College of Medicine, Swansea University

10th Anniversary: 2004-2014
History in the making

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Front cover image based on an original idea by Leifa Jennings.
Research as Art 2013
Undergraduate award: ‘Cobalt, Celeste, Cyan and Me’
Leifa Jennings (College of Medicine)

“This photo shows a rail of blue theatre scrubs, ready to be worn. It is a visual representation of how it feels to be a medical student entering the operating theatre for the first time.

Everyone else has a role to play and a place to be, but as a student you stand there, bright red ‘Student’ lanyard around your neck, feeling like you definitely don’t fit in.

My research project on theatre etiquette aims to create a piece of work to inform new students of the unwritten rules of the operating theatre, hopefully allowing them to feel more confident the first time they enter the operating theatre environment.”

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We train tomorrow’s doctors and life scientists in an environment offering an interdisciplinary approach to translational medicine, from basic science to healthcare delivery, and an innovative approach to building the knowledge economy.
The long and the short of it

The College of Medicine has come a long way in a short time and is now acknowledged as one of the fastest growing medical schools in the UK. The journey started with small incremental steps. Momentum gathered. It is now in full stride.

1980s
Swansea University becomes one of the first Institutions in the UK to offer BSc Genetics degrees.

1970s
Genetics and Biochemistry departments develop at Swansea University.

1980s
EPSRC sites its UK National Mass Spectrometry Service Centre at Swansea University.

1990s
Swansea University founds a Postgraduate Medical School.

2001
Swansea University establishes a Clinical School under the leadership of Professor Julian Hopkin.

2003
The original concept for the Institute of Life Science (ILS) is captured on a napkin in a New York diner.

2004
The Clinical School develops into a School of Medicine, welcoming the first cohort of Graduate Entry Programme (GEP) students.

2005
Building work on ILS begins with a groundbreaking ceremony featuring local school children.

2006
The Blue C Supercomputer is given a permanent home at Swansea University as part of a high profile collaboration with IBM.
2007
ILS1 opens its doors for business with the Boots Centre for Innovation (BCI) as its flagship tenant.

American Astronaut of Welsh descent, Dafydd Rhys Williams, presents to school children and scientists at ILS.

The School of Medicine partners with the School of Medicine in the Gambia to establish the Swansea-Gambia link with support from the Tropical Health and Education Trust (THET).

2008
Prime Minister Gordon Brown visits ILS during his term of office.

First Minister for Wales, Rt Hon Rhodri Morgan, describes ILS as the ‘jewel in the crown of Wales’.

The School of Medicine enjoys spectacular results as part of the Research Assessment Exercise (RAE2008).

The Ibadan Swansea Partnership wins second prize in the Tropical Health and Education Trust (THET) Health Links competition.

Professor Gareth Morgan takes over leadership of the School of Medicine.

The School of Medicine hosts its first Christmas Ball for staff and students.

2009
Medical student Nathan West is selected as the first student to receive the Mullany Prize for Excellence.

Swansea and Bro Morgannwg NHS Trusts combine and are granted University Hospital status to become Abertawe Bro Morgannwg University Health Board.

Swansea University partners with the NHS to secure significant funding for a second phase of the ILS.
The centre for NanoHealth is developed, a joint initiative worth £21 million.

Graduate Entry Medicine students achieve 100% pass rate in 2010.

Construction work begins on the Data Science building to house the £9.3 million Farr Institute of Health Informatics Research and the £8 million Administrative Data Research Centre Wales.

The Schools of Medicine and Engineering collaborate to develop the Centre for NanoHealth, a joint initiative worth £21 million.

The first cohort of students begins studying on the Graduate Entry Medicine (GEM) programme entirely at Swansea University.

The Haemostasis Biomedical Research Unit is opened at Morriston Hospital’s emergency department.

Edwina Hart AM OBE officially launches ILS2.

BEACON project begins, a collaboration between Aberystwyth, Bangor and Swansea Universities dedicated to harnessing the power of plants in medicine, science and manufacturing.

ILS launches the Affiliate Membership Scheme to encourage life science and healthcare companies to access the expertise and state-of-the-art facilities.

ILS establishes E-Health Industries Innovation (EHi2) Centre with grants worth nearly half a million pounds.

Graduate Entry Medicine students achieve 100% pass rate.

Rector of Medicine and Health, Professor Julian Hopkin, is awarded a CBE in the New Year’s Honour List for Services to Medicine.

The School of Medicine becomes the College of Medicine.

ILS2 and the Centre for NanoHealth open for business.

State-of-the-art MRI equipment arrives from Siemens.
2012
The Joint Clinical Research Facility (JCRF) is launched in collaboration with ABMU Health Board’s Clinical Research Unit (CRU).

Genetics and biochemistry programmes are recognised for high graduate employment rates with over 80% of graduates in employment or further study within 6 months.

Professor Keith Lloyd is appointed Dean and Head of the College of Medicine.

2013
EPSRC National Mass Spectrometry Facility replaces the service centre to provide a comprehensive mass spectrometry service for university research groups throughout the UK.

Health Minister Mark Drakeford visits ILS and launches ‘Help is at Hand’, a support publication for people bereaved through suicide.

First minister Carwyn Jones officially opens the Centre for Improvement in Population Health through E-records Research (CIPHER), a multinational partnership to improve population health and wellbeing through health informatics research.

