

## Genomic Psychiatry

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### INNOVATORS & IDEAS: RESEARCH LEADER

# Gustavo Turecki: Three fundamental questions – How does the brain respond to social and emotional experiences? Why does psychological trauma trigger depressive states? What are the mechanisms of antidepressant responses?

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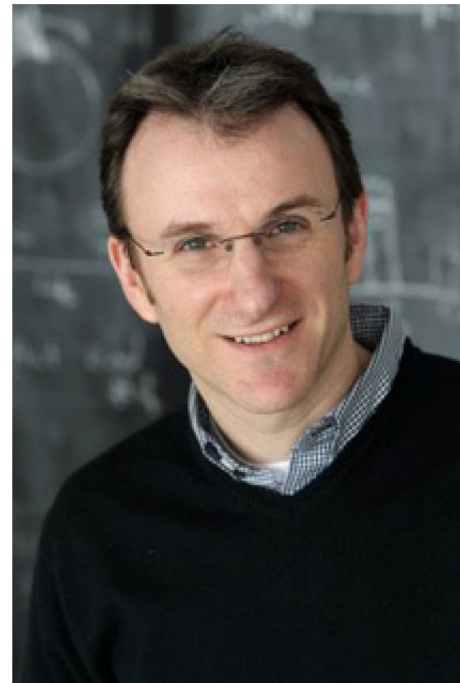
**Gustavo Turecki MD PhD FRSC is a clinician scientist whose work focuses on understanding brain molecular changes that occur in major depressive disorder and suicide, as well as molecular processes that explain antidepressant treatment response. Dr. Turecki is Full Professor and Chair of the Department of Psychiatry at McGill University, the Scientific Director and Psychiatrist-in-Chief of the Douglas Institute in Montreal, Canada, where he also heads the Depressive Disorders Program. He has authored over 600 publications, including research articles in leading peer-reviewed journals such as *Nature Neuroscience*, *Nature Medicine*, and *The Lancet* and is among the world's most highly cited scientists according to Clarivate, Web of Science. He has received several national and international awards and sits on several advisory boards. Dr. Turecki graciously offers our audience a glimpse into his personal and professional journey.**

#### **The Genomic Press Interview Part 1: Gustavo Turecki – Life and career** **Could you give us a glimpse into your personal history, emphasizing the pivotal moments that first kindled your passion for science?**

Since my childhood, I have been fascinated with science and medicine. When I got into medical school, I soon became interested in physiology of exercise. Having been a competitive swimmer, this seemed like a natural extension of my previous interests. I was ready to work in sports medicine until I did my rotation in psychiatry. Unexpectedly, I found myself fully fascinated by this field; therefore, after some internal debate and ambivalence, I decided to pursue this specialty. Early in my psychiatry residency, I was involved in a case of dizygotic twins that strongly influenced my professional trajectory and research career. I was also fortunate to count with excellent role models early on. They were instrumental in my professional development, providing me with excellent advice and, above all, they instilled in me core professional, scientific and personal values that have been essential, as I pursued a career in academic medicine.

#### **We are keen to explore your career trajectory leading up to your most relevant leadership role. What defining moments channeled you toward that leadership responsibility?**

Although today I hold several leadership roles, leadership did not come naturally to me. I remained in academia because of the research work and the intellectual stimulation that it provides, not to be a manager. I first took a leadership role out of duty, but it was difficult as leadership involves skills that I had to acquire with effort. In addition, I was very concerned about the potential impact that the time I had to dedicate would have on my lab and research. After many years in diverse leadership roles, I now appreciate the opportunity that leadership provides, and particularly, the opportunity to build capacity and contribute to develop academic psychiatry, research and clinical services.



**Figure 1.** Gustavo Turecki, MD, PhD, McGill University, Canada.

#### **Please share with us what initially piqued your interest in your favorite area of research or professional focus.**

As a resident, I treated one of a dizygotic twin who had a shared delusion with her co-twin. The case was fascinating and led me to explore, conceptually, the role of genetics in the etiology of mental illness. I have been working in genetics and genomics ever since.

#### **What kind of impact do you hope to achieve in your field through your focus on your specific research topics?**

Above all, I hope my work will contribute to elucidate processes and mechanisms underlying psychopathology, and particularly major depressive disorder and suicide risk, which are my areas of more direct interest. More specifically, I hope my work will help gain some insight into how the brain responds to social and emotional experience and how traumatic experiences trigger pathological depressive states. I also hope that my work may help elucidate mechanisms of antidepressant response.

I keep a clinical practice, specializing in refractory or treatment-resistant major depressive disorder. It is extremely rewarding to help people who suffer and are unable to function. While the treatments we use





today are generally effective, they do not always work, and sometimes, it takes way too long to identify the proper treatment or for the treatment to work effectively. I hope the work that I do will eventually help the life of people like the patients I treat.

