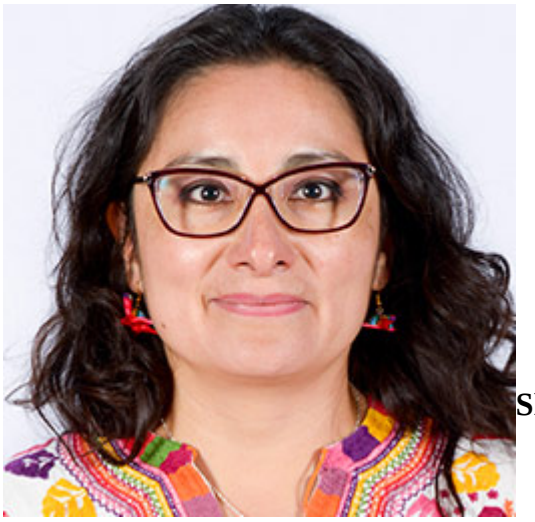
SORS/WomenInBSC: Biomechanics full organ simulations with a sex-specific dimension

Objectives

Abstract: The current state of the art simulations on cardiac and uterine simulations will be presented employing the BSC's finite elements code: Alya. An overview of the different scales at which we are solving the sub-cellular to full organ physics will be explained, including the aspects of hormonal influence on sex-specific functional behaviour. The creation of an in-silico human clinical trial will be employed to demonstrate the use of virtual human populations to assess drug cardiac safety. Furthermore, some of the simulations created to study female reproductive health will be shown, towards the use of patient-specific simulations to study endometriosis and infertility.



Short bio: Jazmín Aguado-Sierra obtained her Biomedical Engineering degree with Academic Excellence Award at the Universidad Iberoamericana, Mexico in 2000. She obtained her PhD degree at Imperial College London, UK, at the Bioengineering Department under the supervision of Emeritus Professor Kim H. Parker with a scholarship from CONACYT Mexico. During her PhD she developed one-dimensional models of blood flow in coronary and arterial circulations.
In 2008 she obtained a PostDoctoral position at the Cardiac Mechanics Research group of the University of California San Diego, under supervision of Prof. Andrew McCulloch, where she worked on electro-mechanic models of the heart until 2011.
She worked for 4 months as a PostDoctoral Fellow at the Universitat Pompeu Fabra and as a Visiting Researcher at the University of Sheffield focusing on electro-mechanic models of the heart.
She was offered a position at the Barcelona Supercomputing Center, Spain in 2012 where she is currently a Senior PostDoc part of the Biomechanics group at the Barcelona Supercomputing Center, where she develops multi-scale, multi-physics, high performance models of the cardiovascular system.
From February of 2019 she holds a Ramón y Cajal Fellowship and is a Scientific Consultant for Elem Biotech, a BSC' spinoff.

Speakers

Speaker: Jazmín Aguado, Biomechanics Group Senior PostDoc, CASE, BSC
Host: Mª José Rementeria, Social Link Analytics unit leader, LS, BSC

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