NEW ACADEMICS ON THE BLOCK

The Department of Bioengineering is delighted to welcome new members of staff to our academic team. Our talented new crop of lecturers and research fellows will ensure that our department remains at the forefront of research and teaching. We look forward to having them on board with us and would like to take this moment to introduce them and their work to readers of the Imperial Bioengineer.

LECTURERS

Dr Sam Au
Lecturer

Dr Au did a postdoctoral fellowship at Harvard Medical School with Mehmet Toner where she developed microfluidic models of capillaries to explore the ability of circulating tumour cell aggregates to transit through the circulation. Using biophysical, xenographic and computational models, she demonstrated that these multicellular clusters can unfold into single flake chains which permitted them to transit through constrictions as small as five microns.

Sam is particularly excited about future collaborations and scientific advances that will emerge in the years ahead. A major theme of his interests are how physical forces interact with cells or subcellular. Sam is delighted to join the Department and is looking forward to getting to know everyone.

Dr Adam Celiz:
Lecturer

Dr Celiz gained his bachelor’s degree in Pharmaceutical and Chemical Sciences at the University of Brighton and a PhD in Chemistry at the University of Cambridge in the Melville Laboratory for Polymer Synthesis. Following this, he was awarded a Marie Curie International Outgoing Fellowship to perform postdoctoral research at the University of Nottingham and the Wyss Institute for Biologically Inspired Engineering at Harvard University.

During this fellowship, Adam designed biomaterials that interact with tissues and stem cells to repair or regenerate tissues, specifically, “tough” surgical tissue adhesives and regenerative dental fillings. His research has been published in journals such as Science, Nature Materials and Advanced Materials. Adam joined the Department of Bioengineering at Imperial College London in August 2017 as a Lecturer where he will be developing biomaterials for tissue repair and regeneration.

Dr Chris Rowlands
Lecturer

Dr Rowlands studied Chemistry here at Imperial College, before leaving to take a PhD in glass physics with Stephen Elliott at Cambridge University.

Chris’ interest in Raman microscopy lead him to loan Nottingham’s lab at the University of Nottingham at the use of Raman in diagnosing and treating cancer, before leaving to take up a Wellcome Trust MIT Postdoctoral Research Fellowship in Peter So’s lab at MIT. At MIT, he developed new tools for multiphoton photodynamic therapy for cancer treatment, super-resolution mapping of the mouse brain for cognitive applications, activity mapping of large numbers of synapses in a mouse brain, high-throughput multiphoton intravital imaging and blood-flow monitoring.

RESEARCH FELLOWS

Dr Rodrigo Ledesma-Amaro
ICRF Research Fellow

Dr Ledesma-Amaro has just joined the Department of Bioengineering as an Imperial College Research Fellow. Before this, he studied Biotechnology and Chemical Engineering in Spain where he also completed a PhD in Systems Metabolic Engineering. During that, he has been a visiting researcher in Japan, Sweden, France, and Belgium. After his PhD, he moved to Paris (INRA) as a Marie Curie Agreenskills Fellow to work on engineering microorganisms for the production of fuels and chemicals. His works produced numerous articles and patents.

Now, Rodrigo will be developing his research on the interface of synthetic biology and metabolic engineering with applications in biotechnology and biomedicine. He is specially interested in metabolism, microbiome research, strain engineering and bioproduction.

Dr Joseph Sherwood
RAEng Research Fellow

Dr Sherwood studied Mechanical Engineering at Kings College London before completing a PhD in Biofluid Dynamics with Dr Stavroula Balaban at University College London. In Autumn 2012, Joseph started as a post-doctoral researcher with Dr Darryl Overby here at the Department of Bioengineering, working on a project looking at endothelial cells under controlled mechanical forces in microchannels. During this project, Joseph became involved with investigating the flow of aqueous humour in the front part of the eye and used his experimental fluid dynamics experience to develop a system to measure aqueous humour flow called iPerfusion. iPerfusion is now being used by over thirty researchers in seven international research institutions.

Now, Joseph will be focus his research on establishing the role of blood flow in microvascular diseases in order to open up avenues for potential treatments.

UPCOMING EVENTS

The Invention Rooms Open Day
28 Oct 2017
Imperial College London
Celebrate the opening of The Invention Rooms at White City with a free community open day of free maker activities for people of all ages

BSSM Postgraduate Experimental Mechanics (PGEM) Conference
16-17 Nov 2017
Imperial College London
The BSSM PGEM Conference aims to bring together PhD/DPhil postgraduate students and early career researchers involved in the field of Engineering measurement and experimental techniques in stress, strain and vibration analysis. The conference provides an excellent opportunity to share and discuss their current research in a low pressure and relatively informal environment, learn about research projects at other institutions, network amongst like-minded people and make contacts for the future. For more information, please contact Dr Hari Arora.