Biochemistry teaching is enhanced with new teaching laboratories.

Construction work begins on the Data Science building to house the £9.3 million Farr Institute of Health Informatics Research and the £8 million Administrative Data Research Centre Wales.

2014
MRC bioinformatics centre is won in collaboration with Warwick University, becoming the College’s fourth research council centre in two years.

The GMC adds Swansea University to the list of institutions able to award Primary Medical Qualifications (PMQs).

The College of Medicine celebrates its 10th Anniversary.

The College of Medicine wins Athena SWAN bronze award for commitment to advancing women’s careers in science subjects.

BEACON wins RegioStars award for sustainable growth.

First cohort of GEM students graduates from Swansea University.
Rising to the challenge

Vice-Chancellor Professor Richard B. Davies applauds the College of Medicine’s distinctive approach and rapid growth, and its contribution to positioning Swansea University for the 21st century.

Swansea’s efforts to establish a medical school date back at least to the 1960s. However, Swansea lost out then when the new schools went to Universities in England, and lost out again in a further round of new medical schools in the 1990s.

All changed in 1999 with devolution. With fresh thinking in Wales came a fresh opportunity, and the arguments by the University and clinicians in the region began to receive a sympathetic hearing. Importantly, the population in the region could begin to look forward to the health and wider benefits associated with living close to a medical school. In 2001, the Welsh Government, with the support of the Welsh Assembly, established a medical school at Swansea.

Step-by-step, the College of Medicine took shape. Key early decisions have proved to be crucial: it was not to mimic other medical schools elsewhere in the UK, but to focus on graduate entry, adopt a distinctive multi-disciplinary approach to research, and commit uniquely in the UK to effective collaboration with industry. Those decisions have enabled the College to develop world-leading strengths and build up its recognition with remarkable speed, initially attracting substantial Welsh Government and European Investment Fund support for the Institute of Life Science and, recently, large MRC and ESRC funds for the purpose-designed Data Science building. This will open in 2015 and will house the £5 million Farr Institute of Health Informatics Research, the £4.3 million Centre for the Improvement of Population Health through E-records Research (CIPHER) and the new £8 million Administrative Data Research Centre (ARDC) Wales.

The big challenges of today do not respect the artificial boundaries between traditional disciplines. Swansea’s Institute of Life Science has eliminated several disciplinary boundaries to foster world-class research that delivers high-technology solutions to major healthcare challenges in collaboration with industry and the NHS.

The growth in research income achieved by the College of Medicine is impressive, particularly the high proportion of prestigious research council income which in 2013-14 accounted for 62% of the £14.5 million secured by the College.

The results of the Research Assessment Exercise 2008 (RAE2008) demonstrated unequivocally that Swansea University is fast achieving its ambition to be a world-class, research-led University. Since then, progress has accelerated even faster and Medicine is very much a part of that success. Already Swansea is fourth in the UK for the amount of collaborative research with industry. Our industrial links will be further strengthened within our ambitious Science and Innovation campus development and Singleton campus developments, many led by the College of Medicine.

The College of Medicine’s approach reflects the distinctive Swansea strengths that are particularly relevant for a 21st Century University: multidisciplinary research, collaboration with industry and an international perspective. We are confident at Swansea that we have the staff commitment and ambition to maintain our impressive momentum and spectacular growth, and that the College of Medicine has a big role to play in that success.

I wish the College of Medicine well in its next phase of development and in its ambitious plans for further expansion of learning and teaching, research and innovation.

Professor Richard B. Davies
Vice-Chancellor, Swansea University
From vision to reality

Professor Julian Hopkin, founding Head of Swansea Clinical School (2001-2004) and School of Medicine (2004-2008) sits in Café Glas, ILS1, and discusses how the College of Medicine arrived at where it is today.

What was your vision for the College of Medicine at Swansea University?
It was 1999 and I’d returned from Oxford to Swansea with the aim of just doing medical research when talk of the possibility of a new medical school arose again in the Swansea Hospitals – there’d been a failed bid to UK Government in the 1960s and later the establishment of a postgraduate medical school led by John Williams. The 1999 vision was for an exciting and strategically sound medical school that placed innovation at the heart of our proposal to the, by then, devolved Welsh Assembly Government: innovation that would apply to the excellence of medical teaching and medical research. We envisaged the creation of a second medical school for Wales that truly complemented rather than duplicated the established Cardiff Medical School model. We also saw the benefits of healthy competition as well as cooperation between the two Schools in Wales’ two major cities.

Was there a need as well as a desire for a second medical school for Wales?
Absolutely. At that time, the UK had become fully aware that it was under-doctored by international standards and new Schools were being established in England as a result of the findings. Wales was lagging behind in both training new doctors and in recruiting doctors to work in Wales. There was additional and much-needed opportunity outside the capital for a fresh approach in medical teaching and research.

What benefits did you see for Swansea and south west Wales generally?
Wales’ second centre in Swansea would in turn foster both recruitment and retention into the NHS of the west and through that – and research – would drive medical advances of international importance, advancing medicine at large whilst at the same time being rooted in its local community, which was integral to our vision.

