



University of Buckingham, Tanlaw Mill in spring.

Full Steam Ahead! Head of School, Mike Cawthorne provides an update on plans, progress and publications

Over the past two months, our action plan for the MB ChB course, starting in January 2015, has developed in leaps and bounds. We have already had two selection events which have demonstrated the high calibre of applicants to the School and we are hopeful that the first round of offers will be made by the end of this month. Academic staff are busy preparing course material and putting into place all the multiple student support mechanisms. Renovation work has commenced to provide modern teaching facilities for the first year students and the University's timetable now has the MB ChB embedded within it. After some delays we now have

approved planning permission for the Medical School/Sciences building which will be located on Right Bank, a four acre site owned by the University adjacent to the main Hunter Street campus.

Throughout the development of the Medical School we have been impressed by the enthusiastic support we have received from medical and administrative staff at Milton Keynes Hospital, St Andrew's Healthcare, Bedford Hospital and local General Practitioners. Their involvement and commitment means that students will be involved with patients from the outset and throughout the programme.

Whilst all this has been going on we have not been idle on the research front. In the past two months, eight papers have been selected for international conference presentation and Professors Arch, Trayhurn and myself attended the International Obesity Congress in Malaysia. Paul Trayhurn was the Chair of the Programme Committee

and assembled an exciting programme of basic and applied science on this world epidemic. Jon Arch gave a plenary lecture on 'Drugs for the Treatment of Obesity'.

I had meetings with the Ministry of Health examining the possibilities of joint research programmes.

Momentum is high and it is exciting to see the result of many years of hard work culminating in what will, in less than 9 months time, be the only independent medical school in the UK.

Professor Mike Cawthorne



Professor Mike Cawthorne, Head of the Medical School .

For admissions enquiries please contact Stephen Maden via medicine-admissions@buckingham.ac.uk

Newsletter Editor: **Lucinda Roberts-Holmes**

Contributing Authors: **Professor M A Cawthorne, Helena Kealey, Dr Samantha Crimmin, and members of the Milton Keynes NHS Foundation Trust to Contributing Authors.**

World Experts Gather for Congress on Obesity and Clinical Treatments

Kuala Lumpur, Malaysia

Professor Jon Arch, Dean of Science at the University of Buckingham presented *Pharmacotherapy – The Options* at the 12th International Congress on Obesity in Kuala Lumpur, Malaysia last month.

Around 1,100 clinicians, policy makers, scientists and UN representatives had gathered for the conference. Professor Arch's lecture described both the limited pharmaceutical options available to obese patients in most of the world and how very few US patients use the two drugs that have been recently approved in their country, many preferring a 44-year-old drug (phentermine) that has been withdrawn in much of the rest of the world.

Professor Arch went on to illustrate the limited efficacy of the available drugs, but pointed out that average weight loss is in the same range as that achieved with various types of diet. He discussed research targeted at brown adipose tissue – noticeably present in limited amounts in the

bodies of obesity sufferers. To be useful, new drugs will need to increase the amount of brown adipose tissue in obese patients as well as activate it to burn off fat. They will have to have advantages over exposing oneself to colder temperatures or eating spicy food, which both activate brown adipose tissue and have not yet been proven to be of benefit in the treatment of obesity.

"It was a real honour to be invited to speak by my colleague, Professor Paul Trayhurn, who chaired the International Scientific Committee," said Professor Arch, "the sharing of ideas and knowledge in all the areas of expertise should give a boost to obesity research and clinical practice alike."



Professor Jon Arch,
Dean of Science and
Medicine

Is Reversing the Ageing Process a Reality?



Dr Aubrey de Grey, Chief Science Officer SENS Research Foundation

"Given sufficient research funding, we can stop ageing within the next 30 years" announced Dr Aubrey de Grey at a public lecture in the Radcliffe Centre, Buckingham on 27 February.

