

Annual Report
Division of Rheumatology
Department of Medicine - Jewish General Hospital
January 1 - December 31, 2017

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 field 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

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).

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

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-metHuIL-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:

-The Canadian ArTHritisCoHort (CATCH): A prospective cohort study of adults with new-onset inflammatory arthritis symptoms.

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

Current (ordered by end date)						
06/2017	01/2020	Bringing Patients and Therapies Together Sooner: Building Clinical Research Capacity to Improve Outcomes in Myositis	CIORA	PI		\$119,300
10/2016	09/2019	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)	TAS	Co-PI		\$359,686
07/2016	07/2019	Randomized Controlled Trial of an Internet-based Scleroderma Self-Management Program: A Scleroderma Patient-Centered Intervention Network (SPIN) Study (Thombs)	CIHR	Co-PI		\$561,909
08/2016	07/2019	Pragmatic, multicentre, cluster, cohort randomised controlled treat-to-target trial for treatment of small intestinal bacterial overgrowth in SSc (Baron)	CIHR	Co-PI		\$117,000
08/2017	02/2018	Scleroderma Renal Crisis Working group	SCTC	PI		\$12,000 US
05/2017	05/2018	Proteomic analysis of Inflammatory Myopathies – A Pilot Project	MyoCan	PI		\$10,000
06/2015	01/2018	Preventing rheumatoid arthritis (Pre-RA)	CIORA	PI		\$82,933
02/2017	01/2018	NT-proBNP to screen for SSc-PAH	Roche	PI		\$50,000
07/2016	12/2017	Pollution, epigenetics and serologic markers of rheumatoid arthritis (Bernatsky)	US DoD	Co-PI		\$244,838

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

- Arthritis Society Investigator Salary Award (\$350,000, 2013-2017).
- 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)
- Knowledge Synthesis and Exchange Grant. Improving Depression Screening by Reducing Bias in Accuracy Estimates: An Independent Patient Data Meta-Analysis of the PHQ-9 (\$100,000, 2014-2015)
- 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

1. Anh-Tu Hoa S, Hudson M. Critical review of the role of intravenous immunoglobulins in idiopathic inflammatory myopathies. *Seminars in arthritis and rheumatism* 2017;46:488-508
2. Bernatsky S, Smargiassi A, Joseph L, Awadalla P, Colmegna I, Hudson M, Fritzler MJ. Industrial air emissions, and proximity to major industrial emitters, are associated with anti-citrullinated protein antibodies. *Environmental research* 2017;157:60-3
3. George A, Wong-Pak A, Peschken CA, Silverman E, Pineau C, Smith CD, Arbillaga H, Zummer M, Bernatsky S, Hudson M, Hitchon C, Fortin PR, Nevskaya T, Pope JE. Influence of Education on Disease Activity and Damage in Systemic Lupus Erythematosus: Data From the 1000 Canadian Faces of Lupus. *Arthritis care & research* 2017;69:124-32
4. Greenfield J, Hudson M, Vinet E, Fortin PR, Bykerk V, Pineau CA, Wang M, Bernatsky S, Baron M. A comparison of health-related quality of life (HRQoL) across four systemic autoimmune rheumatic diseases (SARDs). *PloS one* 2017;12:e0189840
5. Gumuchian ST, Delisle VC, Kwakkenbos L, Pepin M, Carrier ME, Malcarne VL, Pelaez S, El-Baalbaki G, Thombs BD. Reasons for attending support groups and organizational preferences: the European scleroderma support group members survey. *Disability and rehabilitation* 2017:1-9.
6. Gumuchian ST, Pelaez S, Delisle VC, Carrier ME, Jewett LR, El-Baalbaki G, Fortune C, Hudson M, Korner A, Kwakkenbos L, Bartlett SJ, Thombs BD. Understanding coping strategies among people living with scleroderma: a focus group study. *Disability and rehabilitation* 2017:1-10
7. Hao Y, Hudson M, Baron M, Carreira P, Stevens W, Rabusa C, Tatibouet S, Carmona L, Joven BE, Huq M, Proudman S, Nikpour M. Early Mortality in a Multinational Systemic Sclerosis Inception Cohort. *Arthritis & rheumatology (Hoboken, NJ)* 2017;69:1067-77
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
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- Treatment outcome in early diffuse cutaneous systemic sclerosis: the European Scleroderma Observational Study (ESOS). *Annals of the rheumatic diseases* 2017;76:1207-18
10. Hoa S, Leclair V, Hudson M. Cutaneous Lymphangiectasia in Systemic Sclerosis. *Arthritis & rheumatology* (Hoboken, NJ) 2017;69:446
 11. Hoa S, Stern EP, Denton CP, Hudson M. Towards developing criteria for scleroderma renal crisis: A scoping review. *Autoimmunity reviews* 2017;16:407-15
 12. Hudson M, Bernatsky S, Colmegna I, Lora M, Pastinen T, Klein Oros K, Greenwood CMT. Novel insights into systemic autoimmune rheumatic diseases using shared molecular signatures and an integrative analysis. *Epigenetics* 2017;12:433-40
 13. Jean S, Hudson M, Gamache P, Bessette L, Fortin PR, Boire G, Bernatsky S. Temporal trends in prevalence, incidence, and mortality for rheumatoid arthritis in Quebec, Canada: a population-based study. *Clinical rheumatology* 2017;36:2667-71
 14. Jewett LR, Kwakkenbos L, Carrier ME, Malcarne VL, Harcourt D, Rumsey N, Mayes MD, Assassi S, Korner A, Fox RS, Gholizadeh S, Mills SD, Fortune C, Thombs BD. Validation of the Body Concealment Scale for Scleroderma (BCSS): Replication in the Scleroderma Patient-centered Intervention Network (SPIN) Cohort. *Body image* 2017;20:99-106
 15. Jewett LR, Kwakkenbos L, Hudson M, Baron M, Thombs BD. Assessment of English-French differential item functioning of the Satisfaction with Appearance Scale (SWAP) in systemic sclerosis. *Body image* 2017;22:97-102
 16. Khanna D, Furst DE, Clements PJ, Allanore Y, Baron M, Czirjak L, Distler O, Foeldvari , Kuwana M, Matucci-Cerinic M, Mayes M, Medsger T, Jr., Merkel PA, Pope JE, Seibold JR, Steen V, Stevens W, Denton CP. Standardization of the modified Rodnan skin score for use in clinical trials of systemic sclerosis. *Journal of scleroderma and related disorders* 2017;2:11-8
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 18. Lagares D, Ghassemi-Kakroodi P, Tremblay C, Santos A, Probst CK, Franklin A, Santos DM, Grasberger P, Ahluwalia N, Montesi SB, Shea BS, Black KE, Knipe R, Blati M, Baron M, Wu B, Fahmi H, Gandhi R, Pardo A, Selman M, Wu J, Pelletier JP, Martel-Pelletier J, Tager AM, Kapoor M. ADAM10-mediated ephrin-B2 shedding promotes myofibroblast activation and organ fibrosis. *Nature medicine* 2017;23:1405-15
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 20. Levis B, Kwakkenbos L, Hudson M, Baron M, Thombs BD. The association of sociodemographic and objectively-assessed disease variables with fatigue in systemic sclerosis: an analysis of 785 Canadian Scleroderma Research Group Registry patients. *Clinical rheumatology* 2017;36:373-9
 21. Li G, Adachi JD, Cheng J, Thabane L, Hudson M, Fritzler MJ, Lorenzi S, Baron M, Larche M. Relationship between calcium channel blockers and skin fibrosis in patients with systemic sclerosis. *Clinical and experimental rheumatology* 2017;35 Suppl 106:56-60

