

Short course on HPC-based Computational Bio-Medicine @ BSC

Tuesday 11 February 2020 - Thursday 13 February 2020

Barcelona BSC Campus Nord

Agenda

Day 1 (Feb. 11)

Session 1 / 9:00am – 1:00 pm (4 h lectures)

9:00-9:15 Welcome (Mariano Vázquez, BSC)

9:00-11:00 Compilation and Optimization in the HPC environment (O. Hamitou)

11:00-11:20h Coffee Break

11:20-13:00 Introduction to Computer-Aided Drug Design (CADD) and GPCR Modelling (Dr Alexander Heifetz, EVOTEC)

13:00-14:00 Lunch Break

Session 2 / 2:00pm – 6:00 pm

14:00-15:00 Innovations in HPC-training for medical, science and engineering students (Andrea Townsend-Nicholson, UCL)

15:00-16:00 Molecular Medicine: Hands On (Andrea Townsend-Nicholson, UCL)

16:00-18:00 Visit to MareNostrum

Day 2 (Feb. 12)

Session 3 / 9:00am – 1:00 pm (4 h lectures)

9:00-10:50 Introduction to HPC in Computational Modelling (Carlos Teijeiro Barjas, SURFsara)

10:50-11:10h Coffee Break

11:10-13:00 Computational Hemodynamics on HPC (UvA) (Ben Czaja, UvA)

13:00-14:00 Lunch Break

Session 4 / 2:00pm – 5:00 pm (2 h lectures, 2 h practical)

14:00-15:15 Visualization applied to 2D/3D scientific datasets (Paul Melis, SURFsara)

15:20-15:40 Coffee Break

15:40-17:00 Cardiac Modelling (J. Aguado-Sierra)

Day 3 (Feb. 13)

Session 5 / 9:00am – 1:00 pm (4 h lectures)

9:00-11:00 Fluid-Structure Interaction methods for biomechanics (C. Samaniego, D. Oks, A. Santiago)

11:00-11:20h Coffee Break

11:20-13:00 hands-on on Fluid-Structure Interaction methods for biomechanics (C. Samaniego, D. Oks)

Session 6 / 2:00pm – 6:00 pm

14:00-15:00 Parallel algorithms for Computational Mechanics (Guillaume Houzeaux - Ricard Borrell, BSC)

15:00-16:00 Artificial Intelligence in Life Sciences (Davide Cirillo, BSC)

16:00-16:15 Coffee Break

16:15-18:00 Artificial Intelligence in Life Sciences (Davide Cirillo, BSC)