

REMEDY

Tackling a global threat:
*Antibiotic resistance in
neonates in Africa and
South Asia*

Inside:

In conversation with our alumni

Promoting mental health and wellbeing in schools

Welcome

Welcome to the twenty fifth edition of ReMEDy



As mentioned in edition 24, ReMEDy is now being sent digitally to the School's alumni. Please remember that it's never too late to update your contact details and so if these have changed or you have a new email contact address visit: www.cardiff.ac.uk/alumni-update

This research themed edition of ReMEDy focuses on the work of the BARNARDS

team, led by Professor Timothy Walsh. BARNARDS (Burden of Antibiotic Resistance in Neonates from Developing Societies) is a project which aims to investigate the effects of antibiotic resistance on neonatal morbidity and mortality in low to middle income countries. Since this project began it has helped to minimise the impact of this growing global threat and already has had a significant impact on the mortality and morbidity in Africa and South Asia.

The C21 Update highlights the excellent work of the student led Cardiff University Research Society (CUREs). Paul McEnhill, President of CUREs provides a snapshot of wide ranging research initiatives that CUREs lead on and is involved in, including hosting in partnership with INSPIRE this year's National Intercalators' Research conference.

In this edition, we put the spotlight on the Wales Kidney Research Unit team

who recently marked World Kidney Day on 10th March by teaming up with the Kidney Wales Foundation and nurses and members of the renal and transplant units at UHW to draw attention to the need for a "Healthy Lifestyle for Healthy Kidneys."

Finally, in March the School hosted the 23rd annual Science in Health Live event which was a huge success. I would like to take this opportunity to thank Dr James Matthews, the Public Understanding of Science in Health team and all staff and students involved in staging this two day event for approximately 800 year 12 students. The School of Medicine is very proud of this event and, particularly, the impact and positive influence it has on young people's lives.

I hope you enjoy this edition.

Professor Ian Weeks
(BSc 1976, PhD 1980, DSc 2009)
Acting Dean, School of Medicine

C21 update : CUREs

To fit in with this Research themed edition of ReMEDy, Paul McEnhill, 4th year medical student and President of the Cardiff University Research Society (CUREs) was invited to provide an update on the work of CUREs.

CUREs is a society run by medical students for medical students. Created in 2012, it aims to provide opportunities to any medical student who is interested in research. These opportunities range from one day taster sessions in a lab to two month fully funded research projects during the summer break. In addition to research placements CUREs also offers opportunities throughout the year such as short duration projects, which students can carry out during their hospital attachment and courses such as the Academic Foundation Programme (AFP) preparation weekend aimed at 5th year students.

Paul describes: "One of our other aims is to try and remove the mistrusts surrounding medical research that

discourage student engagement. We do this through working with the medical school to encourage uptake of projects, holding talks on research skills such as poster design. Our new initiative 'bedside to bench' is a series of talks whereby there is teaching in a core clinical topic such as osteoporosis, a skill such as interpreting bone scan results and then framing it in a research context by inviting a speaker at the forefront of their field to discuss their research related to the theme of the evening."

CUREs takes part in large scale studies, notably the All Wales Sepsis study, where CUREs members collaborated with clinicians to recruit medical students to audit sepsis care over 24 hours across 15 hospitals in Wales. This study was recently published in the PLOS one Journal and has been cited in the NCEPOD report 'Just Say Sepsis!'

Over the years CUREs have hosted many events in addition to the annual research symposium. The flagship of these was

hosting the National Student Association of Medical Research (NSAMR) conference in February 2015 that was livestreamed to other medical schools across the UK. This year, in partnership with INSPIRE, CUREs are hosting the National Intercalators' Research conference in October, which will serve as a platform for those who wish to present their dissertation research or learn more about undertaking an intercalated degree. If you would like more information on CUREs please visit cures.cardiff.ac.uk. If you are an academic/clinician and you would be interested in offering a project of any duration or speaking about your research please email:

CUREs@cardiff.ac.uk



In conversation with our alumni: Dr Samantha Cox (nee Currie) MBBCh 2006, MRCP, FRCR



Samantha is a ST6 Clinical Oncology registrar working at the South West Wales Cancer Centre at Singleton Hospital, Swansea. Samantha lives in Cardiff with her husband and two children. A typical working day is spent reviewing patients with upper gastrointestinal malignancies, both on the wards and in clinic, prescribing systemic anti-cancer treatments and planning radiotherapy.

In conversation with Samantha, she explains her reasons for choosing Cardiff School of Medicine: "I remember visiting Cardiff for the first time on an Open Day in 1999 and having a really good feeling about the place. It seemed to be a friendly and exciting city, easily accessible and somewhere I could see myself being happy for the next five years.

I liked the format of the curriculum, with placements across Wales and that anatomy was taught using human dissection. Little did I know that I would meet my husband-to-be over the dissection table!"

Samantha recalls some of her most memorable times as a Cardiff medical student: "In the early years it was trundling down Colum Road in the rain for long days of lectures in BioSci given using overhead projectors, essays saved on floppy disks, my first mobile phone bought on a lunch break, fry-ups in the

main university building canteen and catching the yellow double-decker bus from the Union back to Talybont Halls singing 'Build Me Up Buttercup'. Clinical placements wearing creased white coats on ward rounds, nervously presenting the findings of a CXR held up to an x-ray box and scrubbing into theatre for the first time only to touch my glasses and have to re-do it all again. Thursday nights in the Philharmonic and Caroline Street aka 'Chippy Alley'. Making the most of placements in Singleton Hospital playing frisbee and having BBQs on the beach in the summer. University trips volunteering in an orphanage in Belarus, skiing in Val Thorens, and an elective in Montego Bay, Jamaica all provide fond memories."

