

**COLLOQUIUM
DEPARTMENT OF PHYSICS
UNIVERSITY OF HOUSTON**

**Tuesday, April 13, 2010
4:00pm
Houston Science Center Room 102**

“Macromolecular crowding: excluded volume... and more”

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NIH

The term “macromolecular crowding” is used to connote the effect of high total volume occupancy by macromolecules in solution upon the equilibrium and dynamic behavior of individual macromolecular species, and upon specific and nonspecific interactions between them. Theoretical and experimental investigations of crowding effects have largely focused upon the role of repulsive nonspecific interactions deriving from the mutual impenetrability of macromolecules (excluded volume) and upon nonspecific repulsive electrostatic interactions between macromolecules of like charge. Basic concepts will be described, and experimental data demonstrating the magnitude of nonspecific repulsive interactions upon colligative properties and upon association and conformational equilibria in several systems will be presented. More recently the presence of attractive as well as repulsive nonspecific interactions has been taken into consideration. Evidence will be presented that under certain conditions and in certain systems, such interactions may lead to crowding effects that are qualitatively different from those arising from excluded volume alone.

Hosted By Dr. Margaret Cheung