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The University of Manchester

Faculty of Life Sciences

Science for Life

The Newsletter For Alumni And Friends Of The Faculty Of Life Sciences

Issue 2, Spring 2012

In This Issue

The Faculty of Life Sciences and its alumni

For many graduates the connection with their university may lack real meaning, with few benefits or obligations, but in the Faculty of Life Sciences we want to forge real and valuable links. We aim to create an active body of supporters who are interested in and contribute to the Faculty's work, taking part in social, educational and networking activities and acting as ambassadors for the Faculty.

What are we doing now?
Our priority is to set up a targeted programme of activities that are mutually beneficial to the Faculty and its alumni. We are currently working through and updating our alumni database identifying where our alumni have gone and what they are doing so that we can target our future activities more effectively.

What sort of events and activities are planned?
Our future programme of events will be determined by the outcome of our review of the database. In the interim we will continue to produce this regular newsletter to keep you up to date with news and events in the Faculty and we invite you to engage with us through our community events such as the Community Open Day on the 30th June 2012
www.ls.manchester.ac.uk/openday

What would we like you to do next?

- Check our alumni web page for upcoming events
  www.ls.manchester.ac.uk/schoolsandcommunity/alumni/
- Register for Your Manchester Online - Your exclusive portal to the University of Manchester, connecting you with other alumni and keeping you up to date with news and events.
  www.yourmanchester.manchester.ac.uk
- Submit a "Graduate Profile" to our alumni web page so we can highlight your successes to current and prospective students.
- Volunteer to be a careers mentor for our current students and new graduates either via email or by attending one of our upcoming Careers Networking events.
- Volunteer to co-ordinate a local alumni group, or, if you live in the Manchester area, to help with our developing alumni programme.

Please contact us if you are interested in being involved:
alumni.lifesciences@manchester.ac.uk


Alumni Speed Networking Event


Alumni meet in the Museum

New episode out every other Friday and available from the FLS website:
www.ls.manchester.ac.uk/podcast

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Front cover image by Natalia Sanchez-Soriano
Drosophila cell in culture in which the organisation of the microtubule cytoskeleton can be viewed

Message from the Dean - Martin Humphries

Dear Graduate

I would like to welcome you to this second edition of the Faculty of Life Sciences alumni magazine. Inside, you will find a diverse range of interesting articles and notes that reflect the breadth and impact of the work being carried out in the Faculty. In my introduction, I thought I would place some of these achievements in context and provide you with a very brief Faculty stock-take.

Before too long (actually two years), the new University of Manchester will be celebrating its tenth anniversary. The institution continues to perform very well, but 2014 will be an interesting year. Most obviously, it will be the year in which the new national research assessment exercise (termed the Research Excellence Framework or REF) will be conducted. The University excelled in the last such exercise (in 2008), ranking third in the UK. As usual, the goalposts for the exercise have changed, and in 2014 there will be a much greater emphasis on assessing the social and economic impacts of research. Manchester is well placed in this regard, but as in any new system the outcome is unpredictable.

2014 will also be an interesting year for teaching and learning. The previous September will be the second intake for undergraduates in the new fee regime, and it will be intriguing to reflect on trends and behaviours. Many of us have been surprised at the robust level of applications for undergraduate places for 2012 entry (albeit a greater than 10% fall nationally), but we are yet to see how this will translate into institutional and subject-level shifts in numbers. As the new fees kick in, institutions will be attempting to brand themselves more clearly and will be emphasising their strategies to improve student employability. Manchester will be no exception. Despite the uncertainties that continue to swirl around the Higher Education sector, our overall financial position is strong. Many UK HE institutions have generated healthy surpluses in the last year, but, since capital budgets have virtually disappeared, much of this cash is needed for maintaining the estate and replacing equipment.