You had the vision, so what about the process – how did you make it happen?
We had to ensure that there was a vibrant and committed support for the project across Swansea NHS and University – we anticipated there would be challenges. And there were! But, at the outset we had 96% of the consultant workforce onside, voting for the development, and recording that they would be ready to provide clinical teaching. The support was boosted by Professor Robin Williams (Vice-Chancellor of the University at that time) and Dr Pat Steane (Medical Director) and Mr. David Williams (Chief Executive Swansea NHS Trust) declaring their full backing. The support was boosted by Professor Robin Williams (Vice-Chancellor of the University at that time) and Dr Pat Steane (Medical Director) and Mr. David Williams (Chief Executive Swansea NHS Trust) declaring their full backing. The support was boosted by Professor Robin Williams (Vice-Chancellor of the University at that time) and Dr Pat Steane (Medical Director) and Mr. David Williams (Chief Executive Swansea NHS Trust) declaring their full backing. The support was boosted by Professor Robin Williams (Vice-Chancellor of the University at that time) and Dr Pat Steane (Medical Director) and Mr. David Williams (Chief Executive Swansea NHS Trust) declaring their full backing. The support was boosted by Professor Robin Williams (Vice-Chancellor of the University at that time) and Dr Pat Steane (Medical Director) and Mr. David Williams (Chief Executive Swansea NHS Trust) declaring their full backing.
in our results: success driving momentum so that the next phase in our development could be secured. It was proven success that was to be the practical cornerstone of the advance of the School. There were some tough times, but outrageous ambition and team spirit were key right from the start.

What pedigree did Swansea have at that time to drive the agenda forward and endorse its case?
Swansea had a substantial hospital complex with high standards of practice; the physical infrastructure was in place. In addition to a comprehensive range of general hospitals services it also had specialist units – cardiac, renal, burns, neonates, etc. It was also blessed with a strong set of local general practices and a University with diverse departments and strengths: there was already a School of Nursing here and a very powerful School of Engineering that were committed to the local vision of a new medical school building on the research base of the existing postgraduate medical school. In Swansea we also had a University whose campus abutted onto one of the major NHS sites (Singleton), which promised great facilitation of working together in teaching and, vitally, in research. This was a model of excellence and innovation between NHS and the University that local Welsh Assembly politicians strongly endorsed and which led to its approval.

Do you remember how you felt when the first phase of the Clinical School came to be in 2001?
I’ll never forget the moment when I received the phone call from Andrew Davies – I was at home and he told me that the Welsh Assembly Government had supported our application and innovative model to grow the School in phases and to work in cooperation with Cardiff. It all started with 34 Senior Clinical Tutors who were appointed from among the Consultant Staff to lead the medical student teaching in the first phase of the Clinical School which lasted from 2001-2004. They produced a truly brilliant performance with rave formal feedback from the students and impressed politicians and civil servants. It all went from there…

And what about 2004, a significant milestone, I’m sure?
Momentum had been gathering towards 2004, which marked the transition from a Clinical School to the School of Medicine with its distinctive Graduate Entry medical concept – and with the first glimmers of the Institute of Life Science concept. It’s worth emphasising here that business plans are one thing but performance is another: from the word go, the School excelled at attracting and appointing staff at all grades from around the world – medical, scientific, technical, administrative – and it’s those people who are responsible for the outstanding success of the School – now a College – in teaching, research and innovation – and have made the robust entity it is in 2014. And again innovation in medical training: while the UK was strongly focused on School-Entry medical training, we dared to be different, following the USA and German approach by attracting Graduate Entry students with their distinct and diverse backgrounds and maturity which has enriched the talent and potential of the medical workforce in terms of medical care and research. We were able to offer a highly innovative medical degree programme with thorough integration of medical care and medical science from day one.

The rise of the School (College) has been continuous and I know it will continue in that vein. The founders of the Swansea School knew that the now great and wonderful Harvard Medical School had started in 49 Marlborough Street, Boston in 1810 and just went on to grow!

What do you see as your proudest moments in the College’s story to date?
Obviously the establishment of the Swansea Clinical School in 2001 and then the School of Medicine in 2004 [later to be renamed the ‘College’]. The Institute of Life Science with building 1 in 2007 and building 2 in 2012. In 2008 there was a highly successful Research Assessment UK Exercise Result when 87% of our research outputs were classed as world-leading or internationally excellent and, of course, the winning of MRC/RSSC Research Centres in Health Informatics and Data, the support of EPSRC for the Mass Spectrometry Centre. I’m proud of our people: the fantastic pass and distinction rates for the Graduate Entry Programme. Out of our first 2 cohorts, a Swansea student won the all-Wales best medical student award in both 2008 and 2009 final examinations. And then of course, there was Prime Minister Gordon Brown’s visit in 2008: he was, quite rightly, duly impressed and sent a warm letter of fulsome congratulations.

“I’d like to be remembered simply as the founding boss whom I hope folk found ambitious for medicine in Swansea and Wales, determined and fair minded. But it wasn’t just about me.”
Professor Julian Hopkin CBE
College of Medicine, Swansea University

It’s been quite a journey and I know it’s only just begun. How would you like your involvement to be remembered?
Simply as the founding boss whom I hope folk found ambitious for medicine in Swansea and Wales, determined and fair minded. But it wasn’t just about me.

