

Chem 452 - Fall 2012 - Hand-in Assignment 1

Read Watson and Crick's 1953 article in *Nature* (Watson and Crick 1953)¹ and answer the following questions. Hand in your answers on Friday, 14. September, 2012.

1. In their article, Watson and Crick report being scooped in their effort to be the first to describe a structural model of deoxyribose nucleic acid (DNA).
 - a. Who was the person who scooped Watson and Crick? _____
 - b. Give the citation for the article written by the person identified above:
 - c. What were the two reasons given by Watson and Crick for why they felt that the model described in the above cited article was incorrect?
 - i.
 - ii.
2. What is the physical interpretation for the "van der Waals distance", and what defines it?
3. In words, describe Watson and Crick's proposed structure and how this structure well suits its function. (Use the back to give your answer. You may attach additional sheets if necessary, but keep in mind that Watson and Crick's Nobel Prize-winning article is only one page long.)
4. Draw chemical structures showing the base pairing that Watson and Crick proposed to explain the observations made by Erwin Chargaff
 - a.
 - b. What were Erwin Chargaff's observations?

1. Watson, J. D. and F. H. Crick (1953). "Molecular structure of nucleic acids; a structure for deoxyribose nucleic acid." *Nature* **171**(4356): 737-738.