



Imperial Bioengineer

November 2015

DEVELOPMENT AND INNOVATION

Imperial Positive About Cultural Talent

by Mica Jones

Recruitment and Personnel Administrator

Being a new member of staff in any establishment can be daunting, my first couple of days at Imperial was no exception. When I signed up for the IMPACT workshop, it was my second week at Imperial. I was sent an email giving further information on the programme and what it consisted of. From the information provided I could tell that the course would be worthwhile.

All together there were 4/5 workshops and 4 ALS Group meetings that I had to attend. The workshops were for the duration of a whole day and was held once a month. The ALS group meetings were from 30 minutes to 1 hour (all depending on the group).

Although at times it was information overload, the information provided and skills learnt are invaluable. I will take what I have learnt within the IMPACT sessions along with me throughout life- no matter what career I end up in.

IMPACT has allowed me to build in confidence and network with people who I may not have had the opportunity of meeting. It helped me to realise my potential, how to deal with conflict, how to become more assertive. It also helped me to set goals and work on ways to achieve them. I would definitely recommend IMPACT to colleagues.

Sports Innovation success

by Dr Ian Radcliffe

Sports Innovation Challenge Project Manager

A group of students from Bioengineering (Bryony Halcrow, Akashaditya Das) and Mechanical Engineering (Nicolas Lautard) worked over the summer on a UROP as part of the Sports Innovation Challenge (SIC) to develop a wrist support system for Paralympic Rower Pam Relf MBE. Pam, who has arthritis, rows as part of the LTA Mixed Coxed Four team that won Gold in London 2012 and also at the World Championships in 2011, 2013, 2014 and 2015.

The student team spent 10 weeks over the summer developing a wrist support system to help transfer load away from Pam's wrist and distribute it more evenly along her arm. After using a morphological analysis to determine the different solution combination they could develop the team produced a number of prototypes which were then tested both on rigs in the lab and the rowing ergometer.

On Wednesday 18th November the team were invited to the National Sports Centre in Bisham Abbey to trial the prototypes with Pam. Their concepts were well received and Pam will be testing a selection of their prototypes in a month long trial to provide feedback to the team so that they can further develop the concept. The final aim is to provide Pam with a wrist support that she will be able to use in next Summer's Paralympic Games in Rio de Janeiro.



WELCOME TO THE DEPARTMENT

Welcome to new starters

- **Nawal Kinany**
Research Assistant working with Prof Burdet
- **Dr Christopher Reynolds**
Research Associate working with Prof Kitney
- **Ethan Rowland**
Research Assistant working with Prof Weinberg
- **Dr Maedeh Borhani**
Research Associate working with Dr Kedgley

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

- Dr Neville Boon
- Dr Horst-Moritz Maus

GRANT SUCCESS

Dr Aldo Faisal was awarded as Co-I a **NIHR/BRC** funded grant in "Experimental Medicine Call" titled "*Probing functional network dynamics in early stage Parkinson's disease*". The grant involves neuroimaging, behavioural experiments and computational neuroscience to understand the mechanisms of cognitive impairment in Parkinson's.

PUBLICATION SPOTLIGHT

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

Stefaan W. Verbruggen, Jessica HW Loo, Tayyib TA Hayat, Joseph V. Hajnal, Mary A. Rutherford, Andrew TM Phillips, and Niamh C. Nowlan. "*Modeling the biomechanics of fetal movements*." *Biomechanics and modeling in mechanobiology* (2015): 1-10
[doi:10.1007/s10237-015-0738-1](https://doi.org/10.1007/s10237-015-0738-1)

Professor Moore's paper "*Determining the Combined Effect of the Lymphatic Valve Leaflets and Sinus on Resistance to Forward Flow*" was featured on the homepage of the journal of *Biomechanics*

Dr Aldo Faisal's work on gaze-controlled machines was named as the first of 10 World Changing Ideas by Scientific American in their 170 year anniversary edition.

