Biosensors for investigating neuronal Ca^{2+} signalling

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Biosensors are genetically engineered protein sensors of a selected intracellular target (e.g. ions, metabolites) that can be directed to intracellular locations by targeting sequences that are encoded within the sequence of a protein. This presentation will focus on studies on designing and making new sensor molecules and addressing the utility of biosensors for making measurements, of Ca^{2+} (and ATP), in functionally important cell locations, such as pre-synaptic terminals. In particular, the coupling of these biosensors with fast imaging procedures will be highlighted by example studies.