In order to grow old and remain in good health, argued Dr de Grey, we have three options. We can try to prevent our metabolism from producing harmful by-products, we can find a way to clean up these by-products, or we can deal with the consequences of the accumulation of damage over time. Medicine has mainly focussed on the third option, dealing with the consequences

of ageing related diseases such as dementia, cancer and diabetes.

Soon, argued Dr de Grey, regenerative medicine will target therapies at the cellular, rather than organ level. If our cells are always in optimal shape we may not need to replace our organs.

"As it currently stands, the best chance for you to reach 100 years

of age is sushi, sleep and a whiskey a day", commented Avjit Guha Roy, PhD student at the University of Buckingham.

With more research concentrating on regenerative medicine we could finally see ourselves not only living to ripe old ages but doing so in full physical and mental health.

Staff Feature

In every issue we'll introduce you to a member of the Medical School Faculty and ask their views on current affairs in their specialist field

Professor Stewart Petersen

Professor Stewart Petersen is the Director of Medical Education and has overall responsibility for undergraduate medical education at the University of Buckingham. He is chair of the Curriculum Executive, and responsible for the MB ChB curriculum.

Q: What makes a great medical school?

Being focussed on two things: first, the students, and ensuring that they have a good experience, and second the patients, so that we produce good doctors that will look after patients. Everything you do in a medical school impacts on patients down the line and we must never forget that.

Q: What kind of person should study medicine?

The formal answer is we're looking for people who have the capacity to undertake Good Medical Practice, as prescribed by the GMC in its document of the same title. (http://www.gmc-uk.org/guidance/good_medical_practice.asp).

Essentially, what we're looking for is the intellectual capacity to handle complex and uncertain information, the human capacity to be able to handle distressed people, the moral capacity to be able to do the right thing, and the personal resilience to cope with situations that are often challenging. Medicine is demanding and only suits some people.

Q: Work force planning is the most difficult thing for a government to achieve. This is a new era of taking time off work, feminisation of the workforce and many other changes. Discuss.

The problem here is that there is a very different timescale in changes to service provision and the amount of time that it takes to train a doctor, which is ten years. The NHS is changing on a much faster scale than that, and it's therefore extremely difficult to predict what a future work force might need. A good undergraduate degree should focus on educating rather than training its students, which will allow them to be adaptable and flexible professionally as service patterns change. Historically this is what medical schools have been about, but we're losing that. As it is now, we run the risk of training people for jobs that will disappear in five years time. The NHS thinks this is what it wants, but it isn't.

Q: Where does the research/teaching balance lie for students and teachers?

It's critical that any doctor understands the importance of research as they have to be able to make judgements on evidence and be familiar with the research methods used. However, they don't have to become trained research scientists in order to do this.



Professor Stewart Petersen, Director of Medical Education

Regarding teachers, the medical educational role requires particular expertise. For many people this is not compatible with research at the highest level. In order to achieve highly at research you need to give almost all of your time over to it. For a good medical school to work therefore you need both full time, high quality medical educators and researchers who have a smaller number of teaching hours to leaden the medical course and inspire future medical researchers.

Q: What is Buckingham doing different from the state sector and why should students study here?

Buckingham is working to the same standards as the state and will produce doctors as competent as anywhere else. We are, however producing new doctors at no cost to the UK exchequer. Furthermore, we will be more student-focussed than other medical schools – we have to be. Our School is focussed around medical education, not research.

Q: How can Buckingham make a positive contribution to patient care?

Well, the first obvious answer is by producing good doctors. But, further to that, the educational transformation of having a medical school linked to local NHS Trusts will be substantial. Research shows that local services improve greatly, and that the impact for patients in places where students are placed is enormous. Healthcare in the local area should improve substantially.

Bespoke Database for MB ChB Students

Applied Computing research students from the University of Buckingham are setting up a fully integrated and comprehensive MB ChB database. The database will integrate all aspects of data collection from assessment, quality, student support, placements and equality.

It will enable the collection of many different types of data, such as scanned images, narrative data, and feedback.

