Bachelor – Biological Chemistry

Projects for Biological Chemists at the Biophysics Institute

Dr. Isabella Derler

Worum geht’s ?

Examination of biological systems

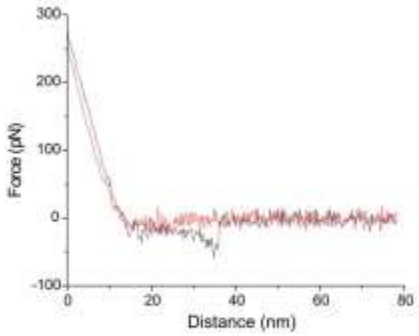
at the molecular and cellular level

with modern methods of biology, chemistry and physics

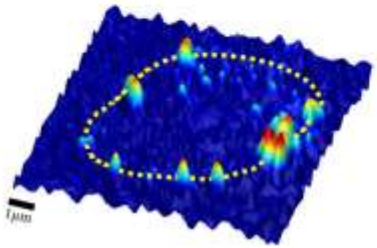
BIO-PHYSIK

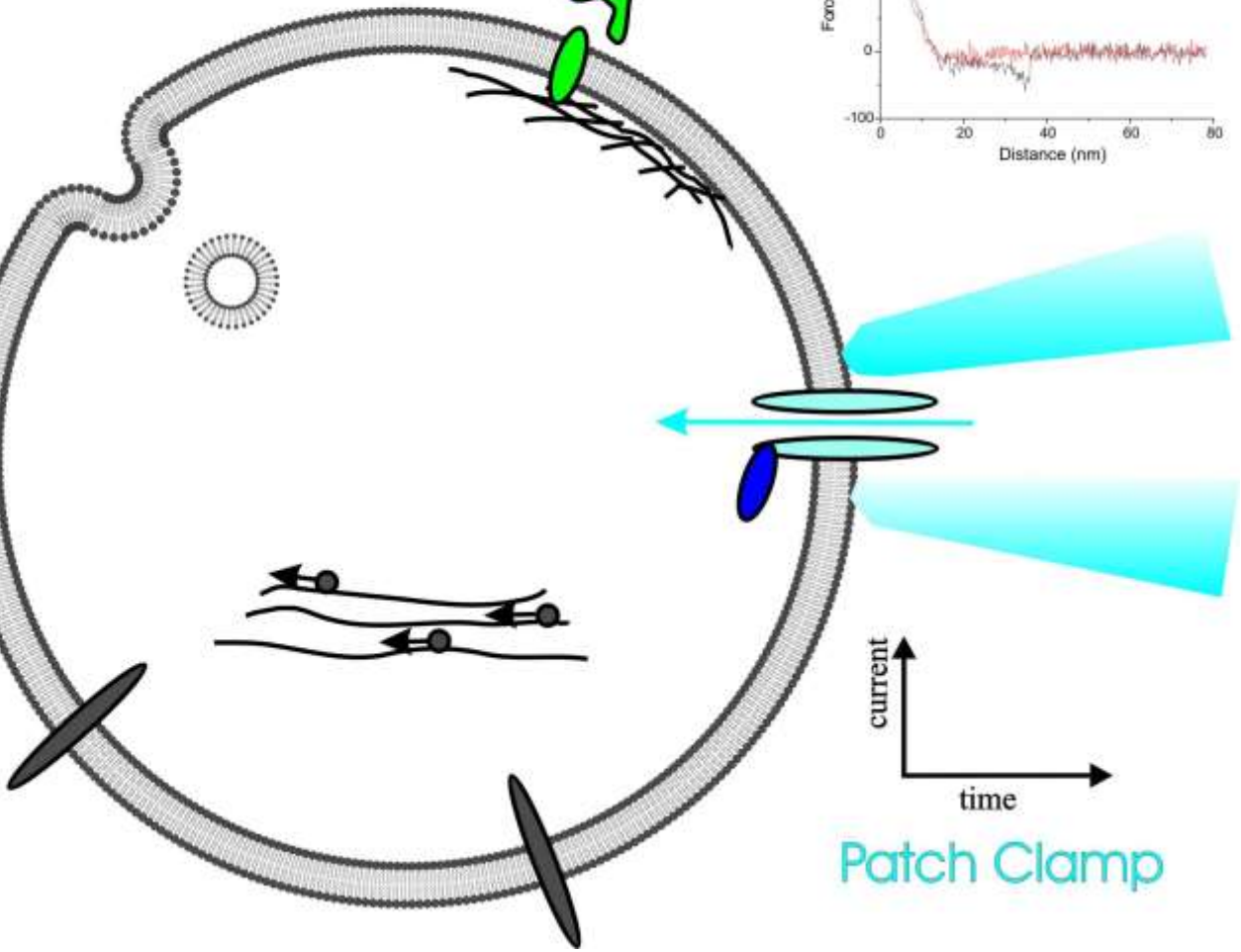