During her third year as a medical student, Samantha followed a patient during the course of his cancer treatment as part of the University's oncology project. This experience directly influenced her decision to become an oncologist and she explains why she finds this career so rewarding:

"Cancer treatments are becoming more successful and survival rates are improving. For example, major advances in state-of-the-art drugs are working their way into everyday clinical practice, enabling us to target the individual patient's cancer type. Technological advances in radiotherapy planning are allowing us to eradicate tumours more accurately and spare damage to normal tissues. It can be emotionally challenging in cases where a cure is not possible. However, we can often make a real difference by helping to improve symptoms and maintain a patient's quality of life."

Samantha says: I'm passionate about promoting Oncology as an exciting and rewarding career pathway. Despite the prevalence of cancer, many students and junior doctors do not have the opportunity to experience the specialty first-hand during their training. I'm now a tutor for the medical school's oncology project and have also established a foundation programme taster week programme at Velindre Cancer Centre during which juniors can spend a week shadowing consultants, to gain a better understanding of what it is to be an oncologist."

Immediately after graduating Samantha had F1 jobs in Palliative Care (Holme

Towers), Colorectal Surgery and Respiratory Medicine (Llandough Hospital). She bought her first house, her first car and had some pretty nice holidays! Samantha stayed within the Wales Deanery, completing core medical training and the MRCP and FRCR examinations. She currently works less than full time bringing up a young family. This summer Samantha will start a research fellowship in radiotherapy quality assurance for a national UK trial.

Samantha's shared alumni wisdom:

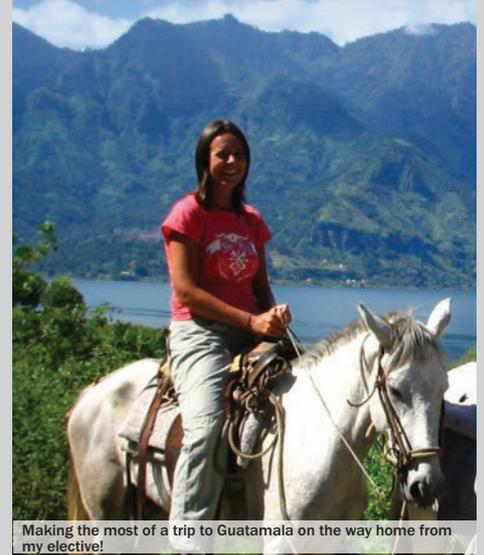
"Don't underestimate the importance of shadowing the junior doctors on the wards to learn the logistics of the job – it will make your first few months as an F1 a lot easier! ..."

"Being a doctor can be challenging but if you always try to care for patients in the way you would like your relatives to be treated, you won't go far wrong."

"Cardiff School of Medicine not only provided me with the clinical knowledge and skills to become a doctor, but also lifelong friends and fond memories."

Samantha's five words describing Cardiff School of Medicine:

Diverse
Friendly
Fun
Supportive
Sociable



Making the most of a trip to Guatemala on the way home from my elective!

In the Spotlight: Wales Kidney Research Unit/ Uned Ymchwil Arenol Cymru (WKRU/UYAC)

The WKRU was funded in 2015 by Health and Care Research Wales and aims to deliver an All-Wales strategy for the diagnosis, prevention, treatment and social context of kidney disease.

Kidney disease is common. About one in ten people in Wales have longstanding kidney disease, and about one in five people admitted to hospital have a serious problem with their kidneys as part of their illness. The WKRU provides core infrastructure enabling researchers, clinical staff, patients, families and carers to work together to answer important health and social care research questions related to kidney disease.

WKRU is built on internationally recognised research undertaken by investigators across Wales. WKRU connects expertise in each step of the translational pathway, from fundamental disease mechanisms and better diagnosis to improved implementation and health outcomes. This expertise connects to the core of WKRU, which is explicitly designed to include patients, families and carers, service providers and service commissioners, as well as researchers.

In its first year, members of WKRU made 12 successful grant applications worth £3.4 million, leading to the appointment of 12 new staff. In addition, 4 extra staff have been appointed through successful business cases to Welsh Higher Education Institutions and NHS organisations. New studies have started on family attitudes following the implementation of the new Human Transplantation Act (Wales), predicting cardiovascular risk in peritoneal dialysis, evaluating innate immunity and its regulation in peritoneal dialysis, biomarker expression in acute kidney injury and the regulation of extracellular matrix components involved in inflammation and fibrosis.

The Cardiff Centre of WKRU is led by Professor Donald Fraser (WKRU Director) and managed by Dr Chantal Colmont, who also runs the Wales

Kidney Research Tissue Bank. WKRU is a major research grouping of more than 20 researchers within the Division of Infection and Immunity, Cardiff School of Medicine. Research strengths include the molecular and cellular biology of renal and peritoneal inflammation and fibrosis as well as clinical trials in Acute Kidney Injury, Chronic Kidney Disease and Peritoneal Dialysis. These include the CREDENCE study, investigating new treatments for diabetic Nephropathy and SIGN, developing immunotherapies for IgA Nephropathy, amongst others. In addition, the Unit has strong international clinical links highlighted by the International Society of Nephrology Sister Center Program linking the WKRU with the renal units at Zhang Da Hospital, Nanjing, China and Tikur Anbessa Hospital, Addis Ababa, Ethiopia.

Although this feature focuses on the WKRU's Cardiff members, the Unit has an All-Wales remit which is part of a wider research family.