In medicine students have to accumulate evidence of their progression which can come, for example in the form of handwritten notes from a consultant.

“To our knowledge, no other medical school has a fully integrated system such as we’re planning”, said John Clapham COO.

Landmark Progress Towards Breast Cancer Treatment

A research fellow and a PhD student from the School of Science and Medicine at the University at Buckingham have both been championed as great success stories following their performance at the Bioinformatics and Bioimaging 2014 Conference in France.

Dr Maysson Al-Haj Ibrahim presented her cancer diagnostic paper, *Rational Identification of Prognostic Markers of Breast Cancer*; and PhD student Osman Sharif Osman presented a poster articulating new methods of analysing collagen in the skin.

Dr Ibrahim was also invited to chair a session at the conference, where 150 experts in bioinformatics and bio-imaging had gathered for the four days.

Dr Ibrahim's presentation in particular struck a chord with the programme's co-chair who told Dr Ibrahim that, "we need the level of vibrancy and enthusiasm that you bring to the field", and invited her to become part of next year's Bioinformatics Conference Programme Committee.

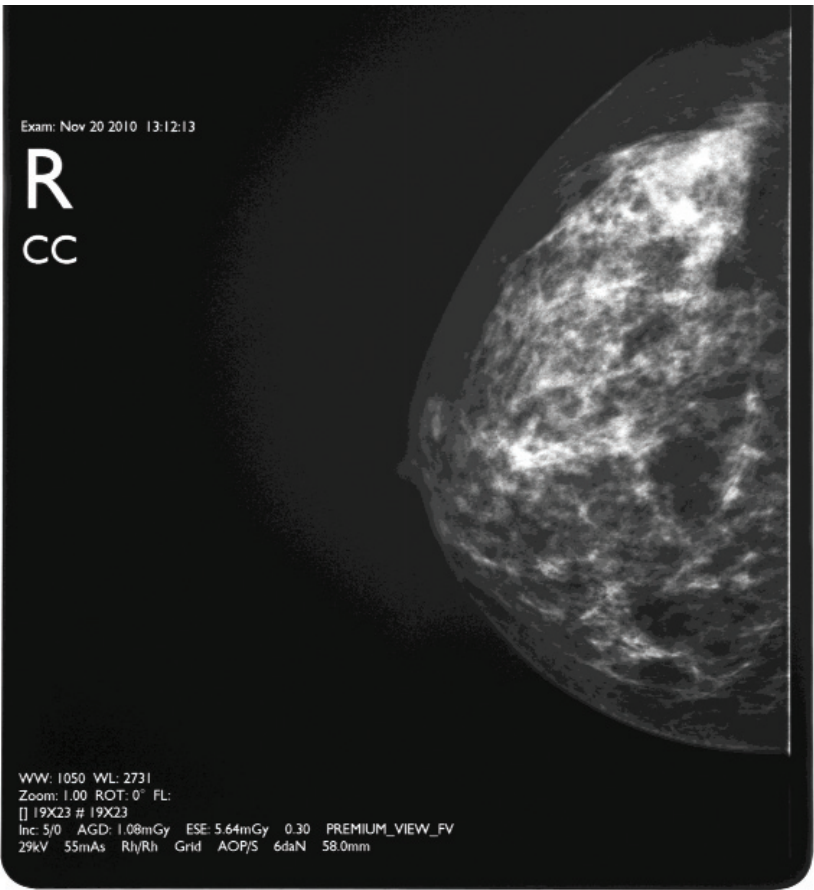
Dr Ibrahim's research centres on biomarker identification. She has produced a method for the detection of cancer relapse that has fewer false negatives than the current tests used in hospitals today. In practise, Dr Ibrahim's work could spare a greater number of cancer sufferers from un-necessary treatment, and ensure that fewer people are over or under-treated.

Speaking about the conference, Dr Ibrahim commented, "The conference was very informative and well thought out. Presentations and posters were interesting as they covered different up-to-date topics in bioinformatics. It was a great opportunity to present my latest work and discuss it with international experts in the area."



Dr Maysson Al-Haj Ibrahim

Collaboration Will Lead To Improvements in Surgery for Breast Cancer Treatment



A revolutionary method for targeting breast cancer tissue has come out of the University of Buckingham's scientific collaboration with Milton Keynes Trust and the Open University.

Amongst the other collaboration projects, the researchers and clinicians from the three institutions have produced a new photosensitive cancer drug.

This technology will enable doctors to focus a specific type of chemical compound with extreme accuracy on the cancerous breast tissue, increasing the accuracy of surgery and leave the healthy breast untouched. It is believed that this will significantly reduce the side effects experienced by

patients and allow many to avoid multiple episodes of surgery as well as minimising the extent of breast cancer surgery.

This photodynamic cancer research project has been spearheaded by Mr Kian Chin, Breast Cancer surgeon at Milton Keynes Trust and Dr Jon Golding, Senior Lecturer in Health Sciences at the Open University and Milton Keynes Trust. A small start-up pilot project exemplifying the new technology will shortly be

embarked upon in Milton Keynes Hospital. It is hoped that these advances will revolutionise breast cancer care.

In the UK, 1 in 8 women will be diagnosed with breast cancer in their lifetime

Healthy Breast Scan X-Ray Plate

A Look at Paediatrics

For many people, deciding on the right career can be tricky. But for some, like James Bursell, the choice was simple.



Having already decided to become a doctor, he was working his medical attachment in Bath when it became clear.

James explained: "I trained with someone called Dr Steve Jones and I saw how much fun it could be looking after children. It changed my life. Since then I've never wanted to do anything else. "It is a genuine privilege and honour to be able to look after someone's child. Someone is putting their most treasured possession in your hands."

As a consultant in paediatrics, James works with infants, children and young people up to the age of 16. Dealing with emergency situations, through to managing long term conditions, James has to combine a strong medical knowledge with a variety of other skills. James said: "We are looking after families, not just children. We need to understand that parents

need support too. But equally we must remember the child – it is very easy when you are explaining something to just talk to the parents. We need to keep the child involved as much as possible and appropriate. You have to work out ways of engaging – from a two-year-old to a surly 15-year-old. One moment you could be explaining a complex condition, and the next you may need to sit on the floor with a child and play with cars."

James started working at Milton Keynes Hospital in 2008 and has been the Head of Department since 2011. His specialist interest is diabetes, so he spends much of his time helping the 130 children locally with Type 1 diabetes. He's been helping to introduce new techniques to manage their condition more intensively – which results in far fewer complications when the children reach adulthood. He also works

closely with the hospital's diabetic nurses and the service's dedicated psychological support. For many young patients with long term conditions, visits to the hospital are a regular part of life. James said: "You can't manage something like diabetes without knowing about the child and their family. You need to understand the child to look after them properly."

"You get to see children grow up. Many parents see you as part of the child's life. Some even bring in photos to the appointment of their child's achievements, like sporting awards. It's great to see children going on to lead such a full life."

James has even used the paediatric service himself, when his wife was having their third child two years ago.

He explained: "We were booked for Stoke Mandeville, but asked to

come here. It was a very complex delivery, but obstetric consultant Dr Premila Thampi got a great team together. We were so well looked after. It's important to feel proud of where you work, and I do. "When I had children, the job did become more difficult. Empathy is a good thing, but you can't help thinking "it could be my child" who has cancer, or diabetes, or anything else. But it has helped me to give a more personal slant to discussions and advice. Sometimes parents ask "what would you do if it were your child" – now I can give an answer that is personal, and not just hypothetical."

The rest of James' time is spent interpreting lab results and investigations, explaining results to GPs and parents, supporting junior doctors, working with the nursing team, running an informal mentoring scheme for new consultants, helping other

departments understand the needs of paediatric patients and running an award scheme for staff who make the biggest contribution to the children's service. His next plan is set up closer working with schools in the Milton Keynes area.

