

Faculty of Life Sciences Newsletter

Graduation Edition - Issue 20, Summer 2011

A UNIQUE RESEARCH PARTNERSHIP WITH THE PHARMACEUTICAL INDUSTRY

On May 11th 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 as rheumatoid arthritis, inflammatory bowel disease, asthma, chronic obstructive pulmonary disease and psoriasis. The MCCIR starts with initial funding of £15 million. The search is now underway for a Centre Director. We anticipate that, in addition to those recruited directly into the Centre, scientists from each of the partners – including FLS – will have the opportunity to work with and within the MCCIR.



Minister for Universities and Science, David Willetts, said: "The announcement made today by The University of Manchester, GlaxoSmithKline and AstraZeneca is a fantastic example of partnership working and its potential to translate cutting-edge science into health and commercial benefits. It is a clear vote of confidence in the UK's world-class academic research base by our leading pharmaceutical companies and is an exciting development."

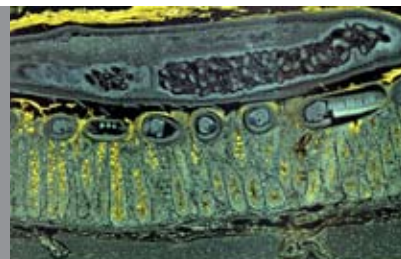
The Dean of FLS, Professor Martin Humphries, said that: "The Manchester Collaborative Centre for Inflammation Research (MCCIR) is a truly unique 3 way partnership between the University of Manchester and two global pharmaceutical companies, GlaxoSmithKline (GSK) and AstraZeneca (AZ). This collaboration brings together the breadth and depth of expertise in inflammation biology in this Faculty, and

in FMHS, with the experience in translational medicine and inflammatory disease available in GSK and AZ. The aim of the Centre is to deliver world leading research in the cell and molecular biology of inflammation that can be translated quickly into new and effective treatments for inflammatory disorders. We look forward to working alongside colleagues in GSK and AZ to achieve this goal"

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Focus on ... Our Graduates

MESSAGE FROM ASSOCIATE DEAN FOR TEACHING AND LEARNING



"Graduation is my favourite time of the academic year. The massive effort that students have put into the examinations process (and the equal effort put in by staff in marking) has reaped its just rewards. It also never fails to amaze me how, on graduation day, the individuals who have been sitting in my classes all year look so unrecognisable when they have been scrubbed up – and booted and suited!

I wish all of our graduates this year well for the next part of their journey in life. They leave us in difficult times. The world economic situation has scarcely been worse in living memory. I do believe, however, that a degree in one of the Life Sciences from Manchester prepares our graduates exceptionally well for the road ahead. In recent years, we have reformed the curriculum we teach to more closely link the clear research excellence of the Faculty with our educational endeavours. This has involved a radical reform of the taught curriculum and an explicit linkage between the high level skills taught as part of a research-oriented degree and the attributes that employers seek. I have no doubt that this will continue to put Manchester, and its graduates, at the forefront of biology education in the UK.

Students come to Manchester to learn, and leave to change the world. Long may they continue to do so. I hope our graduates will also stay in touch, through the alumni association and a whole host of other means, so they know that they will always be welcomed back."

Prof. Richard J. Reece
Associate Dean for Teaching and Learning
Faculty of Life Sciences

WHAT MAKES OUR GRADUATES SO EMPLOYABLE?

Our reputation for research excellence attracts individuals who aspire to a career in life sciences research. A research focused curriculum including; 'Frontiers of Science' lectures and seminars, a comprehensive training programme in laboratory skills, experimental design and academic writing, and the opportunity to undertake a research project in our research labs, ensures we equip these individuals for success at PhD level and beyond.

However, many students choose a life sciences degree simply out of interest for the subject or decide over the course of their degree that they are not suited for a career in research. In fact around 50% of our graduates choose careers in subjects completely unrelated to the life sciences. It is therefore important that we develop in our

graduates the abilities and characteristics that are required not just in research but also in the wider jobs market. The following case studies highlight just a few of the ways that we are doing this.

