinical phenotypes in bronchiectasis patients: evidence from cluster analysis
- 12:00 **Meng-Chih Lin**, Chang Gung University, Taiwan
Clinical and translational respiratory research at the Chang Gung Memorial Hospitals: A Taiwanese perspective
- 12:20 **Qutayba Hamid**, McGill University & University of Sharjah
IL5 from discovery to clinical implication

12:40 *Lunch**Room: Nordheimer***SESSION 8: Trainee Oral Presentations II**

Chairs: Elizabeth Fixman, Tania Janaudis-Ferreira

- 13:40 **Tom Podolsky** Supervisor: Basil Petrof
Intermittent Glucocorticoid Therapy Prevents Signs of Trained Innate Immunity in Macrophages from Muscular Dystrophy (mdx) Mice
- 13:55 **Joshua Taylor** Supervisor: Dick Menzies
Residual respiratory disability after successful treatment of pulmonary tuberculosis: a systematic review and meta-analysis
- 14:10 **Rui Sun** Supervisor: James Martin
Elk-1-myocardin cross-inhibition determines the airway smooth muscle phenotypic polarization only when serum response factor is in low abundance

SESSION 9: Trainee Poster Presentations II

Room: Sherwood/Stratton

Health Break Served during Poster Session

- 14:25 Poster Instructions and Interactive Poster Session
View the abstracts online: <https://event.fourwaves.com/meakins50th/schedule>

16:00 *Announcement of Trainee Prizes*
Closing Remarks

Poster **SESSION 5: Trainee Poster Presentations I (Day 1)**

- 1 **Quazi Islam** Supervisor: Carolyn Baglole
A Multi-omics Approach Identifies that Human Antigen R (HuR) Controls Multiple Cellular Pathways in Idiopathic Pulmonary Fibrosis (IPF) Pathogenesis
- 2 **Lydia Labrie** Supervisors: Brian Ward & Elizabeth Fixman
Mechanisms of early life RSV infection-mediated enhancement of Type 2 allergic lung inflammation
- 3 **Julia Chronopoulos** Supervisors: Maziar Divangahi & James Martin
Immunity to influenza A virus during pregnancy: An unexpected mechanism of resistance
- 4 **Amanda Marino** Supervisor: Deborah Assayag
Racial Disparities in Lung Biopsies for Interstitial Lung Diseases in Canada
- 5 **Jean-Philippe Leduc-Gaudet** Supervisor: Sabah Hussain
MYTHO is a novel regulator of skeletal muscle autophagy, mass and integrity
- 6 **Jacquelyn Rich** Supervisor: Dao Nguyen
Proteomic changes induced by the stringent response that led to envelope adaptation and antibiotic tolerance in stationary phase *Pseudomonas aeruginosa*
- 7 **Jun Ding**
scCross: Single-cell multi-omics data integration and cross-modal generation
- 8 **Rachelle Aucoin** Supervisor: Dennis Jensen
Impact of trigeminal nerve and/or olfactory nerve stimulation on activity of human brain regions involved in the perception of breathlessness
- 9 **Teresa Gomes** Supervisors: Marta Kaminska & John Kimoff
The effect of obstructive sleep apnea on cognitive functioning among Parkinson's disease individuals: Evidence from the Canadian Longitudinal Study on Aging (CLSA)
- 10 **Danielle Karo-Atar** Supervisor: Irah King
Helminth-induced reprogramming of the stem cell compartment inhibits type 2 immunity
- 11 **Katelyn Liu** Supervisors: Gregory Fonseca & Simon Rousseau
Understanding the roles of SHC4, FGFR signaling and NETosis in COVID-19 coagulopathy
- 12 **Diana Karina Toscano Rivero** Supervisor: Bruce Mazer
Serological Assessment of Patients Undergoing Peanut Oral Immunotherapy: The Role of IgG4
- 13 **Felix Michel Girard** Supervisor: Dennis Jensen
Effect of induced metabolic acidosis on the ventilatory and perceptual response to incremental cycle exercise testing in healthy adults
- 14 **Patrick Greiss** Supervisor: Carolyn Baglole
The effect of cannabis-derived terpenes on the innate immune response in the lungs
- 15 **Stephan Matecki**
Mitochondrial fission contributes to diaphragmatic weakness induced by mechanical ventilation
- 16 **Rafael Intrevado** Supervisor: Anne-Marie Lauzon
Isolating the Contribution of Type 2 Immune Effectors in Asthma: IL-13, IL-5, IL-4, and ILC2s

