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4 novembre 2011

Madame,

Nous avons le plaisir de vous faire parvenir cette annonce d'ouverture de stage dans notre service de Structure, Design & Informatics au Centre de Recherche Vitry/Alfortville de notre société sanofi.

Nous vous serions très reconnaissants de publier cette annonce auprès de vos étudiants.

Veuillez agréer, Madame, l'expression de nos sincères salutations.

Anke Steinmetz, PhD

Annonce d'ouverture de stage

Title: Coarse-grained molecular dynamics simulations of nanoparticles

Description:

Galenic formulations employing nanoparticles aim at ascertaining maximal efficacy and minimal toxicity of drugs by optimizing adsorption, distribution, metabolism, and elimination as well as drug stability and shelf-life of the preparation. Development of such formulations represents a major challenge in drug development.

Molecular modeling is applied to support characterization and analysis of physico-chemical properties of and drug release from nanoparticles. Furthermore, it will guide selection and design of optimal polymer/drug combinations for the development of novel nanoparticles.

Coarse-grain molecular dynamics simulations are a powerful approach to model large-scale systems such as nanoparticles on an extended time-scale. This internship will address the exploration and development of parameters for coarse-grain molecular dynamics simulations at the example of nanoparticles targeting the delivery of drugs through the skin. Once suitable parameters are identified they will be applied to study physico-chemical characteristics of selected nanoparticles and drug release from them. Established soft-ware packages such as Maestro Suite, Desmond, and LAMMPS will be employed.

Benefit to internship student:

Hands-on experience in molecular modeling to support drug discovery and development in a scientifically and culturally rich industrial research group focused on structure, design, and informatics.

Required expertise:

Master M2 level with knowledge in molecular modeling or computational chemistry acquired during university course work or internship; basic knowledge in programming or computing. We are committed to individual tutorship, require an autonomous and pro-active mind-set nevertheless.

Length of internship & envisioned start: 6 month, start as soon as possible (early 2012)

Address Curriculum Vitae and letter of motivation to

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