Tutorials

From the very first tutorial we focus on providing our students with the type of transferable skills that will get them noticed by graduate employers. They develop their communication, team work and organisational skills through a range of challenging activities which can include; participating in debates, planning and running a group project in the local community and making presentations to a full lecture theatre!

GRADUATE CASE STUDY Peter Fison – Television Researcher

Peter graduated in 2008 with a 2:1 in Zoology. He now works as a television researcher for Windfall Films who have produced documentaries including 'Inside Natures Giants' and 'Meet the Elephant Man'. Peter believes the communication skills he developed through his tutorials, as well as a healthy dose of luck (!), helped him develop a career in this exciting field:

"My first job was a lucky break, a friend knew a friend... So I rang him. If there's one thing that Manchester provides in spades it is the opportunity to meet people and have a drink, so I used this. We met in a pub and I got my first job on a BBC Natural World production.

With this job under my belt I applied for an exciting new anatomy series 'Inside Nature's Giants'. The show is based around the dissection of large species. I have filmed dissections of elephants, whales, giraffes and hippos to name a few. This series has given me some amazing opportunities to work and meet with eminent scientists like Joy Reidneberg, Jim Hicks and Richard Dawkins.

This all sounds very fortunate and it was, but TV doesn't suffer fools gladly. That's where my Manchester degree put me in good stead. It gave me a head start in how to research science. I had some great tutorials too (the biology of Harry Potter creatures being a personal favourite). They taught me how to communicate science with both top experts and the public."

Peter on location for "Inside Natures Giants", the hippo died as part of a planned culling program



Placements

Most of our undergraduate programmes are offered as a four-year degree incorporating a twelve-month placement in the third year where students undertake a research project. Students undertake a range of projects, from studying the pathogenesis of malaria at a research institute in the Gambia to investigating the behaviour of sloths at a sanctuary in Costa Rica. In the current graduate employment market students who can demonstrate this type of significant work experience have a head start on their peers when applying for jobs.

Not all students can undertake placements so the Faculty also provides many opportunities for students to work in a paid or voluntary capacity as Student Ambassadors who represent the Faculty to prospective applicants and their parents, Peer Assisted Study Scheme (PASS) Leaders who facilitate the learning of first year undergraduates or Course Representatives who represent the views of their fellow students to staff. These are challenging roles, which require the ability to problem solve, use initiative and communicate well with a range of audiences.

GRADUATE CASE STUDY

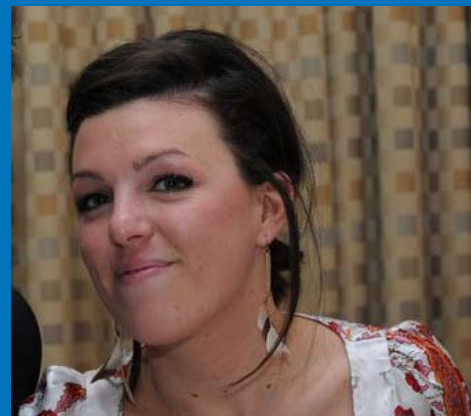
Fran Barker - Research and Development Assistant Reckitt Benckiser

Fran worked as a student ambassador and undertook a placement year at the Medical Research Council in the Gambia whilst studying for her degree in Biochemistry with Industrial/Professional Experience. She graduated in 2010 and has recently started a job at Reckitt Benckiser as a Research and Development Assistant in the Scientific Services Group. Fran believes that her experiences on placement and as a student ambassador helped her stand out from the crowd:

"Transferable skills that I developed during my degree such as problem solving, team work and communication have

been central to my career progression. To give an example – my presentation skills were honed whilst working as a student ambassador, presenting to three hundred students fortnightly about the city. Now in my day to day job I am able to put myself forward and present confidently which has helped boost my profile in the company.

