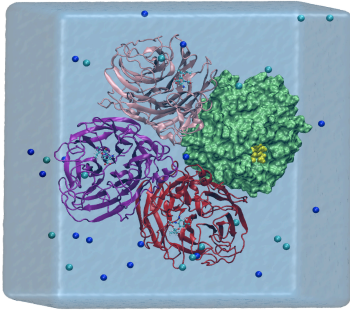


*Interested to learn the latest in high performance computer simulation and visualization, (bio)statistical data analysis, or how to find a cure for the swine flu using your PlayStation3?*

## **CS295: Computational Biology / Biophysics and Drug Discovery**



**Wednesdays 2:00-3:50PM**  
**Instructor: R. Amaro**  
**1422 Bren Hall**  
**(4 units)**



Computational Biology and Drug Discovery will introduce students to the application of computational and statistical models to biophysics and drug discovery. This graduate-level seminar course will walk students through the basic techniques of biomolecular simulation and computer-aided drug design, including application of massively parallel molecular dynamics simulations on large-scale cluster / GPU architectures, as well as analysis techniques to enable new discoveries within the vast quantity of digital data, such as finding new potential drug leads through virtual screening and small molecule docking.

Lectures on course concepts will be closely combined with hands-on tutorials that allow the practical application of computational methods and statistical data analysis in a project-based format. Students will be granted access to the national supercomputers centers as well as the local GreenPlanet high performance computing cluster to run their simulations and analyze the data.

Students should have an interest in and some knowledge of biology, and some knowledge of physics (Newton's Law) will be helpful. Advanced undergraduates are also welcome to attend.