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*Folding something other than laundry*

RNA (ribonucleic acid) is the connection between genetic information and proteins. The nucleotides adenine (A), uracil (U), guanine (G), and cytosine (C) are the building blocks of RNA. The nucleotide A pairs with the nucleotide U, and similarly G pairs with C. These nucleotide pairings create folds in the RNA sequence, which we refer to as the secondary structure. The secondary structure's stability increases with the number of pairings, but in general, even with a maximum number of pairings, there is more than one way a sequence of nucleotides can fold. This motivates the *combinatorial RNA design problem*: given a target secondary structure  $T$ , can we specify an RNA sequence which can achieve its maximum number of nucleotide pairs in only one way, namely by folding into the specified secondary structure  $T$ . This talk examines the case where all nucleotides are paired and the trickier case where some go unpaired.