I really feel like my career with Reckitt Benckiser has got off to a great start. The company is expanding into the developing markets at the moment, and with my international mobility and experiences it looks like I might be getting posted to India for a couple of years!"



Final year research project

In their final year students carry out an independent in-depth research project. Laboratory based projects are an excellent preparation for students who are interested in careers in research but the Faculty also offers a suite of alternative project types to cater for students who career interests lie outside this area. Students have developed websites, created teaching resources for schools, undertaken research into the history of science, technology and medicine and much more. All our projects regardless of format require students to develop skills in research, analysis and project management which will be essential when they transition into the world of work.

A recent innovation is the introduction of enterprise projects, which involve close collaboration with entrepreneurs from local biotechnology and bioscience start-up companies, and the Manchester Science Enterprise Centre. Groups of students generate business proposals delivered to a "Lions' Lair" presentation to examine their feasibility.

GRADUATE CASE STUDY

Ed Spencer – Trainee Solicitor

Ed undertook an Enterprise Project as part of his Biology degree. He graduated in 2007 and is now a trainee solicitor with Taylor Wessing a leading international law firm. Ed believes his degree and in particular the Enterprise Project provided him with important skills which he utilises in his current role:

"My biology degree definitely helps me both from a skills perspective and in understanding some of the cutting edge technologies that many of our clients are involved with. Research is a big part of my job and my biology background means I not only have the skills needed for the task but I also have a different approach that comes from not having the more traditional law background, this means I can often find more discrete cases or law which is often the key to our client's dilemma.

The commercial awareness that I developed throughout the Enterprise Project helps me in presenting practical business solutions to the legal problems I face day-to-day. It was also a really good talking point for interviews as it really makes you stand out as having done something which proves your interests are wider than pure science."



STAY IN TOUCH

If you have just graduated please stay in touch and let us know where your career takes you. If you feel that you might be able to support our future students by mentoring them or giving talks about your career we would love to hear from you.

email: charlotte.alcock@manchester.ac.uk

Tel: +44 (0)161 275 7700

www.ls.manchester.ac.uk/about/facultyessentials/alumni

University of Manchester Alumni Association

Register with Your Manchester Online now and become a member of the University of Manchester's interactive alumni website where you can search for friends, update your details, register for events, sign up for email for life and more.

www.yourmanchester.manchester.ac.uk

BREAST CANCER RESEARCH GRANT SUCCESS

Breast Cancer Campaign has awarded a grant worth almost £190,000 to FLS researcher Dr Keith Brennan.

The three year project will look specifically at finding out more about triple negative breast cancer, a particularly aggressive form of the disease.

Researchers have discovered a molecule called Notch, which is active in breast tumours, especially in triple negative cancers. Dr Brennan believes Notch is involved in producing proteins that make these cancer cells less sensitive to chemotherapy – one of the few treatments available to triple negative breast cancer patients.

Dr Brennan, who is based within the Faculty, said: "I believe that understanding how Notch works and how to stop it could

provide a new way to treat this particular type of breast cancer.

"Using this grant, I will collect proteins produced by laboratory-grown triple negative breast cancer cells with active Notch and then analyse them, to try and uncover their identities. This will give me vital clues as to how active Notch makes cancer cells less sensitive to chemotherapy. "I will also treat these breast cancer cells with drugs called 'inhibitors' that stop Notch from working and study exactly how this affects their response to chemotherapy," he added.

Dr Lisa Wilde, Director of Research, Breast Cancer Campaign, said, "Too many people still die from breast cancer – 12,000 a year – and those with triple negative type of the disease currently have limited treatment options.



"Dr Brennan's innovative project will provide key knowledge about Notch's involvement and how to stop it, which could help in the development of new treatments, vital for these patients."

MP PAIRING SCHEME



Mark and David Mowat MP on Westminster 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 to 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. "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".

