Research Topics

We are studying the complex mechanisms that underlie the experience of pain with the hope that a better understanding can lead to more successful methods of control and treatment. Our research into the diversity of pain phenomena adopts a multidisciplinary approach; it incorporates novel imaging techniques and electrophysiological, histological and behavioral experiments, to study pain-related mechanisms at the molecular and cellular level, as well as the level of neuronal networks and behavior. It is anticipated that this integrative approach will yield a fundamental understanding of the multidimensional mechanisms involved in the unremitting suffering of pain experienced by so many people. New targets for the treatment of pain will be identified and lead to the development of new pain-specific anesthetic drugs which could eliminate the sensation of pain much more effectively than currently available painkillers.

Fundings

Jacob and Lena Joels Memorial Foundation Senior Lectureship for Excellence in the Life and Medical Sciences

Follow the Pain [1]

The morphological and physiological complexity of multidimensional and multilevel processing of pain-related information limits our ability to understand pain perception. All levels difficult.

Read More [1]

Molecular and Cellular Determinants of Pain and Itch Sensation [2]

We recently discovered for the first the mechanism by which pain and itch is encoded by peripheral neurons.

Read More [2]

Neuronal GPS - NPS - Neuronal Positioning System [3]

We study how information detected by nociceptive neurons is propagated into CNS. To that end, in
collaboration with Prof. 

Read More

Pain and Itch Selective Anesthesia

Targeted delivery of therapeutic compounds to selective cell types is of great clinical importance and can minimize undesired side effects.

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PainBow

We are using Neuronal Positioning System which we developed (see NPS entry) to follow nociceptive information from the periphery to the spinal cord and trigeminal nucleus. Moreover, we have modified NPS to study nerve injury related peripheral plasticity.

Read More

Programmable molecular nanorobots for treatment of Pain

Machines and computers have drastically altered our ability to do work and shape almost every aspect of reality. However, our ability to deploy machines that will interface directly with the biology of living organisms at the cellular and molecular levels is very limited.

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UPCOMING EVENTS

Learn more about our exciting upcoming events!

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Studying at ELSC

Our Int'l Ph.D. program provides outstanding students with top-notch courses in computational neuroscience.

read more

The Building
The Jerusalem Brain Sciences Building will provide a state-of-the-art research and teaching facility for the Edmond and Lily Safra Center for Brain Sciences.

Get into our media channel and investigate ELSC's latest videos: seminars, public lectures, courses and video articles.

Source URL: https://elsc.huji.ac.il/binshtok/documents

Links: