



Imperial Bioengineer

March 2015

"Happy, Safe and successful"

by Ken Keating, Laboratory Manager, Bioengineering

This succinct phrase sums up our department's priorities - put forward by the chair of our safety committee and Head of Department Professor Anthony Bull. This vital statement gives our growing, complex and multi-disciplinary department a clear goal and standard to achieve and maintain.

To most it comes as no surprise that happy workers are successful workers, and neither is possible if an employee feels unsafe in their workplace. Due to the importance that we all place on these values and the efforts we put in Bioengineering continues to gain recognition and praise across the college in having an incredibly positive safety culture.

Our continued success is thanks to all of our staff and students whose diligence, co-operation and professional work allows safety to be a key topic in every area without ever becoming a hindrance in producing world class research. As with anything worth having though this doesn't come without effort; certainly the correct systems and processes have to be in place however constant communication and the willingness and ability of Bioengineering to learn and adapt is by far the number one requirement in keeping our excellent safety culture/system thriving.

The feedback we receive from each other is continually welcomed, particularly when systems and processes can be improved. The Department's Safety Booklet/Code of Practice details departmental policy and can be found online on our health and safety pages, but for now just a brief description of some of the resources/systems the department utilises:

1. **Bioengineering safety committee**, consisting of expert advisers to cover the full range of departmental work, PhD and post doc reps.

The committee, chaired by the Head of Department (HoD), meets once per term and their remit is to cover and address any health and safety matters and advise the HoD in the effective discharge of his health and safety responsibilities. Anyone can ask for a topic to be raised at this committee by contacting one of the committee members.

2. **Documentation systems** are essential in aiding us to assess our work for potential health, safety and environmental risks. This also achieves not only our health and safety compliance but also our legal duties. Bioengineering has been a front runner in the development of digital systems that ensure the highest level of compliance with the least amount of bureaucracy. These systems are continually evolving with feedback received.

3. **Accident, incident and near miss reporting.** The College's emergency number is 4444 - this can be used to contact security for first aid or if you require any of the emergency services. It's an age old tale that we learn from our mistakes, and this is never truer than in a scientific environment. In order for the Department as a whole to learn what has gone wrong (accidents or incidents) and how to stop a reoccurrence, or what could go wrong (near misses) and prevent an accident/incident we ask everyone to be aware of the reporting system SALUS.

<http://www3.imperial.ac.uk/safety/subjects/reportingaccidents/reportinganincident>

Always remembering that there is a no blame culture here in Bioengineering and that we would rather over report than under. Please also note that all first aid box supplies are available from the Departmental Secretary or Departmental Safety Officer.

Thank you all for continuing to make the Department Bioengineering a thriving and safe place to be.

WELCOME TO THE DEPARTMENT

The Department are delighted to welcome the following new staff and researchers:

- **Miss Christina Warboys**
Visiting Researcher for Prof Peter Weinberg;
19 March to 30 April 2015
- **Mr Dan Nardini**
Mechanical Workshop technician
Started 10 March
- **Dr Yu Liu**
Research technician for Dr Simon Schultz and Dr Thomas Knopfel
1 March 2015 to 31 Dec 2016
- **Mr Franck Gonzalez**
Research assistant for Professor Etienne Burdet; 3 March 2015 to 2 March 2017
- **Ms Sharon Gould**
PA to the Head of Department whilst Angela Glyes is on maternity leave.

GRANT SUCCESS

Royal Society Research grants awarded to Dr Tobias Reichenbach, Dr Claire Higgins, Dr Andrei Koslov and Dr Ben Almquist for equipment (£15,000 each)

US Air Force Research Laboratory (AFRL) through the European Office of Aerospace Research and Development (EOARD) International research project grant in "Optics and information processes of horsefly polarization vision that underlie visual searching" coordinated by Prof Doekele Stavenga (University of Groningen, the Netherlands) and includes efforts of Dr Nick Roberts (University of Bristol), Dr Gregor Belušič (University of Ljubljana, Slovenia) and **Dr Holger Krapp** (\$1.57M)

SynbiCITE Lean Launchpad

by Dr Helen Findon, Outreach & Communications Manager, CSynBI



The halfway point in the Lean LaunchPad for Synthetic Biology.

As reported in the previous newsletter, the Lean LaunchPad for Synthetic Biology is currently being taught at Imperial College in London and has a critical role in SynbiCITE's mission of commercialising synthetic biology in the UK.