For more information, see <http://royalsociety.org/Pairing-Scheme>

REGIONAL SCHOOLS AWARD - DOUBLE SUCCESS FOR FLS!

Congratulations to Amanda Bamford and Mark Travis who have both been awarded the BBSRC Regional Schools Champion status, only 13 awards were granted across the country following a competitive judging process by an expert panel. The SRC network aims to 'support our funded researchers in the UK with public engagement activities for secondary schools and young people aged between the ages of 11-19'. The role comes with 2 years of funding (£800 p.a.) and an opportunity to apply for further funding. One of the responsibilities of the SRC will be to support BBSRC funded researchers in carrying out their public engagement activities, in line with the RCUK Concordat for engaging the public with research. This will enable researchers to communicate their research and discuss it with a new audience. The aims are to stimulate interest and encourage wider participation in science by young people and to encourage positive attitudes to science in the next generation of scientists from the local area. The SRC will encourage a positive 2-way dialogue between researchers and local schools and young people.

Amanda Bamford says, "My activities will centre on the topic of food security, a BBSRC strategic priority. I am hoping to build a network of researchers who will work with local schools in developing science projects and to then display these projects to the public at a Schools' Science Fair".

AN ENDURING PARTNERSHIP



Professor Dame Nancy Rothwell (centre) with Dr Bastian Hengerer (Director of CNS Diseases Research) (l) and his colleague, Dr Florian Gantner (VP Respiratory Diseases Research) (r).

The Faculty hosted a visit earlier this month from two distinguished scientists from Boehringer Ingelheim; Dr Bastian Hengerer (Director of CNS Diseases Research) and his colleague, Dr Florian Gantner (VP Respiratory Diseases Research). Three years ago, in recognition of his contribution to CNS drug discovery (Parkinson's) and of his pivotal role in Industrial placements, FLS conferred an Honorary Professorship on Dr Hengerer. During this recent visit, Professor Dame Nancy Rothwell (pictured top centre) re-affirmed Bastian's (pictured top left) honorary position and also conferred a similar title on Dr Gantner (pictured top right), who has had a distinguished career in the discovery of drugs for the treatment of airways diseases (COPD and asthma) and also plays a key role in the placement of FLS undergraduates.

Boehringer Ingelheim is the largest single host of the Faculty's placement students at its

research complexes in Germany and Austria, which are organised by Dr Gill Edwards. We were delighted that Bastian and Florian were also able to present this year's Boehringer Ingelheim Best Student Placement Prize, worth €500. Three students were short-listed for this and gave excellent presentations on their work to an invited audience, followed by 5 minutes of questioning by the judges, who selected the ultimate winner. The prize was awarded to Lucie Van Emmenis, who did her project at Boehringer Ingelheim in Vienna. This year, in addition to two judges from the Faculty, Dr Paolo Tammaro and Dr Kath Hinchliffe, we were also very pleased to welcome back Dr Luisa Hector, who was the first Manchester student ever to be placed at Boehringer Ingelheim in Biberach from June 1995-June 1996. Luisa is now a Director of Equity Research at Credit Suisse. We look forward to our continuing partnership with Boehringer Ingelheim.

WELLCOME TRUST NEW INVESTIGATOR AWARD

Many congratulations to Dr Chris Thompson who has received one of the inaugural Wellcome Trust New Investigator awards. This 7-year award is superb news for Chris, and is also the first of these prestigious new awards to the Faculty and University. Wellcome Trust Investigator awards are given to leading researchers who are addressing ambitious and challenging questions that have the potential to transform our understanding of the mechanisms of health and disease. Chris's research, entitled "Generating order from chaos: understanding how heterogeneity, stochastic differentiation and cell sorting can result in robust developmental patterning" will focus on how stochastic processes can result in robust biological outcomes. His groundbreaking research will tackle this major outstanding problem in the biological sciences in the context of multicellular development and embryonic patterning. Chris has chosen an ideal experimental system, *Dictyostelium discoideum*, which permits a uniquely powerful combination of techniques to be applied, and yields systems level understanding of the basic mechanisms underlying developmental patterning.