What else do you think significant as to where Swansea stands so successfully poised in 2014?
Team spirit, and again team spirit. And keeping focus on the little matter that the medical education and medical research and development of today makes the great doctors and powerful medicine of tomorrow.

And the future?
Bright, very bright. Successive Heads must sustain outrageous ambition and team spirit. Current Head, Keith Lloyd, is doing just that.
Ten years. Ten snapshots. Together they tell the story of the incredible journey the College of Medicine has made in the last decade, and signpost where that journey might lead in the future.
2014 is a doubly special year for medical education at Swansea. September sees the 10th anniversary of the first students who started on the Swansea-Cardiff 4 year Graduate Entry Programme (GEP) in Medicine.

July 2014 also sees the first cohort of medical students to have spent all four years of their course at Swansea University qualifying as doctors. Their completion of Swansea’s Graduate Entry Medicine (GEM) Programme is a triumph for staff and students alike.

But learning and teaching within the College of Medicine is much more. It is the successful coming together of its integral parts: a highly-regarded undergraduate programme in Genetics, Medical Genetics, Medical Biochemistry and a world-class Postgraduate facility comprising taught Masters and Research degrees in areas significant to the advancement of medicine on a global scale.
At the heart of the triumph and celebration of 2014 are ambition, innovation and above all, proven excellence in learning and teaching. Whether part of the Graduate Entry Medicine (GEM), Undergraduate or Postgraduate programmes, all the students who qualify in the College of Medicine know that they will be equipped to be tomorrow’s doctors and life scientists in the communities they will serve: across Wales; across the UK; across the world. With them they will carry the prestige of one of the UK’s fastest growing medical schools.

Firm foundations
The story of successful learning and teaching at today’s College of Medicine is not a new one. The ethos of providing the best learning and teaching was already firmly established on campus, and recognised nationally and internationally, before the beginnings of the College of Medicine. Previously based in the School of Biological Sciences, Swansea University had offered BSC Genetics degrees since the 1960s, one of the first Institutions in the UK to do so. Swansea University also boasted a highly regarded School of Nursing (which celebrates its 25th anniversary this year) and a globally acclaimed School of Engineering. There was also a research based postgraduate medical school. All this provided a firm foundation on which the embryonic College of Medicine could build, maintain and improve on the quality provision of learning and teaching which lays at the core of the success it enjoys today.

Thinking big
Attracting and retaining the best staff and students has been a critical element in the story of the College from day one. The tone was always deliberately bold and ambitious: this was a College that was going somewhere and only the cream of world class expertise would suffice. Big ambitions needed big thinking.

Prestigious teaching experts were sought out across the world and recruited sometimes en masse (six joined in one day in 2001) attracted by the vision of the Swansea model, which realised that a Medical School could not be built without major players in the fields of research and teaching nor without innovation as a key driver.

Students across all three areas of learning and teaching have been, and continue to be, recruited through a stringent selection process comprising UCAS application, open day, interview and assessment. The best of the best philosophy applies here too, so that in 2014 only 25% of those who initially apply will be considered eligible to take part in the ‘Swansea Experience’.

Making it happen
It takes great people to turn concepts into tangibles and there have been many people tasked with just that during the College of Medicine’s short, but dynamic, history of learning and teaching to date. This history has not been without its challenges – fortunately more of the lesser type than those of greater magnitude – and all have been overcome through a spirit of “pragmatic acceptance of setbacks by students and a collaborative culture of positive thinking and hard work by staff members.” One person of many more deserves acknowledgement: Professor Rhys Williams, who is said to have enabled “medicine to be brought to life” at Swansea and who successive cohorts on the GEP/GEM Programmes will remember as the “human face” of their medical education. He has handed on that role to Professor Judy McKimm and her team.

Learning and teaching for tomorrow
The three features which follow aim to encapsulate the essence, development and successes of the unique ‘Swansea Experience’ of learning and teaching and illustrate where these successes are leading.

“The staff members who walked into the Purnell Lecture Theatre on that first day – 8th September 2004 – of the first year of our GEP course are unlikely ever to forget the feeling of seeing for the first time these young people as a group. We got to know them well as we did each cohort of students from then on.”

Professor Rhys Williams
Formerly Chair of Learning and Teaching,
College of Medicine, Swansea University
Tomorrow’s life scientists

2014 sees Swansea University’s Biochemistry and Genetics Undergraduate programmes firmly embedded within the College of Medicine. But the roots reach back over forty-five years to the 1960s when the University was one of the first UK institutions to offer students BSc degrees in Genetics.

When Swansea did not become Wales’ second medical school in 1966 the University’s long and respected tradition in Biochemistry, Chemistry and Genetics continued to flourish. Biochemistry was closely involved with the Chemistry Department prior to transfer in the late 1980s to the School of Biological Sciences into which Genetics was also integrated. When the bid re-emerged in 1999, this tradition was critical in giving leverage to the articulation of the new vision.

It made sense: there is a substantial link between Genetics and Medicine and it was a natural step that linked the people instrumental in helping to birth the Swansea Clinical School in 2001. In Medicine there was Professor Julian Hopkin and in Genetics there was Professor James Parry who both realised the positive and mutual benefits of their separate disciplines forming part of the envisaged model for the School.