im Nano-Bereich

Atomkraft Mikroskopie



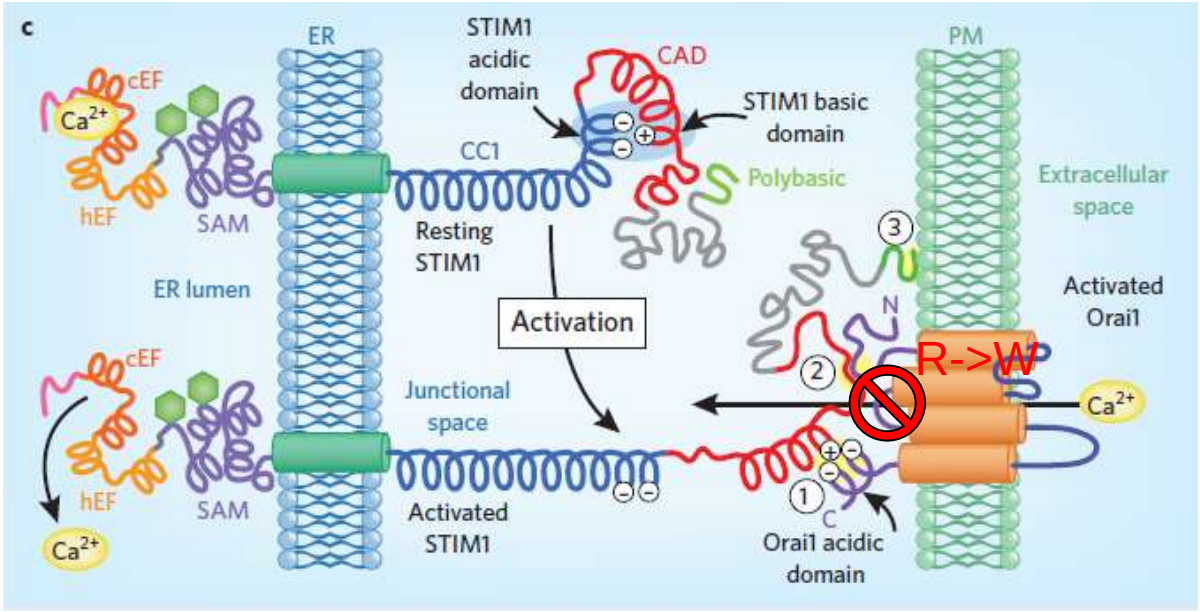
Fluorezenz Mikroskopie



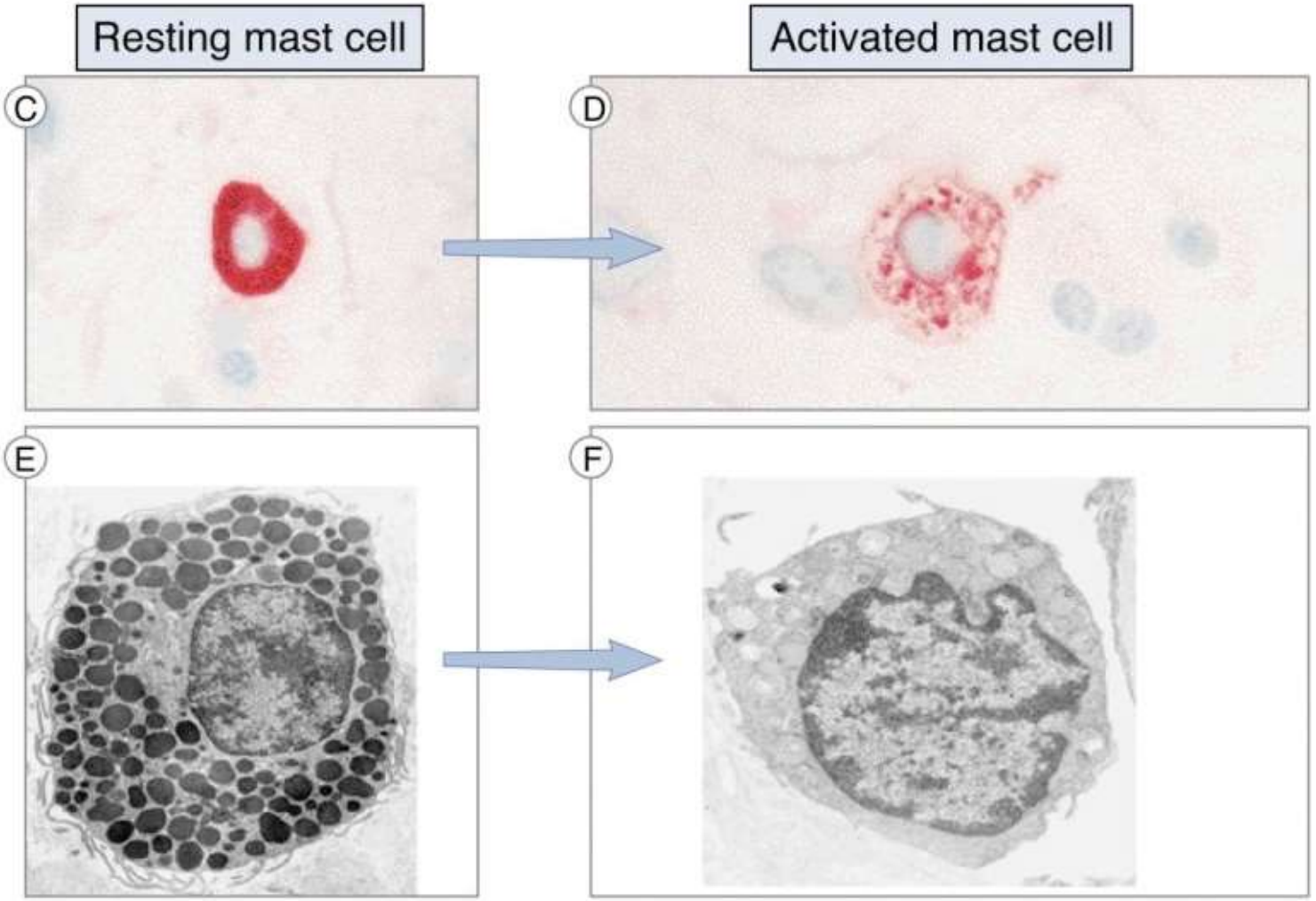


Patch Clamp

The boy in the bubble

