SUMMARY

Introduction:

Divisional members provide clinical services on Clinical Teaching Unit (CTU), out-patient clinic coverage, consult service as well as supervision of Internal Medicine residents and Rheumatology fellows as follows:

CTU: 2 weeks/year (Dr. Baron);
Consult service 3 months/year (Dr. Baron, Dr. Berkson, Dr. Fallavollita, Dr. Gyger); Dr. Hudson: 1.5 months
Out-patient clinic (Dr. Baron 7 ½ days per week; Dr. Berkson 6 ½ days per week; Dr. Fallavollita 6 ½ days per week; Dr. Gyger 7 ½ days per week)
Musculoskeletal ultrasound (Dr. Fallavollita 1 day)
Video capillaroscopy (Dr. Gyger ½ day)
In-Patient Follow up (Dr. Hudson 3 hours/day)
Supervision of research trainees for 2 half-days per week (Dr. Hudson 8 hours)

Staff members strive for clinical innovation. Dr. Baron has an ongoing scleroderma clinical, rheumatic disease/lung clinic.

1. Research and publications:

An important study was published showing the longitudinal relationship of calcinosis in scleroderma to underlying ischemia (Baron M, Pope J, Robinson D, et al. Calcinosis is associated with digital ischaemia in systemic sclerosis-a longitudinal study. Rheumatology (Oxford) 2016;55:2148-55)

We published the last of a series of articles regarding oral abnormalities in scleroderma. This series will represent the definitive set of articles on this topic. (Baron M, Hudson M, Dagenais M, et al. Relationship between Disease Characteristics and Oral Radiologic Findings in Systemic Sclerosis: Results from a Canadian Oral Health Study. Arthritis Care Res (Hoboken) 2016;68:673-80.

Dr. Hudson led a team of clinical researchers, geneticists and statisticians to identify the methylome signature of systemic autoimmune rheumatic diseases (Epigenetics 2017; 12(6):433-40; IF 5.3).

Dr. Hudson is supervising Dr. Sabrina Hoa who is performing scleroderma fellowship. Dr. Hoa published a scoping review of the literature on scleroderma renal crisis (Autoimm Rev 2017;16(4):407-15; IF 8.7).

Dr. Baron’s primary research interest is scleroderma. Dr. Baron has established the Canadian Scleroderma Research Group (CSRG) and the McGill Early Arthritis Registry that has performed research on recent onset inflammatory arthritis.

Most recently he established the International Systemic Sclerosis Inception Cohort (INSYNC) to study
specifically recent onset cases of Scleroderma. This involves participation from many countries.

Dr. Baron’s research has focused on ways of measuring disease activity and damage in scleroderma, as well as on aspects of nutritional deficiencies caused by the disease. In addition, he has brought in several labs to work with the biospecimens he has collected. They are working on multiple aspects of the disease, including the vascular abnormalities and control of fibroblast function.

Dr. Baron has also played an important role in Canada’s rheumatic disease research community by creating the concept of the Systemic Autoimmune Rheumatic Diseases (SARDs) as a group that deserves attention as a whole rather than just individually.

Dr. Hudson pursues research in systemic autoimmune rheumatic diseases. In particular, she is a principal investigator in the Canadian Scleroderma Research Group (CSRG), a pan-Canadian cohort of over 1500 systemic sclerosis patients followed annually since 2004. She has done primarily outcomes research on this national dataset. In addition, given the rarity of the disease at hand, she has also established several international collaborations with leading scleroderma experts worldwide (International Scleroderma Renal Crisis Survey, Tri-nation (Canada, Houston, Australia) Scleroderma Cohort (undertaken to study the clinical correlates of some of the less frequent autoantibodies found in this disease), and International Systemic Sclerosis Inception Cohort (INSYNC).