The fit between medical and molecular science that was so strategically effective at the inception of the School, and integral to its aims and ambitions, resulted in the Genetics Programme being incorporated within the School (now College) of Medicine in 2007, with Biochemistry following in 2010. With the new transfers came a considerable overhaul of management and structures, with the formation of a joint Board of Studies chaired by a single Programme Director – initially Professor David Skibinski and currently, Professor Paul Dyson.

By 2014, that fit has already been successfully proven, with Undergraduates benefiting from the cross-fertilisation achieved through shared learning and teaching and research expertise available within the College. Many teachers on the Undergraduate Programmes are part of the wider research environment and many teachers are medical professionals, often working as doctors in local hospitals. Positioned together, the two sciences have been strengthened and are jointly contributing to the prestige of the College as a whole.

With the transfer to the College of Medicine there has been an accompanying increase in status of the Undergraduate Programmes. The rate of growth has been rapid: during 2007-2008 there were 94 students in total across the 3 years. Fast forward to 2013-2014 and there are 197 – a 100%+ increase and Programmes are almost fully subscribed.

The Undergraduate Programmes are tuned into the increasing demands of students as consumers of education, and since transfer was completed in 2010 have been proactively evolving the nature and scope of the degrees offered (currently a total of 5 single and joint honours BSc Degrees) ensuring that Swansea maintains competitive edge and maximises employment opportunities for its Graduates.

Increasing employability success is a source of pride: in 2007 only 67% of Graduates taught in the Biological Sciences were employed in work or in further study.

2007-2008 saw that figure soar to over 80% where it has remained year on year since.

The Undergraduate Programmes also take pride in the fact that they are seeding the ‘home grown’ and globally significant research that is so in evidence at ILS. An ongoing cycle of learning and teaching is developing at the College: Undergraduate – Postgraduate – PhD – Staff; retaining that knowledge base in a local clever economy for the benefit of the wider world of Life Science.

And the future? Such strong performance in such short a time looks set to continue on an upward trajectory. About to launch is an innovative one year MSc bolt-on to the BSc that will place greater emphasis on research and add even more value to tomorrow’s life scientists.

“We are turning them into professional scientists. I am proud to say, I taught them.”
Professor Paul Dyson,
Undergraduate Programme Director,
College of Medicine, Swansea University
George is a an award-winning researcher in the College of Medicine who combines teaching and research, ensuring that tomorrow’s life scientists are learning from the best of today.

Academics like George who keep their fingers on the pulse of research teach students the latest methods and findings and coordinate placements in world-leading organisations such as GlaxoSmithKline (GSK) so students can hone their skills in business settings. Evidenced by the spectacular employability rate, this hands-on experience makes them some of the most sought after graduates in the UK.

Dr George Johnson,
Senior Lecturer
College of Medicine,
Swansea University
Tomorrow’s doctors

25th February 2014 will always be remembered as the day Swansea University’s medical school joined the General Medical Council’s (GMC) prestigious list of UK medical schools entitled to award UK Primary Medical Qualifications (PMQs) independent of any other institution.

This GMC validation is testament to the vision and ambition of all those who campaigned for Wales’ second medical school ahead of it opening its doors to the first cohort of thirty-six graduates in 2004. This acknowledgement to ‘stand alone’ is also an endorsement of the successive leaders who have been charged with Graduate Entry Medicine’s stewardship in its ten short years and a marker of the responsibility to follow in the years to come.

Back in 2004 the Graduate Entry Programme (GEP) was funded by the Welsh Assembly Government as part of a joint collaboration between Swansea and Cardiff Universities, which meant that students on the Programme spent the first two years at Swansea followed by their final two years at Cardiff. From its inception in 2004, Swansea had been striving to be able to ‘go it alone’ and since 2007 the College of Medicine had worked partnership with Welsh Government, the Wales Deanery, local Health Boards, hospitals, community organisations, students and the GMC to develop the distinctive GEM Programme, which it was able to offer from 2009.

Swansea’s GEM programme is unique in Wales and one of a small group of similar programmes of medical study in the UK. It is an innovative, accelerated medical degree open to high-achieving graduates with demonstrable first and upper second degrees in the arts, sciences or humanities. Competition is tough and only seventy, selected from initial applications of over eight hundred, will have the opportunity to benefit from the ‘Swansea Experience’.

GEM enables Swansea to play its part in the under-doctoring issue in Wales by both increasing recruitment and increasing retention of doctors, which will in turn improve the health and wellbeing of the communities they will serve. It has already started to deliver with 59% of this year’s cohort who will graduate with a MB BC in July committed to foundation doctoring in Wales.

The GMC visiting team highlighted some of the programme’s unique features including the Rural and Remote Health in Medical Education (RRHIME) and the value placed on the Welsh language and culture which is embedded in the programme.

2014 is a year to celebrate and also to acknowledge that there have been challenges along the way. Challenges that have been overcome with the same ethos of determination, team spirit and the pursuit of excellence that is at the core of GEM’s success. Following the bitter disappointment – both for students and staff – of the 2011 GMC Review, the curriculum has been recast, building on and adapting its inherent strengths so that it has now been deemed ‘fit to go’. It is proof of the ‘yes we can…and we did,’’ mind set of Professor Judy McKimm and her predecessor, Professor Rhys Williams who have enabled the GEM Programme to come of age.

