

# Senior Investigator Award Winner

Dr. Joel Katz



*Written by Bethany Sander, BSc (Regina)*

Dr. Joel Katz is a Tier 1 Canada Research Chair in Health Psychology and a Distinguished Research Professor of Psychology at York University. As the director of the Pain Research Unit at the Toronto General Hospital Department of Anesthesia and Pain Management and the Human Pain Mechanisms Lab at York University, Dr. Katz broadly investigates pain, including the psychological factors affecting pain, the transition from acute to chronic pain, and phantom limb pain. His list of accomplishments is long: he has accumulated over \$9.5 million in research funding as a principal investigator, has over 300 publications accumulating nearly 30,000 citations, and has supervised a total of 87 postdoctoral fellows and students at the undergraduate and graduate level. He has also served on the editorial board of several respected journals and is the current Editor-in-Chief of the Canadian Journal of Pain. As a clinician, Katz is the former Psychologist-in-Chief of the University Health Network in Toronto, and has been integral to the creation of the world's first Transitional Pain Service. We are pleased to announce one more accomplishment to this lengthy list: Dr. Katz is the most recent recipient of the CPA Health Section Senior Investigator Award. Here, we share his reflections on his impressive career.



## **What inspired you to pursue a career in health psychology and specialize in your area of interest?**

After I finished my master's degree at Dalhousie University studying infant speech perception, I took some time off school and worked as a research assistant at the Montreal General Hospital Pain Centre under the supervision of Professor Ronald Melzack. It was at the Pain Centre that I first developed an interest in the mind-body problem after meeting patients who had undergone limb amputation and who suffered from phantom limb pain. The idea that someone without a limb could still feel its presence and all sorts of pain referred to it was a revelation to me that meant that the brain was actively involved in creating the experience. That's really when I got interested in health psychology. As a result of my experience at the Pain Centre, I developed all sorts of ideas about what I wanted to pursue and went on to do my PhD in clinical psychology at McGill University studying phantom limbs and phantom limb pain under Ron Melzack's supervision.

## **What aspects of your career do you enjoy the most?**

By far the most enjoyable part of what I do involves supervising students. Being able to help them develop their own ideas, test them, and discover whether and to what extent they were borne out through experimentation is immensely rewarding to me. It's also gratifying to know that I'm contributing to the next generation of Canadian health psychologists, pain clinicians, and pain scientists. I also very much enjoy the process of developing and testing my own ideas and collaborating with colleagues to produce new knowledge.



(cont'd)

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### **What is the ultimate goal of your research? Can you tell us about a project that you are particularly excited about?**

My somewhat lofty goal is to abolish pain after surgery! I know it sounds grandiose, but that's not the way I mean it. What I'm imagining is a future when patients undergo painless surgery and a painless recovery. I suppose a more realistic goal of mine is to reduce the intensity and incidence of chronic postsurgical pain, a highly prevalent and intractable problem that affects millions of people worldwide each year. In fact, of the approximate 230 million people who undergo surgery each year 23 million will develop moderate-to-severe chronic postsurgical pain one year after surgery!

We've got tons of ongoing projects and they're all exciting --- to me at least! I'm really excited about a project that we've just gotten underway examining a fascinating phenomenon called 'telescoping' that approximately 30% of people report after undergoing an amputation of an arm or a leg. Telescoping is described as the perception that the phantom extremity is gradually shortening as it moves upward toward the residual limb. So, for example, a person with an above-the-knee amputation might feel that the phantom foot and ankle are attached to the residual limb at thigh level. Others may report that the phantom hand and fingers are actually felt to be inside the residual limb. Many people who experience telescoping don't spontaneously talk about it or report it to their health care providers because it sounds so bizarre. We have reason to believe that telescoping is a perceptual marker of a use-dependent process of re-mapping that takes place in somatosensory cortex after amputation. The perceived distance between the phantom extremity and the residual limb is progressively reduced as regions of cortex that once received inputs from the amputated parts are gradually re-occupied by inputs from the residual limb. Telescoping is an understudied aspect of phantom limbs largely because until recently it's been very challenging to measure the telescoping process. We've just finished developing an app to help measure the telescoping process and hope to begin a large-scale study to better understand the factors associated with it.

### **What accomplishments are you most proud of?**

That's a 'no-brainer'. I have three boys - well they're young men now, in their 20s - and there's no question in my mind that they are what I am most proud of! From an academic perspective, I feel that one of my most significant contributions is to have been involved in the development and implementation of the world's first Transitional Pain Service - a multidisciplinary clinical program designed to proactively identify patients at high risk of developing chronic postsurgical pain and to intervene as early as possible - even before surgery to reduce the risk. The service was launched in 2014 by Dr. Hance Clarke and me, along with our colleagues in anesthesia, surgery, physical therapy, kinesiology, mobile e-health, and psychology. The Transitional Pain Service has since helped hundreds of patients and received a lot of interest from our colleagues at other institutions around the world, and it has even been replicated at other centers. I'm also proud of having contributed to training the next generation of Canadian pain scientists and clinicians. Seeing my former students moving on with their lives, building families, getting jobs, and generally succeeding in their careers is also very gratifying to me.

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### What advice would you give to those early in their health psychology careers?

The best piece of advice I can give is not to give advice! It rarely has its intended effect and can even backfire. What I tell my students is what worked for me, which was to figure out what was important and meaningful to me and to do my best to follow through with it. That way, when things fail – which happens pretty often – it doesn't hurt as much, and when they succeed, it feels like a true accomplishment. So, for example, if you can, pick a thesis or dissertation topic that really interests you and work to make the project yours. One advantage to doing this is that several years in, when the slogging gets tough – which inevitably happens – and you really hate what you're doing, you can console yourself by imagining how much more you'd be hating it if the ideas you were working on weren't yours or if the topic had been handed to you! My PhD dissertation was on phantom limbs and phantom limb pain and now, some 30 years later, I'm still as fascinated by phantom limbs as I was way back then!

I'm proud of having contributed to training the next generation of Canadian pain scientists and clinicians.

Seeing students translate their clinical experiences into their research is the best part of the job.

*Dr. Joel Katz*