Dr. Hudson is also the Director of the Canadian Inflammatory Myopathy Study (CIMS). Funded by a CFI grant awarded in 2010, she developed a study protocol to prospectively follow an incident cohort of patients with inflammatory myopathies. The database has been created, we have begun to recruit at 6 sites and 6 additional sites are in various stages of start-up.

Most recently, Dr. Hudson has developed an interest in immune-related adverse events (irAE) secondary to cancer immunotherapies as a “human” model for classical autoimmune diseases. She has developed collaborations with oncologists, immunologists and lab scientists to pursue clinical and fundamental research in this field. She has assembled a Montreal-based multi-institutional team of physicians, immunologists and basic scientists interested in pursuing research in this field, the Montreal Immune Related Adverse Events (MIRAE). MIRAE has already recruited over 60 patients and generated promising pilot data which will be used to apply for research funding. Dr. Hudson is also co-leading the Canadian Research Group of Rheumatology in Immuno-Oncology (CAN-RiO), a pan-Canadian group who will follow a cohort of cancer patients exposed to immunotherapies and who develop rheumatic irAE. The aim of this work is to identify predictive biomarkers, mechanisms of irAE and mitigation strategies in order to optimize the use of immunotherapies and improve outcomes of cancer patients. Dr. Hudson’s expertise in this filed is increasing. In the last year, she has been invited to present on this topic at 4 local, national and international meetings and to write a review article for CMAJ.

Dr. Hudson continues as Associate director of clinical research at the Lady Davis Institute.

2. **Teaching and learning (undergraduate and graduate):**

The division continues to participate in undergraduate and post-graduate medical education. Its members provide clinical supervision to medical students, residents and fellows regularly during their 2-week as attendings on the medical wards, full-day weekly general rheumatology clinics and consult service. They participate in the CaRMS Admission Committee for Internal Medicine (3 hours/year).

Dr. Berkson has developed a Rheumatoid Arthritis versus Osteoarthritis lecture, a didactic and
Dr. M. Baron
2 weeks on medical ward
3 months on rheumatology consult service,
Frequently with students and residents in outpatient clinic
Co-supervision of rheumatology fellow with Dr. Hudson

Dr. L. Berkson
Osteoporosis Seminar x3 for Rheumatology Fellows (6 hours)
Lecture for Med1 x 1
Osler Fellow 4 hours/ month
12 weeks attending on consult service
½ day per week supervising residents in ambulatory care
2 weeks attending on 7W

Dr. S. Fallavollita
Working on developing US curriculum for students
Teaching undergraduate / postgraduate students and fellows

Dr. G. Gyger
Capillaroscopy course at the Rheumatology week-end (12 hours)
Capillaroscopy course to rheumatologists (around 25-30 hours per doctor)
RAC course (13 hours 45 min)
Scleroderma introduction yearly (1 hour)
Scleroderma GI disease and capillaroscopy for pediatric fellows (45 min)
6 hrs "MSK Physical exam" 1st year medicine small group on introduction to MSK exam
2 hrs Approach to Arthritis Internal Medicine IIM lecture
2 hrs Approach to Gout and Septic Arthritis Clerkship
1 hr Clerks: Inflammatory Arthritis

Post Graduate Teaching
15 hrs McGill Simulation Center: Ethics (Internal Medicine R2 and 3)
Shoulder and Knee Injection and Aspiration (Internal Medicine R4)
3 hrs McGill Internal Medicine PGY4 Academic Half Day MSK exam
1 hr Family Medicine academic half day: Commonly encountered joint complaints
1 hr Internal Medicine PGY4 half day: Approach to Rheumatoid Arthritis
1 hr Academic half-Day: Rheumatology
1 hr Rheumatology Fellows: Approach to joint injections
72 hrs Internal Medicine TCP small group Teaching
10 hrs what is rheumatoid Arthritis
3 hrs/ week 2 residents
Supervision of Fellow Continuity Clinic
JGH Site Director Rheumatology Program

interactive lecture for first year medical students. Every two years since 2013, she has presented a
seminar series on osteoporosis for rheumatology fellows. Dr. Berkson completed a course in
Technology for Health Professions Education at Harvard Medical School in October 2015. This course
has given Dr. Berkson digital/technological skills to develop and offer better rheumatology exposure for
undergraduate and postgraduate medical students. In 2016 she was appointed chair of the Faculty of
Medicine's Program Evaluation and Curriculum Outcomes Committee (Undergraduate).
Supervision of trainees (undergraduate and postgraduate)

