Celebrating 10 years of the MRC Centre for Neuropsychiatric Genetics and Genomics

Inside:
Master’s of Public Health celebrates 30 years in transforming passion into practice
Humphreys Laboratory - Understanding immune responses to viruses
Doctor: Healer, Scientist, Innovator
Welcome to the thirty first edition of ReMEDy.

Professor Siladitaya Bhattacharya is presently away from the office and so as Acting Dean of the School of Medicine I have the honour of introducing this edition of ReMEDy.

In this research themed edition, we celebrate 10 years of the MRC Centre for Neuropsychiatric Genetics and Genomics at Cardiff University. This global centre of excellence for research into the genetic basis of mental health and neurodegenerative disorders has delivered widespread patient benefit. The Centre boasts many exemplars of public engagement with research and successfully delivers several initiatives focussed on developing the next generation of researchers in this field.

The Curriculum Update highlights our collaboration with Bangor University to set up a C21 North Wales/Gogledd Cymru programme to enable us to recruit undergraduate medical students in North Wales.

We are in conversation with Dr Alan Eric Thomas, a 1944 graduate of the School of Medicine. Alan, known as Eric, recently celebrated his 100th birthday and shared with us what it was like to be a student and graduate during World War 2. Following the war, Eric pursued a long career as a GP in both Carmarthenshire and Bristol. We were delighted when his daughter Caroline Thomas got in touch with us and told us that Eric loves to read ReMEDy and to keep up to date with developments at Cardiff School of Medicine.

Also in this edition, we put the spotlight on Professor Ian Humphreys and his laboratory team who work to understand immune responses to viruses and decipher what mechanisms control this balancing act in our bodies. In another feature, we celebrate the 30th anniversary of the Master’s of Public Health (MPH) and reach out to our MPH Alumni.

As always, please be reminded that ReMEDy is available electronically to the School’s alumni and to ensure that you receive your copy, please inform us if you have changed your contact email address.

Update your details now:
www.cardiff.ac.uk/alumni-update

Curriculum Update

I was interested to read the Welsh Government document “A Healthier Wales” which sets out the principles by which we can work towards tackling the challenges associated with health and social care delivery.

What was clear from this document was that much of the vision contained within this document aligns with the significant undergraduate curriculum changes that have taken place over the last 5 years or are planned into imminent curriculum updates within the C21 course. Our graduates encounter the values of the NHS in Wales and have been prepared to consider the whole system of healthcare delivery in Wales. This is achieved through activities such as Patient Pathways and the early exposure to the clinical education hubs that act as staging posts to bridge the gap between primary and secondary care. Whilst still not perfect the building blocks for the political and NHS vision are very much in place. Recognising the needs of individual communities around Wales has led to the successful introduction of the Community And Rural Education Route (CARER), featured in the last edition of ReMEDy. Our 3rd year students participating in this pilot have been enjoying excellent learning opportunities in Aberystwyth and Bangor, being extremely enthusiastic about the benefits that this type of longitudinal integrated clerkship offers in terms of personal development and educational experiences. You can read about their latest news and watch the videos here: www.blogs.cardiff.ac.uk/carer

Over the last 12 months we have been collaborating with Bangor University to set up a C21 North Wales/Gogledd Cymru programme. This is absolutely the right direction to take the provision of Medical Education in Wales providing students with a menu of opportunities for study, widening access to medicine for those from non-traditional backgrounds and supporting sustainability of health care provision in the underserved areas of Wales. This social accountability remit of the Universities in Wales is essential to delivery of the Healthier Wales vision and reducing the social and health inequalities that are evident in any health care system. At time of writing we are very close to being able to formally recruit to the new course and updates will be provided in future editions of ReMEDy.

Finally, I would like to thank staff and students for participating in the recent SURGAM event which is our annual recognition of all the good work that is done by people on behalf of the Centre for Medical Education. We heard about the outstanding academic achievements of students within Medical Pharmacology, Post-Graduate Taught, Intercalated BSc and Medicine as well as the exceptional work and commitment of our staff. Hearing about the extracurricular and charitable activities of the students was inspiring and sets a fantastic example for our future students.

Professor Stephen Bilev
Dean of Medical Education
A normal day now involves reading and relaxing, says Eric. However, prior to retiring, Eric spent 40 years in general practice. Eric describes: “After World War Two, it was difficult to find a practice. But eventually I found one on the Carmarthenshire coast (Kidwelly and Burry Port) and spent 16 happy years there with my wife, children, horse and dog. We lived 300m from a long beach and Pembrey Forest.

