

Psychedelics

OPEN

INNOVATORS & IDEAS: RESEARCH LEADER

Bernard Lerer: Pre-clinical, translational and clinical research focused on the use of psychedelic drugs and their derivatives to treat psychiatric disorders

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Professor Bernard Lerer is in the Faculty of Medicine, Hebrew University, Jerusalem, Israel, where he is Director the Center for Psychedelic Research (<https://cfpr.brainlabs.org.il/>) at Hadassah Medical Center, in Jerusalem. The Center has a growing staff that includes senior scientists, post-docs, Ph.D. and graduate students, technicians, and psychiatrists undergoing research training. Their research is preclinical, translational, and clinical and focuses on the use of psychedelic drugs and their derivatives to treat psychiatric disorders. Previously, he was Head of the Biological Psychiatry Unit at Hadassah Medical Center for 30 years, with research and clinical responsibilities. A conversation with Professor Lerer covered topics on his life and career.

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

I was born in South Africa during the apartheid era and grew up in a middle-class, Jewish family near the beautiful city of Cape Town. At school I excelled in languages, literature, and sports rather than science. I went to medical school straight from high school and was a doctor at 23 years of age. After moving to Israel with my wife, Ziona, I started a residency in internal medicine and then moved to psychiatry. The pivotal moment that kindled my passion for science was when, as a disillusioned, psychoanalyst to be, I discovered biological psychiatry in the late 1970s. This was during a remarkable series of seminars given to the psychiatry residents at Hadassah Medical Center by the renowned Herman Van Praag, then on sabbatical in our department. I had never been completely sure that I wanted to be a doctor, an internist or a psychiatrist; Van Praag's seminars opened an entirely new direction for me—understanding the workings of the mind, and its maladies, through biology. I knew immediately that this was the direction I wanted to go. It was not an epiphany, more an intellectual realization that there was an entire world waiting for me.

We are would like to know more about your career trajectory leading up to your most relevant leadership role. What defining moments channeled you toward that leadership responsibility?

My leadership role in biological psychiatry began in 1985 when I took over as Head of the Research Laboratory at Herzog (then Ezrath Nashim) Hospital in Jerusalem. Ezrath Nashim was the first fully fledged research facility in Israel devoted to biological psychiatry and psychopharmacology. It was a pioneering effort founded by Elliot Gershon and expanded and developed under the leadership of my research mentor, Robert (Haim) Belmaker. In 1985, I had just returned from a post-doctoral fellowship with my other esteemed mentor, Samuel Gershon, at Lafayette Clinic in Detroit. Haim Belmaker left for an extended sabbatical and I took over as Head of the Laboratory which I nurtured and developed for 5 years. In



Figure 1. Bernard Lerer, MD, Hadassah Medical Center – Hebrew University of Jerusalem, Israel.

1990, I accepted an invitation from Hadassah Medical Center to rejoin the Department of Psychiatry as Director of a newly founded Biological Psychiatry Unit. In the 30 years that followed, I led the Biological Psychiatry Laboratory at Hadassah Medical Center until I handed the reins over to my protégé, Dr Amit Lotan, in 2021. I then founded a research group devoted to psychedelic research which has since expanded into the Hadassah BrainLabs Center for Psychedelic Research (<https://cfpr.brainlabs.org.il/>)

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

I mentioned Herman Van Praag's seminars at Hadassah in the late 1970s. They were highly systematic, focusing on the role of serotonin in affective disorders, defining a biological subtype of depression which Van Praag called "Vital Depression" and outlining the careful, systematic research performed by his group and others in depressed patients to assemble proof of the serotonergic hypothesis. I then went on to work with Belmaker and the remarkable group he assembled at Ezrath Nashim and learned how to conduct both preclinical and clinical research and most important, how to combine the two modalities. The approach was translational, long before the term was invented. During my two years with Sam Gershon in Detroit I expanded and developed this approach under





his guidance. Affective disorders have always been a central focus but I have been intrigued by schizophrenia since my residency with OCD not far behind. In the last few years I have devoted my efforts to the application of psychedelic compounds to the treatment of these disorders.

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

It may sound simplistic but what I have always wanted to do is to understand the biology of the disorders I study (affective disorders and schizophrenia in particular) in order to use this understanding as a platform for developing new and more effective treatments. For several years, I thought that ECT could hold the key to this understanding and this was the impetus for a great deal of preclinical and clinical research. I then shifted my focus to genetics in the hope of uncovering druggable mechanisms by identifying genes implicated in the etiology of the disorders I was studying. In recent years, my approach has become much more direct; I work on psychedelic drugs that are known to have important therapeutic potential and I look for novel variants and treatment combinations. Changing focus, as I have done more than once, means learning a lot of new information and skills. It's been a challenge but it keeps up my hopes that eventually I will find what I am looking for.