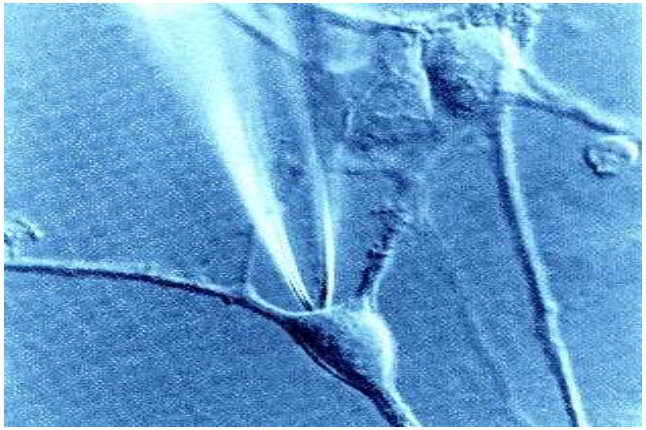


Allergies

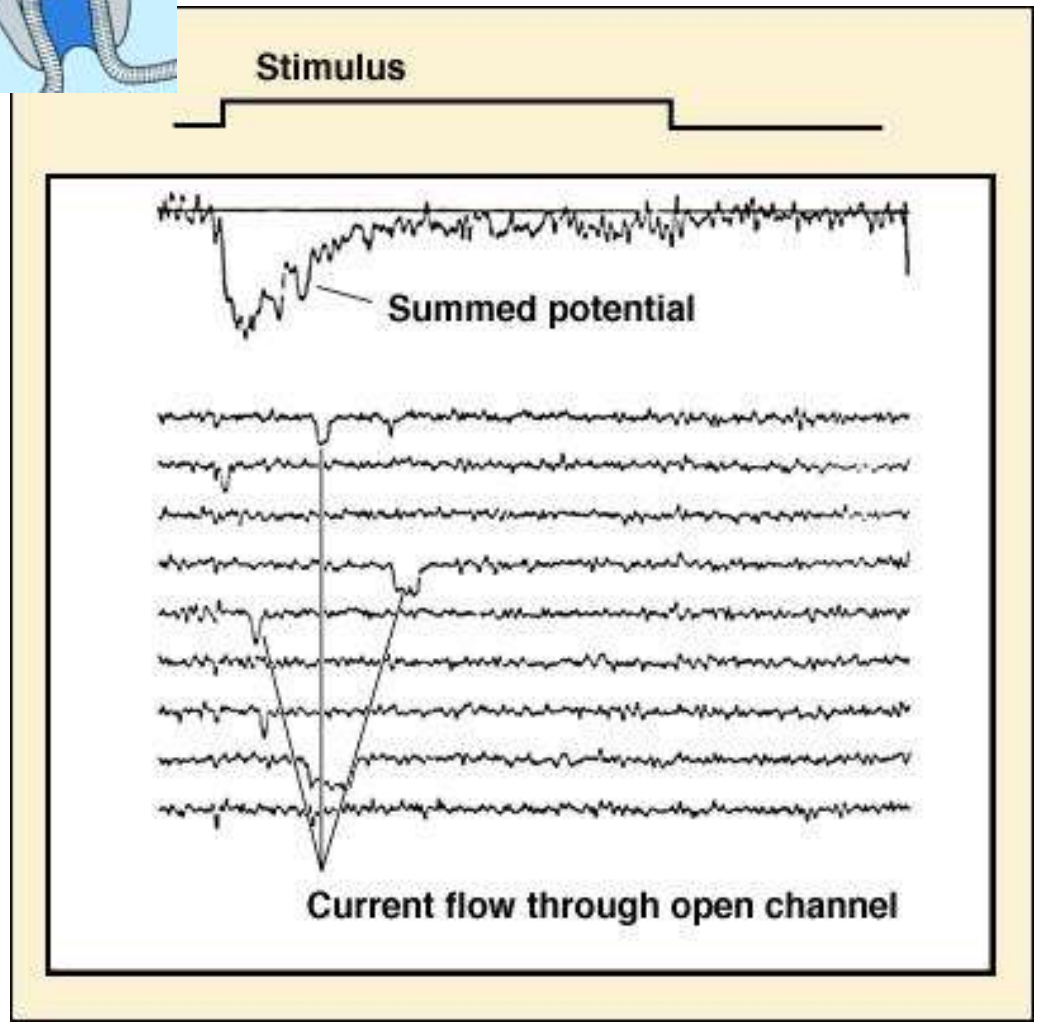


The patch-clamp technique

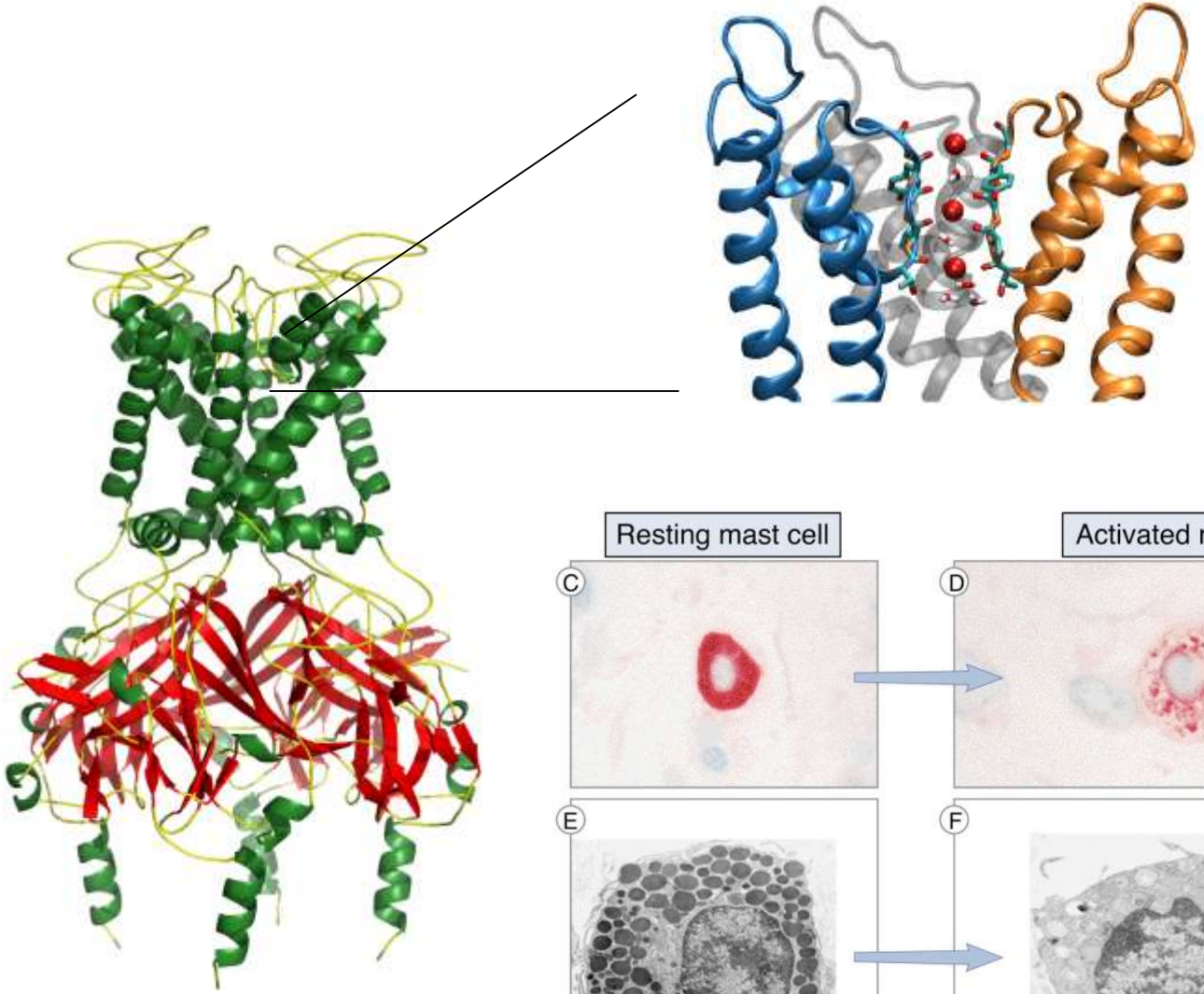
Bert Sakmann, Erwin Neher
Nobelpreis 1991 für Medizin