The Bangor Centre in the School of Social Sciences at Bangor University includes Dr Jamie McDonald (PI), Dr Leah McLaughlin (Research Officer) and Jo Mitchell (Research assistant) and is led by Professor Jane Noyes. Social care research is based in the School to support development of a programme of integrated health and social care research involving renal

patients, carers and families in Wales. A significant proportion of social care is also provided by Third Sector, not for profit organisations and public private partnerships, including Welsh volunteer organisations (Welsh Kidney Patients Association, People Like Us) and other kidney charities (Kidney Research UK and Kidney Wales Foundation) that are also WKRU partners.

The Department of Nephrology at Morriston Hospital was established in 1985 to provide a service for patients with renal disease living in South West Wales. This covers a relatively large geographical area extending from Bridgend and Milford Haven in the south east and west to Llanidloes and Machynlleth in the north. The Swansea section of the WKRU includes Dr Tim Scale (Clinical Fellow and Gareth Davies (Data Analyst) and is led by Dr James Chess. They use the SAIL (Secure Anonymised Information Linkage) databank to utilise routinely collected clinical data with advanced linkage analysis techniques to perform studies into the management of both acute and chronic kidney disease across primary and secondary care.

For further information please contact:
Dr Bob Steadman
steadmanr@cardiff.ac.uk
or visit: www.kidneyresearchunit.wales



Back row, left to right: Dr Tim Bowen; Ms Jennifer Holmes; Dr Soma Meran; Dr Chantal Colmont; Dr Alexa Wonnacott; Mr Glyn Morris; Dr Rob Jenkins; Dr Matthias Eberl; Mr Dan Smith.

Front row, left to right: Dr Bob Steadman; Dr Lucy Newbury; Mrs Kim Abberley; Dr Jerry Warden-Smith; Ms Amy Brook; Dr Adam Midgley; Mrs Cheryl Ward; Dr John Martin; Prof Donald Fraser.

Promoting mental health and wellbeing in schools: front-line innovation in Wales

A recent BBC School Report highlighted that 70% of 11-16 year olds say that they have had one or more negative feelings in the past year. This has led to urgent calls to action to transform mental health services in schools.

In Wales, improving student wellbeing is a key focus of the new curriculum review, commissioned by the Welsh Government, and is reflected in a ground-breaking piece of Welsh legislation: The Well-being of Future Generations Act 2015.

Researchers at the Wales Centre for Primary and Emergency Care Research (PRIME), the Centre for Trials Research (CTR) and the Centre for the Development and Evaluation of Complex Interventions for Public Health Improvement (DECIPHer), worked in partnership with staff, students and governors at Monmouth Comprehensive School to identify the key ingredients of a sustainable restorative approach that aims to enhance student health and wellbeing.

Senior leadership at Monmouth Comprehensive began to use the restorative approach in 2008 in response to increasing levels of exclusion among students. Staff members were also frustrated that their approach to behaviour management through the expectation of reward (merit systems) or fear of punishment (punitive systems) did not result in any meaningful change. The School wished to help students develop intrinsic motivation to make changes. **“...conflict is an opportunity to build community, rather than to punish and blame.”** – senior leadership.

The restorative approach develops a congruent model for building, maintaining and repairing relationships. Five core principles frame the school’s values and visions:

- sharing perspectives and listening to one another;
- exploring the link between thoughts and feelings and actions;
- understanding our actions have an impact;
- understanding that we have needs that connect us to purpose and

- the best people to find solutions are the people themselves.

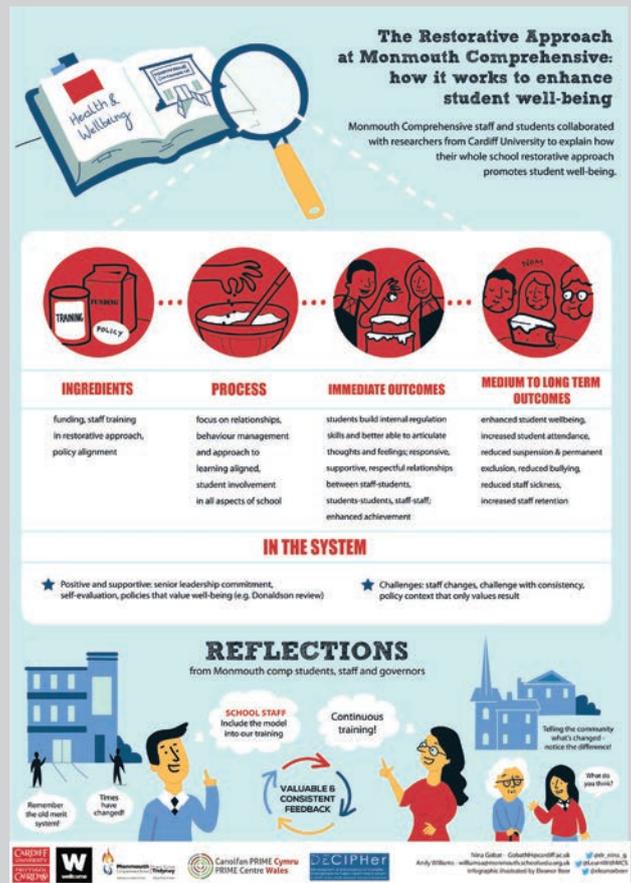
These principles when applied to pedagogy, curriculum design, leadership and relationships can transform the philosophy, behaviour and language of the school.

The adoption of the restorative approach at Monmouth Comprehensive School resulted in clear, measurable benefits such as increased student attendance and reductions in student exclusions, youth offending team referrals, anti-social behaviour in the community and staff absence. In 2015, it was the first state-funded Welsh school to receive the Restorative Service Quality Mark in recognition of their work.

