You are cordially invited to the first Minerva workshop on Depression and Exploration, July 12th

At Room 424, Bloomfield Building

Program

12:30 – 12:50 – **Prof. Ido Erev**

12:50 – 13:10 – **Prof. Eldad Yechiam -** *"Hypericum perforatum, depression, and performance".*

13:10 – 13:30 – **Tamar Gur** – *people's strategic expression of sadness (expressing it or refraining from doing so) when they are members of high or low power group be suitable?*

13:30 – 13:40 – Coffee break

13:40 – 14:00 – **Ron Ishai**

14:00 – 14:20 – **Ofir Yakobi**

14:20 – 14:30 – Coffee break

14:30 – 15:30 – **Prof. Jon Rosier** *"Computational psychiatry: towards a mathematically informed understanding of mental illness".*

15:30 – 15:40 – Coffee break

15:40 – 16:30 – **Prof. Yonatan Loewenstein** *"Directed exploration in reinforcement learning".*

Abstract

14:30 – 15:30 - **Jon Rosier** *"Computational psychiatry: towards a mathematically informed understanding of mental illness".*

Computational psychiatry aims to use mathematically-precise information processing concepts to describe the relationship between dysfunctional feelings, thoughts and actions, and the structure and function of the brain, including its interaction with the environment. It can unite different levels of description in a mechanistic and rigorous fashion, while avoiding biological reductionism and artificial categorization. This talk will describe two separate but complementary aspects of Computational Psychiatry research, using depression as an example. (1) Data-driven classification, particularly related to treatment response: This part of the talk will highlight recent data-driven work applying machine-learning methods to datasets comprising rich psychological and neurobiological data. This approach has shown promise in dissecting the syndrome of depression in ways that integrate symptoms and patterns of brain connectivity. (2) Theory-driven model specification, defining mental processing relevant to symptoms in formal mathematical terms. This part of the talk will describe attempts to use the theory-driven computational approach to understand specific symptoms of depression. It will focus on how concepts from the framework of reinforcement learning have been used to specify and test novel hypotheses relating to symptoms such as anhedonia. In the long-term, it is hoped that both data- and theory-driven approaches will improve our understanding of the environmental, psychological and neurobiological processes that drive psychiatric symptoms, and lead to refined mental health diagnoses and the development of new treatments.