In all of life on Earth, information flows from DNA to RNA to Protein. Thus, RNA has a role as a ‘message,’ transmitting the information encoded in our chromosomal DNA.

More recently, the biological importance of noncoding RNA has been revealed. RNA molecules can have active roles in biology, even acting as enzymes. I will describe the events that led to the discovery of the first catalytic RNA, or ribozyme, and subsequent work that revealed the structures and functions of these remarkable molecules. The finding that RNA could be a biocatalyst fueled speculation about a primordial RNA World, where RNA served as both information (genotype) and function (phenotype). I will then describe recent work on the structure and function of telomerase, the RNP (ribonucleoprotein) enzyme that synthesizes new DNA at chromosome ends.

Speaker
Professor Tom Cech
Distinguished Professor, University of Colorado Boulder
Director, University of Colorado BioFrontiers Institute
Investigator, HHMI
Nobel Laureate (Chemistry, 1989)