Spotlight
Your Department’s Newsletter

Spotlight
Welcome to the 5th edition of Spotlight, the newsletter for NDM staff and students. We aim to publish four newsletters each year, one each quarter, which carry news items and updates from the Department. An electronic version is also available on the NDM website.

If you have any comments or news items, please contact the Athena SWAN Coordinator, Claire Worland: athena.swan@ndm.ox.ac.uk.

Working for NDM
www.ndm.ox.ac.uk/working-for-ndm

Francois Nosten wins science diplomacy award

In recognition of his 35 years of work fighting malaria in the conflict zones of the Thai-Myanmar border, and bringing Karen and Burmese representatives around the same table to discuss malaria elimination, François Nosten, director of the Shoklo Malaria Research Unit (SMRU), was awarded the 2014 TWAS Regional Prize for Science Diplomacy. The award comes with a USD3,000 cheque that will go towards SMRU finances.

Winners of NDM Photography competition announced

Many thanks to all those who entered the NDM photography competition. The images submitted were of a very high standard and will be added to the NDM image bank for use on our websites and merchandise in the future.

The overall winner, for his image of osteoclasts was Clarence Yapp. The judges were really impressed by this image and felt that it was visually striking and that it really captured the ‘Endeavour, Discover, Inspire, Engage’ motto of the Department. The primary function of osteoclasts is to reabsorb bone as part of the body's way of maintaining a healthy skeletal system. The picture is a confocal microscopy image of human osteoclasts differentiated from monocytes with the multi-nuclei in blue and actin-ring in green.

Osteoclast by Clarence Yapp, TDI
Candidate Ebola treatments

Investigational Ebola treatments are being tested in West Africa for the first time as part of an international initiative to fast-track trials of the most promising drugs, for the disease that has already led to over 2,600 deaths.

A £3.2 million grant from the Wellcome Trust is enabling multiple partners around the world, including the University of Oxford, to quickly establish clinical trials at existing Ebola treatment centres. Dr. Peter Horby of Tropical Medicine and Global Health and ISARIC is leading this initiative to allow candidate Ebola treatments to be assessed rapidly in patients so that those proving safe and effective may be adopted for use as soon as possible. Dr Horby is leading a four-strong group aiming to fast-track trials at treatment centres in West Africa.

A recent article in the Guardian newspaper follows the work of the group: www.theguardian.com/world/2015/feb/17/ebola-race-find-cure

Booster Ebola vaccine enters 1st trials

The first results from the Ebola vaccine trial carried out by the Jenner Institute team led by Professor Adrian Hill found that the vaccine has an acceptable safety profile at the doses tested, and is able to generate an immune response. Professor Adrian Hill said 'The vaccine was well tolerated. Its safety profile is pretty much as we had hoped.' 60 healthy volunteers were vaccinated at the Jenner Institute between 17 September and 18 November.

The NEJM paper reports safety data and immune responses for the volunteers for 28 days after immunisation. Follow-up of the vaccines will continue beyond these initial data until six months after the volunteers received the experimental vaccine.

After these encouraging initial results from the Ebola vaccine trial in Oxford, clinical trials of the vaccine began in Liberia on 2 January.

For more on these news items please visit: www.ndm.ox.ac.uk/latest-news/1 www.ox.ac.uk/current-medical-alerts
The NDM Book
The NDM book was launched on Thursday 9 October. The book provides an overview of the Department's history, highlighting impact stories and scientific achievements.

Electronic copies will be available shortly.

“In her footsteps” podcasts
“In her footsteps” is a podcast series that allows leading women in the Department to interview each other about their inspiration for pursuing research, as well as how they balance the demands of work with their home and family lives, and their interests and pursuits outside the lab.

Please see www.ndm.ox.ac.uk/in-her-footsteps

Athena SWAN: Going for Silver!
Following our successful Athena SWAN bronze award, in 2013, and to demonstrate our continued commitment to our staff and students, NDM submitted an Athena SWAN silver application on 28 November 2014. Thank you to everyone for your hard work. We wouldn't have been able to get to this point without the support of the whole Department and the enthusiastic uptake of the Athena SWAN principles and initiatives.