“I’ve got a brother who is 5 years older than me but he came to this school as well and he’s told me stories about how there used to be fights every week and people would set off fire extinguishers... it doesn’t sound like our school now!” (Student)

Maintaining the approach needs ongoing monitoring, reflection and improvement. Student and staff groups change and it is important to keep the restorative ethos active through everyday interactions among staff and students. Lack of consistency and competing pressures of a results orientated culture are two of several challenges faced in continuing to deliver this approach. In November 2015, Andy Williams, Deputy Head, Monmouth Comprehensive, approached Cardiff University researchers with a request for guidance in evidencing and improving the approach at Monmouth Comprehensive.

A team of researchers, led by Nina Gobat, used a novel methodological approach by collaborating with stakeholders at the school to articulate how the approach was working, in a model that set out the underlying theory of change of the system-level intervention. This provided



theoretically grounded evaluation which could potentially be transferred to other schools.

Researchers interviewed the school’s senior leadership team and ran focus groups with staff, governors and students in April and June 2016 to understand their experience of the school. They also reviewed the literature on restorative approaches and examined documents submitted for the RSQM award. Findings were mapped to the model that sets out how the different components of the restorative approach were implemented in the school. When feeding back research findings to the school, researchers developed a simplified, visual overview of the model to stimulate discussion and debate about how the school can improve integration of the approach.

The impact of this research at the school has helped the school’s self-evaluation processes and the development of systems to support measuring wellbeing and inclusion. Another positive spin off for the school includes students learning about how research works, which will be especially useful for students doing their Individual Projects for the Welsh Baccalaureate.

Reducing neonatal mortality in Africa and South Asia

Antimicrobial resistance (AMR) has recently been identified as one of the most serious threats to public health, food security and development across the globe, with levels of resistance rising dangerously high.

Misuse of antibiotics, globalisation, and other society related practices are key drivers behind the ever-increasing AMR threat. Numerous causes contribute to the misuse of antibiotics globally: over-the-counter sales and uncontrolled use in low-middle income countries (LMICs); incomplete courses of antibiotics; inadequate medical prescriptions, low healthcare expenditures and lack of knowledge. Globalisation, triggered by the continuous movement of people over international borders, provides the opportunity for resistant bacteria to spread from one geographic location to another, fomenting the rise of AMR. Society idiosyncrasies and behaviour, including poor hygiene, overcrowding, low health care expenditures, use of antibiotics in agriculture, animal husbandry, aquaculture and veterinary medicine, and the release of antibiotics into the environment, all contribute to this hazard. These serious concerns have been catalysed by the rapid increase and spread of multi-drug Resistant (MDR) Gram-negative bacteria (GNB) that render infections increasingly difficult to treat.

Developing countries bear the burden of 99% of neonatal mortality worldwide with infections such as tetanus, pneumonia and sepsis acting as leading causes

of neonatal mortality. BARNARDS which stands for 'Burden of Antibiotic Resistance in Neonates from Developing Societies' is a project that aims to investigate the effects of antibiotic resistance on neonatal morbidity and mortality in LMICs and identify possible solutions to minimise the impacts, particularly in regard to neonatal sepsis in babies who are less than 60 days old.

BARNARDS is funded by the Bill & Melinda Gates Foundation and to date has established a network of neonatal centres within Nigeria, Bangladesh, Rwanda, South Africa, Pakistan, Ethiopia and India. Local teams enrol all mothers in labour presenting to hospital or centres who give consent. Patient socio-demographic data is collected and rectal swabs are taken from enrolled mothers. The control group includes mothers with healthy babies. Babies who present with signs of infection <7 days (early onset of sepsis) and those who return to the hospital >7 - <60 days (late onset sepsis) compose the study cases. Samples are also taken from the hospital environment at each centre, including medical devices, bed linen, door handles, taps, etc., constituting the environmental fraction of the study.

At Cardiff University, the local clinical epidemiology is supported with state-of-the-art molecular genetics by performing the characterisation of the microbiota of the samples in study, particularly of the MDR GNB. Aims are:

(i) to assess the epidemiology of MDR GNB carried as normal microbiota. For this, bacterial cultures obtained from rectal samples (from mothers



BARNARDS UK Team member preparing to run a MiSeq for whole genome sequencing

and babies) are sought for antibiotic resistance genes (ARG) and bacterial isolates carrying ARG identified to the species level and antibiotic susceptibility profile. Also, strain typing identifies closely related isolates possibly being the same strain (likely clones) to pinpoint outbreaks of MDR GNB in the centres/countries.

(ii) to assess the impact of MDR GNB carried as normal microbiota in mothers and babies in the development of neonatal sepsis. For this, relevant isolates from septic cases are subjected to whole genome sequencing (WGS) to provide strain type, virulence related genes, type and number of ARG and genes related to plasmids. This will allow the identification of isolates causing sepsis in babies that might have had origin in the mothers' microbiota.

(iii) to identify routes of transmission of MDR GNB within each site. This will be addressed by molecularly characterising the bacterial isolates recovered from environmental samples and, when relevant, these will also be subjected to WGS and compared to isolates from septic cases.

This study will enable assessment of the impact and burden of antimicrobial resistance on clinical outcomes of neonates and determine local and common risk factors to identify potential intervention studies and exploration of rapid techniques for diagnosis of sepsis in LMICs. It will also determine the prevalence of MDR GNB carried as normal microbiota and causing neonatal sepsis.



UK BARNARDS Team. From left to right, front to back: Professor Timothy Walsh, Dr Maria Carvalho, Rebecca Milton, Calie Dyer, Ana Ferreira, Kathryn Thomson, Edward Portal and Dr Kirsty Sands.

