

EPFL



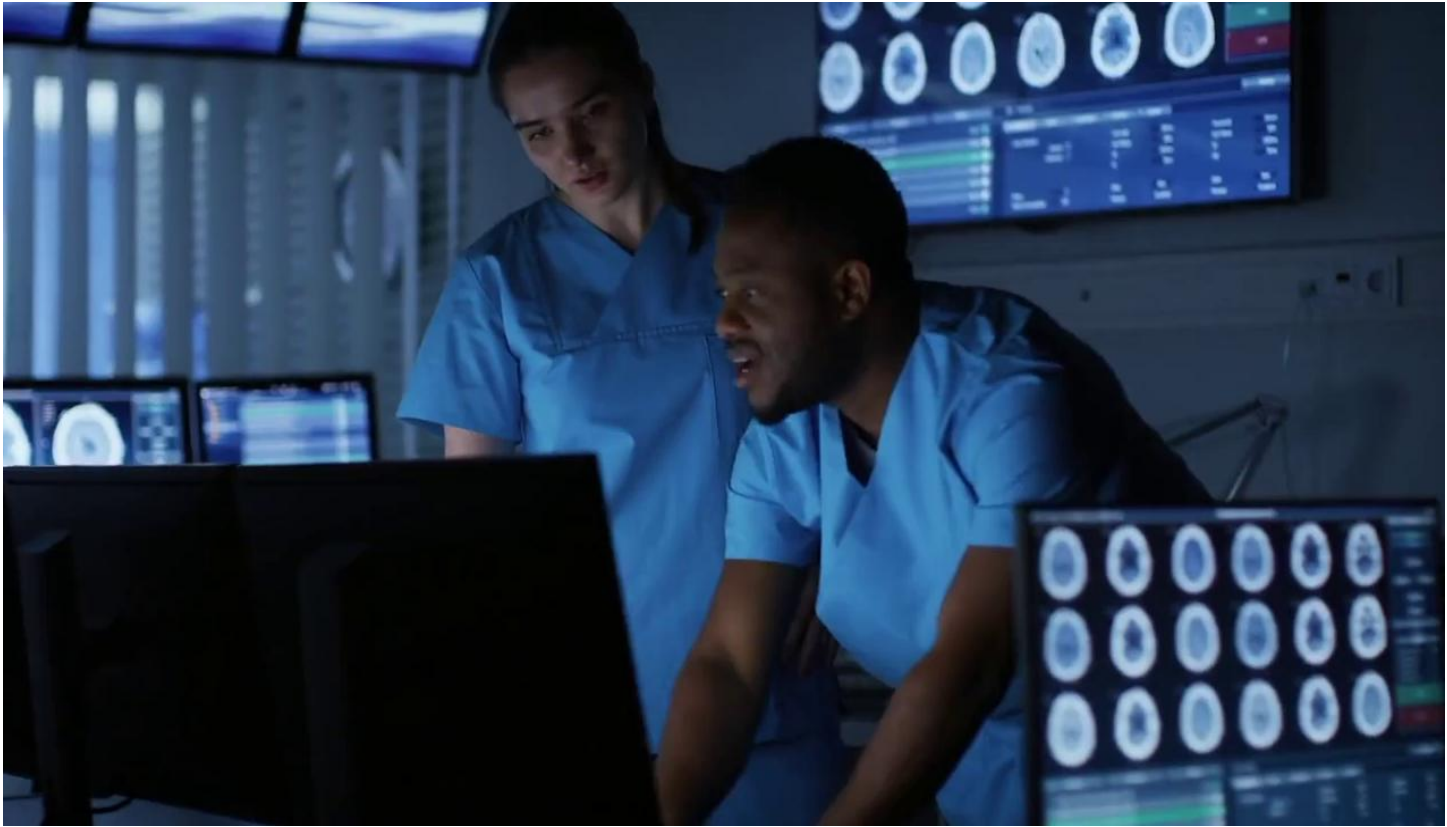
Neuroscience is the study of the brain and the rest of the nervous system. This scientific discipline explains how humans produce thoughts, emotions, behaviour, and control important body functions like breathing and eating. Studying the brain and nervous system thus advances our understanding of our basic biology and body function. It sheds light on mental illnesses, helps understand neurodegenerative diseases such as Alzheimer's, and helps to develop a greater understanding of how we learn and adapt to the world around us. Modern neuroscience is very multidisciplinary and collaborative. We need to integrate knowledge of the brain from a clinical perspective, experimental perspective, theoretical perspective, and look at the brain and brain function from many different angles.

Notes

Summary

0m 11s





For example, genes can partially explain differences in reading ability, but there's no single gene that makes someone a good or poor reader. Genes can be turned on and off by external factors by the environment, such as someone's diet or a viral infection. Many genes are correlated with autism, for example, as well, but none actually cause autism in the arm. To understand something as complex as reading ability or a mental disease, we need to stitch together knowledge about the role of genes, proteins, cells, circuits, brain regions, and the network that they form across the brain. This course is for anyone that has a basic understanding of cell biology and that wants to learn about the brain from a broad biological perspective. We will examine the structures and processes of the brain at different levels of analysis and how these levels interact and can be integrated to get a full picture of brain function. We will show how the most promising new methods and technologies in neuroscience helps us to analyse the brain, simulate and model the brain to see beyond what experiments can do in real life, edit or intervene in the brain, and how this impacts what we see in the clinic.

Notes

Summary

1m 17s





Patrick & Lina Drahi
Foundation^{PLFA}

The Neuroscience Reconstructed MOOCs were made possible by a donation from the

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You will learn from top scientists, clinicians, engineers specialised in each field, and have access to research databases and learning tools such as brain atlases and brain modeling tools and many more. Invite you to come and join us and share our passion to study and understand the brain.

Notes

Summary



2m 53s