The unique programme stresses the importance of customer discovery, development and market validation in the launch of new products. Too often research in the UK has failed to move out of universities and into the marketplace, the Lean LaunchPad seeks to reverse this trend.

This month, our teams have travelled to San Francisco to meet and learn from the best in the biotech industry in the Bay Area including Novozymes, Amyris, Bay Bio and many more.

With each passing week, the entrepreneurial spirit of our teams has grown and we're confident that there will be teams and a number of individuals that will go on to start companies. We can't wait to hear what they learnt from their trip to the US - watch this space!

PUBLICATION SPOTLIGHT

Be sure to check out the Department's recently published works below:

Sinan Li, Shengtao Lin, Yi Cheng, Terry O. Matsunaga, Robert J. Eckersley, Meng-Xing Tang, *Quantifying Activation of Perfluorocarbon-Based Phase-Change Contrast Agents Using Simultaneous Acoustic and Optical Observation*, Ultrasound in Medicine & Biology, Available online 2 February 2015, ISSN 0301-5629, <http://dx.doi.org/10.1016/j.ultrasmedbio.2014.12.021>.

Wei Pan, Ye Yuan, Henrik Sandberg, Jorge Gonçalves, Guy-Bart Stan*, *Online Fault Diagnosis for Nonlinear Power Systems* To appear in Automatica, 2015.

Wei Pan, Ye Yuan, Jorge Gonçalves, Guy-Bart Stan*, *A Sparse Bayesian Approach to the Identification of Nonlinear State-Space Systems* To appear in IEEE Transactions on Automatic Control, 2015

Aivar Sootla, Diego Oyarzún, David Angeli, Guy-Bart Stan*, *Shaping Pulses to Control Multi-Stable Biological Systems* To appear in Proceedings of the 2015 American Control Conference (ACC), Palmer House Hilton, Chicago, IL, USA, July 1-3, 2015 (6 pages).

OUT AND ABOUT

Dr Warren MacDonald and Dr Jenna Stevens-Smith took part in "Meet the Engineers" at Thomas Hardy School, Dorchester on 6 March. Talking to over 200 students Y8-10 about careers in bioengineering.

Dr Jenna Stevens-Smith as part of British Science Week spoke to Y11s at Ipswich High School for Girls on 19 March and Y11-13 at King Edward VI school in Bury St. Edmunds on 20 March about bioengineering.

Robert Ferguson and Robert Learney spoke to students at St Paul's School about careers in bioengineering on 24 March.

Dr Angela Kedgley spoke to students about careers in bioengineering at Waldegrave School Science Careers event on 26 March.

Karthik Ravichandran and Sorin Popa attended MedTec UK event at Excel in London on 3-4 March.

Dr Anil Bharath's spinout Cortexica was one of the focuses of HRH Duke of York's visit to Imperial West on 6 March alongside Fire Tech Camp, which many bioengineering undergrads helped run last summer.

STAFF & STUDENT SUCCESS

Dr Dilen Carpanen, Research Assistant in the Royal British Legion, Centre for Blast Injury Studies won MSC Software's "Simulating Reality Contest". He produced a video (which will be on display at Imperial Festival) showing how CBIS uses their software. The video will appear on a showcase page on their website and there will be a write up "simulating reality" in the MSC Company magazine. As a consequence of his award, Dilen has been invited to present our work at the upcoming MSC Software User Conference in London.

Dr Helen Findon has successfully completed her Professional Diploma in Marketing from the Chartered Institute of Marketing. Helen would like to thank the Department for supporting her in this endeavour.

Delaram Khodadadi, MSc student 2013/14 in the Krams Lab came runner-up in Dennis Hill Award (Healthcare Technologies Student and Early Career Awards 2015) and won the IPEM Prize for the best MSc project in medical physics in November 2014.

PROMOTIONS

Congratulations to the academic staff who have been promoted.

- Senior Lecturer: **Dr Niamh Nowlan** and **Dr Sylvain Ladame**
- Reader: **Dr Darryl Overby** and **Dr Mengxing Tang**
- Professor: **Dr Holger Krapp**

Monthly Centre for Neurotechnology Colloquium series

Wednesday 29 April

Tobias Moser, University of Goettingen

Optogenetic stimulation of the auditory pathway for research and future prosthetics

Wednesday 27 May

Dario Farina, University Medical Centre, Gottingen

Wednesday 24 June

Richard Wade-Martins, University of Oxford

GET INVOLVED

Imperial Festival

Bioengineering explainers needed for 8-10 May. Email Jenna for more info.