BARNARDS was originally funded in 2015 with the following sites:

Bangladesh:

Chittagong Maa-O-Shishu Hospital
Medical College, Chittagong
Kumudini Hospital, Dhaka

Nigeria:

National Hospital Abuja (NHA), Abuja
WUSE General Hospital, Abuja

Rwanda:

Kabgayi Hospital, Kabgayi
University Central Hospital of Kigali
(CHUK), Kigali

South Africa:

Tygerberg Hospital, Cape Town

Pakistan:

Pakistan Institute of Medical Sciences
(PIMS), Islamabad

In 2016, the project received further funding from the Bill & Melinda Gates Foundation and more sites were enrolled:

Nigeria:

Murtala Muhammad Specialist Hospital,
Kano

Pakistan:

Rural Health Centre, Bahra Kahu,
Islamabad

Ethiopia:

St. Paul's Hospital Millenium Medical
College, Addis Ababa

India:

National Institute of Cholera and Enteric
Diseases, Kolkata

Kano, Bahra Kahu and Addis Ababa are three sites which have community based elements compared to the original sites which are hospital based and have been added to capture a wider population with distinct demographic traits (rural vs. urban areas); this will provide a more inclusive snapshot of the diverse range of risk factors individuals are exposed to on a daily basis.



BARNARDS locations

BARNARDS developed a standardised methodology to attain common objectives, yet the intervention in each site is tailored in response to specific needs. As an example, BARNARDS procedures include antibiotic susceptibility testing and after being implemented, the empirical treatment of sepsis has been modified in NHA, Nigeria. This came about following results obtained early in 2016, which showed that the treatment implemented at the time was not appropriate. This change in procedure has resulted in a decrease in mortality.

A Gates representative visited Murtala hospital in Kano in 2016 and the need for BARNARDS was evident. Each day, between 500 to 700 women in labour, including mothers with their sick babies, arrive at Murtala in the hope of treatment; they are assessed by a doctor and only those with the greatest need are admitted, there is only space for 40 patients. Together with the team based in NHA and the Gates Foundation, BARNARDS set up a maternity ward with an additional 20 beds; a renovated shipping container became a microbiology laboratory, backed up by solar panels. Blood cultures are taken from babies with infection and processed in the laboratory, which was not possible prior to BARNARDS. Additionally, BARNARDS is providing antibiotics for the treatment of sick babies as drug availability is a serious concern in Kano. The local team has been trained by the UK and Nigerian Team in the microbiology laboratory and a resident phlebotomist has taught the research nurses how to take blood from the neonates. Earlier this year Professor Didier Pittet, (Director of the Infection



BARNARDS UK team member loading an agarose gel for electrophoresis of PCR products

Control Programme and World Health Organization Collaborating Centre on Patient Safety) visited Kano and gave workshops on infection prevention and control, and hand hygiene to the staff at Murtala Hospital. This sharing of best practice is building capacity in Kano and empowering them to combat infection and ultimately reduce infant mortality.

Aside from BARNARDS, the team is active in a number of international research groups, consisting of over 140 people in over 12 LMICs studying the impact of AMR. The research group in Cardiff University is itself a mirror of the international dimension of its research, involving enthusiastic technicians, PhD students and researchers from Europe, Asia and Africa.

To find out more about BARNARDS and to follow the work of the team please visit:

www.barnards-group.com



BARNARDS in Kano (microbiology facilities, baby in unclean fly infested bed, makeshift resuscitator, babies waiting outside in the heat)

10 ways

MEDIC is MAKING an IMPACT

The School of Medicine has a successful track record of contributing to society through its Research, Learning and Teaching, and Innovation and Engagement activity. Efforts by many staff and students highlight a rich variety of ways in which the School is engaging and benefitting society. Here are just ten recent examples:

1 Medical students teach school pupils about asthma attacks

Medical students are teaching children how to recognise the signs and symptoms of an asthma attack. Asthma can result in hospital admissions, significant absence from school and even mortality, despite widely available treatments.



An initial awareness drive in schools educated over 900 children, aged between four and nine, in seven schools across Cardiff. Caitlin Peers,

a third year student who created the scheme said:

“Education and awareness about asthma from a young age is key to building a generation that will take responsibility of their own health, hopefully reducing asthma-related deaths that occur before reaching hospital.”

2 The Hodge Centre for Neuropsychiatric Immunology

Following investment from the Hodge Centre, a new five-year partnership will bring together leading experts to explore the role the brain’s immune system plays in some of the most common brain disorders like Alzheimer’s, schizophrenia and epilepsy.

Professor Jeremy Hall, Director and Research Theme Lead, Neurosciences and Mental Health Research Institute said: “Through this new Centre we will be able to gain a greater understanding of the causes and open up the potential development of new treatments.”

Professor Paul Morgan, Director, Systems Immunity Research Institute said: “Bringing experts in neuroscience and immunology together will bring better understanding of the immune processes in the brain so we can not only “re-purpose” existing drugs but hopefully design newer, and better ones.”

3 Medical students raising awareness of mental health issues

How Are You? Is a short documentary on the stigma of mental health created by medical students Munzir Quraishy and Natalie Ellis as part of their year 3 Student Selected Component. The film interviews patients and psychiatrists to find out their experiences on stigma to help educate about it. The film was part of the Official Selection at the Early Bird Film Festival (Bulgaria) and the Indiewise Virtual Film Festival. It was also voted Best Short at the International Film Festival of Wales 2016. The film is now online and will hopefully go on to educate members of the general public on mental health.

https://www.youtube.com/watch?v=Ap848kUvI_M

4 First medical lecture in Welsh

The first ever Medical lecture in Welsh was delivered on 16 January by Dr Awen Iorwerth. The lecture on bone health was delivered with simultaneous translation available to non-Welsh speaking students.