17	Roham Gorgani The Impact of Vaporized Cannabis Distillates on Pulmonary Immune Modulation	Supervisor: Carolyn Baglole
18	Muyang Zhou The Role of the BTLA-HVEM Signaling Axis in Modulating CD4 T Cell and Airway Smooth Muscle Cell Phenotypes	Supervisor: James Martin
19	Sofia Paoli Pulmonary Toxicity of E-cigarettes in a Murine Model of Allergic Asthma	Supervisor: Carolyn Baglole
20	Wided Akik Synergistic Implications of IL-17A in the Modulation of Neutrophilic Airway Inflammation by Bronchial Epithelial Cells	Supervisor: Larry Lands
21	Fatima Hubaishi House Dust Mite-Induced Murine Model of Epicutaneous Allergic Inflammation and Atopic March	Supervisors: Elizabeth Fixman & Brian Ward
22	Mina Sadeghi Regulation of the bone marrow iron metabolism in hematopoiesis and host defense against TB	Supervisor: Maziar Divangahi
23	Motahareh Vameghestahbanati Association of Dysanapsis and Cardiac Function Among older adults	Supervisor: Benjamin Smith
24	Kim A Tran The cross-protection of BCG vaccination in influenza infection: Training adaptive immunity?	Supervisor: Maziar Divangahi
25	Yumin Zheng Repurposing Drugs for IPF with Deep Generative Model and Single-nucleic RNA-seq Data	Supervisor: Jun Ding
26	Maddison Arlen Cannabis Smoke Extract and Cannabis Dry Herb Vapour Induce Inflammation in Lung Epithelial Cells	Supervisor: Carolyn Baglole
27	Yasmin Jolasun Leveraging multi-omics sequencing data to identify clinically relevant cell groups and the risk-associated biomarkers	Supervisor: Jun Ding
28	Eisha Ahmed Heterogeneous Regulation of IL-10 Expression in B-cell Subsets	Supervisor: Bruce Mazer
29	Sophia Goldman Pseudomonas aeruginosa evasion of neutrophil-mediated clearance in persistent Cystic Fibrosis infections	Supervisor: Dao Nguyen
30	Fanny Gabrysz-Forget Oscillometry and Spirometry in Fibrotic versus Non-Fibrotic Interstitial Lung Disease	Supervisor: Deborah Assayag

Poster **SESSION 9: Trainee Poster Presentations II (Day 2)**

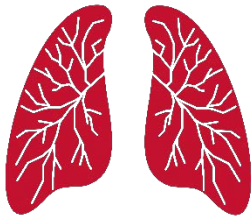
- 1 **Everglad Mugutso** Supervisor: Nicole Ezer
Impact of Low Educational Attainment on Loss to Follow-up among Individuals Eligible for Lung Cancer Screening in a Quebec Pilot Lung Cancer Screening Program
- 2 **Jana Abi Rafeh** Supervisors: Bruce Mazer & Salman Qureshi
Real-Time Cytokine Profiling of Critically Ill Patients
- 3 **Bavanitha Thurairajah** Supervisor: Irah King
Investigating gut microbiota determinants of IL-17-producing gdT cells during early life
- 4 **Joshua Smocot** Supervisor: Sushmita Pamidi
Maternal sleep-disordered breathing in pregnancy and risk of adverse health outcomes in mothers and children: Preliminary Results from a Pilot Study
- 5 **Matheus Schultz** Supervisor: Anne-Marie Lauzon
Investigating the Role of h-Caldesmon in Smooth Muscle Force Maintenance: Implications for Understanding Smooth Muscle Dysfunction
- 6 **Coralie Geric** Supervisor: Faiz Ahmad Khan
Incorporation of clinical factors to improve the diagnostic accuracy of artificial intelligence-based chest X-ray analysis for detecting pulmonary tuberculosis
- 7 **Rachelle Aucoin** Supervisor: Dennis Jensen
Impact of trigeminal and/or olfactory nerve stimulation on measures of inspiratory neural drive: Implications for breathlessness
- 8 **Eszter Farkas** Supervisor: Dao Nguyen
Production of antimicrobials in Canadian High Arctic Bacteria
- 9 **Sahar Mikaeeli** Supervisors: Simon Rousseau & Jean Bourbeau
The Impact of Smoking in CFTR Heterozygotes on The Frequency of Pulmonary Exacerbations in COPD
- 10 **Rohin Chakraborty** Supervisor: James Martin
Role Of Interleukin-33 (IL-33) In Influenza A Induced Airway Hyperresponsivness In C57BL/6 Mice
- 11 **Jérôme Bédard-Matteau** Supervisor: Simon Rousseau
The Th17 inflammation axis as a potential mediator of persistent fatigue symptom in post-COVID-19 condition
- 12 **Motahareh Vameghestahbanati** Supervisor: Benjamin Smith
Association of dyanapsis genetic risk score with airflow obstruction
- 13 **Nicole Heimbach** Supervisor: Carolyn Baglole
AhR Signaling in Macrophages Protects Against Cigarette Smoke-Induced Lung Inflammation
- 14 **Sami Sedraoui** Supervisors: Basil Petrof & Sabah Hussain
Monitoring the Regulation of Mitophagy in Skeletal Muscles Under Normal and Pathological Conditions
- 15 **Casey Cohen** Supervisor: Bruce Mazer
Major Peanut Allergens Ara h 1, Ara h 2 and Ara h 8 Are Degraded and Fragmented Following High-Pressure and Temperature Autoclaving
- 16 **Jingtao Wang** Supervisor: Jun Ding
Enabling Single-cell Studies for Large-scale Disease Cohorts