You will no doubt be happy to hear that the Faculty of Life Sciences is also thriving. Our applications for undergraduate places have bucked the national trend, and are actually up on last year. It is difficult to be certain why this is, but I suspect the quality of our research and the consistently very high scores that our courses have obtained in the National Student Survey (92% overall satisfaction last year) are likely to have had an influence! Our preparations for REF2014 are on track, and we have responded to reductions in our traditional sources of research funding by diversifying our income streams. In particular, funding

from industry and the EU are increasing rapidly. Following the refurbishment of the Carys Bannister building, almost all of the Faculty are now housed in new build or recently renovated space, much of which is interconnected by bridges. Communication is therefore excellent, and we hope this will stimulate even greater collaboration among our staff. Our buildings house some of best equipment core facilities in Europe, something that is only possible to sustain and support because of the scale of the Faculty. Additions in this year include state-of-the-art nuclear magnetic resonance and mass spectrometers. Finally, we are in the middle of a major recruitment programme, aimed at further increasing the quality of the Faculty. As the relocation decisions of academics tend to be motivated by the quality of three things - their colleagues, the students they pass on knowledge to, and the buildings in which they work - we are confident of a successful outcome.

We are very keen to hear from our alumni, celebrate your successes, and involve you in Faculty events. In this context, I am delighted to inform you know that Andrew Cohen, currently BBC Head of Science, London Factual, and a one-time undergraduate in Physiology and Pharmacology, will receive an Outstanding Alumnus Award at a graduation ceremony in July. Among his many contributions to television, Andrew has been both Producer and Series Producer within the BBC Science department for programmes such as 'Horizon', 'Tomorrow's World', 'Planet Dinosaur' and 'Wonders of the Solar System', the latter of course with another of the University's famous alumni, Brian Cox! We will also be holding our second Community Open Day on June 30th. You can see what happened first time around, when our buildings were opened to the public, on our web site at http://www.ls.manchester.ac.uk/openday/.

I hope you find the contents of this magazine interesting and that, to some extent, you can relate some of its contents to your time studying in Manchester. If there are specific areas of activity that interest you and you would like to hear more about, or individuals or class groups that you would like to get back in touch with, or if you simply want to tell us what you are doing now, we would love to hear from you.

Martin Humphries
Vice President and Dean

Brand new facilities for our Optometrists!

The University of Manchester's Optometry facilities have recently relocated from the North Campus to the brand new Carys Bannister building on Dover Street. The building is named after a pioneering Manchester-based doctor who was one of the first female neurosurgeons in Britain.

The student teaching clinics and the private Vision Centre, both based within the building, conduct eye examinations, provide spectacles and contacts lenses, and offer additional services such as screening for glaucoma and diabetes to the general public. Specialist optometric equipment within the unit, including topographers and high-quality digital cameras, is used to enhance the service offered by the clinics and facilitate ongoing research projects.

The building is also the new home to Eurolens Research, a long- established research group that conducts contact lens clinical studies for contact lens manufacturing companies around the world. It regularly undertakes projects for global organisations and co- ordinates as many as thirty clinical studies per year.

Dr Philip Morgan, programme director for optometry and director of Eurolens Research says, "We are delighted to be in the new home for optometry ... Years of careful planning for the new clinic areas mean that we have a new state-of-the-art facility for teaching optometry and training future professionals".

Human skull study causes evolutionary headache

Scientists studying a unique collection of human skulls have shown that changes in skull shape, thought to have occurred independently through separate evolutionary events, may in fact be linked.

Evolution has led to a significant change in the shape of our faces compared to those of our ape-like ancestors. Our spinal cord enters the skull further forward than in the ape, facilitating upright motion, the top portion of our skulls are larger and more rounded to accommodate a larger brain and our faces have flattened, perhaps driven by the development of language. Anthropologists have previously thought that such changes occurred independently. However, researchers from the Faculty and Barcelona have uncovered evidence suggesting these structural changes may instead be linked.

