

Crawling out of the RNA World: From Ribozymes to Telomerase

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Dr. Cech will describe the discovery of the first catalytic RNA, or ribozyme, and the analysis of its chemical mechanism and molecular structure. The finding that RNA could be a biocatalyst fueled speculation about a primordial RNA World, where RNA replicated itself. How, then, would life evolve beyond RNA to encompass proteins and eventually DNA? Dr. Cech will describe more recent work on ribonucleoprotein (RNP) enzymes that may provide clues about how life “crawled out” of the RNA World to the present situation, where catalysis is carried out mostly by protein enzymes but also by RNP enzymes. The experimental system is telomerase, the RNP enzyme that replicates the ends of eukaryotic chromosomes.