Deoxyribonucleic acid (DNA) is best known as the carrier of genetic information. However, it is also a versatile material for designing nanometer-scale structures. This is because DNA sequences can be designed such that the strands self-assemble into well-defined secondary structures. DNA exists normally as a linear, unbranched molecule in our body. DNA-based nanotechnology, on the other hand, makes use of artificial branched DNA structures to create DNA complexes with useful properties. In this talk, I am going to show you the advances made in the field of structural DNA nanotechnology in the last 30 years since its inception – including the various DNA nanostructures which have been made successfully and the various applications which have been derived out of them. I will also briefly describe the research I am involved with at the NC State University in Prof Thom LaBean’s lab which is principally focused on the development of potent anticoagulants using DNA nanostructures.