For further information on Wellcome Trust Investigator awards, see:
<http://www.wellcome.ac.uk/Funding/investigator-awards/>
<http://www.wellcome.ac.uk/News/Media-office/Press-releases/2011/WTVM051560.htm>

GENETIC FINGERPRINTING AND THE TURBULENT GENOME

Earlier this year the FLS Postgrad Society invited Professor Sir Alec Jeffreys to present their annual lecture entitled "Genetic Fingerprinting and the Turbulent Genome".

1st Year PhD Researcher Lorna Wilkinson provides her impressions of the visit:

"When Sir Alec arrived, he seemed like any other person, just doing what he loved and doing it well, getting by and enjoying life. He was genuinely interested in what we were doing in our research, and very concerned about the impact the current student fees saga will have on the talent pool entering further education and beyond. Before seeing his talk, although knowing enough about his work to introduce his lecture, I didn't realise just how global his impact had been. It made me think about

the importance of knowing what you're looking at, both at the molecular level, but also in the broader context. The work that we as individual scientists do is important on a global scale – and communicating our work to the general public is as important as doing it.

What surprised me most about Sir Alec, was that he was extremely humble about his achievements, and seemed really approachable and easy to talk to. This amplified the human element of the work that he does – Science should be fundamentally important for the human impact, not just the biological curiosity. As scientists, we are always searching for the proverbial needle in a



haystack, but I think its important not to lose sight of the end goal – we are faced with so many challenges and difficulties that it is easy to feel like giving up in favour of easier tasks. People like Sir Alec remind us of the ultimate goal – finding something significant enough that it impacts almost every aspect of our lives."

Faculty Activities

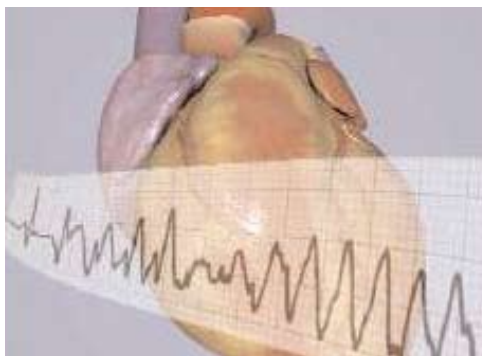
ENZYME PREVENTS FATAL HEART CONDITION ASSOCIATED WITH ATHLETES

Scientists have discovered an important enzyme that may prevent fatal cardiac disorders – the leading cause of sudden cardiac death in young athletes.

Cardiac hypertrophy is a disease of the heart muscle where a portion of the muscle is thickened. It is commonly due to high blood pressure (hypertension) and excessive exercises.

The condition is also associated with fatal cardiac disorders related to irregular heart beats (arrhythmias), leading to millions of deaths worldwide each year, and is perhaps the most well-known cause of sudden cardiac arrest in young sports people.

The researchers used laboratory experiments and computer simulations to show that the enzyme MKK4 is involved in preventing arrhythmias. They believe it does this by



modifying another protein, connexin, which forms an electrical bridge between adjacent heart cells to ensure the conduction of electrical activity across the heart as an excitation wave, triggering synchronised contraction of the heart with a regular heartbeat rhythm.

The multidisciplinary team, writing in *The Journal of Biological Chemistry*, found that loss of the MKK4 protein disrupts the spatial distribution of connexin, resulting in irregular heart beats. As a consequence, the heart loses

its power to pump blood efficiently, causing disability or sudden cardiac death.

"Using experimental measurements together with computer models, we were able to simulate the electrical activity in the heart with disrupted electrical coupling between adjacent heart cells," said Dr Xin Wang, from the Faculty.