He concluded: "It is no child's fault that they are unwell. Our priority is keeping them well, and while we do that we can also make it an enjoyable atmosphere for children, doctors and nurses, within reason. On every single ward round I'll be amused by something – children can be funny and entertaining – and that enjoyment makes it a better place for children to be."

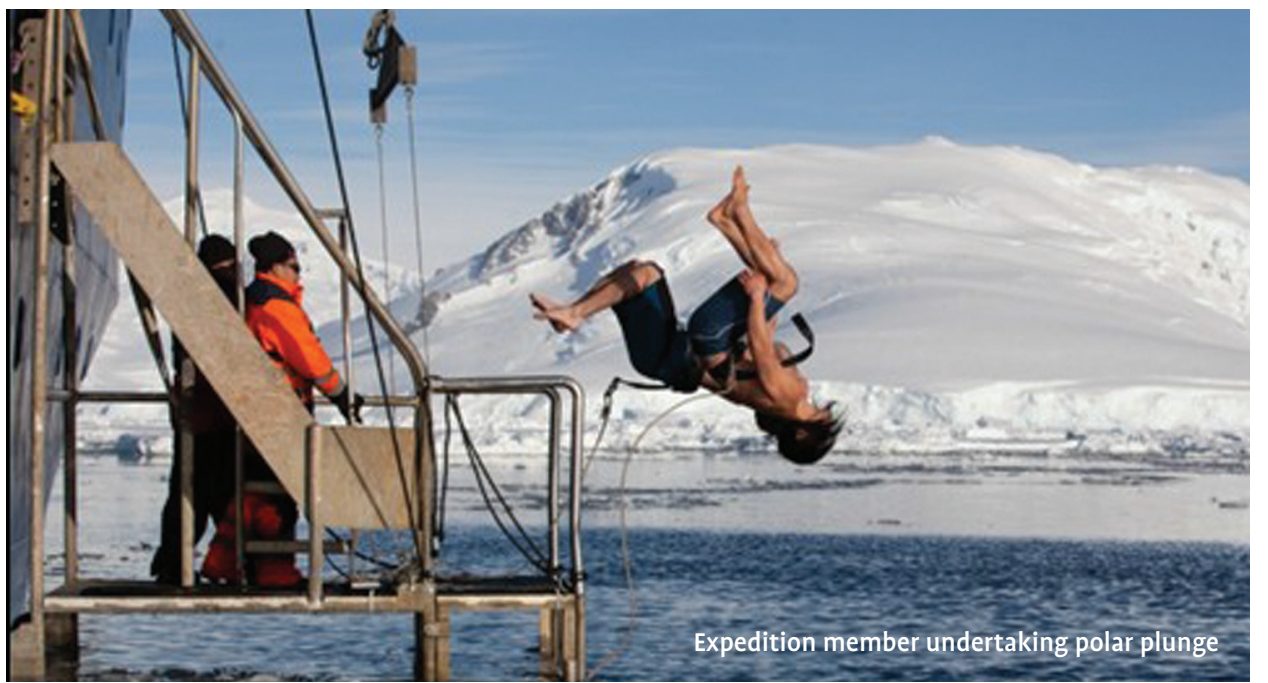
"On a daily basis parents are very grateful of what we do here. Every day I can go home knowing we've provided high standards of care."

Another Day in the Office: Polar Medicine

Samantha Crimmin qualified as a doctor 2003 and started working towards a career in emergency medicine. In 2009 a love for travel and adventure led her to apply to work for the British Antarctic Survey. She spent two years working with them, including spending one winter on the sub Antarctic island of South Georgia.

Since leaving the British Antarctic Survey in 2012 she has returned to the island, working for the government of South Georgia and for Quark. In 2013 she started working in the Arctic, initially in Svalbard and Greenland. Later this year she will be going to the North Pole.