When my partner moved away, I was left alone with a large practice and no support. At nights and weekends I was on call from home. My wife was an unpaid receptionist, taking calls, and there were no mobile phones or even pagers in the 60’s. After a year of being on call every day, I decided to move to a practice in Bishopsworth, Bristol where there was a new service: a doctors’ deputising service.

My new patients in the peripheral estate of Hartcliffe were very different to those of a rural Welsh practice. Many worked for Wills Tobacco, where employees were given free cigarettes as a staff perk. In 1974, they built the largest cigarette factory in Europe in Hartcliffe.”

Eric chose to study at Cardiff University, as his family lived in Caerphilly, so it was a 20-minute train journey. It also had a good reputation. Eric recalls that his time at Cardiff was a hard slog. He says: “My favorite memory is of the postman calling at my house with a letter to say I’d passed my final exams.”

Eric recalls being a Cardiff student during the war: “We had to go and sit exams in London – Tavistock Square, I think. Whilst sitting them we heard the sound of approaching buzz bombs and everyone had to jump under their desks. Afterwards the invigilator joked ‘don’t think this is going to pass you!’”

After graduating, Eric spent 6 months as a house surgeon at Whitchurch Military Hospital. He describes: “The work involved waiting for convoys to come in by train from the war zone and treating them. There were Brits and Germans. I remember we did a lot of blood transfusions and I took a few bullets out.

After 6 months, I was called up and one cold January day I took P&O liner Strathnaver from Southampton via the Suez Canal to Mumbai/Bombay, then a train to Calcutta. First I was stationed in a hospital 100 miles from Calcutta (Ranchi), and then to Midnapore in West Bengal.

Reflecting on how Cardiff School of Medicine contributed to his success, Eric describes: “We had good quality teaching staff at Cardiff. It gave me a solid grounding in medicine and I feel a great fondness for and loyalty to my old university. I am still interested in all the advances being made at Cardiff University, and am an avid reader of the newsletters!”

Dr Alan Eric Thomas, MBBCh (1944), MRCS, LRCP

Alan, known as Eric, is retired and recently celebrated his 100th birthday by visiting his old practice in Carmarthenshire where he met some of his old patients.

Eric’s shared alumni wisdom:
“Keep a balance in your life. I had a horse, and my release was riding in Pembrey Forest and cantering on the empty 6-mile beach there.”

Eric’s five words describing Cardiff School of Medicine:
Pioneering and progressive, proud past!
The Humphreys laboratory, led by Professor Ian Humphreys, is an eclectic mix of clinical and non-clinical students, postdoctoral researchers and research assistants, working in the Division of Infection and Immunity and the Systems Immunity University Research Institute (SIURI), who want to understand immune responses to viruses and decipher what mechanisms control this balancing act in our bodies.

The Humphreys laboratory is particularly interested in two important viruses; influenza and the herpesvirus cytomegalovirus which is a serious problem in both immune-suppressed adults (such as transplant patients) and in young children following congenital infection. Ian describes: “We study these processes in experimental models and, in the case of cytomegalovirus, we work with the Wales Kidney Research Unit to study infection of recipients of transplanted kidneys. By studying virus-induced inflammation, we aim to develop anti-inflammatory strategies that can be safely used to treat the harmful side-effects of viral infections. We also hope to understand better how different people respond differently to viruses. To achieve these goals, the laboratory has been awarded a prestigious £2M Wellcome Trust Senior Research Fellowship renewal.”

The Humphreys laboratory is also interested in exploiting viruses as vaccines, working in collaboration with the laboratories of Andrew Godkin, Awen Gallimore and Richard Stanton. The idea is to make safe cytomegaloviruses that are unable to divide and cause disease but are engineered to produce proteins produced by cancers. By doing this, the immune response can be ‘tricked’ into thinking that the cancer is part of the virus. Because our immune system typically reacts more strongly to viruses than cancers, immune responses capable of countering cancer development can be induced. To help support this work, the collaborative team (led by Andrew Godkin) has recently been awarded a £1.5M Collaborative Award from the Wellcome Trust.

Outside the laboratory, the team like to engage with students and members of the public to talk about their research and what an important role the immune system plays in health and disease. They do this in several ways. Firstly, they engage with the Lay Faculty from the SIURI when writing grants and press releases that present their findings. This has been extremely useful, particularly to help communicate sometimes complex scientific findings that the general public can understand.

The lab is also very passionate about engaging with school pupils. For over a decade they have run sessions as part of Science in Health Live! where Year 12 pupils visit the laboratories and learn about how the Humphreys lab exploits viruses to make vaccines. An expanding area of school engagement activity is delivery of their ‘Science of Blood’ workshop to Year 3 pupils (7-year olds) to teach them about the immune system, germs and snot. Ian says: “Children learn how to study blood using microscopes and get to put on lab coats for (slightly messy!) snot experiments! These visits are always so much fun and a major highlight of the academic year.”