17	Vincenza Caruana The Effects of E-cigarette Use on Cardiopulmonary Health	Supervisor: Carolyn Baglole
18	Leonardo Jurado BCG-mediated protection against Bladder Cancer via Trained Immunity	Supervisor: Maziar Divangahi
19	Emily Wilson Ahr Controls Pulmonary Inflammation From Cannabis Smoke	Supervisor: Carolyn Baglole
20	Smriti Suresh Rheological studies in muco-obstructive lung disease: development of artificial mucus	Supervisor: Larry Lands
21	Pierre-Alexandre Gagnon A decade later: long term effects of bronchial thermoplasty on airway remodeling	Supervisor: Jamila Chakir
22	Martin Klein MicroRNA-155 Modulates IL-13R α Subunits in Bronchial Epithelial Cells in Severe Asthma	Supervisor: Jamila Chakir
23	Willem Rijnbout St James The Aryl Hydrocarbon: New Implications in Fibrosis	Supervisors: Carolyn Baglole & Jun Ding
24	Amanda Scanga Effect of Long-acting Levodopa on Obstructive Sleep Apnea in Parkinson's Disease (ELO-PD trial): Preliminary Results	Supervisor: Marta Kaminska
25	Elizabeth Lapshina The role of GATA6+ peritoneal macrophages in host defense against influenza infection	Supervisor: Maziar Divangahi
26	Ruohan Wang Deep-learning-based Transposons Expression Quantification in scRNA-seq and scATAC-seq	Supervisor: Jun Ding
27	Nicholas Vonniessen Stimulation of human mucosal B cells with germinal center cytokines results in the generation of IL-10+ regulatory plasmablasts	Supervisor: Bruce Mazer
28	Qian Li Macrophages in the Muscular Dystrophy (mdx) Mouse Diaphragm Are Reprogrammed by the Dystrophic Environment and Almost Entirely of Bone Marrow Origin	Supervisor: Basil Petrof
29	Marwa El Sheikh Genetic Regulation of the Host Immune Response to Cryptococcus neoformans Infection	Supervisor: Salman Qureshi
30	Wei Zhao Characterization of a novel casein-specific anaphylactic mouse model	Supervisor: Bruce Mazer
31	Kristina Nikolaou The mystery of BCG vaccine in protection against SARS-CoV-2	Supervisor: Maziar Divangahi
32	Ryann Lang Mechanical Ventilation and Resumption of Spontaneous Breathing Do Not Induce Inflammatory Cell Infiltration of the Diaphragm	Supervisor: Basil Petrof

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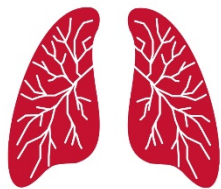
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