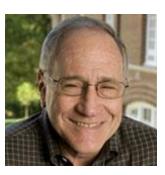
Department of Molecular Biophysics and Biochemistry Departmental Colloquium

## Barry Honig, Ph.D.

Department of Biochemistry and Molecular Biophysics



Columbia University

## Integrating Structural and Systems Biology: Structure-based Prediction of Protein-Protein Interactions on a Genome-Wide Scale

The genome-wide identification of pairs of interacting proteins is an important step in the elucidation of cell regulatory mechanisms. To date, structural information has had only limited impact on genome-scale efforts to predict protein-protein interactions (PPIs). A new algorithm, PrePPI, will be introduced that combines structural information with non-structural clues and that is comparable in accuracy to high-throughput experiments. The surprising effectiveness of three-dimensional structural information can be attributed to the use of homology models and the exploitation of both close and remote geometric relationships between proteins. More generally, the "structural BLAST" approach encapsulated in PrePPI significantly expands the range of application of protein structure in the annotation of protein function.

## Monday, January 28, 2013 OML202 3:45 Tea 4:00 Seminar

Host: Don Engelman

Supported by the Mrs. Hepsa Ely Silliman Memorial Fund

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