Synthetic Biology Hub UPDATE

by Dr Helen Findon, Outreach & Communications Manager, CSynBI

This month saw SynbiCITE, Imperial's synthetic biology IKC, along with 12 of the UK's leading synthetic biology companies, head to San Francisco to promote the UK synthetic biology industry to their American counterparts, as well as industry leaders and investors.

In order to facilitate the success of the mission's delegates, SynbiCITE and UKTI teamed up to provide them with expert advice, a wide network of contacts and practical support, including facilitating their attendance at SynBioBeta 2015, a conference for people working and investing in synthetic biology.

The mission comprised delegates from: Alcmene Bioworks, Bento Bioworks, BioVernier, Desktop Genetics, LabGenius, Nanocage Technologies, Skillfluence, SynbiSTRAIN, Synpromics, Synthace, Touchlight Genetics and ZuvaSyntha.

The trade mission and SynBioBeta generated a lot of media interest, with Dick Kitney and Paul Freemont (Co-Directors of SynbiCITE), and Steve Chambers (CEO) providing interviews and comments to the [Green Chemical's blog](#), [Biocoder](#), [the Bio Report](#) and more— we'll keep you posted as more are published!

This month SynbiCITE ran the Lean LaunchPad Educators programme. This programme challenged participants to rethink their approach to teaching technology commercialisation, innovation and entrepreneurship. It was attended by experienced entrepreneurship, engineering, and science faculty from across the UK, as well as VCs and independent business accelerator managers.

Events like these are helping to fulfil SynbiCITE's mission to support the commercialisation of synthetic biology technology nationally.

OUT AND ABOUT

Kai Arulkumaran, BICV group PhD student, gave an invited talk on "Nature vs. Nurture: Biological Parallels to Deep Learning" at the Deep Learning for Computer Vision workshop in Edinburgh.

Dr Hari Arora and **Dr Ian Radcliffe** attended MedTech South East a competition run by the Design Council and MedCity (and supported by AXA PPP Healthcare). We were there as part of an Imperial innovations showcase, displaying the Murr-Ma prosthesis. Successful applicants in the programme get the opportunity to go on an accelerator course to help develop their projects. Winners included Path the team developing this walking aid have been working with **Alison MacGregor**. Other winners from Imperial include GyroGlove who are also from Imperial College.

Dr Aldo Faisal was the Conference Chair for Neurotechnix 2015 (Lisbon, PT) and an invited speaker at the International Symposium on Natural User Interfaces and Intention based Enhancement of Reaching and Grasping in Physically Disabled People (Lisbon, PT).

Medical Device Design and Entrepreneurship MRes student **Dr. Andrew Birch** attended 'Accelerating innovation through human-centred design' at the PDD design agency in Hammersmith on 10-11/11/15. The two-day course used a variety of scenarios, from designing an energy drink to creating a children's diabetes educational tool, to explore some of the techniques used to define and solve problems in the design industry. "The course was an excellent experience which will shape my approach to my MRes project." Human centred design is now taught in the medical device design course by **Fabien Schmitt**, a bioengineering alumnus who is the healthcare innovation principle at PDD group Ltd.

Dr Warren Macdonald attended the Electrical & Electronic Engineering Speed Networking event at City University London on Tuesday 24th November 2015.

Dr Aldo Faisal was invited speaker on Robotic Restoration of Movement at the "Action Duchenne International Conference 2015" and at the "Takin' Charge" Symposium on Robotic Restoration of Movement for Stroke and Duchenne Muscular Dystrophy workshop at the Institute of Child Health (London).

Peter Sowinski (Weinberg group) was invited by the Polish Veterinary Specialisation Committee to teach as part of Management and Pathology of the Laboratory Animals Course at the National Veterinary Postgraduate Training Centre, Poland. On top of professional and practical subjects discussed there I shared with students our experience of implementing new European Directive 2010/63/EU on the protection of animals used for scientific purposes. Many things have changed since my last teaching 3 years ago, Poland is advancing on every front extremely quickly trying to narrow the gap between them and the so called West.