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23. Nevskaya T, Baron M, Pope JE. Predictive value of European Scleroderma Group Activity Index in an early scleroderma cohort. *Rheumatology (Oxford, England)* 2017;56:1111-22
24. Pauling JD, Frech TM, Domsic RT, Hudson M. Patient participation in patient-reported outcome instrument development in systemic sclerosis. *Clinical and experimental rheumatology* 2017;35 Suppl 106:184-92
25. Richard N, Hudson M, Gyger G, Baron M, Sutton E, Khalidi N, Pope JE, Carrier N, Larche M, Albert A, Fortin PR, Thorne C, Masetto A. Clinical correlates of faecal incontinence in systemic sclerosis: identifying therapeutic avenues. *Rheumatology (Oxford, England)* 2017;56:581-8
26. Sharma A, Hudson M, Watters K, Billick R, Fallavolita S, Netchiporouk E. Rapidly progressive melanoma differentiation-associated protein 5-positive amyopathic dermatomyositis in an HIV-positive patient. *JAAD case reports* 2017;3:158-61
27. Tay T, Ferdowsi N, Baron M, Stevens W, Hudson M, Proudman SM, Nikpour M. Measures of disease status in systemic sclerosis: A systematic review. *Seminars in arthritis and rheumatism* 2017;46:473-87
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29. Thombs BD, Kwakkenbos L, Riehm KE, Saadat N, Fedoruk C. Comparison of Self-Efficacy for Managing Chronic Disease between patients with systemic sclerosis and other chronic conditions: a systematic review. *Rheumatology international* 2017;37:281-92
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32. Azar M, Rice DB, Kwakkenbos L, Carrier ME, Shrier I, Bartlett SJ, Hudson M, Mouthon L, Poiraudou S, van den Ende CHM, Johnson SR, Rodriguez Reyna TS, Schouffoer AA, Welling J, Thombs BD. Exercise habits and factors associated with exercise in systemic sclerosis: a Scleroderma Patient-centered Intervention Network (SPIN) cohort study. *Disability and rehabilitation* 2018;40:1997-2003

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2017 Published abstracts

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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)

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