

2015 Distinguished Investigator: Dr. Hani El-Gabalawy

1. You have mentioned that your mentors at McGill University influenced your interest in rheumatology. With hindsight, what have been the most rewarding aspects of going into the field of rheumatology, and what have been some of the more challenging aspects?

For me, the most rewarding aspects of rheumatology have been, firstly, establishing long-term therapeutic relationships with patients, and observing the impact of clinical decisions on their life trajectory. This has been a source of great satisfaction, while at times teaching me important lessons in humility. Secondly, being part of the targeted therapies revolution in rheumatology has been exhilarating for me, as it has been for all rheumatologists. We have led the way in targeted biologic therapeutics and in linking treatment to disease mechanisms. Many other disciplines have been indebted to ours for their progress in therapy. All over the world, the rheumatology community is populated by nice people who collaborate well together and who value each other. Finally, it has been a privilege to work at an academic centre with a steady flow of young minds that are eager to make a difference.

As far as challenging aspects I would say being overshadowed by disciplines with larger, often higher-earning, medical communities. This also applies to their scientific communities, for “it’s just arthritis after all...” Rheumatologists have had to collectively deal with this “we just don’t get any respect” phenomenon for as long as I can remember. The biologic revolution has helped us a great deal in this respect. For more than a decade, rheumatology as a discipline has struggled to recruit the best young minds and talents into the field, but I believe this is finally changing.



2. You mentioned in 2011 the possibility of maybe one day developing a vaccine for rheumatoid arthritis (RA). Has your research led you any closer to such a possibility?

We are tantalizingly close to considering an RA vaccine, although there are several important considerations to such an initiative. I have already mentioned the need for a workable risk model. The second is having the biomedical research world bring us new insights into appropriately targeting the immune system in a highly specific, safe, and cost-effective way. Induction of immune tolerance

has been the “holy grail” of this research, but it has been a tough nut to crack.

Another key challenge is having enough study subjects (power) to undertake prevention clinical trials. It is highly unlikely that we will have the ability to test several different strategies, so we need to carefully choose the studies we undertake.

Finally, we have begun to explore the ethical dimensions involved, through focus groups in the local communities. These have given us important insights into how individuals will potentially weight the risk of RA versus risk of prevention strategies.

3. You have spent the past several years studying and providing care and treatment to First Nations people living with RA. What are some of the major breakthroughs you have had with your research? How has providing expert clinical care to treat this disease impacted these communities?

Our research program, which is focused on RA and other rheumatic diseases in First Nations populations, has been

rewarding in many respects. It should first and foremost be acknowledged that this program would not have been possible without ten years of uninterrupted funding from the Canadian Institutes for Health Research (CIHR) for our project entitled *Early Detection of RA in First Nations*. We are truly privileged to have had this opportunity to undertake and sustain the project. As with all longitudinal cohort studies, stability of research funding is an essential ingredient. So what have we done with all this funding? Although we pride ourselves on our publication record—this being the “currency” of scientific research—arguably the most important “breakthrough” from our research has been bringing this population much closer to the prospect of disease prevention. We are now at stage where a substantial amount of translational research has provided us with a workable risk model for RA in First Nations patients, and we can begin to carefully consider the risks and benefits of various interventions that may in fact modify the probability of imminent disease onset.

From a clinical practice perspective, a key aspect of our research strategy in remote First Nations communities—such as Manitoba’s St. Theresa Point and Norway House—has been bringing clinical rheumatology services to the communities in which the research is undertaken. We are particularly indebted to Dr. David Robinson for his provision of many of these services, and for engaging our rheumatology trainees in this program. Dr. Robinson is now developing new models of care for primary-care rheumatology services in these communities that rely on training local community-based healthcare providers and providing them with appropriate skills.

4. If you had a theme song that played whenever you enter a room full of people, what song would it be?
Jim Croce’s *I Got A Name*.

5. How does your research influence the clinical care of patients? Are there differences that you see in the way that MD researchers approach epidemiologic studies and health services research compared to PhD researchers?

In my opinion, the best clinical research programs harness the strengths of teams that have both MD and PhD researchers. My 25-year interaction with my friend and colleague Dr. John Wilkins is a perfect illustration of this synergy.

6. If you could live in any other time period in history, what era would you inhabit?

The classic period at the interface between ancient Egyptian and Greek culture, for this is a period that has profoundly influenced the course of mankind.

7. What do you believe are the qualities of a distinguished investigator? Moreover, how do they apply to you?

Passion, tenacity, and creativity are in my mind particularly important. I believe I embody these.

8. How has your research in northern Manitoba contributed to the overall understanding of RA? How has it compared to the research conducted by similar teams in the United States and Europe?

We have been fortunate to collaborate with some of the world’s best researchers in this area. In particular, our collaborations with researchers at Leiden University in the Netherlands have been exciting and productive. In studying RA in First Nations and comparing our



Dr. El-Gabalawy standing guard over his investigative research content.

Photo courtesy of Dr. Fred Davis, 2015.

Graphics courtesy of Sara Heppner-Waldson,
www.saragraphics.com, 2015.



The ever-animated Dr. El-Gabalawy in his Great Debate iteration.

findings to other populations around the world, we have the opportunity to examine key commonalities and differences, both of which are highly instructive. For example, we have studied the major HLA risk allele for RA in First Nations, that being HLA-DRB1*1402. This allele encodes for the “shared epitope” sequence, which is common to essentially all of the HLA risk alleles that have been identified in multiple populations. On the other hand, *1402, which is unique to Native American populations, encodes for other amino acids at a different part of the molecule that have been found to be protective for RA in other populations. Untangling this interesting paradox gives us important insights into both RA specifically in First Nations patients, and RA in general.

9. Are there other areas of interest you would like to investigate in the future?

Our lab at the University of Manitoba, named *The Manitoba Centre for Proteomics and System Biology*, is focused on applying new state-of-the-art proteomic technologies to the analysis of a spectrum of biological fluids. We are getting closer to being able to quantify the entire “proteome” in a similar manner to what has been achieved with the expressed genome (microarray). This is exciting as we apply it to serum samples before and after RA onset. We are also actively studying epigenetic changes in peripheral blood cells, such as lymphocytes, that may precede RA onset.



Dr. Cory Baillie and Dr. John Esdaile presenting Dr. El-Gabalawy with his Distinguished Investigator Award.

Photo courtesy of the CRA, 2015.

10. If you could erase one day from history, which would it be?

9-11.

11. I never anticipated leading an National Institute of Health (NIH) study in early arthritis ...until it happened.

12. What was your first thought when you learned that you would receive this award?

“What am I going to say to all my colleagues that would make it sound like I was actually worthy of this honour?!”

13. What do you love most about living in Manitoba?

Manitoba is a place where great accomplishments happen in an understated manner. Manitobans do not oversell their achievements.

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