Insigneo Institute for *in silico* Medicine

Showcase 2018: Octagon Centre, Sheffield, 3rd May

@Insigneo #InsigneoSC18

The Insigneo Institute

The Insigneo Institute for *in silico* Medicine is a research institute established as a collaborative initiative between the University of Sheffield and Sheffield Teaching Hospital NHS Foundation Trust, where we develop sophisticated computer simulations of human physiology, in health and disease, in order to improve clinical diagnosis and treatment. With a multi-disciplinary membership of over 140 academics and clinicians, Insigneo is Europe's largest centre dedicated to these activities, in the emerging discipline known as *in silico* medicine.

The Exhibition Area

The 2018 Showcase *in silico* medicine's **latest commercial applications** and **developments from our industrial partners**. Here you will find many of Europe's foremost medical industry organisations presenting the latest, most dynamic information on their cutting-edge developments, and their interface with the world of *in silico* technology.

Demonstrations by our industrial partners will take place during the day:

Time	Exhibitor / Summary
11:15	**Ansys** **ANSYS: A platform for *in silico* medicine and Personalised Healthcare** Let us review how ANSYS has assembled the necessary software components to make the *in silico* approach a reality for researchers, industry, patients, and regulators.
11:25	**Synopsys** **Simpleware software for *in silico* modelling** Simpleware software enables detailed analysis, visualisation and generation of simulation-ready FE and CFD models from complex medical image data (e.g. MRI, CT, microCT). This presentation will talk about the key benefits and opportunities offered by image-based modelling using Simpleware software. Explore the software's many applications, such as medical device development to improve design decisions and reduce time-to-market.
13:30	**Dassault Systèmes** **Dassault Systèmes – the 3DEXPERIENCE Company** Virtual Human Modelling – who does Dassault Systèmes serve in Life Sciences?
13:40	**Materialise** **Image based Computational Modelling for Clinical Care** This short session will demonstrate an overview of a wide variety of applications in the medical field using Materialise's image based technology.
13:50	**Comsol** **COMSOL Multiphysics®: Providing software for accurate FEA modelling** The COMSOL Multiphysics® software is used for simulating designs, devices, and processes in all fields of engineering, manufacturing, and scientific research. A particular strength is its ability to account for coupled or multiphysics phenomena, for example, coupling fluid and structural effects in a single simulation. COMSOL®'s ability to easily incorporate user-defined equations allows for flexible customisation of your models.

Showcase 2018 Joining Instructions

Arrival and registration from 08:15. Event begins at 09:00

Venue Information

The Octagon Centre, Clarkson Street S10 2TQ, is situated in a pedestrianised area near the Student Union in the area between Durham Road, Clarkson Street and Western Bank. It can be approached on foot from any of these directions (see the map below), but perhaps most obviously from Durham Road. A map of the campus and further travel instructions are available on the University of Sheffield website.

Travel Information

By Car

We recommend that when travelling from the north, east and south you should approach Sheffield by the M1 (and M18 if necessary). From the west, use the M60 and A628 Woodhead Pass, following the signs for Sheffield. If in doubt, follow the road signs labelled 'University of Sheffield'. The postcode for the main University building on Western Bank, Firth Court, is S10 2TN. **Car parking** is limited around the University. The nearest car park is the multi storey access on Durham Road. Another multi storey car park is Rockingham Street, Sheffield S1 4NL.

By Train

Arrive at Sheffield Station and either take a taxi to the Octagon Centre or follow Tram/Bus directions below.

By Tram

Trams link the railway station and the city centre directly to the University. The tram stop is located at the back of the railway station. Trams from the station to the University run on the Blue route (destination Malin Bridge). Trams from the city centre to the University run on both the Blue route and the Yellow route (destination Middlewood).