GMC’s Tomorrow’s Doctors (2009) outlines the requirements of a doctor under three themes: doctor as scientist and scholar; doctor as practitioner; and doctor as professional. Those doctors who leave GEM in 2014 will know that they have had the best of the best to equip them to be tomorrow’s doctors. For them, their lifelong journey is just beginning.

“In common with best medical practice internationally and in line with Tomorrow’s Doctors, the Swansea GEM programme incorporates… a high level of patient involvement and a large number of self-selected clinical and research experiences to develop lifelong learning.”

Professor Judy McKimm
Dean of Medical Education,
College of Medicine, Swansea University

So too for GEM. The programme will mature with the years and with continued outward facing thinking will continue to attract and retain the best. Small student: teacher ratios and a context that views both learners and teachers as professional colleagues is a potent mix and combined with GMC’s recent validation has boosted Swansea University’s upward trajectory and its ambition to be one of the world’s top universities.
Gaining one of the seventy places on the GEM programme is an achievement in itself, but becoming one of the seventy doctors of tomorrow is something else.

The GEM curriculum features a unique balance of learning weeks, clinical apprenticeships, specialty attachments, clinical assistantships, electives and shadowing. Unlike conventional medical degree courses, the innovative GEM curriculum is intentionally not structured in a traditional ‘body systems’ approach. Instead, it is designed to reflect the way in which clinicians actually approach patients, investigating particular problems and conditions from all possible angles. This gives Swansea graduates the upper hand when it comes to approaching the uncertainties and uniqueness of their future practice and prepares them to be tomorrow’s doctors.
The rapid rate of growth in the number of Postgraduates choosing to progress their studies at Swansea is commensurate with the College’s status as ‘UK’s fastest growing Medical School’. It is affirmation of the demand for its distinctive approach to learning and teaching at the heart of its vision.

In 2014, within the College of Medicine there are 140 candidates engaged in highly valued and respected Postgraduate and Continuing Education or in supervised Postgraduate Degrees aligned to the research-active groups in the College. In the years 2001-2004 there were just 3.

The Postgraduate thread of learning and teaching is now able to offer 4 Postgraduate Research Degrees: Doctor of Philosophy (PhD); Doctor of Medicine (MD); Master of Philosophy (MPhil); and the latest addition – a significant milestone for the Programme – Masters by Research (MRes.) introduced in 2013.

Under its Postgraduate Taught Masters and Continuing Education Programme, the opportunities continue to expand: all are linked to the College’s professional and research expertise and focus on gaining transferable employability skills as well as specialist knowledge.

Year on year, the Postgraduate Programmes are growing talent: talent enriched by the experience of study itself and in turn, enriching the advance of medical science. Postgraduates are drawn from across the globe, the UK, from industry, and from other programmes in the College of Medicine: many of those who graduate through GEM or the Undergraduate Programme are feeding into Postgraduate study and in so doing progressing the knowledge pipeline and helping retain ‘home grown’ expertise.

Nurturing all the expertise at present (2013-) is Dr Tom Wilkinson, Chair of Higher Degrees who succeeded Professor John Baxter, Professor Gareth Jenkins and Professor John White, each retrospectively keeping the Chair warm for the subsequent sitter. Though the stewardship has changed, the focus on increasing Postgraduate numbers and at the same time ensuring high levels of service are maintained is paramount. Student surveys are now all important and Blackboard intranet allows the Programmes to monitor satisfaction. Vital markers too are statistics from external monitoring benchmark bodies such as the Research Excellence Framework (REF).

The learning and teaching nurturing approach embodied in the PhD programme can be summed up in ‘Tom’s method’ – a close mentoring of apprentice by master that progresses over the duration of the course from I (the master demonstrating) to We (master and apprentice working together on research in the laboratory) to You (master gradually ‘letting go’ of the apprentice who thus becomes a new master).

The Postgraduate Programmes are coming of age. To reach the point they are at today, a strong strategy and strong structures have needed to be in place. The restructuring of the Postgraduate Research Degrees 2011-2012 has resulted in the “best balance of people and ensures everybody’s on the same page.” But there are smaller changes in place too: increasing pastoral support for students, with the Chair meeting all students at the end of every year to chat about progress and gaining valuable feedback; four official joint-appraisal meetings between Postgraduates and their Supervisors; the use of Skype and the fusion of the internet into the design of projects; platforms for students to have their voice in quarterly ‘Tea with Tom’ sessions. And in the ethos of the interdisciplinary nature of learning and teaching and research at the College, open discussions at monthly meetings operating in a culture of collective decision making. Since 2007 there have been physical structures too that have been the catalysts in attracting and developing progression from Undergraduate to Postgraduate to PhD: world class innovation and research at work in the laboratories and facilities of the Institute of Life Science (ILS1 and ILS2). With the new Data Science building on track to open in 2015 and ILS3 beckoning in 2020, things can only go from strength to strength and give more space for developing knowledge to flourish.

“Postgraduate Day in May has now become Postgraduate Week. I’m really proud that the number of Postgrads is too big to present snapshots of its research on 1 day.”