Researchers studied 390 skulls from the Austrian town of Hallstatt, where tradition dictates that following burial, bones are removed and stored separately, making room for future burials. Once removed, skulls are decorated and, importantly, bear the name of the deceased. This allowed researchers to identify individuals through church records

and ultimately investigate the inheritance of skull shape. Using both genetic and structural analysis, researchers found that the features of these skulls vary together, meaning that changes in one structure cause changes in other structures. These findings indicate that the human skull may have evolved as a whole, rather than as a number of separate evolutionary events.

FLS researcher Dr. Klingenberg, one of a team of scientists behind this work, said that these findings are intriguing and appear to tell a different story to some fossil records, meaning we may have to re-think our current understanding of human skull evolution.

Director appointed for new Inflammation Research Centre

Last year we announced the creation of the Manchester Collaborative Centre for Inflammation Research (MCCIR). This is a unique partnership between The University of Manchester (Faculties of Life Sciences and Medical and Human Sciences) and two leading pharmaceutical companies (AstraZeneca and GlaxoSmithKline). The MCCIR will be housed in the Core Technology Facility (CTF) building, and has the objective of becoming a world-leading centre for fundamental research into inflammation. The Centre aims to increase understanding of relevant biological processes which can be translated quickly and effectively into new treatments for a variety of inflammatory diseases such rheumatoid arthritis, inflammatory bowel disease, asthma, chronic obstructive pulmonary disease and psoriasis. There is an initial investment of £5 million from each partner over a three year period.

Professor Tracy Hussell has recently been appointed as Director of the Centre, she is currently Professor of Inflammatory Disease at the National Heart and Lung Institute at Imperial College London. She has developed a vibrant research group studying immunity, pathology and vaccination in influenza virus infection, with a special interest in the secondary bacterial complications that can ensue. Her research has identified novel strategies to alleviate inflammatory disorders. Her group has pioneered the concept of, and is still working on, how one inflammatory condition modulates the severity of the next. Importantly, she has identified that the activation of an immune response changes depending on which organ of the body it is in.
Professor Hussell said: "This new centre provides a unique opportunity, working not only with the academic and medical resources of The University of Manchester, but also with the pharmaceutical industry. I am very proud to have been chosen to lead the centre and, naturally, I am hugely excited by the prospect of guiding it into a world leading institution for translational research and innovation".

The MCCIR collaboration will bring together scientists from both the pharmaceutical industry and academia to work collaboratively on inflammation research and translational medicine.

Professor Martin Humphries, Vice-President and Dean of the Faculty, added: "The MCCIR will deliver ground-breaking basic and translational research in inflammation and inflammatory disease. The initiative therefore requires someone with Tracy's track record, vision and drive to succeed, and I am delighted that she has agreed to join us to lead the Centre."

It's a Dog's Life

Researchers from the Faculty have begun a £500,000 Wellcome Trust funded study into the relationship between man and his 'best friend' over the 20th century. The project aims to explore the role of the biological and medical sciences in the changing form and behaviour of domestic dogs. The research team will be looking at the impact of genetics on breeding practices, physiology and nutritional science on feeding, animal behaviour on training, and medical research on veterinary practice.

Project leader Professor Michael Worboys said: "Despite their importance in many people's lives, the changing form, character and role of dogs has been neglected by researchers" and went on to stress that "the dog was transformed in the 20th century by the application of science and medicine: no animal species has been more altered in size, shape, colour or temperament by human selection". In recent years pure bred dogs have been a subject of controversy. Four years ago the RSPCA and the BBC pulled out of Cruft's dog show citing concerns about the health of pedigree dogs.

The project will also investigate the history of stray and 'dangerous' dogs, as well as the use of dogs in the laboratory for health and medical research. Matthew Cobb, Professor of Zoology and a co-investigator on the project, added: "When we think of laboratory animals, we think of rats, mice and guinea pigs. Yet, in the first half of the twentieth century dogs were very important animal models. Dogs helped win Nobel Prizes: Pavlov with his salivating dogs; Best and Banting with insulin, Mellanby with vitamins, Whipple with pernicious anaemia. Joseph Murray, who won the Nobel Prize in 1990, pioneered his kidney transplant techniques on dogs.'" Professor Worboys added that relations were two-way. "Veterinary medicine and animal health has been transformed by transfers from human medicine. Think of the gap between veterinary practice in James Herriot's All Creatures Great and Small, set in the 1930s, and Rolf Harris's Animal Hospital. Many aspects of human-dog relations have been increasingly medicalised, to the point where dogs are called 'patients' and vets' records list them by their names, not those of their owners.'

