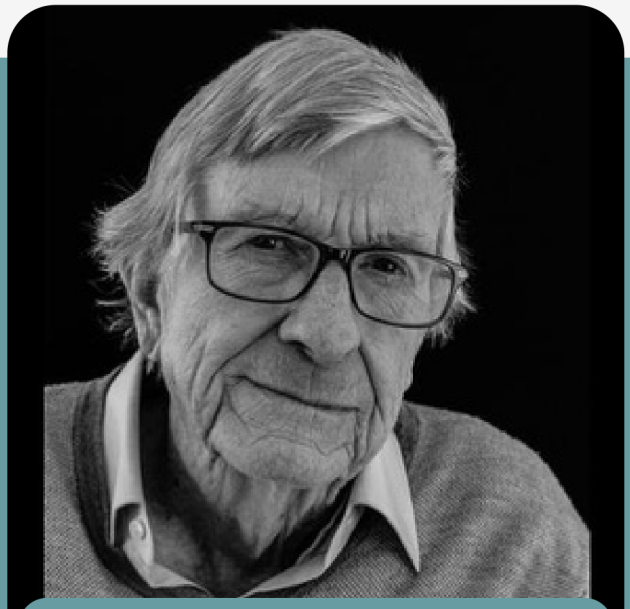
VANDERBILT
School *of* Medicine Basic Sciences
Department of Pharmacology

2024 - 2025 Seminar Series

"A Molecular Machine for Memory"

CaMKII and long-term potentiation (LTP) were discovered within a decade of each other and have been inextricably intertwined ever since. Francis Crick proposed that a memory molecule should possess two properties. First, it should be a multimeric protein with identical subunits that can phosphorylate each other. Second, to address how memories outlast molecular turnover he proposed that naïve unphosphorylated subunits could exchange into the phosphorylated multimer and become phosphorylated. Within two years CaMKII was shown to satisfy the first property. In my talk I will show that the autophosphorylation of CaMKII, indeed, maintains LTP (memory) by the synaptic capture of AMPA receptors and that this memory survives the protein turnover of CaMKII.



Roger Nicoll, M.D.
Professor
Cellular and Molecular Pharmacology
University of California, San Francisco

10 September 2024

4:00 PM

202 Light Hall

Host: Quynh Anh Nguyen