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15 February 2018

UCT study to uncover why brains seize

Over the past five years, a University of Cape Town (UCT) scientist has been able to establish the necessary local technology to study the function of individual brain cells which aims to uncover why brains seize – resulting in the development of epileptic seizures.

Epileptic seizures are a disorder of the central nervous system and occur when the brain discharges too much electrical energy, resulting in seizures, which may be convulsive or non-convulsive, depending on where in the brain they occur and how much of the brain is involved.

Dr Joseph Raimondo, a cellular neuroscientist at UCT's Department of Human Biology, explains: "The brain depends on the coordinated activity of multiple computational units – brain cells – for its operation."

Cellular neuroscience is focused on how these single cells contribute to brain function and dysfunction.

As one of five UCT researchers to receive a 2017 Claude Leon Merit Award – which recognises exceptional work by early career academics in the natural sciences, medical sciences and engineering – his endeavour has now been given a helping hand.

The focus in Raimondo's lab is on how changes to inhibitory synaptic transmission and neuroinflammatory responses relate to the emergence and termination of epileptic seizures.

"The Award recognises research into understanding why certain seizures don't stop by themselves. This condition, termed status epilepticus, constitutes a serious medical emergency with a high mortality rate."

Raimondo has always been fascinated with the brain, and from a young age he has endeavoured to understand how it works.

"I started my academic career studying medicine at UCT, after which I broadened my horizons by studying Neuroscience at Oxford University in the United Kingdom. This allowed me to understand first-hand many of the health challenges faced by my fellow South Africans. I also got to learn quite a bit about the body, including the brain."

The Award is especially beneficial because of the additional funding it provides. Biomedical research is expensive and the funding climate in South Africa is difficult.

ENDS

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