structures and the scattering data are formed from tetramers and dimers both in the presence of H2A and H2B or H3 and H4. Reconstituted octamer was studied in solution at that ionic strength the octamer further dissociates into an H2A-H2B dimer and its structural integrity as assessed by sucrose gradients and by electron microscopy is preserved. Electron micrographs of arrays diffract to 45 Å resolution. Optical diffraction of electron micrographs of flattened tubes shows there are two large subunits per asymmetric unit in a primitive lattice with plane group symmetry p2 (a = 360 ± 20 Å, b = 380 ± 20 Å, α = 118 ± 5°). This packing can also be referred to a centered lattice (a = 380 ± 20 Å, b = 660 ± 20 Å) with approximate symmetry cm. Supported by grants from NIH and NSF to JAL.

02.5-08 NEUTRON SCATTERING STUDIES OF HISTONE COMPLEXES. By R. Douglas Carlson and Teresa H. Kelley, Biology Department, Brookhaven National Laboratory, Upton, New York 11793.

The basic unit of chromatin structure is the nucleosome. It consists of a segment of DNA wrapped around a protein core comprised of 2 each of the histones H2A, H2B, H3 and H4. This histone octamer can be dissociated from the DNA in 2M NaCl and can be studied in isolation. At lower ionic strength the octamer further dissociates into an (H3-H4)2 tetramer and an H2A-H2B dimer.

It appears as though these smaller histone complexes exist intact within the larger core octamer, although it is not known what conformational changes may accompany this association. Neutron scattering methods are being used to study this problem. Data are presented here on the solution conformations of these histone complexes. They were isolated by salt extraction at pH7 from chicken EBC chromatin bound to hydroxyapatite columns, or formed by mixing dilute solutions containing stoichiometric amounts of purified H2A and H2B or H3 and H4. Reconstituted octamer was formed from tetramers and dimers both in the presence and absence of DNA. Radial, volumes and shapes are discussed and the scattering data are compared with those calculated for model structures. (Supported by the U. S. Dept. of Energy.)