

Insigneo Newsletter - July 2019

Welcome to our monthly Insigneo newsletter!

Our monthly e-newsletter keeps you up to date with events, funding, success stories and information. We hope you will find it useful! If you would like to add information and/or events to this newsletter please email: news@insigneo.org (the newsletter will be issued during the 2nd week of the month, excluding January and August). Please ensure that you submit news and events with a minimum of one week's notice.

The Virtual Human enters parliament



Last week our CompBioMed project took a virtual heart to parliament for Evidence Week to show parliamentarians how computer modelling can simulate the tissues and organs of the human body and how this can contribute to the future of healthcare through personalised, predictive medicine.

Dr Alberto Marzo, Insigneo Fellow and Principal Investigator at the University of Sheffield's Department of Mechanical Engineering, said "The human body is exquisitely complex and in the CompBioMed project we are using computer models and supercomputers to embrace this complexity. The University of Sheffield is contributing to the project by developing computational models of the cardiovascular and musculoskeletal systems and some of these models are already being tested by our clinical colleagues to improve diagnosis and treatment of conditions such as stroke or osteoporosis. The project is reaching the end of its course but its mission will continue with a new 4-year EU project, CompBioMed 2, starting in October 2019 where we plan to continue the development, dissemination and clinical translation of *in silico* medicine approaches".

[Read more](#)

European Course in Minimally Invasive Neurological Therapy (ECMINT)

INSIGNEO

Institute for *in silico* Medicine

ARTERIAL PHYSIOLOGY IN HEALTH AND DISEASE: THE FUTURE OF COMPUTATIONAL MODELLING

Paul Watton

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The
University
Of
Sheffield.



University of
Pittsburgh

SofT Mech

Dr Paul Watton, Insigneo member and Senior Lecturer at the University of Sheffield's Department of Computer Science, was part of the Faculty at ECMINT 3.2 (26-29 June 2019) at St Anne's College, University of Oxford. He gave a lecture on 'Arterial physiology in health and disease: the future of computational modelling – intracranial aneurysms'.

[Read more](#)

Ioannis Xanthis featured in Journal of Cell Science

The Journal of Cell Science has written a 'First person' interview with Ioannis Xanthis on work he conducted while a PhD student in Insigneo member, Professor Paul Evans's lab at the University of Sheffield's Department of Infection, Immunity & Cardiovascular Disease, identifying $\beta 1$ integrin as a sensor of blood flow direction.

First Person is a series of interviews with the first authors of a selection of papers published in Journal of Cell Science, helping early-career researchers promote themselves alongside their papers.

[Read more](#)

New book: Multiscale Mechanobiology in Tissue Engineering



Professor Damien Lacroix has had a book published on 'Multiscale Mechanobiology in Tissue Engineering' with Insigneo colleagues and alumni: Marzia Brunelli, Cecile Perrault, Adrien Baldit, Maryam Shariatzadeh, Ana Campos Marin, Andre Castro, Sara Barreto.

This new book provides the latest results of Professor Lacroix's research team on mechanobiology after having received a prestigious grant from the European Research Council (grant number 258321) entitled 'Finite element simulations of mechanobiology in tissue engineering'. The research was performed within the mechanobiology laboratory of the Insigneo Institute for *in silico* Medicine within the Department of Mechanical Engineering at the University of Sheffield.

[Read more](#)

In profile: Leticia Bezzera Bresani Campello



Meet Leticia Bezzera Bresani Campello, a student on our revolutionary MSc in Computational Medicine course who completed her undergraduate degree at the University of Sheffield in the Department of Mechanical Engineering.

Computational Medicine is a pioneering area of healthcare engineering and this MSc is teaching a new generation to become digital specialists in computer modelling for disease diagnosis, treatment and prevention.

[Read profile](#)

The University of Sheffield Big Walk 2019



Well done to Insigneo Director of Research Professor, Jim Wild and Insigneo member, Professor Allan Lawrie – Professor of Translational Cardiopulmonary Science (pictured above with Amy Jones – International Recruitment Manager), and all of our colleagues who completed the 37 mile Big Walk, raising crucial funds for student scholarships.

[Read more](#)

Join us! Membership open to PhD students and Research Associates



Membership of Insigneo is now open to academics, research associates & PhD students at The University of Sheffield and medical professionals at Sheffield

Teaching Hospitals NHS Foundation Trust and Sheffield Children's NHS Foundation Trust.

If your supervisor is an Insigneo member then you are eligible to join our interdisciplinary *in silico* medicine research community as an associate member and we would encourage you to join us. We are developing a series of activities aimed at supporting your scientific and professional development so please get in touch!