"The information generated from this study will help us to identify whether the MKK4 enzyme could become a therapeutic target for the treatment of cardiac arrhythmias in association with cardiac hypertrophy."

Co-author Professor Henggui Zhang, a biophysicist in Manchester's School of Physics and Astronomy, added: "This research means it would be possible to identify the most important factor behind the sudden cardiac death associated with cardiac hypertrophy, which can affect people of any age with hypertension and also healthy well-trained athletes."

www.ls.manchester.ac.uk/research/researchgroups/channelsandtransporters

WORM DISCOVERY COULD HELP ONE BILLION PEOPLE WORLDWIDE



A section of an intestine infected with whipworm, one of the commonest types of roundworm infection worldwide.

Scientists have discovered why some people may be protected from harmful parasitic worms naturally while others cannot in what could lead to new therapies for up to one billion people worldwide.

Parasitic worms are a major cause of mortality and morbidity affecting up to a billion people, particularly in the Third World, as well as domestic pets and livestock across the globe.

Now, University of Manchester researchers have, for the first time, identified a key component of mucus found in the guts of humans and animals that is toxic to worms. "These parasitic worms live in the gut, which is protected by a thick layer of mucus," explained Dr David Thornton, from the Faculty's Wellcome Trust Centre for Cell Matrix Research. "The mucus barrier is not just slime, but a complex mixture of salts, water and large 'sugar-coated' proteins called mucins that give mucus its gel-like properties.

"In order to be able to study these debilitating worm diseases, we have been using a mouse model in which we try to cure mice of the whipworm *Trichuris muris*. This worm is closely related to the human equivalent, *Trichuris trichiura*.

"We previously found that mice that were able to expel this whipworm from the gut made more mucus. Importantly, the mucus from these mice contained the mucin, Muc5ac. This mucin is rarely present in the gut, but when it is, it alters the physical properties of the mucus gel."

Co-lead on the study, Professor Richard Grencis, continued: "For this new research, we asked how important Muc5ac is during worm infection by using mice lacking the gene for Muc5ac. We found that mice genetically incapable of producing Muc5ac were unable to expel the worms, despite having a strong immune response against these parasites. This resulted in long-term infections.

"Furthermore, we discovered the reason for the importance of Muc5ac is that it is 'toxic' for the worms and damages their health." The study, published in the *Journal of Experimental Medicine* and featured in *Nature's* 'research highlights' today (Thursday), found that Muc5ac is also essential for the efficient expulsion from the gut of other types of worm that cause problems in humans. These include the hookworm, and the spiral threadworm. Together, these worms cause mortality and morbidity in up to one billion people across the globe.

Dr Sumaira Hasnain, the lead experimentalist on the project, added: "For the first time, we have discovered that a single component of the mucus barrier, the Muc5ac mucin, is essential for worm expulsion. Our research may help to identify who is and who isn't susceptible to parasitic worms, and it may eventually lead to new treatments for people with chronic worm infections."

www.ls.manchester.ac.uk/research/researchgroups/immunologyandmolecularmicrobiology

BEE CONSERVATION AT THE MANCHESTER MUSEUM

First year Zoology students in Dr Qing-Jun Meng's tutorial group spent a Saturday explaining to visitors to Manchester Museum about the decline in the bee population. The students sent in this report:

"Many people are unaware that there has been a 60% collapse of the UK bumblebee population since 1970, with three of our 25 species already extinct. The aim of the day was to let the public know more about the bees in their garden and how they can help conserve the 22 species left in the UK.

Bees are the most common and most economically important pollinators, with the Food and Agricultural Organisation of the United Nations estimating that up to 90% of food worldwide is pollinated by bees. A lot of the visitors to our stall were shocked to hear that many of our favourite foods like strawberries and tomatoes would be harder to grow without bees.