**Could you let us know your current scholarly focal points within your chosen field of science?**

Currently, I am interested in the understanding of molecular changes associated with depression at single-cell resolution. We have adapted diverse single-cell genomic methods to study postmortem human brain tissue and are exploring different aspects of major depression. We are also very interested in the role of extra-cellular vesicles in systemic communication and how their cargo may be manipulated to elicit therapeutic responses.

**What do you most enjoy in your capacity as an academic and research leader?**

The intellectual stimulation of the work and the possibility of contributing to knowledge.

**What habits and values did you develop during your academic studies or subsequent postdoctoral experiences, that you uphold within your own research environment?**

Research is stressful and competitive, but I believe that the lab environment should be welcoming and supportive, and very collegial.

**At Genomic Press, we prioritize fostering research endeavors based solely on their inherent merit, uninfluenced by geography or the researchers' personal or demographic traits. Are there particular cultural facets within the scientific community that you think warrant transformative scrutiny, or is there a cause within science that deeply stirs your passions?**

I am passionate about science and the work that I do, and this is what drives me and has been a constant motivation throughout my professional trajectory

**Outside professional confines, how do you prefer to allocate your leisure moments, or conversely, in what manner would you envision spending these moments given a choice?**

I have many personal interests. Besides my family life, I keep busy and try to live a balanced life. I am physically active, exercising almost daily. I enjoy skiing, biking, cooking and good wine. I grow a vegetable garden in the summer, and love politics. I am an avid reader of the economist and diverse newspapers, and a regular listener of the Good Fight by Yascha Mounk and several other podcasts.

**The Genomic Press Interview Part 2: Gustavo Turecki – Selected questions from the Proust Questionnaire<sup>1</sup>**

**What is your idea of perfect happiness?**

All moments of happiness are just perfect.

**What is your greatest fear?**

Decline.

**Which living person do you most admire?**

Too many to list.

<sup>1</sup>In the late nineteenth century various questionnaires were a popular diversion designed to discover new things about old friends. What is now known as the 35-question Proust Questionnaire became famous after Marcel Proust's answers to these questions were found and published posthumously. Proust answered the questions twice, at ages 14 and 20. Multiple other historical and contemporary figures have answered the Proust Questionnaire, such as Oscar Wilde, Karl Marx, Arthur Conan Doyle, Stéphane Mallarmé, Paul Cézanne, Martin Boucher, Hugh Jackman, David Bowie, and Zendaya. The Proust Questionnaire is often used to interview celebrities: the idea is that by answering these questions an individual will reveal his or her true nature. We have condensed the Proust Questionnaire by reducing the number of questions and slightly rewording some. These curated questions provide insights into the individual's inner world, ranging from notions of happiness and fear to aspirations and inspirations.

**What is your greatest extravagance?**

A bottle of Gran Enemigo Gualtallary.

**What are you most proud of?**

My three kids.

**What is your greatest regret?**

None.

**What is the quality you most admire in people?**

Their intellect.

**What do you consider the most overrated virtue?**

Virtues are virtues, can't be overrated.

**What is your favorite activity (physical or intellectual)?**

Too many to list.

**Where would you most like to live?**

Right where I live, in Montréal.

**What is your most treasured possession?**

Possessions come and go, so I do not treasure them. They are worth for their transaction value.

**When and where were you happiest? And why were so happy then?**

Right now, yesterday and tomorrow.

**What is your most marked characteristic?**

Not sure I can answer this, but probably persistence.

**Among your talents, which one do you think gives you a competitive edge?**

Perhaps the fact that I am patient, but very persistent.

**What is a personality/characteristic trait you wish you had?**

To be more extroverted.

**What do you consider your greatest achievement?**

Scientifically, it was the first description of how early-life adversity leads to molecular changes in the brain through epigenetic changes (McGowan et al, 2009).

**What do you most value in your friends?**

Their sense of humor.

**Who are your favorite writers?**

Chabon, Singer, Borges, Amis, Joshua Cohen, Richler, Cortazar, Philip Roth, Bioy Casares, Beauvoir, Atwood, Amos Oz, and several others.

**Who are your heroes of fiction?**

Many, but to cite a recent one, Gyuri Köves in Fatelessness by Imre Kertész, which I have just read.

**Who are your heroes in real life?**

My grandparents, who escaped Nazi occupied East Europe and established in South America after losing many of their family members and much hardship. They had nothing, worked very hard, kept going, appreciated everything they had and were always in a good mood. They have been a constant source of inspiration.

**What aphorism or motto best encapsulates your life philosophy?**

You make the best of every situation.



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