The Centre for Blast Injury Studies 2017 Annual Networking Event
16 Nov 2017
Imperial College London
The CBIS event will cover topics from point-of-injury through to long-term outcomes of blast injury. For more information, please contact Melanie Albright.

Professor Manos Drakakis’ Inaugural Lecture
“The Non-linear Low-power Microelectronics For and From Biology: A Log Story”
6 Dec 2017
Imperial College London
The lecture is free to attend and open to all, but registration is required in advance
Congratulations are due to:

- PhD student Sarah Johnson who won a prize for her poster at the NAVBO Outstanding Poster awards.
- Professor James Moore Jr who represented Great Britain at the World Championships of Beach Ultimate Frisbee in June 2017.
- Dr Rylie Green who won the RSC Emerging Technologies competition in the Materials and Enabling Technologies category. This includes a £10,000 prize and support in developing a start-up based on our conductive polymer technologies for biotics.
- Dr Jenna Stevens-Smith who was highly commended for the President’s Award for Leadership in Societal Engagement for 2017.
- Dr Christina Warboys who was elected to sit on the committee of the British Society for Cardiovascular Research for a three year term from January 2018.
- Dr Stefaan Verbruggen who was awarded 1st prize Oral Presentation at the 2017 Joint Meeting of the Anatomical Society and the American Association of Anatomists.
- Dr Ben Almquist who passed his academic probation on the 19th July 2017.
- Dr Hari Arora and Dr Ben Almquist who were awarded Fellow status in the Higher Education Academy.
- Dr Yu Liu who was awarded Associate Fellow of the Higher Education Academy.
- Darshan Shah who passed his viva with his thesis entitled ‘Design and implementation of a physiologic wrist simulator with applications to surgical reconstructions’.
- Mara Pop and Alistair Rice who were joint winners of the 2017 PhD Symposium prize.
- Professor Molly Stevens who was awarded the Harrison Medal by the Royal Pharmaceutical Society for her outstanding contribution to pharmaceutical science.
- Dr Amanda Fourest on the birth of her son, John.
- Dr Tom Ellis on the birth of his daughter, Pim.

OUT AND ABOUT

Professor James Moore Jr presented an invited lecture at the 5th Annual BME-IDEA EU conference.

Dr Ben Almquist gave a talk titled “Rewiring wounds to heal” at the World Economic Forum Annual Meeting of New Champions in Davos, China, on 28 June.

David Nesbitt and Jean David Wurtz from the Lee group spoke at the CDT Fluids Student Symposium 2017 on July 12th. The titles of their talks were “Stokes flow in active fluids” and “Chemically-controlled liquid-liquid phase separation of the cell cytoplasm” respectively. David also gave the same talk at the UK Fluids Conference in Leeds in September whilst Jean David gave his talk again at the 19th International Union of Pure and Applied Biophysics (IUPAB) and 11th European Biophysical Societies’ Association (EBSA) Congress in Edinburgh in July.

As Fellow of the Royal Academy of Engineering, in July 2017 Professor Molly Stevens spoke at the Global Challenges Summit 2017 in Washington DC, USA hosted by the UK, US and Chinese Academies of Engineering.

Professor Molly Stevens delivered a Plenary lecture as Centenary Congress Speaker at the Royal Australian Chemical Institute (RACI) Centenary Congress.

PUBLICATIONS

Be sure to check out the Department’s recent publications, some of which are included here:

- Dariusz Lachowski, Ernesto Cortes, Daniel Pink, Anthony Chronopoulos, SA Karim, JP Morton, and Armando del Rio Hernández, Substrata rigidity controls activation and durotaxis in pancreatic stellate cells, Scientific Reports (2017), doi:10.1038/s41598-017-02689-x

EXTERNAL GRANTS

Professor James Moore Jr (PI), awarded a Wellcome Trust Collaborative Award in Science for the project Integrative Transport Phenomena in Chemokine Gradient Establishment. £1,927,134 (£736,887 to Bioeng).

Professor Andy Hare (Co-PI), awarded BRC Funding by the Imperial College Healthcare Trust NHS Trust for the project Personalising antimicrobial dosing: Delivery through a novel closed-loop control systems incorporating transdermal monitoring and PK-PD indices. £277,650.07 (£29,175 to Bioeng).

Dr Darryl Overby (PI), awarded by National Institute of Health via Duke University for the project eNOS-Dependent Mechanoregulation of Intravascular Pressure. £98,126.

Dr Joseph Sherwood, awarded the RAEng Fellowship for the project Interactions between fluid dynamics and biological function in microvascular disease. £499,902.

Dr Guy-Bart Stan & Dr Tom Ouldridge, awarded by the Engineering & Physical Sciences Research Council for the project Genetically encoded nucleic acid control architectures. £642,354.

Dr Reiko Tanaka (PI), awarded a British Skin Foundation Small Grant Award for the project Development of predictive models for the efficacy of atopic dermatitis treatments using machine learning methods. £9,980.