3. **Involvement in the community:**

Dr. Baron holds the position of immediate past President of the Scleroderma Clinical Trials Consortium.

Dr. Hudson co-leads a Scleroderma Clinical Trials Consortium working group on scleroderma renal crisis.

Dr. Hudson is medical advisor for Myositis Canada, a national grass-roots advocacy organization and AWISH, a local self-help group for patients with arthritis.

We have initiated our own vaccine clinic for our patients who are immunocompromised.

4. **Partnerships:**

Dr. Berkson is collaborating with Dr. Vartan Mardigyan (cardiology) in the treatment of patients with refractory pericarditis.

Dr. Fallavollita is a member of a national organization developing a core clinical dataset for quality care for Rheumatoid Arthritis.

Dr. Gyger is part of an international consortium studying rare GI manifestations of scleroderma.

Dr. Gyger is on a committee of the Scleroderma Clinical Trials Consortium seeking to establish training programs and a certification process for the use of video capillaroscopy in Scleroderma.

The rheumatology research group has instituted the development of a new international research organization called The International Systemic Sclerosis Inception Cohort (InSync) with the aim of closely following the first few years of illness in patients with scleroderma from many different countries to develop a large enough cohort for important research. In Sync includes researchers from Canada, United States, Germany, Holland, Sweden, Australia and Spain.

Dr. Baron is past President of scleroderma clinical trials consortium, a worldwide body of scleroderma researchers.

Dr. Hudson participates in numerous local, national and international research networks including CSRG, INSYNC, Tri-Nation cohort, SCTC, CIMS, MIRAE, and CAN-RiO.

The Division runs an osteoporosis clinic in partnership with endocrinology. It has a once/month clinic for rheumatic disease with lung disease and/or pulmonary hypertension. Scleroderma patients are seen once per week for collection of data for the Canadian Scleroderma Research group.

5. **Milestones:** There were no changes in staffing.

6. **Honours, awards, and prizes:**

Dr. Laeora Berkson was honored as the Osler Fellow to the class of 2019. She is the inaugural chair of the Program Evaluation and Curriculum Outcome Committee for McGill University's Undergraduate
Medical Education Program.

Dr. Hudson was the recipient of the Prix de Mérite from the Association des Médecins Rhumatologues du Québec in recognition of her clinical, teaching and research activities.

Dr. Sabrina Hoa, a post-doctoral fellow under the supervision of Dr. Hudson, was awarded The Arthritis Society’s Post-doctoral fellowship award (2016-18), the CIHR Canada Graduate Scholarship award (2017-2019), the Fonds de recherche du Québec- Santé master award (2017-2019), the Drug Safety and Effectiveness Cross-Disciplinary Training (DSECT) Program award (2017-2018), and the Fondation du Centre Hospitalier de l'Université de Montreal Scleroderma Research Chair award (2017-2018)

Under the supervision of Dr. Hudson, Sophie Wojcik (PGY4, Rheumatology) won Best Abstract by a Rheumatology Fellow, Jessica Salituri (PGY2 Internal Medicine) won Best Abstract on Basic Science Research by a Trainee, and Tedi Qendro (Second year medical student, McGill University) won Best Abstract by a Medical Student at the Canadian Rheumatology Association meeting held in February 2018 in Vancouver, BC

7. **Fundraising:** None to report

SECTION I - DIVISION STATUS UPDATE

1. **Mission and objectives of the Division**

The Division strives to provide high level clinical care, education and research.