She currently divides her time between working as a locum emergency medicine registrar in Milton Keynes Hospital and an expedition doctor in the Polar Regions for tourist, conservative and government projects.



February 18th 2014

My alarm goes off at 4:30 am. An early start today as I am currently on a ship that is South of the Antarctic circle and we have a full day ahead. I am working as the doctor as part of the expedition team for Quark, one of the largest polar tourism companies.

The plan for the morning is to take our 114 passengers on a sunrise zodiac (small boat) cruise around a spot called Cierva Cove. I get up and make my way up to the bridge, the expedition leader is there with the captain looking at the weather. Even though we are in a scheduled location with high snow covered peaks all around us, the wind is blowing snow sideways at 50 knots and the water is being whipped into waves that are crashing into the sides of the many tabular icebergs. No morning cruise today so I head back to bed.

About six hours later I get up again, listen to our ornithologist, Santiago give a lecture on seabirds and have seen a couple of passengers who are anxious about seasickness. The weather is bright sunshine and we are sailing through a wide channel called the Gerlache Straight. The area is well known for whales so the whole of the expedition team are out on deck with binoculars looking to spot one. As always it's Jimmy, the marine biologist who sees them first. The captain slows the ship and we stop right up close to a group of Orca. They don't seem bothered by our presence and we are treated to half an hour of

watching them surface and dive.

We would have stayed longer but our destination for the day is the Gullet, a spectacular narrow channel that is usually choked full of ice. The ice charts the ship has been receiving by satellite on a daily basis show that it has begun to clear so our expedition leader has decided to try and go through. If we manage it, we will be the first ship in a few years to do so. The whale watching ends and I head down to the lecture theatre / bar that is the main gathering spot. I have a talk to give. Nothing to do with medicine, this morning I am teaching wildlife photography and I have a full house!

Its early afternoon as we finally approach the Gullet. Despite the charts predictions there is still a lot of sea ice in the area. The sky is now completely cloudless and the scenery is spectacular, so all of the passengers and expedition staff are out on deck. We are surrounded by pack ice. Its first year sea ice, large flat pancakes of soft ice and snow that are packed so close together that not much water can be seen between.

In the distance we can make out a line of hills and the pair of peaks, which marks the narrow sea channel we are aiming for. Our ship is ice strengthened and has the ability to push through this new ice so the captain decides to go for it, in spite of the obstacles.

The next few hours are some of the most memorable of my polar career to date. In perfect weather

we push through sea ice, avoid bergs, watch the penguins and seals lounging on the floes. We make it closer and closer to our destination until at about 7pm we decide to stop. We could have made it but our progress was slow and going all the way we would have affected our plans for tomorrow.

Our current position, at 67°15S, provides the perfect spot for the polar plunge. On every trip we offer our passengers the chance to jump into the Polar Sea, the more intrepid take us up on this option. This time I will not be joining them, I've done it before and I like to brag that the first time I did it was in midwinter whilst working with the British Antarctic Survey, none of this summer time swimming. But actually as the doctor I am on stand-by in case of a medical issue and this time I have a dual role, I am also event photographer. I check my medical kit and make double sure the defibrillator is on close by then hop into a zodiac (a small inflatable boat) to be in position with my camera. Our adventurous passengers jump from the rubber side of the boat with a harness in place then climb back out. The first to go, a respectable business man in his sixties, takes off his swimming trunks and jumps au naturel. I'm not sure whether to snap away or not! We have thirty three polar plungers and he isn't the only one to go naked.

Tonight I forgo food staying out on deck watching the sunset over the floes.

Tomorrow our passengers will visit an Adelie and Gentoo penguin colony, climb to a high spot overlooking a spectacular glacier and partake in a sunset hike to a chinstrap rookery. The expedition team and myself will guide them, drive the boats and in the evening partake in some crevasse rescue training next to the chinstraps. I may not say the same tomorrow, but for today I have the best job in the world.