Dr Tom Wilkinson
Chair of Higher Degrees,
College of Medicine, Swansea University
Leanne Stannard, CASE PhD Studentship
College of Medicine, Swansea University

Leanne is studying towards a PhD at the College of Medicine after being awarded a CASE studentship funded by multinational company AstraZeneca and the BBSRC. She graduated from the College in 2013 with a first class honours in Medical Genetics.

Her growing talent was evident after successfully securing a UK-wide recruited and hotly contested placement with global healthcare company GlaxoSmithKline (GSK) where she excelled by helping to improve human health risk assessment.

The College of Medicine’s ethos is that research and industry opportunities are made available to undergraduate students as well as postgraduates, allowing them to grow into scientists of global standing.
Research

In 2014 the College of Medicine is recognised across the globe for the impact of its Research. This is credit to those whose early vision for the new College realised that Research excellence was integral to the model that would pay dividends and grow profile quickly.

Today, Research is firmly embedded within the College of Medicine at its Institute of Life Science (ILS). But its story is shaped by a strong tradition and a track record of success in Genetics and Biochemistry, which have been based at Swansea University since the 1960s.
The status and impetus for growth afforded by Swansea becoming a fully fledged Medical School in 2004 is nothing short of startling. Nowhere is this more in evidence than in the field of Research, one of the three pillars that together, in just a decade, have enabled the College of Medicine to say, ‘Look at us!’

Perfect strategy
Of course the raison d’être of the embryonic College of Medicine in 2004 was to teach doctors, without that it would have been nothing. But the early strategists, particularly, Professor Julian Hopkin, recognised that this on its own was not enough: the College had to build an international reputation for Research. His strategy was to “get the best quality people and get them fast”. At that time there were no dedicated buildings for Research, no state-of-the-art facilities to entice world-wide expertise, no history, but nevertheless they came from the outset, excited by the opportunity of the Swansea vision conveyed with dynamism and determination by Julian. They came from the UK; from Germany; and from further afield, USA and New Zealand. Many who had started out in Swansea ‘came home’. This was a bold strategy which made a big statement about intention. It was the beginning of a virtuous circle and a spiral of confidence that was central to Research at the College of Medicine. It allowed for ‘clusters of difference’ and a cross-fertilisation of ideas between different areas of Research and between academics, PhD Students and enterprise and innovation at the heart of the concept of ILS.

Room to grow
With more people came the need for more space; more space meant capacity for more people and 2007 saw the triumph of the Institute of Life Science (ILS1). Its open-plan and shared core facilities of laboratories and offices embodied the collaborative ethos that was central to Research at the College of Medicine. It allowed for ‘clusters of difference’ and a cross-fertilisation of ideas between different areas of Research and between academics, PhD Students and enterprise and innovation at the heart of the concept of ILS.

The ILS1 WOW factor, combined with the research expertise that was already in place, plus the excellence highlighted in the 2008 Research Assessment Exercise (RAE) now re-named the Research Excellence Framework (REF) drove a second substantial wave of recruitment of calibre, as did ILS2 in 2011 and the launch of the Joint Clinical Research Facility (JCRF) in 2012. Success then quickly followed success with a flurry of research council funded centres: mass spectroscopy, health informatics and bioinformatics. Translational research at Swansea was being seen to make a “real difference in the real world”; but perhaps it could make an even greater difference.

Strength in depth
Up until 2012 research in the whole College was led by 35 Professors and consisted of over 130 Research Groups. There was general agreement that the Research was being spread too thinly and that strength in depth across less breadth was the way forward. It was therefore decided to reorganise the existing structure into units of critical mass under four broad themes that had been identified as giving the ‘flavour’ of Research expertise at the College of Medicine: Patient and Population Health and Informatics (PPHI); Biomarkers and Genes; Microbes and Immunity; and Devices with Data Science central to all.

Bright spots
In 2014, these four themes remain broad and will be further refined to highlight a series of ‘bright spots’. Research will bring these ‘bright spots’ into sharp focus to maintain the upward trajectory that has seen grant income rise exponentially from a base of £1 million in 2004 to £25 million in 2014 and by 2015 will see the Data Science building open its doors to two research centres, cementing the positioning of Research at the College of Medicine as world-class.

The features which follow aim to give snapshots of the four major Research Themes that have been identified at Swansea together with the cross-cutting theme of Data Science. The features look back at the development of each area of Research and look forward to where those particular areas might lead in the future.
In 2014 Researchers working within the broad theme of Biomarkers and Genes at the College of Medicine are acknowledged as world leaders in the discovery of novel genetic, immunological and molecular biomarkers and in the delivery of their practical applications in drug development and treatments.

Genetics at Swansea has a long and distinguished history. Its origins can be traced back to the late 1960s and early 1970s when its founding fathers, Professor John Beardmore and Professor David Skibinski, returned from Cambridge and began their pioneering research contributions in the fields of genetic toxicology and DNA repair mechanisms, population and evolutionary genetics and in the genetics of microbes and cell organelles.

Soon after Swansea opened its doors to Graduate Entry Medicine in 2004, the departments of Genetics and Biochemistry were brought together under the College of Medicine. Rooted in the respected tradition of those early days, Biomarkers and Genes has since evolved as one of the four major research themes identified by the College of Medicine as ‘bright spots’.