Sara Whittam, Development Manager, Welsh Medium Provision, School of Medicine, funded by the Coleg Cymraeg Cenedlaethol, explained: “As part of our ongoing development of Welsh medium provision at the Medical School, this lecture was a wonderful way to raise awareness amongst all our students of the use of the Welsh language and the importance of bilingualism within Medicine...”

Sara also said: “Over 200 students were present and the feedback has been very positive. Many of our students wish to learn Welsh, and are willing to attend Welsh for All classes before going on clinical placements.”

5 Benefits of daily aspirin outweigh risk to stomach



Stomach bleeds caused by aspirin are considerably less serious than the spontaneous bleeds that can occur in people not taking the drug, concludes a study led by Cardiff School of Medicine.

Published in the journal Public Library of Science, the extensive study of literature on aspirin reveals that while regular use of the drug increases the risk of stomach bleeds by about a half, there is no valid evidence that any of these bleeds are fatal.

Professor Peter Elwood said: “With our study showing that there is no increased risk of death from stomach bleeding in people who take regular aspirin, we hope there will be better confidence in the drug and wider use of it by older people, leading to important reductions in deaths and disablement from heart disease and cancer across the community.”

6 Three MEDIC women highlighted as being at the forefront of scientific innovation at Cardiff University in Wales Online piece marking the second International Day of Women and Girls in Science on 11th February.

Professor Julie Williams, Chief Scientific Advisor for Wales, is one of the UK's leading figures in Alzheimer's research. Julie said: "What I truly love about working in science is that every day I get to address new challenges and create understanding where there is none."

Professor Valerie O'Donnell and her team seek to unpick the biology of lipids and how they contribute to life-threatening conditions such as blood clots. Valerie said: "I've always been interested in trying to understand how cells work, and the thought of being the first person to find out something about biological processes has always been a massive motivation for me."

Dr Emma Yhnell's research aims to find new therapies and interventions to help people who are living with brain diseases such as Huntington's. Emma said: "There is no better feeling than finally getting the results of an experiment that you have been working on for two years. I also love talking to patients and feeling that I can make a real difference to people's lives."

7 Exploring transgender identity and gender transition

Evan Wilkins, a member of the Postgraduate Admissions team, recently delivered a series of trans awareness lectures attracting glowing feedback from attendees saying that "it was not only educational but also honest and emotional."

Evan said: "My talk focuses on bringing a greater understanding around being transgender and highlighting what is involved in transition and the barriers people face. There is a great need for this talk as the majority of barriers that trans people face are due to people's lack of knowledge. It closes with a personal story to give a voice to the issues many trans people face throughout their lives, and also to highlight that we have transgender colleagues at the University and should

all be expanding our knowledge to ensure inclusion.

Evan presented his talk during Diversity Fortnight (6-17 March) a two-week celebration of the University's diversity.



8 Eczema and antibiotics

Eczema is a common condition and affects around 1 in 5 children in the UK. Eczema sometimes gets worse, or 'flares', and having particular bacteria on the skin may contribute to causing some of these flares. Quite often eczema flares are treated with antibiotics, although there was very little research to show whether antibiotics are helpful or not.

The CREAM study was designed to find out if antibiotics help improve eczema severity in children with infected eczema. Dr Nick Francis, Clinical Reader and practising GP who led the study said: "Our research shows that even if there are signs of infection, children with milder eczema are unlikely to benefit from antibiotics, and their use can promote resistance and allergy or skin sensitization."

Full study results are published in the Annals of Family Medicine journal.

9 Films show benefit of public involvement in research

Members of the public have worked with the School of Medicine Engagement team to produce two short films highlighting the benefits of public involvement in research.

'Why get involved in Research?' is aimed at members of the public and firstly tackles the question 'why research is important'. It provides several options of how people in

Wales can use their voice to make a difference to health and social care research. To watch the film visit: <https://www.youtube.com/watch?v=OirTNhHYZRC&t=1s>

The 'Public Involvement in Research' film is aimed at academic researchers and features academic peers describing some of the many reasons why they involved members of the public in their research. To watch the film visit: <https://www.youtube.com/watch?v=iTlxuGYhInc>

10 The impact of the Phoenix Project

The transformative work and people involved in the Phoenix Project was recently featured in a new photographic exhibition by Paul Crompton, Senior Professional Fellow, at the Senedd in March.

The project works hand in hand with the University of Namibia (UNAM) and supports Welsh Government's Wales for Africa programme and its Well-being of Future Generations Act by helping to improve the skills of doctors, nurses and midwives in Namibia. In addition, the team's work covers a much broader range of themes including: Boosting mathematics knowledge among future scientists; carrying out joint research on child neglect; raising aspirations of young learners; and improving human rights awareness.

Speaking about the exhibition, Paul said: "One of the aims is to convey the very human side of much of the work – it benefits real people facing real challenges – and that's very satisfying."



MEDIC people



ReMEDy talks to **Joe Amissah-Arthur (MBBCh 2016)**, alumnus;
Matthew Jones, undergraduate student;
Pragati Sabberwal, postgraduate student
and **Dr Lin Ye**, member of staff,
to ask the questions we love to know the answers to!

What do you listen to first thing in the morning?

JA-A It's normally the radio for me, that and the thoughts in my head asking whether I really need to get up today?