Could you tell us more about your current scholarly focal points within your chosen field of science?

My focal points are currently much more clearly defined than they have ever been. With my colleagues, I study the pharmacology of classical psychedelic compounds and try to understand key therapeutic mechanisms. I am very interested in naturally derived psychedelics, specifically mushroom extracts, and the role of additional components besides psilocybin in their therapeutic effects. We do this work primarily in mouse models but are ready to move to human studies when this is indicated. I work with medicinal chemists to synthesize new chemical entities that embody our findings and also consider novel drug combinations that can be tested in patients in proof-of-concept studies.

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

I learned systematic thinking from Herman Van Praag. I learned to connect ideas from different domains from Haim Belmaker. Sam Gershon taught me to dare to do more than seems feasible or doable. I have tried to combine all these approaches and stamp them with my own personal brand. My students are the ones who can say whether I have succeeded or not.

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 realize that psychiatric disorders are strongly colored by the cultural milieu in which they manifest. Delusions differ between countries and societies and the most prominent features of depressive, manic and psychotic episodes may vary greatly. Yet I am always struck by the similarities. I have seen patients on several continents and the core clinical manifestations are to my eyes astonishingly similar. This does not surprise me because of the approach that underlies my research, that the basic biology has very much in common.

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

What I enjoy most is working with students. I am astonished at how smart many of them are, how insightful, how many new ideas they have and how much they are able to accomplish in a short space of time. I am a step ahead of them because of the knowledge I have acquired and the vast experience I have gathered, but that is only temporary. I view the knowledge and experience I have acquired as a deposit that I need to transfer to my students so that they can bring to fruition ideas that never fail to amaze

me. It's why I have not retired and will not retire as long as I can impart something of value to my students.

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?

My absolutely preferred leisure activity is spending time with my family. Ziona and I have three children, two children-in-law, and seven grandchildren. We live close to them and spend a great deal of time together on weekends and on trips and vacations. I try to take off time from work to exercise several times a week whether cycling, walking, or in our home gym. I quit running marathons but still participate from time to time in off road cycling events. I enjoy reading and a controlled diet of popular TV series when I want to relax in the evening.

The Genomic Press Interview Part 2: Bernard Lerer: Selected questions from the Proust Questionnaire¹

What is your idea of perfect happiness?

Knowing that my wife, children, and grandchildren are healthy, happy, and fulfilled.

What is your greatest fear?

Severe impairment—cognitive, physical, or both.

Which living person do you most admire?

I admire different people for different reasons.

What is your greatest extravagance?

Travel. Fortunately, it's a passion I share with my wife.

What are you most proud of?

My family.

What is your greatest regret?

I have many but they don't keep me up at night.

What is the quality you most admire in people?

Kindness and consideration of others.

What do you consider the most overrated virtue?

I don't think a virtue can be overrated.

What is your favorite occupation?

Doing research.

Where would you most like to live?

Temporarily—next to a beautiful beach with perfect weather. Permanently—where I live now—near Jerusalem, Israel.

What is your most treasured possession?

My house could burn down and if my family emerge safely, I would be happy. There is no possession that I would specifically mourn.

¹In the late 19th 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.



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

I was very happy in high school because of the never-ending combination of social activities, sport, and studies that I really enjoyed; but there have been many other very happy periods including right now (in spite of the challenges of growing older).

What is your most marked characteristic?

Not for me to say.

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

I have learned to make connections where others do not see them and to make bold decisions quickly. My language skills, dating from high school, have been a very great advantage.

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

Being able to understand what people actually want.

What do you consider your greatest achievement?

Bringing up a family with the kind of values my children have, which I see them actively imparting to their children.

What do you most value in your friends?

Commitment.

Who are your favorite writers?

John Le Carre and Pat Conroy.

Who are your heroes of fiction?

George Smiley, John Le Carre's antihero.

Who are your heroes in real life?

People who selflessly strive for the safety and happiness of others even at their own risk.

What aphorism or motto best encapsulates your life philosophy?

Never stop doing.

Bernard Lerer¹

¹Hadassah Medical Center, Hebrew University, Jerusalem 91120, Israel

✉ e-mail: lerer@mail.huji.ac.il

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