Our body’s immune system protects us from infection, but sometimes it over-reacts and causes organ damage in a process called inflammation.

The Humphreys laboratory, led by Professor Ian Humphreys, is an eclectic mix of clinical and non-clinical students, postdoctoral researchers and research assistants, working in the Division of Infection and Immunity and the Systems Immunity University Research Institute (SIURI), who want to understand immune responses to viruses and decipher what mechanisms control this balancing act in our bodies.

The Humphreys lab is particularly interested in two important viruses; influenza and the herpesvirus cytomegalovirus which is a serious problem in both immune-suppressed adults (such as transplant patients) and in young children following congenital infection. Ian describes: “We study these processes in experimental models and, in the case of cytomegalovirus, we work with the Wales Kidney Research Unit to study infection of recipients of transplanted kidneys. By studying virus-induced inflammation, we aim to develop anti-inflammatory strategies that can be safely used to treat the harmful side-effects of viral infections. We also hope to understand better how different people respond differently to viruses. To achieve these goals, the laboratory has been awarded a prestigious £2M Wellcome Trust Senior Research Fellowship renewal.”

The Humphreys laboratory is also interested in exploiting viruses as vaccines, working in collaboration with the laboratories of Andrew Godkin, Awen Gallimore and Richard Stanton. The idea is to make safe cytomegaloviruses that are unable to divide and cause disease but are engineered to produce proteins produced by cancers. By doing this, the immune response can be ‘tricked’ into thinking that the cancer is part of the virus. Because our immune system typically reacts more strongly to viruses than cancers, immune responses capable of countering cancer development can be induced. To help support this work, the collaborative team (led by Andrew Godkin) has recently been awarded a £1.5M Collaborative Award from the Wellcome Trust.

Outside the laboratory, the team like to engage with students and members of the public to talk about their research and what an important role the immune system plays in health and disease. They do this in several ways. Firstly, they engage with the Lay Faculty from the SIURI when writing grants and press releases that present their findings. This has been extremely useful, particularly to help communicate sometimes complex scientific findings that the general public can understand.

The lab is also very passionate about engaging with school pupils. For over a decade they have run sessions as part of Science in Health Live! where Year 12 pupils visit the laboratories and learn about how the Humphreys lab exploits viruses to make vaccines. An expanding area of school engagement activity is delivery of their ‘Science of Blood’ workshop to Year 3 pupils (7-year olds) to teach them about the immune system, germs and snot. Ian says: “Children learn how to study blood using microscopes and get to put on lab coats for (slightly messy!) snot experiments! These visits are always so much fun and a major highlight of the academic year.”
The Cardiff Master’s of Public Health (MPH)

Celebrates 30 Years in Transforming Passion into Practice (1989 – 2019)

MPH Programme Director, Behrooz Behbod states: “Many of us want to make a difference to the world we live in, helping people live healthier and happier lives. The new NHS Long Term Plan has highlighted the need for a focus on prevention¹. The problems we face require innovative and multi-sectoral solutions, facilitated by a public health perspective.”

Public health has been defined by Acheson as “the science and art of preventing disease, prolonging life, and promoting health through the organised efforts of society². Through service and research, public health helps to:

1. Improve the quality and value of healthcare services;
2. Protect people against infectious and environmental hazards, ranging from outbreaks and natural disasters, through to tackling climate change, one health and planetary health;
3. Prevent chronic diseases and promote health and wellbeing through addressing lifestyle factors, such as nutrition, physical activity and behavioural interventions.

The Acheson report², together with the Ottawa Charter recommendations³ stimulated the creation of a new degree: the Master’s of Public Health (MPH) in 1989⁴. It was a response to the need for multidisciplinary training of a variety of public health workers. The MPH was created to develop world-class leaders, many of whom are in influential roles in the UK and internationally.

MPH students at Cardiff learn from experts in public health research and practice. Stand-alone modules are available for any eligible applicant. Undergraduate medical students can take modules in Health Protection and Health Improvement alongside MPH students, as part of the Intercalated Degree in Population Medicine.

Students learn in a multidisciplinary setting. All the key partners, including Public Health Wales, the National Health Service, the Welsh Government, and Cardiff University’s Schools of Medicine, Business, Engineering, Law, Politics and Journalism are in one city. Cardiff enables you to gain the knowledge and skills you need to work anywhere worldwide!

Are you an alumnus of the MPH? We would like to reach out to our MPH Alumni and build an ongoing relationship with each of you. Please take a moment to answer a few short questions here: https://cardiff.onlinesurveys.ac.uk/ mph-alumni-survey.

