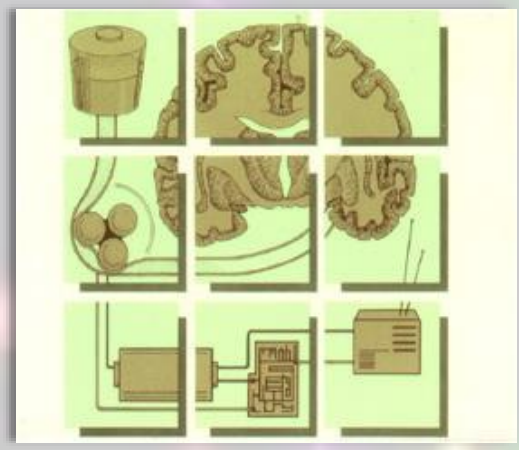

Lille Neuroscience & Cognition

Jeudi

20 Février 2025

14h

Pôle Recherche - Amphi A

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The Pulsing Brain and Drug Delivery

The lecture will cover how the pulsations of the CSF result in drug being distributed around the spinal canal and in the brain tissue. The goal will be to change the classical viewpoint from one of distribution by slow diffusion to one of mixing and dispersion in the CSF and brain tissue driven by cardiac respiratory fluid forces. the dynamics of flow and the various forces involved in the spinal subarachnoid and extracellular space in the brain will be discussed. I will relate this to the use of baclofen for spasticity and neurotrophins for Parkinson's disease and ALS.

Pr. Richard Penn (Invité par l'équipe TREAT)

Prof. Penn combined a clinical practice in neurosurgery with a wide range of research activities. His interest in the use of drug pumps to treat movement disorders, spasticity, and pain led to the creation of a company, CNS Therapeutic. He is probably best known for inventing and then proving the efficacy of intrathecal baclofen for spinal spasticity. In the 1970s, he designed an image processing system using CT scans for stereotactic biopsies. In 1982, he implanted the first programmable pump to deliver drugs to the nervous system. The technique was initially used to deliver morphine to treat refractory cancer pain. Later, baclofen was delivered by drug pump to treat refractory spasticity. In 1991 the Department of Health and Human Services awarded him an orphan drug award for his work on baclofen. He is currently working on a neurotrophic drug for Parkinson's disease as well as on automated processing of MRI images to detect early dementia and autism. In cooperation with USC, the method is being used on retinal images for the early detection of diabetic retinopathy.

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