MJ Usually the sound of the sea or a thunderstorm; I'm always the first one up in my house and I find that a bit of soothing white noise a) lets me come round gently after the PANIC! of the alarm and b) drowns out any sound of blissful snoring from my dear housemates whose days tend to start at entirely more civilised times.

Joe Amissah-Arthur

I am a junior doctor working in East Lancashire Health Trust. Currently wading my way through F1, one cannula at a time.

PS My alarm clock.

LY BBC News.

As a child what did you want to be when you grew up?

JA-A Growing up I always wanted to be a footballer. I used to spend hours in the garden playing football with my brother, and as the youngest I always had to go in goal whilst he smashed the ball at me. I believe that's why I never made it, that and my dad's increasing lack of tolerance of football in the garden as he replaced the fence...AGAIN.

MJ A volcanologist, mostly, as far as I can remember. I had – and still have, because throwing/giving a book away

is blasphemy and never to be thought of – several gorgeously-illustrated books about volcanoes, and there was something about the incredible power, the mixture of creation and destruction, the danger and the possibility of lots of travel to exotic and interesting (and perhaps on fire in an exciting way) places had an enduring appeal.

PS I wanted to be a detective. I used to love watching mystery shows/cartoons and reading detective stories.

LY A doctor.

Who are your heroes and villains?

JA-A Heroes – Liz and Justice Amissah-Arthur.

Villain – whoever created Foundation Studies.

MJ My heroes...everyone who, often against entrenched opposition, has worked tirelessly to improve the lot of people, whether through scientific enlightenment or by fighting for rights, freedoms and dignities. My villains follow a similar vein; people who oppress and exploit for their own gain, at whatever level.

PS Heroes: My parents (wouldn't be the person I am today without them – owe them everything); Barbara McClintock & Gregor Mendel and BATMAN (my all time favourite superhero).

Villains: None that I know of.

LY Generals of Han dynasty; Guan Yu and Zhao Yun are my heroes since the first time I read San Guo (which for those who aren't familiar with Mandarin Chinese is a popular historical series of relatively accurate retellings of "The Battle of the 3 Kingdoms"). Two villains are Dong Zhuo and Qin Hui who you would hate if you have happened to read around the history of ancient China.

If you could change one thing what would it be?

JA-A Stop the university revamping the union. There were few better places in Cardiff than the cesspit of the old Medics Bar.

MJ Eliminate world poverty; all else will follow.

PS Xenophobia, prejudice and discrimination – if we learn to embrace diversity, we can eliminate many crazy and unnecessary events that are taking place in our world today.

LY I wouldn't, as everything that has happened and is happening, will happen naturally, no matter how much we try to stop it or change it.

What is your secret ambition? (just between us)

JA-A I hope to win the lottery and retire ASAP and become a professional traveller/sports watcher.

Matthew Jones

I'm a fourth year, approaching the end of the long slog of medical school, and an even



longer stint in university. I've already got a degree from Durham, graduating into the depths of the recession, and I loved the idea

of scrabbling frantically for jobs so much I decided I should plunge straight back into university for as long as possible. Cardiff was by far the friendliest and most appealing place I interviewed at, and I've never looked back. In my spare time, I go to the opera and consume far too much tea and cake.

MJ To write books and be published, whilst maintaining at least a semblance of a medical career.

PS Travel around the world.

LY I would learn piano when I retire.

What does the School of Medicine need more of?

JA-A Four-day weeks. But I guess in student language four-day weeks soon become three-day weeks...

MJ More time off – the holy grail of any student – and more organisation!

PS Social events!

LY A harmonious balance of clinical medicine and research excellence, which needs to be tailored to needs of clinical practice and medical teaching.

Pragati Sabberwal


I am a first year PhD student at Cardiff University. My project aims to identify and safely target host genes for the development of anti-viral therapies. I recently completed my MSc in Human Molecular Genetics, at Imperial College London, and hold a BSc in Genetics, from The University of Manchester. I have lived in six different countries, which has helped me gain an appreciation for diversity and develop the capacity to adapt to new, and at times, challenging situations. I hope my time here in Cardiff will add to the experience!

What advice would you offer medical students today?

JA-A Get involved with a hobby, great way to meet likeminded people and really enjoy your university experience. Joining Cardiff Medicals RFC was definitely the best thing I did at Cardiff University.

Which book did you re-read most as a child?

JA-A United on vacation... Such a feel good story.

MJ That's an agonizingly difficult question, but Good Omens by Terry Pratchett and Neil Gaiman just about takes the prize. It is, after all, the only book I've dropped soup on, accidentally dunked in the bath (twice), slightly smeared with fake blood (after helping decorate some zombies) and taped back together again with infinite care and most of a roll of sellotape. In the words of the late, great Sir Terry, it has gone past looking 'slightly foxed' and now looks badgered, wolved and possibly beared as well.

PS Harry Potter Series – particularly 'The Goblet of Fire'.

LY San Guo Yan Yi a historic novel of the

Three Kingdoms (AD 220-280) which is immediately after the Han Dynasty (206 BC – 220 AD).

Which one question would you really like to know the answer to?

JA-A How long did it take Dr. TJ Allen to go through all his slides and omit words from each PowerPoint presentation? If I had a second question it would definitely be 'what is the colonel's secret mix of 11 herbs and spices?'

MJ Aside from the usual big questions about the nature of the universe and so on, at this precise moment I'd really like to know why my house currently has a rather glossy life-size cardboard cutout of Keith Lemon in the living room. No-one seems to know where it's from, who acquired the frankly arresting decoration, or, indeed, how it arrived home.

PS Does extra-terrestrial life exist?

LY How to stop cancer cells spreading to a different site?

