

Seminar: Friday 20 September 2013: Monash Undergraduate Research Projects Abroad (MURPA) and Queensland Undergraduate Research Projects Abroad (QURPA).

The annual MURPA/QURPA program exposes final year undergraduate students to an international research experience within a leading research laboratory.

On Friday 20 September Dr Arun Konagurthu will present his seminar "Statistical Inference of Protein 3D LEGO Bricks" live to audiences in Melbourne and Brisbane.

Melbourne Date: Friday 20 September Time: 9.00 - 10.00am Location - Monash University: Seminar Room G12A, Building 26, Clayton Campus Enquiries: Caitlin Slattery (Faculty of IT)

Brisbane Date: Friday 20 September Time: 9.00 - 10.00am Location - University of Queensland: Seminar Room 505A, Building 47 (Axon), St Lucia Campus Enquiries: Sharon Cook (Research Computing Centre)

Abstract: Statistical Inference of Protein 3D LEGO Bricks

Dr Arun Konagurthu

Understanding the principles of protein architecture and structure is fundamental to biology. Underlying the great variety of protein folding patterns are many recurrent substructures. Combining information theory with statistical inductive inference, we discover a comprehensive dictionary of protein fragments (analogous to LEGO pieces) of which all known protein structures are made. Any protein conformation can be dissected into these substructural building blocks. Further, our methodology leads naturally to measurement of the accuracy of experimental protein structure determinations, answering another important -- and until now not satisfactorily solved -- question. Given the central importance of protein structure in biology, these results are of interest to biomedical scientific community and to computational scientists.