The project will contribute to the Manchester Museum's main exhibition this autumn which is on 'Breed: The British and their Dogs'. This exhibition is based on another of Professor Worboys's projects on dogs in the 19th century, which explores the development and meanings of pedigree breeding.

MP Pairing Scheme

Mark Travis and David Mowat MP on Westminister Terrace during Mark's visit to the Houses of Parliament.

Mark Travis, an RCUK Fellow in the Immunology and Molecular Microbiology research group and Wellcome Trust Centre for Cell-Matrix Research, has recently participated in the MP-Scientist pairing scheme, organised annually by the Royal Society.

The broad aim of the scheme is to build bridges between Parliamentarians and science researchers. "The scheme is a great opportunity to learn about how government science policy is decided, and the avenues available to influence it" said Mark. "I knew very little about the structures in place for policy making in Westminster, so the scheme was a real eye opener".

The scheme has two distinct parts: a week long visit by the scientist to the Houses of Parliament, and a reciprocal visit by the MP to the researcher's University. Mark visited Westminster in November last year. "The first few days involved talks by government officials directly involved in directing science policy, with the second half of the week spent shadowing an MP". Mark was paired with David Mowat MP, a Conservative MP for his home constituency of Warrington South. "It was very interesting to see the vast array of different responsibilities an MP has to undertake day-to-day" said Mark. "They certainly have a difficult job, and it was fascinating to see how David juggled all his varied responsibilities."

The reciprocal visit occurred in April, with Mr Mowat visiting the AV Hill Building and meeting with Cay Kielty, Richard Reece and Matthew Cobb to discuss important University issues. "David was very impressed by the state of the art facilities we have in Manchester" says Mark. "He was also extremely interested in how a modern University is run, and to learn more about current important issues in the higher education sector. I definitely felt the visit enhanced David's understanding of the pressures scientists currently face."
Mark would definitely recommend getting involved in the scheme. "It was a great experience" he says "The scheme is open to any research scientist, and I definitely urge anyone with an interest in science policy to get involved".

Following on from Mark being involved with the scheme, FLS's Stuart Allan and Douda Bensasson also successfully participated, for more information, see http://royalsociety.org/Pairing-Scheme/

Profile of Mark Travis

Mark Travis is a Research Fellow based in the AV Hill Building, his lab aims to understand how the immune system is regulated to keep us healthy. "Our immune system needs to react quickly if we get an infection, but be tightly controlled to prevent harmful immune responses attacking our own bodies. If our immune response attack our own cells and tissues we can develop autoimmune disease." Mark is particularly interested in how immunity is controlled in the intestine, a particularly tricky area of the body for the immune system. "Our intestine is lined with trillions of bacteria, which are important in keeping us healthy but can potentially trigger harmful immune responses" he says. "If the immune system gets triggered to attack these bacteria, we can develop inflammatory bowel disease. However, we still need to be able to deal with any harmful bacteria or other infections that enter the intestine." Mark's lab is interested in the cells and molecules that allow us to ignore the bacteria that normally live in the gut, but respond to any infectious bacteria.

