

NEW MSc PROGRAMME IN HUMAN AND BIOLOGICAL ROBOTICS FOR 2016/17

Capitalising on the excellence in robotics at Imperial the Department have developed a new one-year MSc programme in Human and Biological Robotics beginning in October 2016!

The course arises from the [Imperial Robotics Forum](#), which groups together robotics researchers at Imperial and forms one of the largest institutional robotics networks. Particular strengths of the forum include robotics for humans and society, including medical robotics, service and social robotics, rehabilitation technology, as well as related machine vision, artificial intelligence and machine learning.

Research arising from the Robotics Forum is multi-disciplinary and at the cutting edge of several disciplines.

The new programme will allow students to work in a truly inter-departmental and cross-disciplinary environment, in a pioneering and rapidly growing sector.

This MSc builds upon the unique strengths of the Department of Bioengineering and Imperial in this new field. The programme will focus on the emerging research field of Human and Biological Robotics - robotics of humans and animals, robotics for humans, including:

- The use of tools and techniques from robotics to investigate the sensorimotor control in humans and animals;
- The development of robotics tools to assist humans, e.g. interfaces to working in hazardous environments or with physically or neurologically impaired individuals.

[You can find out more about the programme on our website.](#)

WELCOME TO THE DEPARTMENT

Welcome to new starters

- **Susu Chen**
Research Associate with Dr Paul Chadderton
- **Mamadou Diallo**
Research Associate with Dr Rob Dickinson
- **Kok Yeon Chooi**
Research Associate with Prof Peter Weinberg

This month sadly two colleagues are leaving, we wish them all the best in their new roles:

- **Zahra Mohri**

GRANT SUCCESS

British Skin Foundation awarded to **Dr Claire Higgins** for her project titled *Using in vitro models to understand the initial steps in human hair follicle development* (£85,000)

Wellcome Trust Institutional Strategic Support Fund (ISSF) awarded to **Dr Simon Schultz** for a sabbatical at University of Oxford (£23,719)

PUBLICATION SPOTLIGHT

Be sure to check out the Department's recent publications:

Topouzi H, Higgins CA. *Changing faces: Can a new identity stop balding?* Exp Dermatol 2016 Jun 1. doi: [10.1111/exd.13094](#)

Buckeridge EM, Weinert-Aplin RA, Bull AM, McGregor AH. *Influence of foot-stretcher height on rowing technique and performance.* Sports Biomech. 2016 Jun 2:1-14 doi: [10.1080/14763141.2016.1185459](#)

Blount BA, Driessen MRM, Ellis T. *GC Preps: Fast and Easy Extraction of Stable Yeast Genomic DNA.* Scientific Reports 6, Article number: 26863 (2016) doi: [10.1038/srep26863](#)

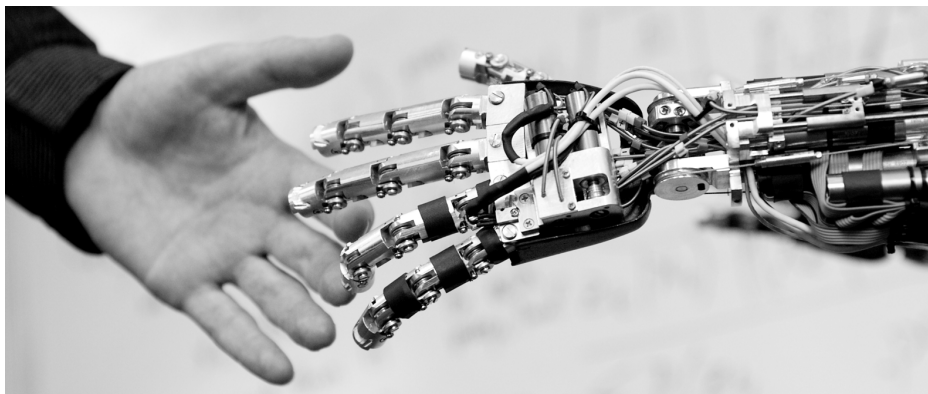
Sweeney Y, Clopath C. *Emergent spatial synaptic structure from diffusive plasticity.* Eur J Neurosci. 2016 doi: [10.1111/ejn.13279](#)