The new Cardiff MPH LinkedIn group here is your network ... use it to connect with classmates, share experiences, ask each other’s opinions, and explore collaborative opportunities.

You may also be interested in these videos:
- What is Public Health? (www.youtube.com/watch?v=K3toO0u8Fzs)
- Why study an MPH? (www.youtube.com/watch?v=D_pkqM4AbeN0)

Further information
www.cardiff.ac.uk/study/postgraduate/taught/courses/course/public-health-mph

¹ NHS Long Term Plan, available at: https://www.longtermplan.nhs.uk/
⁴ Allen AK. The MPH Programme, University of Wales College of Medicine (UWCM), Cardiff, Wales. Jerusalem Meeting on Schools of Public Health March 16th – 21st 2002
2019 marks 10 years of the MRC Centre for Neuropsychiatric Genetics and Genomics at Cardiff University

Established in 2009, the Centre grew out of 10 successful years as an MRC Co-operative Group, bringing together programmes of research in areas including schizophrenia, bipolar disorder, Alzheimer’s disease and attention deficit hyperactivity disorder (ADHD).

Over the past ten years the Centre has been at the forefront of psychiatric genetics, not only making significant advances in identifying specific risk alleles and illuminating the genetic architecture of psychiatric disorders but also translating research findings for widespread public benefits.
This has ranged from spearheading contemporary debate about psychiatric classification and diagnosis to developing psychoeducation programmes for bipolar disorder and pioneering the use of systemic health checks for people with learning disabilities.

Mini research cases:

**Identifying risk genes in schizophrenia**

Researchers including Professors Sir Mike Owen, Mick O’Donovan and James Walters have played a leading role in a global collaboration to better understand the biology underpinning schizophrenia. This has led to the discovery of over 150 regions of the genome that are associated with the condition with significant breakthroughs in 2014 and 2018.

These advances will contribute to uncovering new targets for treatment, which could one day translate into better, more personalised care for people living with schizophrenia.

**Psychoeducation for bipolar disorder**

Professor Ian Jones and colleagues developed a group psychoeducation programme for people with bipolar disorder – Bipolar Education Programme Cymru (BEPC). Since 2014, BEPC has been delivered to groups across UK, been awarded an innovation in healthcare award by the BMJ and used as the basis for Beating Bipolar, an online version of the course.

Building on this success, the team are training healthcare professionals to deliver the course within the NHS. The programme is also being used as a model to develop new interventions, for example, to support people with learning disabilities and mood problems.

**New insights into Alzheimer’s disease**

Professor Julie Williams and her team have led Genetic and Environmental Risk for Alzheimer’s Disease (GERAD) consortia, bringing together an international team of researchers to learn more about the genetics of the disease. Together with other consortia around the world, this has led to the discovery of multiple genes associated with higher risk for Alzheimer’s disease.

These genetic findings have implicated the innate immune response in determining a person’s susceptibility to developing Alzheimer’s, changing the way we think about the underlying biology of the disease.

Training the next generation

A core part of the Centre’s mission has been to develop the next generation of researchers capable of pushing the boundaries in genomics and neuroscience.

Over 80 students have come through the Centre’s PhD scheme, having conducted projects ranging from investigating the relationship between sleep disruption and manic episodes in bipolar disorder to creating polygenic cell-based models for Alzheimer’s disease.

The Centre also runs a clinical academic mentorship scheme, giving clinicians the opportunity to kick-start their academic career through mentorship and financial support. Many of those who’ve benefited from the scheme have gone on to obtain fellowships from the Medical Research Council and the Wellcome Trust.

Engaging communities

Public engagement has been a core feature of the Centre’s work over the past decade, helping to tackle the unfair stigma surrounding mental health problems and inspiring children and young people to learn more about genetics, the brain and neuroscience.

Researchers have hosted school visits and open days, collaborated with Einstein’s Garden to create a ‘library of imagined genes’ at Greenman Festival, taken part in the Cardiff University Brain Games and run a variety of activities as part of the annual MRC Festival of Medical Research. These have included film screenings, public talks and a genetics-themed fun fair event.

Oldcastle Primary School pupils participating in some brain games and activities with researchers at MRC

MRC CNGG Brain Disorders Summer School
This year, the event celebrated its 25th anniversary and pupils once again participated in laboratory tours to gain a feel for the excitement and challenges of biomedical research; visited a wide range of interactive exhibitions, listened to a series of talks on various hot topics in biomedical science and met and questioned scientists and clinicians from across the whole spectrum of scientific and healthcare careers.