Wellcome Trust- Parliamentary Office of Science and Technology (POST) Fellowship in Society and Ethics

<http://www.wellcome.ac.uk/Funding/Society-and-ethics/funding-schemes/POST-Fellowships/index.htm#.VQckJIPu12I>.email

Deadline is 2 April 2015

Free IPEM membership for students

Free student membership now available for undergraduates and full time postgraduate students.

More info: <http://www.ipem.ac.uk/AboutIPEM/JoinIPEM.aspx>

I'm a Engineer/ Scientist

Want to get involved in outreach, but haven't got the time to travel to schools? Then sign up to take part in the I'm a scientist or I'm a engineer where which scientists and engineers talk to school students online via imascientist.org.uk/scientists or imanengineer.org.uk/engineer

Application deadline: 3 May 2015

Blackwood Design Awards 2015

Following the success of MEng graduate Kirubin Pillay in the Blackwood Design Awards 2014. Students are encouraged to enter their projects to the 2015 competition.

http://www.bespoken.me/forum/topics/blackwood-design-awards-2015?xg_source=activity

Deadline is 20 June 2015

UPCOMING EVENTS

Departmental Seminars

Thursdays 12.00-13.00

9 April 2015 12:00-13:00 RSM2.28

Dr Thomas Risler from Institut Curie (Paris)

Fluctuations and instabilities of epithelial tissues

16 April 2015 12:00-13:00 RSM2.28

Professor Jerry Turnbull from University of Liverpool

Decoding Cell Regulation by Heparan Sulfates: Chemical Biology Tools to Drive Drug Development and Regenerative Medicine Applications

23 April 2015 12:00-13:00 RSM2.28

Professor Hans-Günther Döbereiner, University of Bremen.

*Topological phase transitions and foraging in the slime mold *Physarum polycephalum**

30 April 2015 12:00-13:00 RSM2.28

Dr Maria Chait from University College London

How the brain discovers patterns in sound sequences

For more information, visit:

<http://www3.imperial.ac.uk/bioengineering/events/departmentseminars>

Science Friday Seminar Series

Fridays from 16:20

Followed by pizza and networking.

Imperial Events

9-10 May Imperial Festival www.imperial.ac.uk/festival

4-5 June BME-IDEA/BioDesign EU Symposium

20-25 July Engineering Summer School for 11-14 year old girls

External Events & Conferences

How to (successfully) apply science and engineering in healthcare

14 April at 18:00-20:30, Institution of Mechanical Engineers, London

Professor David Delpy, CBE FRS FREng

The IET and IMechE Healthcare Annual Lecture

Physics of Emergent Behaviour II- from molecules to planets

9-10 July

Science Museum, London, UK

<http://peb2015.iopconfs.org>

Contact: Dr Chiu Fan Lee for further information

3rd International Conference on Integrative Biology

4-6 August,

Valencia, Spain

<http://integrativebiology.conferenceseries.com/>

Contact: Dr Armando Del Rio Hernandez for further information.

MEIbioeng15

7-8 September

Leeds, UK

<http://meibioeng.org/>

BMES Annual Conference

7-10 October

Tampa, Florida

<http://bmes.org/annualmeeting>

In the Media

Computations of blood flow in arteries that Dr Peter Vincent made when he was a PhD student in the Weinberg group and the BioMimics stent (Caro) were featured on Michael Mosley's programme **Wonderful World of Blood on BBC4** (28min) on 25 March. Dr Vincent is now a senior lecturer in Aeronautics at Imperial.

BAGRIT LECTURE 2015



Professor Mina Bissell

Distinguished Scientist, Lawrence Berkeley National Laboratory, University of California, Berkeley

Why Don't We Get More Cancer? The critical role of extracellular matrix and the microenvironment in modelling metastasis and dormancy.

Date: Monday 18 May 2015

Time: 17:30

Venue: G16, Sir Alexander Fleming Building

www.imperial.ac.uk/bioengineering/about/bagritlecture

CONTACT

Send news for the next issue to:

Dr Jenna Stevens-Smith

Outreach & Public Engagement Manager