[Read more](#)

European Society of Biomechanics YouTube channel



The screenshot shows a YouTube video player interface. At the top, there are logos for the European Society of Biomechanics (ESB) and SimVascular, with the text 'Webinar Series' and 'in collaboration with'. The main title of the video is 'Learn How To Use SimVascular: The Open Source Pipeline for Cardiovascular Modeling'. Below the title, there are two columns of bullet points: 'Features' and 'How to:'. The 'Features' column lists: Image Analysis, Model Construction, Meshing, Simulation, Machine learning, Python interface, 3D segmentation, and Automated 1D simulations. The 'How to:' column lists: Build 3D Patient-Specific Cardiovascular Models, Run computational blood flow simulations, and Visualize and analyze simulation data. In the center of the video player, there is a large red play button icon. Below the play button, there are four small thumbnail images showing different stages of cardiovascular modeling: a medical scan, a 3D model of a vessel, a meshed vessel, and a 3D model of a vessel with flow simulation. At the bottom of the video player, there are logos for SimTK, Stanford Medicine, Berkeley QSMSC, and a globe icon. Below the logos, there is a registration link: 'Register at : <https://esbiomech.org/blog/2019/05/30/esb-webinar-series-no-01/>'. At the very bottom of the video player, there is a YouTube logo and the text 'Live on ESB YouTube Channel - June 11th, 2019 - 17:00 - 18:00 CET'.

The European Society of Biomechanics aims to encourage research, disseminate knowledge and promote progress in Biomechanics and is now the largest Biomechanics society in Europe with over 1000 members. You can now follow them on YouTube where you will find a growing collection of webinars, lectures, presentations including a recording of their very first Webinar on 'How to use SimVascular: the open source pipeline for cardiovascular modeling' with Gabriel Maher from SimVascular and featuring Insigneo's Dr Enrico Dall'Ara.

[Subscribe](#)

Guest Lectures, Conferences & Seminars

Insigneo Events

23 September 2019 - Insigneo General Assembly - **save the date!**

Other events

18 July 2019

6th MDHRSA Research Forum: Biomedical Imaging, Sheffield

24 July 2019

Challenges in cardiovascular flow, Bath

5 September 2019

BioMedEng19, London

5 September 2019

General Assembly of the UK Chapter of the VPH Institute, London

12 September 2019

AMMM – Additive Manufacturing Meets Medicine 2019, Lübeck

16 - 18 September 2019

British Chapter of ISMRM Annual Meeting 2019, Sheffield

16 September 2019

15th Bath Biomechanics Symposium, Bath

25 - 27 September 2019

CompBioMed Conference 2019, London

6 December 2019

10th Annual Mellanby Centre Research Day, Sheffield – save the date!

24 - 28 February 2020

Advanced International School on imaging, modeling, and simulation in biomechanics and mechanobiology, Rome

For a full list of upcoming events visit: <http://insigneo.org/events/>

Vacancies

Cardiac MRI Research Fellow in Artificial Intelligence

(closing date 26/07/19)

PhD opportunity: using mechanistic computational simulation and machine learning to inform instrument design for EIS-guided surgery

(closing date 31/08/19)

Publications

Research output affiliated to Insigneo in Scopus (please ensure papers are affiliated to the Insigneo Institute by including the words "Insigneo Institute for *in silico* Medicine"):

β 1 integrin is a sensor of blood flow direction (Journal of cell science) I. Xanthis, C. Souilhol, J. Serbanovic-Canic, H. Roddie, A. C. Kalli, M. Fragiadaki, R. Wong, D. R. Shah, J. A. Askari, L. Canham, N. Akhtar, S. Feng, V. Ridger, J. Waltho, E. Pinteaux, M. J. Humphries, M. T. Bryan, P. C. Evans

Finite element modelling of the developing infant femur using paired CT and MRI scans (PLoS ONE) A. P. G. Castro, Z. Altai, A. C. Offiah, S. C. Shelmerdine, O. J. Arthurs, X. Li, D. Lacroix

Upper body accelerations as a biomarker of gait impairment in the early stages of Parkinson's disease (Gait and Posture) C. Buckley, B. Galna, L. Rochester, C. Mazzà

Biomechanical assessment of vertebrae with lytic metastases with subject-specific finite element models (Journal of the Mechanical Behavior of Biomedical Materials) M. C. Costa, P. Eltes, A. Lazary, P. P. Varga, M. Viceconti, E. Dall'Ara

Starters & Leavers

A warm welcome to:

PhD Students

Anna Georgiadou - PhD student of Dr Jennifer Rowson

Goodbye and thank you to:

Yang Zhang - PhD student of Professor Claudia Mazzà

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