

Scientific Landmarks - A brief history of the LMB

1947: MRC 'Unit for Research on the Molecular Structure of Biological Systems' established



1953: Double-helical structure of DNA elucidated



Sliding filament model for muscle contraction proposed



1959: First atomic resolution map of a protein, myoglobin



Structure of haemoglobin determined



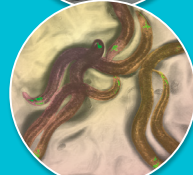
1961: Demonstration of the triplet nature of the genetic code



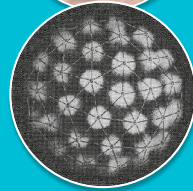
1962: MRC Laboratory of Molecular Biology opened



1967: First mutant of *C. elegans* (nematode worm) produced



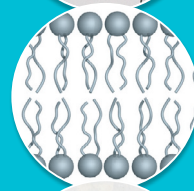
1968: First 3D models of protein structures from electron microscopy



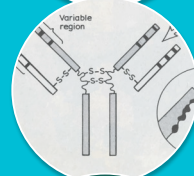
1971: Precursor tRNA molecules found and discovery of catalytic RNA



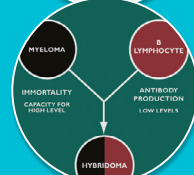
1972: Asymmetric lipid bilayer structure for biological membranes proposed



Signal peptide sequence which directs protein secretion discovered



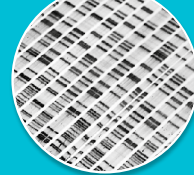
1975: Monoclonal antibody methodology invented



First 3D structure of a membrane protein, bacteriorhodopsin



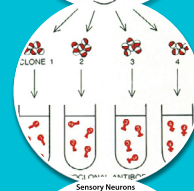
1977: Method for sequencing DNA developed



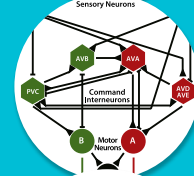
1983: Embryonic cell lineage of *C. elegans* unraveled



1986: First humanised antibody produced



C. elegans is the first animal to have its entire nervous system mapped



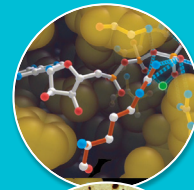
1988: First patient treated with humanised antibody, Campath-1



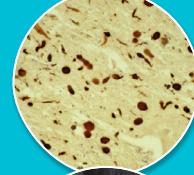
1989: First LMB spin-out company, Cambridge Antibody Technology, formed



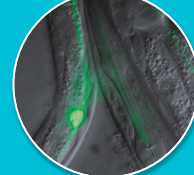
1994: Structure of F1 subunit of mitochondrial ATPase revealed



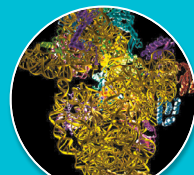
1997: Major component of filamentous lesions found in Parkinson's disease identified



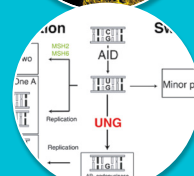
1998: *C. elegans* is the first animal to have its genome sequenced



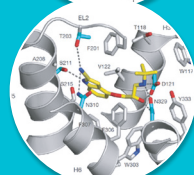
2000: Structure of 30S ribosomal subunit and its complexes determined



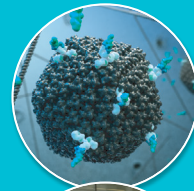
2002: Molecular mechanism of antibody mutation uncovered



2008: β -adrenergic receptor structure determined



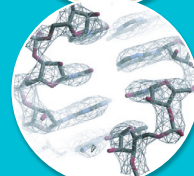
2010: Discovered that antibodies fight viruses within infected cells



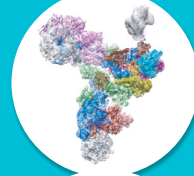
2013: New MRC Laboratory of Molecular Biology building opens



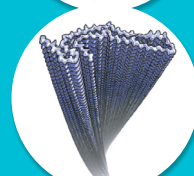
2014: Cryo-EM atomic structures at 3.2 Å resolution



2015: First spliceosomal complex structures determined



2017-2018: Structures of tau filaments from Alzheimer's and Pick's disease solved



2019: First synthesis of an entire recoded *E. coli* genome



2020: First visualisation of individual protein atoms with cryo-EM

