



Honours/Ph.D. projects - Molecular modelling and computer simulation in molecular biology, drug discovery and pharmaceutical research

The methods of molecular modelling and computer simulation can make significant contributions to a wide variety of fields, ranging from molecular biology and drug design to nanotechnology and materials design. The concomitant rapid advances in computational power have enabled these technologies to tackle physical, chemical and biological phenomena of unprecedented high complexity and long time and/or length scales.

An honours/Ph.D. student is sought to work in any one of the following areas:

- (1) protein flexibility and solvation in drug design,
- (2) drug-protein interactions,
- (3) protein-protein interactions,
- (4) loading and delivery of drugs in nanoparticles,
- (5) the hydrophobic effect,
- (6) protein denaturation and stabilisation, and
- (7) cryoprotective solvents.

All of the above projects would provide comprehensive training and experience in modern methods and techniques in computer simulation and molecular modelling. The position would accommodate someone interested in learning to use established commercial and academic software but would also provide an excellent opportunity for someone interested in computer programming. There will also be the opportunity to have access to national high performance computing facilities to carry out some of the work. Participation at national and international conferences will also be encouraged.

The project will be supervised by Dr. Ricardo L. Mancera at the Western Australian Biomedical Research Institute. Ph.D. applicants must have completed an honours degree and/or a master's degree in chemistry, biochemistry, pharmacy, physics, materials science, engineering or mathematics. Enrolment of the successful candidate at an appropriate School/Department of Curtin University of Technology would be arranged.

For further information on any of the above projects and to discuss funding opportunities please contact Dr. Mancera at (08) 9266 1017 or by e-mail at R.Mancera@wabri.org.au.

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