Nicholas Alford, Deputy Director of Faculty of Science, St Cyres School, said: “Our pupils get to see the great breadth of opportunities for careers in the medical professions. The laboratory tours are a highlight of the day; showing the diversity of techniques used in modern diagnosis and treatment. The hands-on activities are great fun and an ideal time for students and teachers to network…. The Science in Health team are an inspiration to all; their love of their work shows through in their enthusiasm for the event. I highly recommend Science in Health Live to any science teacher; it is consistently the best A level trip we take the students on.”

Professor Duncan Baird, who developed the test with Professors Chris Pepper and Chris Fegan, said: “Not all patients benefit equally from chemotherapy and this test is the only one available that can accurately predict how patients are likely to respond. Our research provides strong evidence that a significant number of patients should be receiving more appropriate treatments.”

The paper can be read at [www.nature.com/articles/s41375-019-0389-9](http://www.nature.com/articles/s41375-019-0389-9)

4 New Insights into Underlying Causes of Alzheimer’s Disease

An international collaboration of researchers has identified some striking new insights into the underlying causes of Alzheimer’s disease, including five new genes that increase risk for the disease.

The International Genomic Alzheimer’s Project (IGAP), which is a collaboration of four consortia, including the Genetic and Environmental Risk for Alzheimer’s Disease (GERAD) consortia led by Cardiff University, analysed data from more than 94,000 individuals with Alzheimer’s disease. This unprecedented project, funded in part by the Medical Research Council (MRC) and Wellcome Trust, scrutinized more genetic data than any other study of Alzheimer’s disease to date. Collaborative data sharing enabled the scientists to discover five novel genetic variants or changes that influence the risk for Alzheimer’s disease.

5 Improved Outlook for People of African Descent with Treatment-resistant Schizophrenia

A study led by researchers from the MRC Centre for Neuropsychiatric Genetics and Genomics means that more people of African descent who have treatment-resistant schizophrenia could be safely given the drug (clozapine) best proven to manage their symptoms.

---

1 Science in Health (SIH) LIVE Success – Celebrating 25 years of Inspiring Future Scientists and Clinicians

Since 1995, the School of Medicine has welcomed sixth form pupils from schools across Wales with the aim of engaging and inspiring them with the exciting science underpinning clinical management of disease and medical research.

2 Better Out-Of-Hours Palliative Care Needed

A study, published in the Palliative Medicine Journal, carried out by researchers in the Patient Safety (PISA) Research Group found that among 1072 palliative care cases reviewed, concerns arose because of four main issues requiring improvement: errors in medication provision; securing access to timely care; inefficient transfer of information between healthcare teams; and problems with non-medication based treatments like urinary catheters and feeding tubes.

Dr Williams, Honorary Research Fellow, feels that safety surrounding this group of patients needs to be thought about far more regularly. “You only get one chance to get people’s last days of life right, this is an opportunity to make that experience better for people,” he said.

3 ‘Game changer’ in Treatment of Chronic Lymphocytic Leukaemia

Research, funded by the blood cancer research charity, Bloodwise, has developed a test to quickly and accurately predict how people will respond to standard treatment for the most common type of leukaemia, chronic lymphocytic leukaemia (CLL).

The test has been described as ‘game changer’ by Cardiff researchers. It also has the potential to change how other cancers, including myeloma and breast cancer, are treated. While previous versions of the test had taken a week to process, results can now be ready in a day.

---

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:
In light of the study’s findings, the team suggest offering a genetic test as a simple and sensitive strategy to diagnose benign ethnic neutropenia before prescribing clozapine.

Individuals with the condition who show no signs of compromised immune function could have revised neutrophil thresholds in line with current benign ethnic neutropenia monitoring procedures.

This would allow more people who would benefit from clozapine to start taking the medication while avoiding the need to stop treatment for many more. Crucially, this is dependent on the outcome of additional safety studies, but this pharmacogenetics test has the potential to assist the management of clozapine treatment.

The paper can be found here: www.nature.com/articles/s41380-018-0335-7. A podcast interview with Drs Sophie Legge and Antonio Pardinas about this study can also be found here www.ncmh.info/videos-and-podcasts/podcast/clozapine-neutropenia/

Artwork for Cardiff Children’s Hospital

The ‘Artwork for the Children’s Hospital’ group was founded in 2016 by Charlotte Maden (then a 3rd year medical student). The vision was to create a multi-disciplinary artistic group for healthcare staff and students that would encourage creativity and be of benefit to patients and the wider community.

