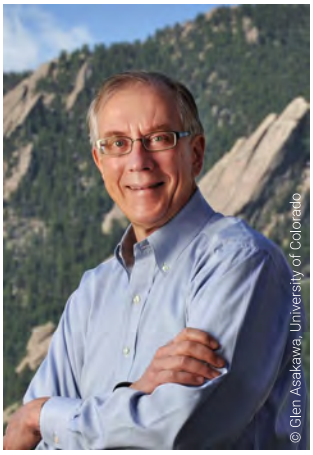
MANFRED EIGEN
AWARD LECTURE



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Curious in the nucleus: Cryo-EM of a telomeric complex and RNA as a regulator of epigenetic silencing

The human CST (CTC1-STN1-TEN1) protein complex functions at telomeres and works genome-wide to help resolve stalled replication forks. Addition of telomeric ssDNA triggers the assembly of CST into a 2-megadalton decameric supercomplex, solved by cryo-EM at 2.95 Å resolution. The decameric form of CST suggests the intriguing possibility of ssDNA architectural organization similar to what the nucleosome provides for dsDNA. Moving away from the telomere, formation of facultative heterochromatin requires the histone methyltransferase PRC2 (Polycomb Repressive Complex 2). PRC2 binds nuclear lncRNAs and pre-mRNAs broadly, and this binding provides an initial step for PRC2 recruitment to sites of action. Given that many DNA-binding proteins also bind RNA, these mechanisms may be more generally applicable.

Tuesday, October 19, 2021
2 pm
Manfred Eigen Hall

Max Planck Institute for Biophysical Chemistry