

The Brain: An Amazing Meaning-Making Machine

Thursday, January 12 to March 16, 2023, 10am to 12 noon

Zoom Session

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Coordinator and Speaker: Dr. Guy Proux

Course Overview: The human brain has evolved into a meaning making machine with incredible capacities to learn and change or what is popularly known as neuroplasticity. It takes a whole life for a healthy aging brain and mind to develop and mature. Half of Canadians born in 2012 can expect to live to 100 years and there is hope that their “healthy life expectancy” could be as long. This course will survey the fascinating brain and cognitive changes that take place over a lifetime. We will see, for example, how the different functions of memory – that amazing time travelling machine – allow us to recapture the past and imagine possible futures. You will gain an inside view into the exciting world of brain, cognition and behaviour.

January 12: The Brain as a Meaning Making Machine

This first session will be an overview of basic, useful guidelines and concepts for the following lectures. You will be introduced to the top 10 brain structures (props included) and understand the importance of why only human organisms can travel with their mind to distant pasts and imagine possible futures.

January 19: Standing on the Shoulders of Giants

Extraordinary people have contributed to our current understanding of brain and mind over the centuries. Aristotle, Sherrington, Broca, Penfield, and others have shared remarkable insights.

January 26: The Spark and Chemical Kiss of Life: How Neurons Talk to Each Other

Although sensory inputs to the brain use very different forms of energies like sound, light, smell or touch, all this information is quickly translated into a common language- “electrical” brain activity and how this, in turn, ignites chemical activity across neurons. You will understand (in plain English) how this is important for the generation, transmission and integration of signals in the brain.

February 2: The Short and Long Story of Aging: It All Starts with Sleeping Babies

We will highlight how the brain develops, adjusts, learns...as it changes over time. With Simone de Beauvoir, we will see how she had it right when she said that “to live is to age, nothing more” and Seneca, well over a thousand years ago when he said that “life can be long if you know how to use it.”

February 9: Round and Round the Clock We Go

This lecture will introduce you to the mysteries of our sleeping brain. Too few people appreciate how daytime functions and...how problems spill over into the night. You might also be surprised to learn how busy the brain is at night.

February 16: The Amazing Time Travelling Machine: Memory and Its Multiple Systems

You will learn about 6 different memory brain systems and their functions. Fascinating brief videos of two persons who have amnesia and feel that they are trapped in the “eternal now” will be presented. The importance of neuroplasticity and rehabilitation techniques will be addressed.

February 23: The Emotional Brain

The story of a patient who recaptured his ability to smile again will be shared, highlighting the powers of neuroplasticity and cognitive rehabilitation.

March 2: The Trinity of Attention

Three major processes of attention have been identified so far. We will see why some view the processes of attention as the “glue” to many other cognitive functions.

March 9: The Miracle of Language

The important concept of how language “co-evolved” with the brain will be stressed. We will also discuss the different modalities of speech, writing and reading and how they facilitate neuroplasticity.

March 16: Cortex in Context: Putting All the Pieces Together

Some final thoughts on 1) how brain and context create the mind, and 2) the privilege of aging....

Dr. Guy Proulx is Associate Professor in the Department of Psychology at Glendon Campus, York University. He specializes in cognitive aging and his research focus is on the wide variability within the normal aging population.

Committee Contact: Glenn Yaffee