Over the past couple of years, the core student team has grown to over 50 participants. Following hours of designing, sketching, sanding, priming, painting, vanishing and drying, the artists have created over 20 large painted murals and many small prints for areas including the children’s theatre recovery rooms and waiting areas. Additionally, around £100 has been raised by the group to further support the Noah’s Ark Charity and future artistic pursuits.

Contact
Charlotte madenc@cardiff.ac.uk and/or Marisol Vazquez vazquezm1@cardiff.ac.uk for more information or to get involved.

7 Namibian Government Recognises Phoenix Project Work

The University’s Phoenix Project has been recognised by the Namibian Government after creating more than 38 joint projects in the country.

New major activities include:
- The Great Green Wall of Namibia: combating desertification in Namibia through indigenous reforestation.
- Implementation of social science research to control a Hepatitis E outbreak in Namibia.
- An electronic patient record system for Namibia.
- The introduction of Continuous Professional Development for doctors and nurses practising in northern Namibia.
- The Cardiff Trauma Pack, which is manufactured in Namibia: saving lives on roads.
- Grant writing training: teaching academics how to attract international research grants.

“The true value of the project is best measured through impact,” said Phoenix Project leader Professor Judith Hall.

8 Brain Games 2019

The annual Brain Games event took place on Sunday 10th March, with a record breaking 3,670 people making their way through the doors of the National Museum Cardiff to join in the fun.

A large selection of interactive games (inflatable brain bouncy castle, stroop mat races, guessing animal brains, shrinking chair optical illusions) and shows were available to the public throughout the day, explaining various scientific concepts relating to the brain and giving children an opportunity to interact and ask questions to some of Cardiff’s leading scientific community. As well as having the opportunity to practice Brain Surgery alongside qualified surgeons, visitors could learn about super hero stem cells and challenge their curiosity.

Great feedback was received on the day: “Well done on a fascinating and educational event. So lovely to see the kids learning without even realising they are!”

9 The Madeline Project

Cardiff’s Clinical Innovation Partnership aims to tackle the biggest health challenges society face. Dementia has been identified as an innovation priority, with over 5,000 people in the Cardiff and Vale area living with the condition.

Madeline Phillips, diagnosed with Alzheimer’s disease, came up with an innovative response to this challenge, stating: “We need to develop a radical new approach to the diagnosis of dementia and the provision of care that can be combined in a unified and coherent programme”.

With support and funding from the South-East Wales Academic Health Science Partnership (SEWAHSP), and the Welsh Government Dementia Action Team, the Madeline Project was established. This has created an innovation test bed, led by the Western Vale of Glamorgan Primary Care Cluster and will ‘design and deliver health care services to be as good as the best in the world at meeting the needs of people at risk of or living with dementia’.

10 Introducing the PACE Project

Drs Sarju Patel, Jeff Allen and Thanasi Hassoulas designed a pilot project in collaboration with Cardiff University’s Community Gateway project. Promoting Academic Excellence (PACE) was set up to work with schools aiming to inspire students to consider reading science, medicine or other healthcare related programmes at University. Since November 2018 thirty medical students have been running weekly sessions for over twenty Yr9 pupils to enhance the teaching and learning of the science curriculum. Pupils say they have enjoyed “learning with friends” and “meeting the university students and learning about the world of medicine”. The medical students are finding it equally rewarding; enhancing their teaching and communication skills.
1. As a child what did you want to be when you grew up?

DH I always wanted to be a wild life expert/explorer. I watched a lot of David Attenborough and other nature programs and wanted to be there in real life.

OD As a child, I must admit I dabbled with the prospect of pursuing every career under the sun. It pretty much depended on what I was exposed to at the time; from wanting to become an architect then accountant then neurosurgeon then child psychologist but I always came back to wanting to be a doctor. Becoming a doctor was the only career ambition of mine that stood the test of time.

VG A scientist or a professional performer.

JT I wanted to be Indiana Jones.

2. Who is your personal or professional hero?

DH My parents have to be my heroes. They sacrificed a lot ferrying me and my brother from school to sports clubs to friends and always made sure we had everything we needed for all a million and one clubs. Spiderman is a close second though.

OD My heroes are the people around me who have continuously encouraged me to pursue my passions alongside medicine.

If it were left up to me, I would probably be too scared to do anything while studying medicine myself. With that being said I would say that I tend to be my own villain when I decide to doubt my ability and stop myself from going for gold!

VG Anyone who volunteers for a clinical trial. Especially in the late stages of a disease. It’s a completely selfless and brave act.

JT Professionally, it has to be Sir David Attenborough, the single greatest scientific orator. After all, what is science worth if we can’t adequately and effectively communicate it? Personally, it is probably my wife-to-be Amy. Her ability to take the most difficult and painful of situations in her stride with strength and resilience is both admirable and a skill I am yet to get even close to mastering.