We wanted people to leave knowing how to help. We demonstrated how to make a simple bee nest from the bits and bobs people have around the garden; many were keen to try it out. An upturned flowerpot, nest material, stones and slate providing a waterproof entrance for the bee is all it takes to provide a home for a colony. Overall the day was a great success – and great fun!"

www.ls.manchester.ac.uk/research/researchgroups/neurosciences



AQUASCIENCE DAYS: THE MAGICAL WORLD IN OUR RIVERS AND LAKES



Earlier this year, pupils and staff from Trinity Church of England High School and Matthew Moss High School, visited the Faculty to take part in an "Aquascience day" run by Drs. Andrew Dean and Amanda Bamford. The activities were designed to give the schoolchildren an idea of what sort of organisms you find in lakes and rivers, and how they can be used in pollution monitoring.

The environs of Manchester University are somewhat lacking in lakes and rivers (the Irwell and Medlock are a bit short of things to look at), so a few days before their visit Andrew, Amanda, and Adam Moolna drove out to the river Etherow near Glossop and did many kick samples (a tiring process!) to collect enough invertebrates for the practical. Phytoplankton samples were obtained and consisted of a sample of mixed phytoplankton (this contained a good assortment of lots of things to look at) and a sample from a local lake.

The pupils started their day with an introductory talk by Andrew about how to use freshwater organisms to monitor for pollution. Afterwards they were taken to the laboratories where each group of 3 children were given a kick sample, from which they

had to sort out the invertebrates from all the non-living debris such as leaves, stones etc. Once sorted, they had a closer look at the organisms under a dissecting microscope with the additional help of PhD students Katie Woodburn and David Armson. Using the FSC guide to aquatic life they identified what they had found in their samples. Using a simple scoring system based on the tolerance of different invertebrates to pollution, they correctly concluded that the invertebrates had been obtained from a "moderately polluted" river.

While the pupils had a packed lunch, the lab was transformed from an invert ID lab to a phytoplankton lab, with all the dissecting microscopes replaced by compound microscopes. The pupils got their 'algae-eye' in by looking at the mixed phytoplankton sample and then applied their newly acquired ID skills to the lake sample. Not many pupils have ever had the chance to look down microscopes at such inspiring microscopic organisms and they found it exciting with lots of impressive diatoms and phytoplankton to look at and identify. Using the presence of indicator species they decided that the lake sample was from a polluted eutrophic lake (and they were right!).

"It was mint" or "mega" were some of the comments from the pupils, which we think that translates as a success! It wasn't only the students that enjoyed the day, Roy Down, a staff member from the school said, "It made me realise how much you have helped to enrich our students learning. I am sure now some of them realise what is out there for them, if they wish to pursue their studies at University of Manchester in the future. I wish I had been given the same insight many years ago!! After today I have been inspired to make my ideas of testing our local mere and river happen."

Due to the resounding success of the day, there are plans to run more sessions later in the year and introduce more pupils to the magical world in our rivers and lakes!



SOUTH AFRICAN FIELD TRIP ADVENTURES

It is 5:30, the early morning mist rises over the African savannah; only the cackling guinea fowl can be heard. All of a sudden, the ground starts to tremble and out of the bush come 30 large antelopes stampeding right across the front of the lodge. Blinded by the rising sun, the hartebeest stop and look but nothing can be seen. Only a giraffe makes its appearance at the waterhole. All of this does not go unnoticed. Students who have been up since five o'clock have recorded all these behaviours, well camouflaged in their hides a few metres away from the animals. A start to another perfect day on the Africa field course.

Every year, over Easter, 20 first year students travel to the northernmost province of South Africa, near the Botswana border and study the behaviour and ecology of the animals. We stay on a private farm



that has a great diversity of habitats ranging from mountainous regions to savannah and grassland with an unrivalled species diversity among them over 250 bird species and over a dozen antelope species. Under the supervision of three lecturers and two demonstrators the students learn from scratch how to run a research project of their own choice from hypothesis formulation, experimental design, data collection to analysis and presentation. The learning curve is steep as nothing is prepared and the logistics can be challenging. The highlight is the excursion to a national park, usually Pilanesberg,

where the Big Five can be spotted. After the trip, slow-cooked warthog has become the favourite dish of many students.