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

**Murray Baron**, MD: Professor of Medicine
Marie Hudson, MD: Associate Professor with tenure
Genevieve Gyger, MD: Assistant Professor
Laeora Berkson, MD: Associate Professor of Medicine
Sabrina Fallavollita, MD: Assistant Professor

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

1. **Grants and awards received**

**Baron, Murray**

Scleroderma Society of Ontario
-Canadian Scleroderma Research Group

Grouping of Canadian Companies and Corporations:
-A multicenter, open label study to describe the safety of daily subcutaneous injections of Anakinar (r-methHuIL-1ra) in patients with rheumatoid arthritis.

University of Michigan
- A phase II study to evaluate subcutaneous abatacept vs placebo in diffuse cutaneous systemic sclerosis-a double-blind, placebo-controlled, randomized controlled trial (IM101-344)(ASSET)

Bayer (Canada) Inc
- A randomized, double-blind, placebo-controlled phase II study to investigate the efficacy and safety of riociguat in patients with diffuse cutaneous systemic sclerosis (dcSSc) (Study 16277)

Mount Sinai Hospital:

Hoffmann-La Roche Ltd, Canada:
- A Phase II/III, multi-centre, randomized, double-blind, placebo-controlled study to assess the efficacy and safety of tocilizumab versus placebo in patients with systematic sclerosis.

JSS Medical Research
- A Canadian randomized controlled trial (RCT) of real world Cimzia treatment in RA: Randomizing to stop vs continued DMARDs.

Abbott Laboratories:
- Real life evaluation of rheumatoid arthritis in Canadians taking HUMIRA.

Hudson, Marie
- Personal Support Awards
  Fonds de la recherche en santé du Québec (FRSQ)
  Recherches observationnelles portant sur les maladies systemiques autoimmunes rhumatismales 2015-2019, Chercheur-clinicien Senior

<table>
<thead>
<tr>
<th>Current (ordered by end date)</th>
<th>Project Description</th>
<th>Sponsor</th>
<th>Role</th>
<th>Amount</th>
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<tr>
<td>06/2017-01/2020</td>
<td>Bringing Patients and Therapies Together Sooner: Building Clinical Research Capacity to Improve Outcomes in Myositis</td>
<td>CIORA PI</td>
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<td>10/2016-09/2019</td>
<td>Randomized Controlled Trial of an Internet-based Exercise Program to Improve Hand Function in Patients with Scleroderma: A Scleroderma Patient-centered Intervention Network (SPIN) Study (Thombs)</td>
<td>TAS Co-PI</td>
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<td>07/2016-07/2019</td>
<td>Randomized Controlled Trial of an Internet-based Scleroderma Self-Management Program: A Scleroderma Patient-Centered Intervention Network (SPIN) Study (Thombs)</td>
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<td>08/2016-07/2019</td>
<td>Pragmatic, multicentre, cluster, cohort randomised controlled treat-to-target trial for treatment of small intestinal bacterial overgrowth in SSc (Baron)</td>
<td>CIHR Co-PI</td>
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<td>08/2017-02/2018</td>
<td>Scleroderma Renal Crisis Working group</td>
<td>SCTC PI</td>
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<td>05/2017-05/2018</td>
<td>Proteomic analysis of Inflammatory Myopathies – A Pilot Project</td>
<td>MyoCan PI</td>
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<td>06/2015-01/2018</td>
<td>Preventing rheumatoid arthritis (Pre-RA)</td>
<td>CIORA PI</td>
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<td>02/2017-01/2018</td>
<td>NT-proBNP to screen for SSc-PAH</td>
<td>Roche PI</td>
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<td>07/2016-12/2017</td>
<td>Pollution, epigenetics and serologic markers of rheumatoid arthritis (Bernatsky)</td>
<td>US DoD Co-PI</td>
<td>Co-PI</td>
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Fallavollita, Sabrina

JSS Medical Research:
- Prospective observational study to evaluate the use of musculoskeletal ultrasonography to improve rheumatoid arthritis management: Canadian experience (Echo Study).