We expect to receive the outcome of our submission in May 2015. Watch this space!

Athena SWAN information: www.ndm.ox.ac.uk/athena-swan

2015 Staff and Student Survey
The 2015 staff and student survey will be circulated on Monday 13 April. We would greatly appreciate if you could take some time to provide your feedback.

We value your continued engagement with the survey process as it provides us with essential information on which to base changes to the Department. The information gathered in previous years has been vital in highlighting where positive changes have been made, the strengths of our Department, and also in identifying areas that require some additional focus or improvement.

Graduate Research Prize Winners Autumn 2014
Congratulations to the autumn 2014 student prize winners. The Graduate Studies Committee awards prizes each year to current or recently graduated students of NDM supervisors on the basis of their publication record, the impact and novelty of their research, references, and the impact of their research within the Department.

Joannah Fergusson (Paul Klenerman, ExpMed)
Richard Maude (Lisa White, TropMed)
Joel Meyer (Helen McShane, Jenner)
Daniel Puleston (Katja Simon, ExpMed)
Anna Seale (Jay Berkley & Derrick Crook, TropMed)
Casmir Turnquist (Xin Lu, Ludwig)

Read their stories: www.ndm.ox.ac.uk/student-profiles
The official UK-wide assessment of all university research, the Research Excellence Framework, found that Oxford has the largest volume of world-leading research in the country. This research sets other academic agendas around the world. The University is also rated top in the REF power rankings published by Research Fortnight.

The University submitted 2409 members of Oxford’s academic staff, researching in 31 academic areas. The assessment panels rated 48 per cent of the University’s research in the top 4* category while 39 per cent more was rated 3*. Clinical Medicine ranked top for the overall quality of submissions along with Public Health Service, and Primary Care and Psychology, Psychiatry and Neuroscience.

Professor Alastair Buchan, Head of the Medical Sciences Division commented “Oxford Medical Sciences continues to be a world leading research centre, as today’s REF 2014 results confirm. I would like to personally thank all our staff for their contributions to this result. We should all be very proud to be associated with this achievement.”


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**NDM staff in collaborative research projects with Pfizer**

The University of Oxford has announced that the first collaborative research projects to be agreed by the University under the Pfizer Rare Disease Consortium have been signed. The collaborations are the result of a strategic alliance to develop new treatments for rare diseases which was put in place by the University of Oxford, Imperial College London, University College London, King’s College London, Queen Mary University London, and Cambridge University. Acting through GMEC Pfizer will be collaborating with the University in haematology and neuromuscular disorders. Michael Skynner, Head of Rare Disease Alliances, Pfizer, says “I am delighted to see concrete output from the first Pfizer Rare Disease Consortium call for proposals with GMEC, in the form of three funded research proposals at the University of Oxford. I look forward to a close scientific interaction between Oxford and Pfizer over the next three years”.

Congratulations to the successful Principal Investigators, including Dr Simon Draper from the Jenner Institute and Dr Wyatt Yue from the Structural Genomics Consortium.

We wish them good luck for their research!
The University of Oxford celebrated National Apprenticeship Week from 9-13 March 2015. Matthew Hancock (MP) Minister of State at the Department for Business, Innovation and Skills met with 14 of the University employed apprentices including NDMs very own Sophie Jamieson. The event at Exeter College was in recognition of the success of the apprenticeship scheme to date which is gaining momentum and also Oxford University’s commitment to expanding the number of apprentices to 150 over the next 2 years.

Reflection from Sophie Jamieson – NDM apprentice laboratory technician

I started my laboratory technician apprenticeship in September 2013 after leaving school in July. I was 17 years old and felt extremely nervous but all my new colleagues were very welcoming, friendly and happy to help me out when I needed support! The first leg of my apprenticeship was in the Jenner Institute where I began learning all the basic laboratory skills, I was sent on all the necessary University Safety training courses and started doing my level 2 Applied Science at Abingdon and Witney College every Wednesday.