Mark did his PhD in Manchester, but was a late comer to immunology research. "My PhD focussed on the biochemistry of integrin receptors, a family of cell adhesion and signalling receptors. I only became interested in immunology during my post-doc in the USA, when I found that a specific integrin is key in regulating immune responses in the intestine." Mark returned to Manchester to further address how gut immune responses are controlled, with studies now moving into human patients. "We are located just across the road from the Manchester Royal Infirmary hospital, which allows us to set up collaborations with clinicians to see how certain pathways are altered during inflammatory bowel disease. Hopefully these studies will lead to the identification of important pathways that could be modulated to treat inflammatory bowel disease".

http://www.mig.ls.manchester.ac.uk/
http://www.wellcome-matrix.org/

Alumni Speed Networking

The Faculty has recently hosted our first alumni event, 'speed networking'. There were over 70 attendees, made up of recent graduates, more experienced alumni and current students.

The aim of the event was to reconnect with our experienced alumni and give our new graduates and students the opportunity to find out more about careers available to life sciences graduates outside of the traditional areas of research and academia.

Fifteen mentors, most of them FLS alumni, were invited to talk about their careers. The fields represented included Science Communication, Patent Law, Clinical Science, Conservation, Forensic Science and the Pharmaceutical Industry with attendees from several high profile organisations including the Society of Biology, The Wellcome Trust, The Cabinet Office and the BBC.

The event began with a tour of the AV Hill and Michael Smith buildings for the mentors, this allowed them to explore the new facilities built since their graduation. An introduction followed by Professor Martin Humphries, Vice President and Dean of the Faculty before the main event got underway.

The speed networking format was designed to give students and new graduates a 'snapshot' of careers that they may not have been aware of. Each mentor had ten minutes to talk to a small group of students and new graduates, introducing themselves and their career, and then taking questions from the group. After each ten minute slot the groups moved round to meet another mentor, giving each group the opportunity to speak to up to ten mentors over the course of the evening.

Following the speed networking, mentors and mentees were invited to a drinks reception in the Manchester Museum Fossils Gallery. This gave the new graduates a chance to catch up with their old class mates and for all parties to have some more in depth discussions and do some networking beneath Stan, the Museum's *T-Rex*.

The mentors and attendees have been invited to join a networking group to continue the conversations, which they started at the event.
The event was organised by Charlotte Alcock, Recruitment and Marketing Officer and Libby Graham, Faculty Alumni intern.

Would you like to be involved in next year's event?

If you graduated in 2008 or earlier, work in a role that is not research or teaching related, and would like to act as a mentor at next year's event please email: alumni.lifesciences@manchester.ac.uk

Your Manchester Fund – Research Impact Scholarship

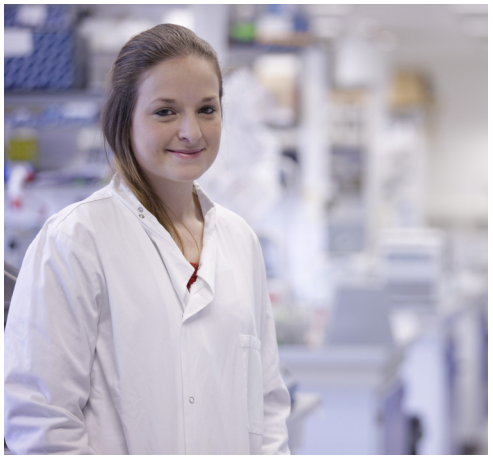
Each year, through the Division of Development and Alumni Relations, the Faculty of Life Sciences supports upto two individuals wishing to pursue a PhD within the Faculty, by awarding them a prestigious Research Impact Scholarship. These students will have recently completed their undergraduate or masters degree at The University of Manchester, and wish to progress to PhD study. Financial support provided via Your Manchester Fund enables us to identify outstanding applicants and make a contribution towards the cost of their PhD here in the Faculty. The Research Impact Scholarship encourages the highest quality Manchester graduates to continue their research in Manchester within a first-class research environment.

The Faculty has a number of Research Impact Scholars, all of whom are confronting some of the most challenging problems society faces around the world today such as cancer. In their role, the PhD students are actively involved in various donor events throughout the year, flying the flag for Manchester – a city they have chosen to stay in for their postgraduate studies.