Apart from detailed knowledge about animal behaviour, behavioural ecology and conservation biology, the course offers a fast-track opportunity to think on your feet about how research gets done in reality. Equally important though is the unique experience gained and appreciation of one of the most diverse habitats on the planet and the challenges facing both animals and humans. You just have to be prepared to get up at five in the morning!



HONOURS FOR IAN KIMBER AND MATTHEW COBB

Ian Kimber

Congratulations to Ian Kimber, who has been awarded an OBE in the Queen's Birthday Honours List for his contribution to science. Ian is Professor of Toxicology and Associate Dean for Business Development, and joined the Faculty in 2007, having spent most of his career in industry, including spells with ICI Zeneca, AstraZeneca and



Syngenta. Ian has published over 550 research papers, review articles and book chapters and currently serves on the editorial boards of toxicology, immunology, dermatology and pathology journals. He has played an important role in the work of the Medical Research Council and is Chair of the UK National Centre for the Replacement, Refinement and Reduction of Animals in Research (NC3Rs). One area of Ian's work is the role of allergies in food safety, and he recently gave a keynote speech at a conference organised by the Food Standards Agency. Ian's OBE is the latest in a series of awards, including an Enhancement of Animal Welfare Award and an Immunotoxicology Career Achievement Award, both from the Society of Toxicology.

Matthew Cobb

The French government has made Matthew Cobb a Chevalier in the Ordre des Palmes Académiques, for his services to French culture. Matthew, who is Professor of Zoology and Associate Dean for Social



Responsibility, spent much of his career as a researcher in France and has continued to be involved in the evaluation of French students and researchers. He is an award-winning translator of a number of French science books, including Michel Morange's *A History of Molecular Biology* and *Life Explained*. He has also published a book on the French Resistance, and last year co-organised the London celebrations to mark the 70th anniversary of General de Gaulle's first war-time broadcast from Britain.

The University of Manchester
MANCHESTER
**University of Manchester
Life Sciences
Community Open Day**

23rd July 2011 11.00 - 3.00
The Michael Smith Building
(see map on reverse)

**Free event with free parking.
No need to book - just drop in.
Suitable for all ages.**

Look around...
Come and look inside our laboratories, see our robots at work and watch living things under our million pound microscopes!

Get hands on...
Kids (and adults!) can get hands on with creepy crawlies, make music with DNA, paint with maggots, take a journey around different areas of the body and feed our bug-eating carnivorous plants!

Meet the scientists...
Our scientists will be there to talk to you about what they do, cancer research, obesity busting, brain imaging, biofuel development and much more...

Plus...
Live music, videos and outdoor activities.

Bringing Science to Life!
www.manchester.ac.uk/lifesciences/openday

FLS HOSTS BRITISH BIOLOGY OLYMPIAD

The Faculty of Life Sciences recently hosted the 2nd North West British Biology Olympiad lecture. The British Biology Olympiad (BBO) is an annual competition for post-16 students and is supported by the Society of Biology. The BBO challenges and stimulates gifted students with an interest in Biology to expand and extend their talents, allowing gifted students to demonstrate their knowledge. They receive medals, certificates and other prizes. Sixth form students from three local schools and current 1st and 2nd year FLS students and staff members attended the event. The invited speaker was Dr Liz Sheffield who presented an exciting portrayal of science in animated movies such as *Bee Movie*, *Jurassic Park* and *Avatar*. Event organizer Dr Michelle Keown gave an overview of the University's sponsorship of the BBO and the annual competitions, and its desire to promote these challenging biology competitions and to encourage pupils in their interest in Biology.

EDITOR'S NOTE:

If you have any comments or contributions for future editions of the Newsletter, please contact the Faculty of Life Sciences:

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