Reflecting on the past 18 months, I have been lucky enough to gain experience and knowledge from many different units. I have worked in the Structural Genomics Consortium, Ludwig Institute for Cancer Research, Jenner Institute and I am currently placed in the Centre for Clinical Vaccinology and Tropical Medicine (CCVTM) learning about the support required for clinical trials. I believe by moving around all these different units I have been given an amazing experience of seeing how different units in Oxford University work and fit together.

I have completed my level 2 Applied Sciences (which I passed with distinction) and my NVQ in level 2 in Laboratory and Associated Technical Activities. I am now working towards my level 3 at college which will be completed by summer 2016. In the next two months I will be moving to the Clinical BioManufacturing Facility (CBF) where hopefully I will carry on learning new skills within a highly regulated quality environment. For the next 18 months I’m looking forward to gaining more experience, learning as much as I can and hopefully achieving my qualifications to the highest standard.

I believe more young people should consider apprenticeships as an alternative route to furthering their education as from my personal experience it has been a great way to gain qualifications while also achieving an in-depth understanding of the work place! I am very thankful for being given this opportunity and can’t wait to see what the next 18 months are like.
NDM takes part in Oxfordshire Science Festival 2015

NDM was a principal partner of the **2015 Oxfordshire Science Festival** and took part in a number of events over the festival, which ran from 4 to 22 March.

On 6 March, The Jenner Institute, in partnership with the British Society of Gene and Cell Therapy, Oxfordshire Science Festival, the British Society for Immunology and NIHR BRC held a **free one day event about vaccines and diseases** at the Museum of Natural History. The programme was a mix of interactive stalls and talks about diseases and the immune system. Research happening within NDM was represented by stalls at the event and **Professor Paul Klenerman**, **Professor Helen McShane**, **Professor Adrian Hill** and **Dr Sumi Biswas** all gave talks about their research.

NDM also had stalls at two science fairs: **Science in Your World in Bonn Square** (7 March) and **ATOM in Abingdon** (21 March). These interactive sciences fairs had hands on activities for all ages demonstrated by staff and students from the Department.

In partnership with Diamond Light Source NDM held a **science film night** on 8 March at the Old Fire Station. The NDM produced mini-series ‘**Revolutionary Biology**’ and the Diamond Light Source produced short documentary ‘The Braggs’ Legacy’ were shown. After each film a panel of scientists (including NDM’s **Professor David Stuart** and **Professor Yvonne Jones**) took questions on X-ray crystallography, structural biology and the role of women in science.
On 2 March 2015, the Structural Genomics Consortium (SGC) welcomed 23 secondary school students and 5 teachers from the Collège Georges Politzer of La Courneuve (north of Paris) in France. The students' time in the SGC was part of a two day visit to Oxford, which included time at Diamond Light Source and the Natural History Museum, to learn more about areas of research and career opportunities in the sciences. Dr Romain Talon, a post-doctoral scientist in the Protein Crystallography group at the SGC, played a pivotal role in organising the visit to the SGC and Diamond, due in part to the strong links between the Protein Crystallography and Diamond teams. With help from Dr Charles Parkins in the ORCRB and other SGC staff on the day, Dr Talon took the students around the SGC's structural biology labs, and enjoyed getting the students on to the SGC's computers to see for the first time what a protein is. The students learned more about molecular biology, biochemistry and crystallography and peppered Dr Talon with questions! To show their appreciation after the visit the students sent Dr Talon a song using all the keywords they learned during their visit. Reflecting on the visit and feedback Dr Talon remarked that it was a great experience for them… and for him!

Collaboration between the SGC Px team and Diamond

Since 2012, Dr Frank von Delft, Principal Investigator for Protein Crystallography in the Structural Genomics Consortium (SGC), has been sharing his time between Oxford and Diamond Light Source to make screening for fragment compounds by X-ray crystallography available to a larger user community. "Fragment-based" screening is the purest form of rational drug design: identify small compounds that bind weakly, investigate how they bind, and synthesise better compounds, aiming eventually for drug-quality binding. Finding weakly binding compounds in the first place is difficult. Although X-ray crystallography is the gold standard technique, it has historically been far too much work to be used routinely.