How do you relax?

JA-A Meeting friends, watching sport, cooking and travelling. I have been known to enjoy a pint or two...

MJ Cocktails! Good food, good wine (and/or champagne; I'm flexible) and good company; taking people out for lunch or dinner is a staple, and something to look forward to after a hard week. Curling up with a good book is also hard to beat, particularly on those days when you wake up and hate everybody for a nebulous and ill-defined reason and everything else is far too much effort.

PS My friend, Ana, usually drags me to have nata & espresso at Nata & Co Portugese bakery. Other than that watching movies, reading and/or online shopping usually does the trick.

LY I enjoy listening to music and landscape photography, especially around rural Wales on weekends and during family holidays.

If you could turn the clock back, what would you do differently?

JA-A Purchase a flight to Amsterdam, instead of boarding the P&O ferry.

MJ I'd probably have gone on a long gap year rather than do my first degree. Which is not to say that it was a waste in any sense; it was useful and interesting and my time at Durham – floreat castellum, for any fellow Castlemen reading – was fantastic and I cherish every bit of it...except maybe for exams, of course. I know, however, I'd have loved

to go travelling and explore the world on my own terms for a bit, a sort of modern-day Grand Tour.

Oh, and if I had any knowledge that I'd turned the clock back, I'd take the names of a few Grand National winners too.

PS Learn to surf when I was living in Penang – much warmer there!

LY I wouldn't.

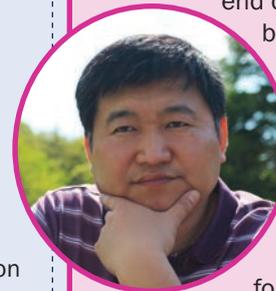
What is your best holiday?

JA-A Australia 2013, we travelled up the East Coast from Sydney to Cairns. Culminated with watching the Lions beat Australia followed by a night partying with the players. Unbelievable.

MJ Probably a long, lazy, rambling trip that ended up snaking all over the Italian peninsula; there was sailing and walking amid gorgeous scenery, superlative food and drink at every stop, plenty of culture

Dr Lin Ye

After being a surgeon for 10 years, I joined the medical school at the end of 2004. I have



been researching for traits of cancer cells spreading in the body since then. This is a journey full of joys and wonders, not only for the research but also for all the peers

I have the pleasure of working alongside. Currently, I am a lecturer at Cardiff China Medical Research Collaborative, Division of Cancer and Genetics. It is great to have such an opportunity; to be able to work with budding young researchers; to pave the stepping stones for their adventure in research of cancer metastasis.

and interesting things to do rather than lie on a beach all day, and the Italian joie de vivre and instinctive appreciation of what was really important was frankly infectious.

PS Anywhere in the world with family/friends and lots and lots of adventure.

LY A short break our family spent in a peaceful village in North Wales, which we spent in a quirky, beautiful converted chapel. Waking up to fog rolling past the sheep speckled hills brought about a sense of peace.

Science in Health Live 2017



Year 12 pupils with Carole Elford, School of Medicine, finding out the Bony Facts of Life

800 young people and 49 teachers from 51 schools gathered at the School of Medicine for Science in Health Live in March 2017. The two-day event, now in its 23rd year, is designed to give pupils an insight into the science behind medicine, showing them the range of career options open to them in healthcare, biomedical and scientific fields. The event forms part of the Science in Health programme of activities, with over 150 members of staff and students involved, and has become the UK's biggest science event for sixth-formers.

The aim is to excite students about science by allowing them direct access to the research that is having a real impact on medical and clinical practice worldwide, with the hope that they will go away inspired to pursue a career in science and medicine. Every participant has the opportunity to see a 'Sound Science Performance' and visit a number of hands-on exhibits covering a diverse range of topics. A key highlight of the day is the laboratory tour - designed to introduce and expose students to a research laboratory environment. For the closing event of the day, students are able to use live-text polling to quiz a number of staff and students from the School of Medicine.

Feedback from this year's event has been extremely positive and pupil comments included: **"It has inspired me to realise that a medical course potentially allows me to**

continue to be curious about the science subjects that I'm interested in."

"I really found the talks to be very inspiring and they gave me a brilliant insight into different routes you can take in medicine. Those who gave the talks were very enthusiastic and made me very excited to pursue a career in medicine."

"The exhibitions were interactive, informative and interesting."

"I found the questions and answers at the end really helpful and made getting into med school seem less abstract and complex."

A teacher reported: **"The students were buzzing. The staff enjoyed it too! The "stretch" of the talks for the more able students was good; mine were taking copious notes. The exhibitions went down well and the tours inspired all. Please pass on our thanks and appreciation to your team. It is well worth your considerable efforts in inspiring our future scientists and medics."**

Previous attendees of Science in Health Live have gone on to become medical students in Cardiff University. Kit Lam, School of Medicine Undergraduate, explained: **"Science in Health Live gave me a first-hand insight into how the fundamental aspects of science underpinned medicine**

and the wider society. What I took most from Science in Health was how research could be translated directly to the bedside. I believe Science in Health Live was where my pursuit of a clinical academic career started. During the Science in Health event I met people like Dr James Matthews and Dr Keith Hart whom have influenced my career on that day and onwards."



Year 12 pupils in the lab learning about Microbes

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The Editor wishes to thank all contributors to this edition of ReMEDy.

The Editor reserves the right to edit contributions received. Whilst care is taken to ensure the accuracy of information, this cannot be guaranteed.

Views expressed in 'ReMEDY' do not necessarily reflect those of the School. Feedback and items of interest relating to the School are welcome and should be sent to: remedy@cardiff.ac.uk

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