Barnett-Vanes A, Sharrock A, Eftaxiopolou T, Arora H, Macdonald W, Bull AM, Rankin SM. *CD43Lo classical monocytes participate in the cellular immune response to isolated primary blast lung injury.* J Trauma Acute Care Surg. 2016 doi: [10.1097/TA.0000000000001116](#)

Pop MA, Sun JB, Almquist BD. *Biomaterial-based systems for pharmacologic treatment of wound repair.* Book Chapter in Bioengineering in Wound Healing: A Systems Approach, World Scientific (2016)

PUBLICATION FROM I GEM 2014 PROJECT

Florea M, Hagemann H, Santosa G, Abbott J, Micklem CN, Spencer-Milnes X, de Arroyo Garcia L, Paschou D, Lazenbatt C, Kong D, Chughtai H, Jensen K, Fremont PS, Kitney R, Reeve B, Ellis T. *Engineering control of bacterial cellulose production using a genetic toolkit and a new cellulose-producing strain.* Proc Natl Acad Sci U S A. 2016 Jun 14;113(24):E3431-40. doi: [10.1073/pnas.1522985113](#)



A SUMMER OF CHANGE

Students and researchers may have been aware of some office moves over the last few months, with the continued expansion of the Department the changes are continuing over the summer.

The major change, which will impact students is the study room.

The bioengineering student study room, which was previously based in RSM3.21c is temporarily in RSM3.03 while the new study room RSM 3.06-3.07 is being refurbished.

The teaching office has now moved to RSM3.21c.

Research Fellows and Senior Research Investigators moved into a shared office in RSM 4.35



OUT AND ABOUT

Dr Ben Almquist gave an invited talk at the "Fibroblast Growth Factors in Development and Disease GRC" in Hong Kong on 9 June. Dr Almquist's talk was entitled "Nanotechnology-Based Strategies for Manipulating Growth Factor Signalling".

Dr Claire Higgins gave an invited talk on 'The Role of Fibroblast Condensation in Hair Neogenesis' at the European Hair Research Society annual meeting, held in Tbilisi, Georgia.



Dr Angela Kedgley and **Dr Jenna Stevens-Smith** delivered the Headstart Engineering Summer school which included the 17 year old students building prosthetic arms (pictured above).

Liam Madden recently hosted 30 second year undergraduates and staff from Hong Kong Polytechnic University. The visitors were the first to hear about the Department's new degree programmes (pictured below).



STAFF & STUDENT SUCCESS

Susan Mulcahy who recently completed her data-driven PhD in the Department, has joined Imperial's Corporate Partnerships team, developing partnerships with corporations in order to fund academic research. Susan is based in the Data Science Institute but also supports partnerships in the Faculty of Engineering as well as the Business School. Dr Mulcahy will continue to teach the "Intro to MATLAB" class to postgraduates in the Bioengineering department.

A number of members of the Department were recognised for their exceptional work or service in the past year at a special Summer Garden party on 1 June, hosted by the President, Professor Alice Gast. Those invited from the Department included **Dr Emma Bailey**, **Dr Claudia Clopath**, **Professor Colin Caro**, **Ken Keating**, **Dr Angela Kedgley**, **Dr Sylvain Ladame**, **Sihao Lu**, **Britta Ross**, and **Dr Jenna Stevens-Smith**.

On 19 June members of the **Weinberg group** took part in the annual London to Brighton cycle to raise money for the British Heart Foundation.

Frances England (2nd year MEng) has been awarded a Wellcome Trust Biomedical Vacation Scholarship to do undergraduate research in the Almquist Lab this summer.

Bioengineering undergraduates **Anisha Malde** (4th Year MEng Biomedical Engineering in 2016-17) (Brian Locke Award) and **Franz Tapia-Chaca** (2nd Year MEng Biomedical Engineering in 2016-17) were awarded Undergraduate Old Centralians' Trust awards. The Old Centralians' Trust is the charitable arm of the City & Guilds College Association (CGCA) a total of twenty undergraduate students have won awards, two from each of the ten Departments of the Faculty of Engineering.

Matthieu Komorowski (Faisal group) awarded Royal Society of Medicine Research and Innovation prize and £500 for his work "Beyond the Surviving Sepsis Campaign: the Surviving Sepsis Computer" the research based on his MRes and ongoing PhD. As part of the prize Matthieu will be invited to give an oral presentation at an upcoming Section meeting to present his project.