MUHC PI: Dr. Ines Colmegna:
- liT Profile and functional implications of the production of age-associated inflammatory cytokines by hematopoietic progenitor cells in RA

Abbott Laboratories Ltd:
- Drug Canadian HUMIRA. Post Marketing Observational Epidemiological Study: Assessing Effectiveness in AS. Site contact and in charge of patient recruitment

Thombs, Brett

- Fellow, Canadian Academy of Health Sciences. Fellows are recognized nationally and internationally for their contributions to the promotion of health science and for demonstrated leadership, creativity, distinctive competencies and a commitment to advance academic health science, 2017.
- Research Scholar Award, Senior. Fonds de la Recherche en Santé Québec (2017 – 2019)

Personal Support Awards
- McGill University William Dawson Scholar Award ($125,000, 2012-2017).

Research Grants
CIHR
- Project Scheme Grant. Randomized Controlled Trial of an Internet-based Scleroderma Self-Management Program: A Scleroderma Patient-Centered Intervention Network (SPIN) Study ($569,909, 2016-2019)
- Project Scheme Grant. Randomized Controlled Trial of an Internet-based Exercise Program to Improve Hand Function in Patients with Scleroderma: A Scleroderma Patient-Centered Intervention Network (SPIN) Study ($100,000, 2016-2017)
- Emerging Team Grant: Rare Diseases. Emerging team: The Scleroderma Patient-centered Intervention Network ($1,499,765 + $205,000 partner funding, 2012-2017)

Arthritis Society
- Strategic Operating Grant. Randomized Controlled Trial of an Internet-based Exercise Program to Improve Hand Function in Patients with Scleroderma: A Scleroderma Patient-centered Intervention Network (SPIN) Study ($359,686, 2016-2019)

Past Grants as Co-Investigator
- Rare Disease Foundation. Microgrant Program: Illuminating the experience of caring for a patient with scleroderma through focus groups (PI Rice DB; $3,467, 2016)

Grouping of Individuals:
International Consortium for Behavioral/Educational/Psychological Interventions for Scleroderma. SPIN COHORT NETWORK (Director of project with over 40 sites from 8 countries and over 100 participating investigators)

2. Research Trainees Supervised

Hudson, Marie

Supervision of 17 research trainees [2 PDF (Hoa, Leclair), PhD (Caron), 1 master (Butler), PGY4/5/6 (Zheng, Bangert, Wojcik, Richard, Maltez), PGY2 (Salituri, Jha, Alamr, Barbacki), PGY1 (Kelly, Maliha, Meti), medical students (Qendro)]

2. Scholarly works published in the 2017 calendar year


8. Harrison M, Milbers K, Hudson M, Bansback N. Do patients and health care providers have discordant preferences about which aspects of treatments matter most? Evidence from a systematic review of discrete choice experiments. BMJ open 2017;7:e014719


2017 Published abstracts


6. Pope JE, Baron M, Nevskaya T, Baxter C and Ramey R. The Association between the Extent of Skin Thickness and Organ Involvement, Function and Quality of Life in Early Diffuse Cutaneous
Systemic Sclerosis. 2017 American College of Rheumatology/Association of Rheumatology Health Professionals Annual Meeting, November 3-8, 2017, San Diego, CA. Arthritis Rheumatol. 2017; 69 (suppl 10):[abstract # 2674]


3. **Grant reviews**

Hudson, Dr. Marie
-CIORA grant review committee Chair (awards approximately $700,000/year; third largest funding agency for arthritis research in Canada)

Submitted by:

**Murray Baron, MD**
Chief, Division of Rheumatology, JGH