Dr Aldo Faisal was Area Chair (Neural Engineering/Computational Neuroscience) for NIPS 2015 (Montreal, Canada) and an invited member of a special working group on "Natural Behaviour in Health and Disease" meeting held at the Rehabilitation Institute of Chicago.

STAFF & STUDENT SUCCESS

Julia Sun, MRes student in the Almquist group and Fulbright Scholar, **won first place nationally in the American Institute for Chemical Engineering (AIChE) student paper contest** in Salt Lake City, Utah for her presentation on "Healing Wounds with Self-Assembled Bioactive Films." The Edwin O. Eisen Award includes a \$500 award sponsored by Omega Chi Epsilon, the National Honor Society for Chemical Engineering.

INTERVIEW DAYS



Our new students may have only started last month, but as we come to the end of 2015 we are already in the process of recruiting our future bioengineering stars for 2016/17.

The teaching office team of Britta, Halima and Samantha have done a great job alongside Liam Madden, Admissions Tutor getting through the first tranche of applications and so far running 2 undergraduate interview days. With the next one scheduled for **Wednesday 2 December**.

If you're a postdoc and interested in getting involved in the interview process please contact **Liam Madden** to express your interest and he will provide training and briefing of what to expect.

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UPCOMING EVENTS

Departmental Seminars

Thursdays 12.00-13.00

03 December 2015 12:00-13:00 RSM2.28

Professor Paul Martin from the School of Biochemistry, University of Bristol Unravelling the influences of inflammation in wound healing and cancer

10 December 2015 12:00-13:00 RSM2.28

Professor Ruedi Stoop from the Institute of Neuroinformatics, ETH Zurich

<http://www.imperial.ac.uk/bioengineering/whats-on/events/>

Science Fridays are back!!!

Join us in RSM2.28 from 16:30 Hear what fellow researchers in the Department are up to mingle, discuss, network and eat pizza afterwards.

Imperial Events

02 December 17:30-18:30 SAF G34

All changed, changed utterly- Athena SWAN Lecture

Surgery and Cancer's first Athena SWAN Lecture, delivered by Clare Marx, the first female President of the Royal College of Surgeons

03 December 17:00-19:30 College Main Entrance

Imperial Fringe: It is rocket science

04 December 14:00-19:00 RSM3.01E&D

2nd Annual Post Doc Symposium

Research presentations from ten research groups plus talks from the Post Doc Centre about what they offer and Robert Ferguson on Industry.

14:00-15:30 Talks (RSM 3.01E)

15:30-16:00 Refreshments

16:00-17:30 Talks (RSM 3.01E)

17:30-19:00 Poster session and drinks reception (RSM 3.01D)

Attendance will be restricted to Post Docs and Academic staff.

07 December 19:00-03:00

Bioengineering Society Christmas Dinner The Loop Bar, 19 Dering Street, W1S 1AH

Tickets are £22 for students and £25 for staff

09 December 13:00-16:30

Postgraduate Open Day

The Department session will be in RSM1.51 from 15:15-16:30

18 December all day

Christmas Jumper Day

It is the last day of term before the Christmas break, so feel free to get into the festive spirit by wearing a Christmas Jumper. This is part of National Christmas Jumper day, created by Save the Children, now in collaboration with Text Santa, Macmillan Cancer Support and the Make a Wish Foundation.

CAREER EVENTS

As part of the career provision in the Department, **Robert Ferguson, Industrial Liaison Manager** puts on a programme of events every term. Still to come this term are:

01 December 17:00-18:00 RSM1.47

Bristows Law Firm and IP solicitors

<http://training.bristows.com/>

04 December 13:00-14:00 RSM2.28

Oxford Nanopore Technologies

<https://www.nanoporetech.com/>

08 December 17:00-18:00 RSM1.47

Cambridge Consultants

<http://www.cambridgeconsultants.com/>

11 December 13:00-14:00 RSM2.28

SECTRA

<http://www.sectra.com/jobs/talent/>

For further information on careers please contact Robert directly.

CONTACT

Send news for the next issue to:

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