Harris Konnaris (Faisal Group) has been awarded Finalist Best Paper Award at IEEE Biorobotics in Singapore (29 June), for his *novel robotic hand and thumb design that enables complex in hand object manipulation such as texting*. The patent was filed by Imperial Innovations in June.

Major DS Edwards (CBIS) has won the Gauvain Society Research Prize on his Meta-analysis of Terrorist Bombings.

A hundred researchers, staff and students from the Department were involved in the Imperial Festival this year. At the celebratory party, CBIS won an award for "Biggest Explosion" based on their talk and stand. Thanks to all researchers, staff and students involved and a special mention to **Hari Arora** and **Phill Pearce** for their development and delivery of the CBIS talk.

UPCOMING EVENTS

Departmental Seminars

Thursdays 12.00-13.00

16 Jun 2016 12:00 - 13:00 RSM2.28

Multiscale and Multiphysics Modeling of Body Armors and Biomechanics
Professor Young Kwon from the Department of Mechanical and Aerospace Engineering, Naval Postgraduate School, California will

20 Jun 2016 12:00 - 13:00 RSM2.28

Bringing EEG into Real-Life Applications **Professor Maarten De Vos**, Associate Professor in Engineering Science, University of Oxford.

28 Jun 2016 12:00 - 13:00 RSM 1.31

Advances in CT In-Vivo Imaging: applications in preclinical disease models **Dr Sasha Belenkov**, a PerkinElmer Application Scientist

Imperial Events

09 Jun 2016 17:30 - 18:30

Manoeuvrability on the fly

Inaugural lecture of Professor Holger Krapp

15 June 2016

Neurotechnology seminar

Professor Peter Dayan, Gatsby Computational Neuroscience Unit, UCL and Dr Mark Humphries, University of Manchester

http://www3.imperial.ac.uk/newsandeventspggrp/imperialcollege/engineering/centreforneurotechnology/eventssummary/event_6-5-2016-11-23-6

15 June 2016 17:30-18:30

2016 Bioengineering Annual Lecture

Professor James Collins, MIT

Imperial College London, South Kensington campus

http://www.imperial.ac.uk/bioengineering/about/bioengineering_lecture/

27 Jun 2016

Bioprocess engineering strategies for stem cell-based therapies and regenerative medicine

Distinguished Chemical Engineering Seminar given by Professor Joaquim M. S. Cabral, Instituto Superior Técnico, Portugal

Conferences

14-15 July 2016

Precision Medicines Conference 2016

South Kensington, London

Including talks from Sylvain Ladame, Armando del Rio Hernandez and Molly Stevens from the Department

5-6 September 2016

MEIbioeng16 (abstract deadline 6 May)

Institute of Biomedical Engineering, University of Oxford

Website: <http://meibioeng.org/>

7-9 September 2016

Young Researchers' Futures Meeting 2016

Medical Imaging and Interventions: engineering a better look at cancer

Imperial College London, South Kensington campus

Website: <http://www.yrfm.uk/>

12-14 September 2016

Medical Physics and Engineering Conference 2016 (MPEC)

Science for patient benefit

Manchester

Website: www.ipem.ac.uk/ConferencesEvents/MPEC.aspx

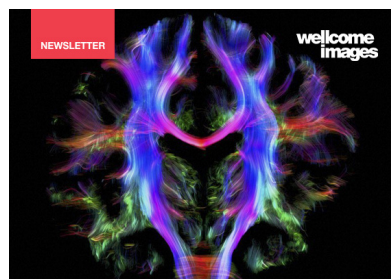
5-8 October 2016

2016 BMES Annual Meeting

Innovation at the Interface (abstract deadline 26 April)

Minneapolis Convention Center/ Minneapolis, Minnesota, USA

Website: bmes.org/annualmeeting



ENTER IMAGES NOW!

We are looking to acquire high-quality images that relate to biomedical science and contemporary healthcare. We are interested in all artistic media and imaging techniques, from hand-drawn illustrations to clinical photography, super-resolution microscopy and functional MRI scans.

Every image accepted into our collections by 11 September 2016 will be considered for the Wellcome Image Awards 2017. The winning images will go on display in science centres and public galleries around the world. Enter for your chance to win prize money: £5,000 for the overall winner, £2,500 for the Julie Dorrington Award winner, and £500 for each of the other winning images.

CONTACT

Send news for the next issue to:

Dr Jenna Stevens-Smith

Outreach & Public Engagement Manager