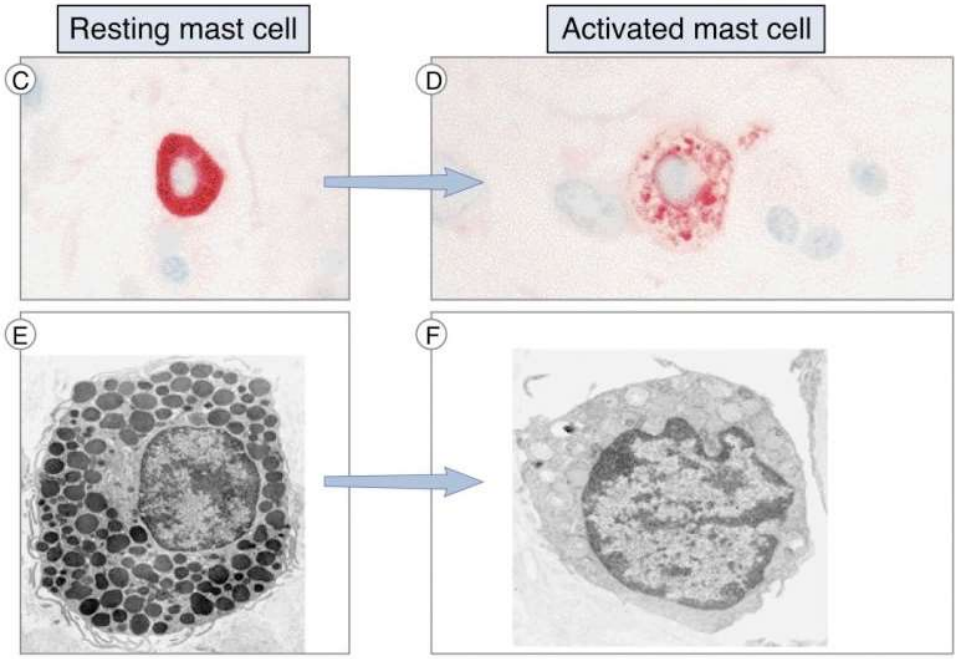


Einzelkanalmessungen



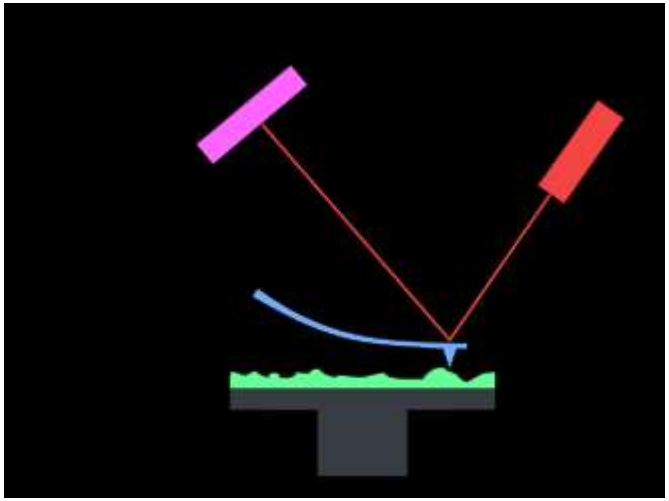
Ion channel structure

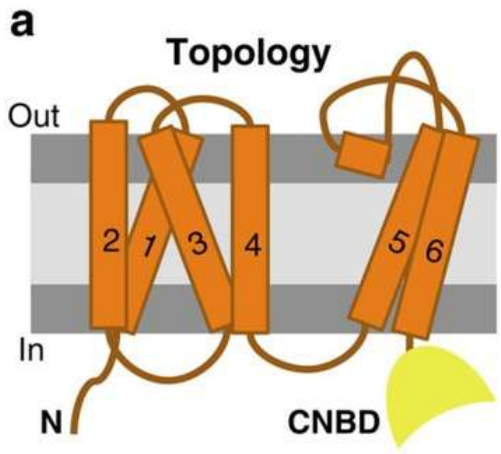


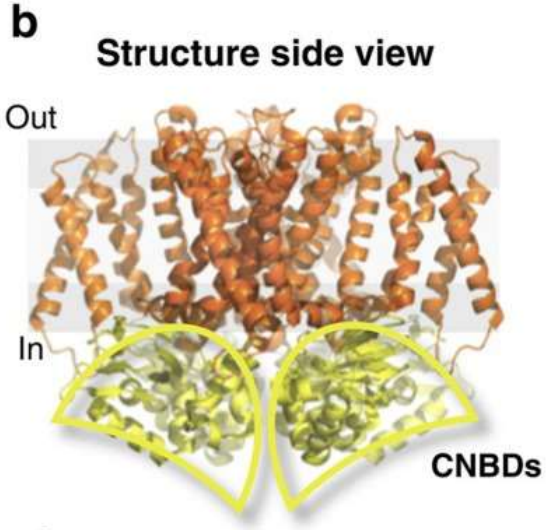


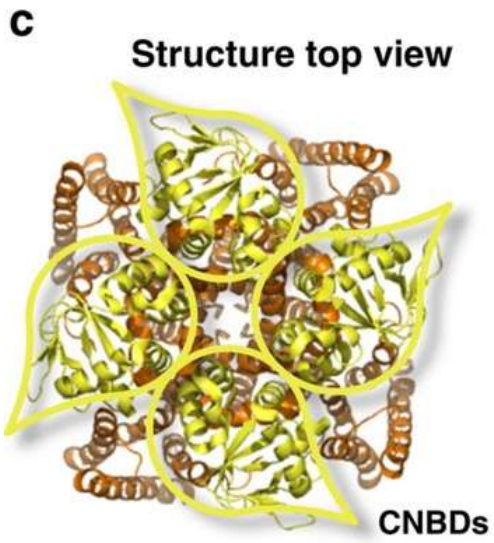
Atomic force microscopy

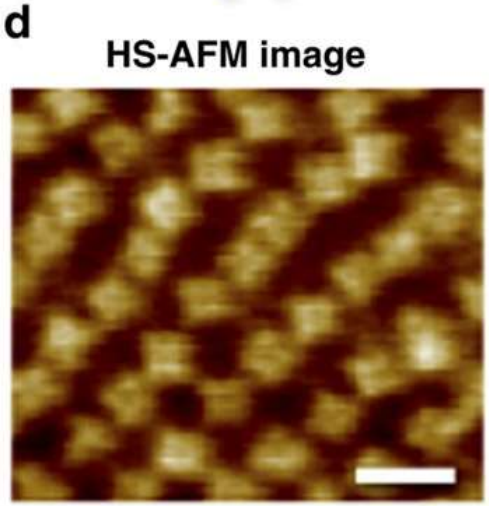
Heinrich Rohrer und Gerd Binnig
Nobelpreis 1986 in Physik