Dr von Delft decided to turn this technique into something fast, routine, and widely available to anybody who needed it. He took on oversight of one of the “beamline” experimental stations (I04-1) at Diamond and brought together his SGC and Diamond groups to form a research partnership focused on expanding the existing throughput capacity and capability of I04-1. Reengineering the beamline, and deploying technologies developed at the SGC the groups have worked together to create a facility at Diamond where users can now test up to 500 compounds within 24 hours - the first facility of its kind world-wide. The facility has been tested with nearly a dozen projects, including projects from non-SGC and industrial groups, and hits are now progressing into medicinal chemistry projects. It is ready for full access to all users, and is now being rolled out – the first shared success of the partnership between Diamond and the SGC. Dr von Delft expects that this technique will continue to develop new innovations that benefit crystallographers.
A taster of the latest news from our Units

For the latest news from across NDM, please see: **www.ndm.ox.ac.uk/latest-news**

**Tropical Medicine & Global Health**
Recent reports suggest that artemisinin drug resistance is emerging and spreading in many parts of the Asian Mekong region. “The identification of the K13 markers of resistance has transformed our ability to monitor the spread and emergence of artemisinin resistance,” says **Professor Philippe Guérin**, Director of the Worldwide Antimalarial Resistance Network (WWARN) and co-author of the recent **study** by NDM researchers published in *Lancet Infectious Diseases*. “However, this study highlights that the pace at which artemisinin resistance is spreading or emerging is alarming. We need a more dynamic international effort to address this issue in border regions.”

Further details and Unit news: **www.tropicalmedicine.ox.ac.uk/news**.

**Experimental Medicine**
Professor John Frater is one of the authors of an Oxford based collaboration who have shown that the HIV virus is being ‘watered down’ as it adapts to our immune systems. By comparing the virus from Botswana and South Africa, where HIV arrived a decade later, the Oxford team discovered HIV’s ability to replicate is 10% lower in the Botswanian strain. This work has been reported nationally on the BBC.

Further details and Unit news: **www.expmedndm.ox.ac.uk/news-seminars**.

**Old Road Campus Research Building**
**Professor Xin Lu** from **Ludwig Cancer Research** led a team of researchers looking at how a protein, iASPP, might be involved in the growth of tumours. They found that it has a surprising role in regulating the ‘glue’ that holds heart cells together, a finding that may explain how a gene defect could cause sudden cardiac death.

Further details and Unit news: **www.jenner.ac.uk**, **www.ludwig.ox.ac.uk**, **www.thesgc.org/scientists/groups/oxford**.

**NDM Research Building**
Dr Roman Fischer and Professor Benedikt Kessler, from the TDI, participated in a collaborative study which resolved pieces of a nearly 200-year-old evolutionary puzzle surrounding the group of mammals that Charles Darwin called the “strangest animals ever discovered”. The new research, published in *Nature* and based on fossil protein sequences, shows that South America’s so-called “native ungulates” are actually related to mammals like horses rather than the elephants and other species with ancient evolutionary ties to Africa as some taxonomists believed.

Further details and Unit news: **www.ndmrb.ox.ac.uk/home**.

**Wellcome Trust Centre for Human Genetics**
The largest studies to date of genetic links to obesity and body-fat distribution have discovered more than 140 locations in the genome that play a role in obesity traits. These studies, published in *Nature* on 11 February 2015, have shed new light on the biological pathways important in controlling metabolism and appetite. The participants in the GIANT (Genetic Investigation of Anthropomorphic Traits) consortium, which carried out the studies, include Cecilia Lindgren, Mark McCarthy and members of their groups at the WTCHG.

Further details and Unit news: **www.well.ox.ac.uk/latest-news**.