Most notably, Becky Brading, who started her PhD in the Faculty in 2011, has taken on the role of 'blogger' for Your Manchester Fund. See what Becky has been getting up to recently (in and out of the lab) http://ddar.manchester.ac.uk/blog/.

Becky is extremely grateful for the support she receives, which has enabled her to continue on to study in a field of research which will have a huge potential impact to the treatment of cancer patients. Becky says "I had a fantastic time doing my undergraduate degree at Manchester, and I was really enthusiastic to continue studying links between human development and cancer."

For more information on how the Your Manchester Funds helps current students, see:
www.manchester.ac.uk/yourmanchesterfund

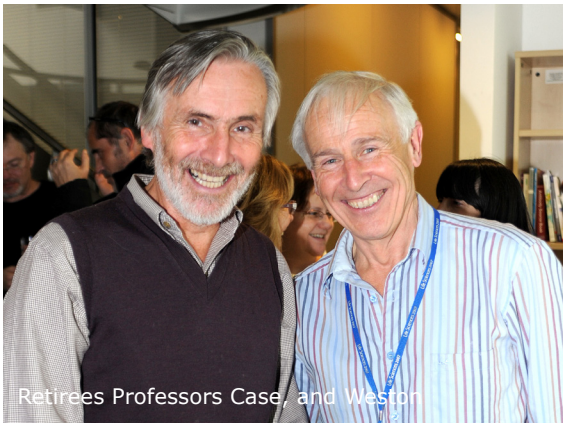


Double retirement

It is with both joy and sadness that we bid farewell to Professors Maynard Case and Arthur Weston as they retire from the University. Both have made tremendous contributions to the Faculty of Life Sciences and will be greatly missed both personally and professionally; we wish them all the best for the future.

Professor Maynard Case joined the University as Professor of Physiology 22 years ago and since has twice been appointed Dean of the School of Biological Sciences as well as to a number of other senior posts. He has also held the position of Associate Vice-President for Compliance, Risk and Sustainability since 2002, while pursuing his research on fluid and electrolyte transport in epithelia.

Leech Professor of Pharmacology Arthur Weston retired on September 30th after a total of 43 years' service in the University. In retirement, he intends to continue with his vascular pharmacology research, as a Senior Editor of the British Journal of Pharmacology and Visiting Fellow at Magdalen College, Oxford. Arthur is also a candidate for election for the Presidency of the British Pharmacological Society.



Retirees Professors Case, and Weston

University Excellence Award

Congratulations to Dr Anil Day who has been awarded the University's Teaching Excellence Award for 2011/2012.

This award recognises excellence in teaching and in Dr Day's case for his work on the innovative MSc in Biotechnology and Enterprise degree programme. Dr Day developed the programme in 2008 with the aim of providing students with the experimental skills and knowledge to undertake scientific research, combined with training in the entrepreneurial and business skills needed to convert scientific discoveries into inventions and commercial products.

Dr Day says, "FLS provided a particularly fertile environment to develop this unique course due to the breadth of research undertaken, and the large number of staff with industry-links. Ultimately, the success of the course reflects the high calibre of our talented students who have embraced the training and vision provided by the course to carve out careers in the global biotech industry."

Since inception the programme has attracted gifted students from countries around the globe including Chile, China, India, Lebanon, Mexico, Namibia, Nigeria, Oman, Pakistan, Spain and Taiwan. The students are united by a common interest in research of international quality, and the entrepreneurial and business skills provided by our international MSc degree programme. Whilst the degree has only been running for three years, alumni are already progressing to senior positions in the commercial sector.

Dr Day says, "Support for the course has been terrific and a large number of people have contributed to its success, especially Maggy Fostier and Martin Henery (Business School) who hone the students entrepreneurial skills for a business pitch to potential investors in the 'Lions Lair'."

Leopoldo Herrera Rodriguez graduated in 2011 and works in a biotech company. He says, "This course can be as useful as you want it to be. There is the business aspect for those who want to be entrepreneurial and there is the science aspect which can be equally thrilling."

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