3. What first brought you to our School of Medicine?

DH Cardiff was the only offer I had, but it was always my favourite, honestly.

OD My friend. We were both applying to Medical School at the same time and she said that she had visited Cardiff University School of Medicine and loved it! I trusted her opinion even though I hadn’t visited it myself and still decided to apply and now I’m thoroughly enjoying my time here.

VG I really wanted to pursue my current project. It seemed like a really interesting approach to cancer research. Thankfully my supervisors liked me as much as I liked the project.

JT During my degree, I was lucky enough to do a professional training year (PTY) with a fantastic scientist Dr Mandy Wootton, in the Specialist Antimicrobial Chemotherapy Unit, here in the Heath. It was Mandy who introduced me to Professor Tim Walsh, who based on my PTY project, offered me the chance of a PhD. I gratefully accepted and the rest they say is history. I am still working with Tim to this day!

4. What is/was your favourite thing about living and working in Wales?

DH The diversity of landscapes around us. Within an hour of my house I have a capital city hosting major sporting and music events, beautiful beaches and national park. What more could you want?

OD Everyone is so friendly! I couldn’t believe it when I first arrived, it seemed too good to be true. Wales is so peaceful, the views in the Bay are amazing and everything is so serene.

VG Rugby days! They’re fantastic.

JT Putting work to one side for a second-being a rugby boy born and bred it simply has to be international match days in Cardiff. Nothing comes close to the comradery and national pride.

5. What does a day in your life look like?

DH I am currently on Breast Surgery so my day is fairly varied. It always starts with waking up too late and getting ready in a panic. Then a good day involves assisting in theatre whilst less fun is all day clinic. My evening usually consist of either rugby, a run or the gym and then chilling with mates and moaning about work.

OD I love playing Gospel music in the mornings while I get ready for my day. There’s just something so uplifting about it. While I’m on placement, I spend most of my day (9am to around 4pm) at the hospital. Once I’m home, I give myself an hour to relax and most times that just involves me watching my favourite TV shows and responding to an insane amount of emails. In the evening I spend some time doing some work, going over things I’d seen in the day and spending time with friends.

VG Early to rise (ish), a day in the office full of coding, emails and planning new events for my society followed by some quality...
time with housemates and cooking with a podcast or maybe an exercise class.

**JT** A mixture of stress, happiness, annoyance, satisfaction, anger, elation, frustration, motivation, fatigue, hunger, optimism and hope that I get home in time to spend some time with the dogs and family!

**6. How do you relax?**

**DH** Exercise has always been my escape. I played rugby throughout med school and still play for a local club, it’s always helped me switch off mentally and reset for the next day.

**OD** Name any movie and I have probably watched it! I love watching movies with a passion, there’s just something so relaxing about it. I also love to dabble in graphic and web design as well as singing tunes and of course sleep.

**VG** I sing in a choir, go to the gym and catch up with friends with a large G&T or cocktail.

**JT** Relax? What’s that?

**7. What is your secret ambition? (just between us)**

**DH** Jaguar E-type. Racing green.

**OD** I’m a girl with BIG dreams. I want to be someone who knows the way, goes the background. I want to make things easier for their goals, irrespective of their age or background. I want to make things easier for people who are following behind me and be someone who knows the way, goes the way and shows the way.

**VG** Well it wouldn’t be a secret then would it?

**JT** Well I am still waiting for Bruce Springsteen to phone me and ask me to become a member of the E Street band. Nothing as of yet though. Failing that, I grew up loving fantasy fiction, particularly the work of David Gemmell and Brian Jacques, so I would love to give writing my own book a stab one day.

**8. What is the funniest thing that has happened to you recently?**

**DH** I was in a rush on call recently and happened to you recently?

**OD** Well it’s been a while since I wasn’t hurt.

**VG** I couldn’t stop laughing once they knew I

**JT** When you have a 2 and a half year old everything is funny, but he did find me spilling food all over the kitchen floor not a couple of days ago, rather hilarious indeed.

9. **If you could have any job in the whole wide world that you could imagine or make up, what job would that be?**

**DH** Can someone pay me for watching Netflix? That’s a career I can fully dedicate myself to.

**OD** I’d want a job that doesn’t make me stressed and isn’t too pressured. Probably something to do with design but minus the needy clients. I want to build my own house in the future, so maybe running a home design company that allows me to express my creative flair and love for homes.

**VG** A really high impact science communicator - like the female David Attenborough (but I’m no way near cool enough for that).

**JT** Other than an adventurer archaeologist, rock-star fantasy fiction author? An international scrum half for Wales of course! (My aspirations are nothing if not ambitious!)