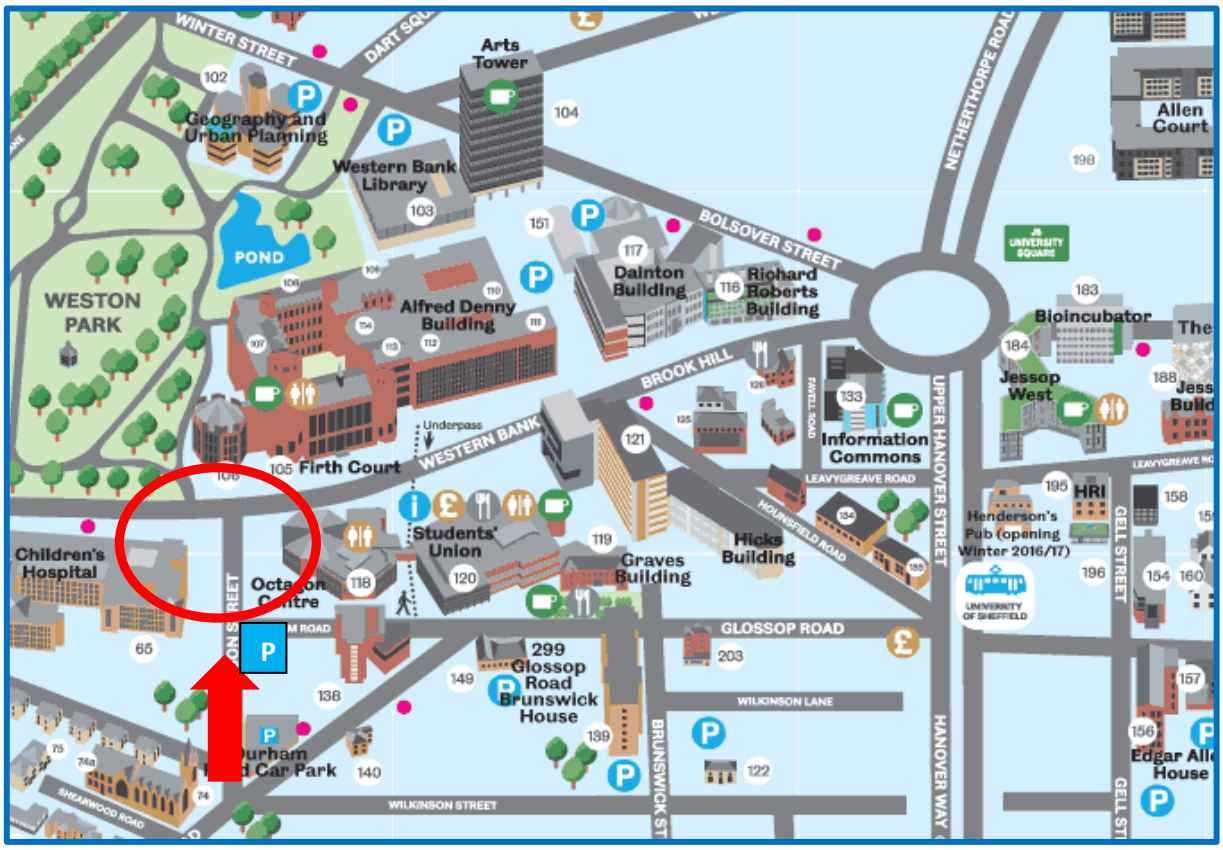
By Bus

Buses to the University are frequent and inexpensive. From the Transport Interchange/coach station you can take the number 120 directly to the University. Other buses from the city centre include the 51, 52 and 95. Get off at the University.

Contacting the Organiser

Please contact Lesley Statham: events@insigneo.org, 0114 22 20162 (on the day contact via the porters: 0114 222 8886).

Showcase Venue – The Octagon Centre, Sheffield

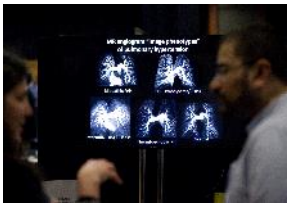


Pedestrian access from Durham Road

Showcase Venue – The Octagon Centre, Sheffield

Octagon Centre from Durham Road (looking toward Firth Court)

Programme
Insigneo Showcase 2018
Octagon Centre, Clarkson Street, Sheffield, Thursday 3rd May

08:15	**Arrival, registration and refreshments** **An opportunity to network, to browse the poster presentations, and to visit the Exhibition Area showcasing commercial *in silico* activities and interactive demonstrations.**	
09:00	**Welcome, including viewing of the Virtual Humans film** **Professor Marco Viceconti, Executive Director, Insigneo Institute, University of Sheffield**	
Prof. Dame Pam Shaw	Sheffield NIHR Biomedical Research Centre in Translational Neuroscience for Chronic Neurological Disorders	
09:45	***In silico* Science** **Introduced by: Dr. Gwendolen Reilly, Director of Training, Insigneo Institute, University of Sheffield**	
Prof. Eugene McCloskey	Optimising MSK assessments to predict future falls and fractures	
Prof. Damien Lacroix	Study of mechanical loading in additive manufacturing scaffolds	
Dr. Frederik Claeyssens	Multiscale porosity scaffolds for organ-on-a-chip devices	
Dr. Dawn Walker	Simple cells, complex behaviours: cellular based modelling of human tissues	
10:45 – 11:15	**Coffee break**	**Enjoy a break and network**
11:15 – 11:30	**Exhibition**	**Visit Exhibition Area and browse poster presentations**
11:30	***In silico* Technologies** **Introduced by: Professor Richard Clayton, Professor of Computational Biology, University of Sheffield**	
Dr. Andrew Narracott	Dynamic strain measurement in soft tissues	
Dr. Cécile Perrault	The role of mechanical forces on cardiovascular diseases	
Dr. Enrico Dall'Ara	Digital volume correlation for bone applications	
Dr. Zeike Taylor	Effects of anatomy and wave delivery methodology on brain MRE results: insights from *in silico* simulations	
12:30 – 13:00	**Lunch**	**Enjoy a break and network**
13:00 – 14:00	**Exhibition**	**Visit Exhibition Area and browse poster presentations**
14:00	***In silico* Medicine: Predictive Medicine** **Introduced by: Professor Pat Lawford, Professor of Physiological Modelling, University of Sheffield**	
Prof. Simon Heller	Exploring the link between hypoglycaemia in diabetes and cardiac mortality	
Dr. Paul Morris	FFR and beyond	
Dr. Alberto Marzo	1D modelling with Gaussian process	
Dr. Jenny Walsh	Selenium and bone	
15:00 – 15:30	**Coffee break**	**Enjoy a break, network, visit the Exhibition Area and browse poster presentations**
15:30	***In silico* for Industrial Exploitation** **Introduced by: Professor Jim Wild, Professor of Magnetic Resonance Physics, University of Sheffield**	
Prof. Wendy Tindale	Translation and adoption of medical technologies in the NHS	
Prof. Fabio Ciravegna	Low-cost large-scale data collection of patients' activity data	
Dr. Paul Armitage	Translating advanced MR imaging into NHS epilepsy imaging practice	
Prof. Rod Hose	Simple system models applied to heart valve disease diagnosis and interventional planning	
16:30	**Closing remarks and poster prize giving:** **Dr. Andrew Narracott, Director of Operations, Insigneo Institute, University of Sheffield**	
16:40 – 17:30	**Drinks reception**	