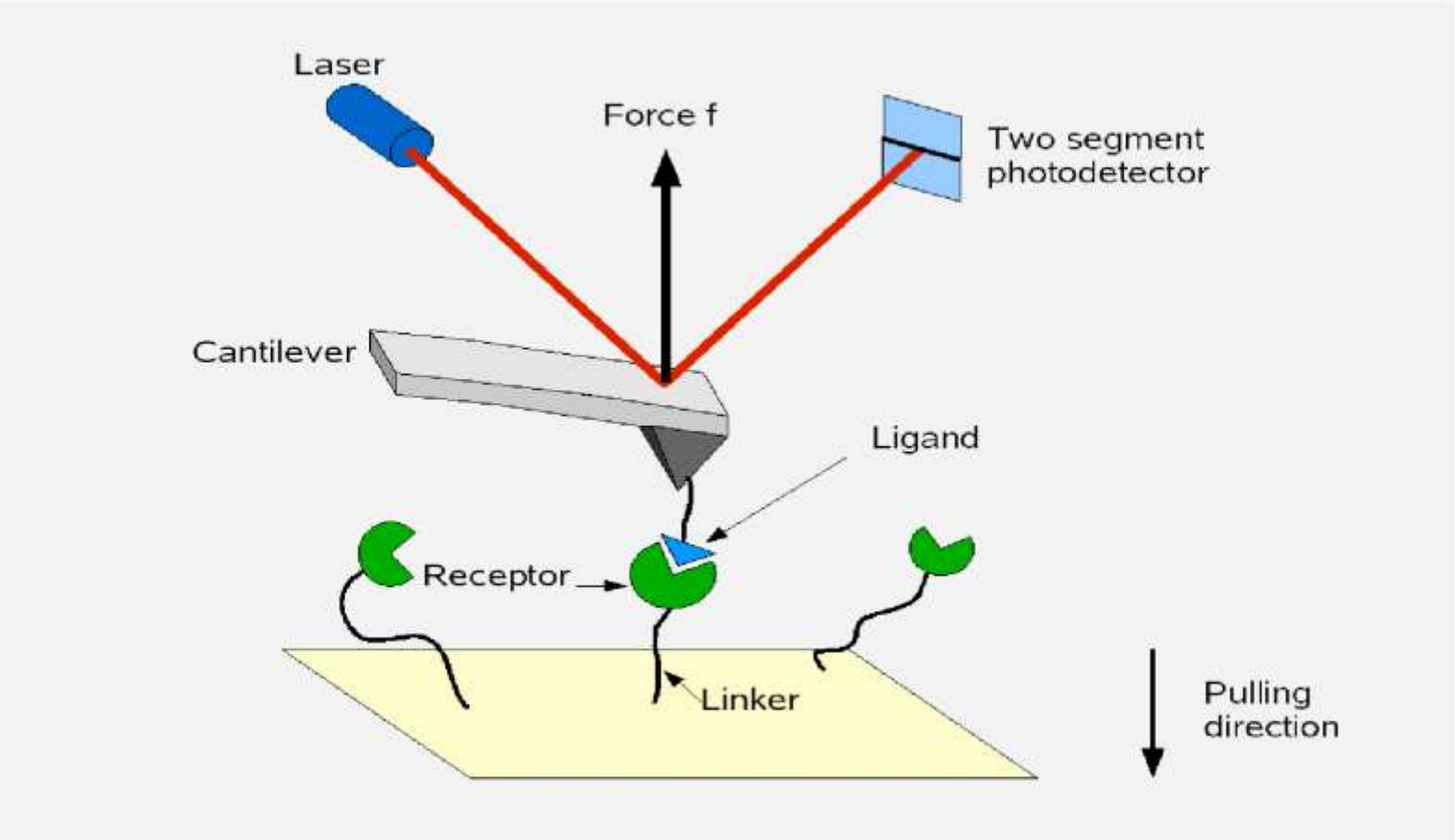






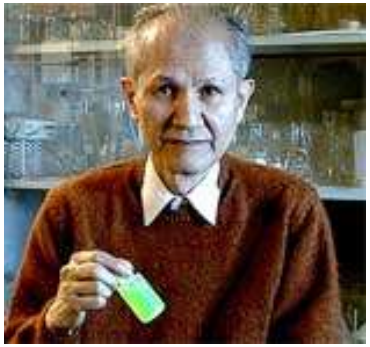


Atomic force microscopy



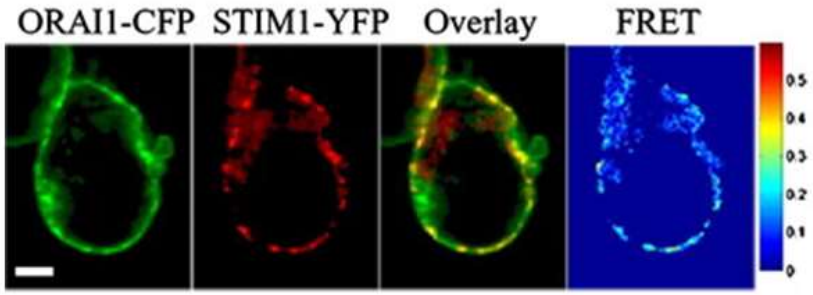
Fluorescence Microscopy

Roger Tsien

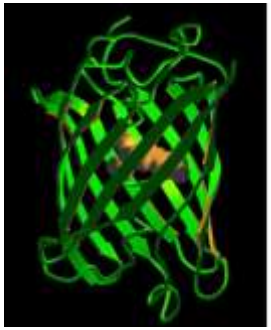


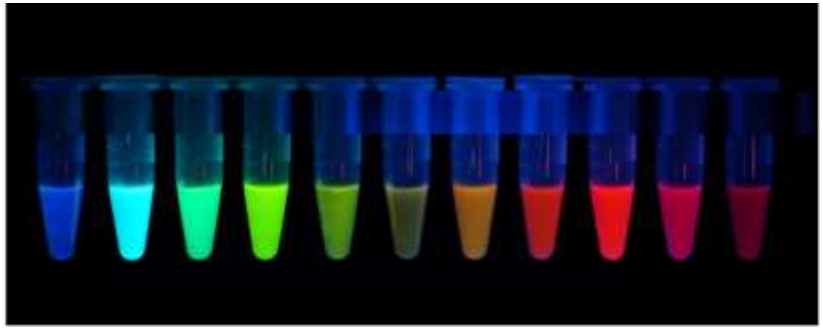
