1037-05-276   **Christine E. Heitsch*** (`heitsch@math.gatech.edu`), School of Mathematics, Georgia Institute of Technology, Atlanta, GA 30332-0160. *Combinatorics of RNA Secondary Structures.*

Under a suitable abstraction, complex biological problems can reveal surprising mathematical structure. Modeling RNA folding by plane trees, we prove combinatorial theorems yielding insight into the structure and function of large RNA molecules. We also, with an appropriate local move, obtain a graph of RNA configurations which is isomorphic to the lattice of noncrossing partitions. These results illustrate the fruitful interaction between discrete mathematics and molecular biology. (Received February 04, 2008)