**10. What advice would you offer School of Medicine students today?**

**DH** Enjoy being a student! Take as many opportunities as you can and go on as many trips as you can. You have plenty of years of studying ahead of you even after university so you deserve that one last ski trip/med tour/sports tour.

**OD** Make the most of your time in Medical School. Don’t be afraid to pursue your passions whilst you are in Medical School! It’s possible to do both simultaneously and still excel.

**VG** Be kinder to yourself. There’s enough people out there who will want to criticise you, you don’t need to add another person to the list.

**JT** Perhaps a little cliché, but it would be to have confidence and belief in yourself. Believe that you have in you whatever it is you are aiming to achieve. Everything in life becomes easier when you have that.

**11. What does the School of Medicine need more of?**

**DH** More social space to be able to switch off from studies.

**OD** We definitely need more diversity amongst both staff and students! There also needs to be more opportunities to interact with different year groups. I’m sure they would be able to offer so much invaluable advice but we need avenues to access this.

**VG** Money. There are lots of really interesting potential research projects that are going unfunded.

**JT** Public engagement for one! I am involved in a number of established and future projects, so if anyone has a passion for public engagement and is interested in getting involved please don’t hesitate to get in contact.

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

**DH** I don’t think I would. I’m really happy with where my life is right now and how many possibilities I have for the future. Everything in the past has lead to this point and I’m pleased it has.

**OD** Be more confident and believe in my ability sooner. I would get more involved in Medical School opportunities earlier in my training and engage with the different initiatives that are run.

**VG** Learn to code earlier and keep on top of my French. I used to be great and now I can barely ask for directions.

**JT** Going back to a previous answer, it would be to try really hard to have confidence and think well of myself. Many opportunities, both personal and professional, have passed me by through a lack of self belief, so I stress again to all the students out there, work on it.
In February 2019, the Topol Review made recommendations for the NHS workforce to evolve and adapt with the technologies and developments of the future such as ‘genomics, artificial intelligence, digital medicine and robotics’. The report mentions that ‘educating the current and future NHS workforce is key to enabling the implementation of the revolutionary changes to healthcare practice that technological advancements will bring for the benefits of the patients’.

Sanchita Bhatia, CUReS President said: “As the future of the NHS, we as students need to not only learn essential clinical knowledge, but also develop versatile skills in how to critically approach the world around us, question and innovate.”

Cardiff University Research Society (CUReS) is a student-led group that has been actively involved in inspiring medical students to get involved in research. Sanchita explains: “We believe that it is incredibly important to learn how to push the boundaries of current healthcare practice through research and scientific discovery.” CUReS provide research mentorship opportunities for students through taster days and longer summer research projects to develop the indispensable skills in a range of areas: from molecular medicine to large-scale population studies.

Sanchita continues: “With the ever-evolving multi-faceted role demanded of the future clinician, we also believe that it is incredibly important to teach students to question the norm, identify current problems in clinical practice and strive for developing solutions. With the introduction of our Innovation arm 3 years ago, CUReS have made strides in addressing the gaps in current medical education helping to equip the clinicians of the future.”

**Learning to Innovate**

Three years ago, CUReS launched its annual Dragons’ Den event, and in 2018, this was integrated into the wider Cardiff University Innovation for All Festival, and expanded not only to MEDIC, but also to School of Healthcare Sciences. CUReS hosted workshops on learning how to think innovatively, and have received funding to develop this into a longer Learn2Innovate bootcamp to equip students with entrepreneurial and technical skills to make their vision a reality.

**Bedside to Bench**

Clinicians are in a unique position where they can put the patient first and gain the insight of what questions need to be answered to improve their care, and root that back towards the science to find the answers. As a result, bedside to bench has been a short series of expert talks from various specialities providing students with an insight into their clinical practice and their research and how it is actively contributing in improving patient care.

**Research for Clinicians**

Last year, CUReS conducted a review of research skills taught to students and identified key, highly relevant skills that are not taught to students currently. Following this, CUReS developed a short hands-on course providing an in-depth knowledge of critical appraisal and how to write a paper. One of the Society’s aims is to inspire students who have never considered academia as part of their clinical careers and to show the importance of understanding where current clinical practice guidelines come from, and how they evolve – in order to become better clinicians and strengthen decision-making skills.

**The Future**

Sanchita concludes: “The future clinician will wear many hats, as a teacher, as a scientist, as an innovator – keeping the patients at the heart. Through CUReS, we aim to allow students to become more flexible with all these roles. We hope to integrate our vision into the evolved C21 curriculum, that allows students to question, problem-solve and build the NHS of the future.”