Osamu Shimomura

Martin Chalfie



Nobelpreis 2008 für Chemie

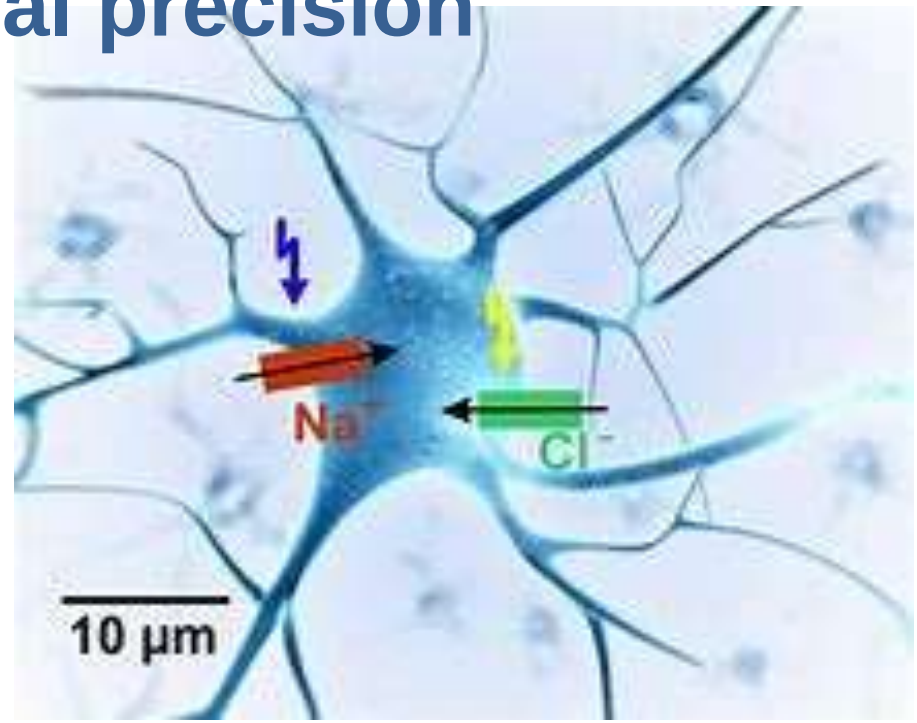




Green Fluorescent Protein (GFP)

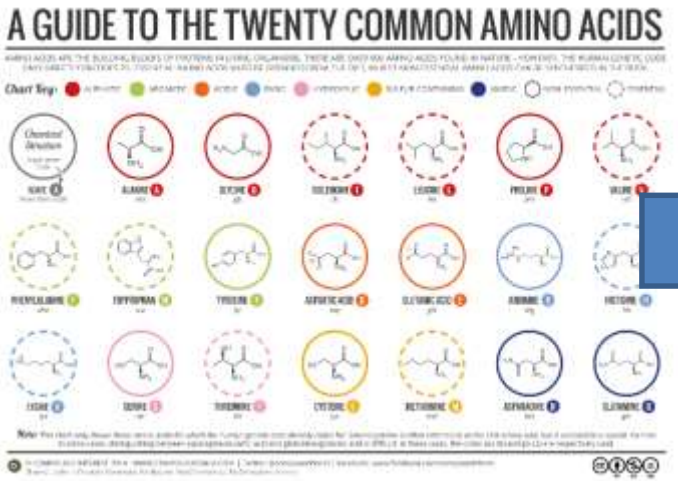
Optogenetic - Optoproteomics

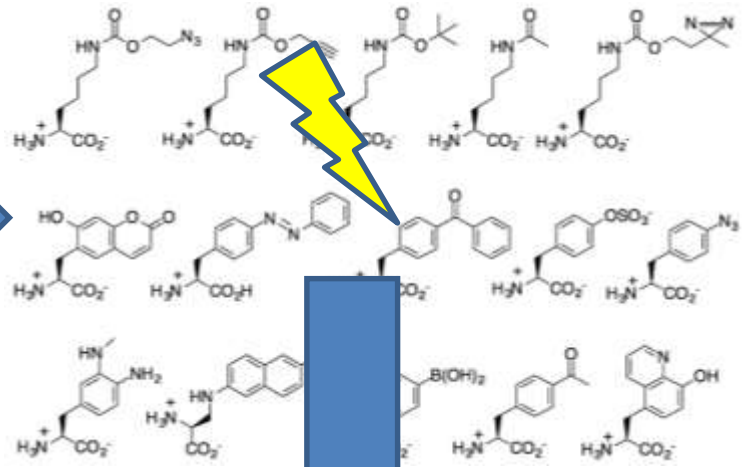
Control of protein function with high temporal and spatial precision

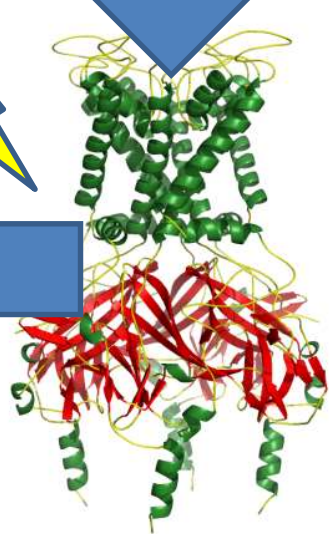


Optogenetic – Optoproteomics via genetic code expansion

artifical amino acids







Control of structure and function dynamically with high temporal and spatial precision