B·DEBATE International Center for Scientific Debate BARCELONA

IBEC Institute for Bioengineering of Catalonia

LIESBET GERIS

CV

PARTICIPANT AT:

FUTURE TOOLS FOR BIOMEDICAL RESEARCH. IN VITRO, IN SILICO AND IN VIVO DISEASE MODELING

October, 1st-2nd, 2015, Barcelona

Liesbet Geris, Professor in Biomechanics and Computational Tissue Engineering at the universities of Liège and Leuven, Belgium

Liesbet Geris is professor in Biomechanics and Computational Tissue Engineering at the universities of Liège and Leuven (Belgium). Her research interests encompass the mathematical multi-scale modeling of bone regeneration in tissue engineering applications. She works in close collaboration with experimental and clinical researchers of the university hospitals of Leuven and Liège focusing on the development of mathematical models of impaired healing situations and the in silico design of novel treatment strategies In 2011 she received an ERC starting grant. She has received a number of young investigator and early career awards. She is chair of the policy affairs work group of the Virtual Physiological Human Institute, member of the Young Academy of Europe and co-chair of the Young Academy of Belgium (Flanders).

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ABSTRACT

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The Virtual Physiological Human Initiative: Applications in Bone Regeneration

For many years now, researchers have created computational models of biological processes to complement and interpret in vitro and in vivo experiments. The Virtual Physiological Human (VPH) initiative is a worldwide effort to develop computer technologies that will enhance these early models and will allow to integrate all information available for each patient. The generated computer models will then be capable of predicting how the health of that patient will evolve under certain conditions or treatment. The applications of these models will defer depending the user: patients (personal health forecasting), clinicians (digital patients), researchers (virtual guinea pigs) or industry (in silico clinical trials). In this talk the general concept of the VPH will be explained. Additionally a number of examples from our lab will be discussed, including models of fracture healing, biomaterial design and bioreactor culture for bone tissue engineering.

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