The establishment of the fledgling Medical School and the impressive research standing of early visionaries Professor Julian Hopkin and Professor Rhys Williams was a “powerful pull” in attracting research talent to Swansea. One such talent was Mike Gravenor, now Professor Mike Gravenor, Theme Lead for Biomarkers and Genes, who took up a Lectureship on returning to his “home town” from Oxford in 2004. He, like many others who came at that time, could not resist the challenge of Professor Julian Hopkin’s words: “Come here and help us set up something exciting.”

Today, within Biomarkers and Genes, there are ten Professors each with “a story to tell”. Some of the most noteworthy of the last decade being: how their research has influenced the care of rare neurological disorders; how their studies of genetic mutations have affected the studies of safety of toxins at low dose; the 2013 EPSRC UK National Mass Spectrometry Facility; pushing the boundaries of research in Diabetic Nephropathy and Retinopathy; and of course, the advances in Nanotoxicology, now a rising star within Biomarkers and Genes.

There have been significant milestones too in that time that have driven success: unquestionably ILS1 in 2007 and ILS2 in 2011, and before, in 2006, the IBM R&D collaboration and the Blue C Supercomputer (the largest in the UK at the time and a remarkable coup for the College). Dedicated to Life Sciences for ‘mathematical biology’, Blue C has been used in projects including numerically intensive analysis of viral genomes, epidemiological modelling, large clinical data bases and analysis of the genetics of disease susceptibility.

The spin-offs from this cannot be underestimated: within the College, the enablement of the Informatics and Data Science Base (prior to PPH1) by Professor David Ford and Professor Ronan Lyons and the facility to carry out cutting-edge research into the evolution of viruses (the paper which was published in 2006 became the 3rd highest cited paper out of 12,000). Externally, the ‘kit’ and its outputs became the blueprint for the £44 million High Performance Computing (HPC) Wales, an innovative collaboration which today gives innovators and researchers in Wales access to world-class, secure and easy to use HPC technology.

This collaboration is central to the College of Medicine’s research ethos: interdisciplinary collaboration with the other Research themes and interaction with industry and spin-out companies so that market needs are fully integrated into research. Central too is the dynamism of the department that is “creating its own story as it goes along” with the flexibility to enquire, explore, discover and deliver.

The next ten years will see Biomarkers and Genes build on the successes of the last decade by expanding its clinical and business interfaces and attracting more funding to take its research forward. The facilities of ILS and the talent of its people gives the opportunity to do so as they stand shoulder to shoulder with the NHS and Enterprise and Innovation.
Shareen’s research sits within the College of Medicine’s Biomarkers and Genes Theme. She has established a research programme in nano-genotoxicology looking at how DNA can be damaged by very small or “nano” particles that potentially lead to cancer. She also leads prostate cancer research at the College, investigating the molecular basis of progression to invasive, aggressive disease, with an ultimate aim of discovering a prognostic biomarker panel to better deliver treatment and patient outcomes.

An award-winning scientist and UK and EUROTOX Registered Toxicologist, Shareen’s expertise is recognised across the globe. She sits on the UK Government Committee on Mutagenicity and the International Genetic Toxicology Technical Committee and is an external expert for the EU Scientific Committee on Consumer Safety.
In 2014, Patient and Population Health and Informatics (PPHI) is a multidisciplinary research centre with a world-class reputation. It has evolved from pioneering work carried out at Swansea University in the 1990s to make explosive impacts internationally in the field of Health Informatics.

PPHI is one of the four major research themes identified in the restructuring of research at the College in 2012 and now consolidated within the ILS. It is currently directed by Theme Lead, Professor Helen Snooks (2012) and its precursor being led by Professor John Williams who set the scene and played a major part in today’s story through the early work of vision and value undertaken at the Postgraduate Medical School (2001) and Swansea Clinical School (2001-2004).

Vision and value remains at the heart of PPNI’s remit: to produce and disseminate high quality and internationally relevant research that will be deemed to be “worth doing” to both policy makers who plan and deliver health services and to patients who use those services.

Year on year, PPNI’s growing reputation as a global leader in research using electronic data is being recognised in the form of prestigious awards and the capture of millions of pounds in grant funding. Instrumental in this recognition is the innovation and entrepreneurship of Professor David Ford and Professor Ronan Lyons and their “solid research rooted in public health”.

The essential component underpinning the ground-breaking research at PPNI is its Secure Anonymised Information Linkage (SAIL) system that securely brings together the widest possible array of routinely collected patient data for research, development and evaluation, using cryptic codes for anonymity. From its inception in 2006, SAIL is now engaged in a range of high-profile externally funded research studies, leading or collaborating with research groups within Wales, the wider UK and across the world.

The growing success of the Centres within PPNI is “phenomenal”. It is home to: the Centre of Health Information Research and Evaluation (CHIRAL); the Centre for the Improvement of Population Health through eRecords Research (CIPHER) one of a network of only four world-class Health eResearch Centres of Excellence funded by the Medical Research Council (MRC); an £8 million Centre of Administrative Data Research and Evaluation; and one of the four major centres that together form the MRC’s £20 million funded UK health informatics research group, the Farr Institute.

This latest award not only cements the College of Medicine’s reputation for world-class research but will enable PPNI to capitalise on its expertise in safely sharing, combining and analysing diverse data sets across new boundaries, ‘leading discoveries’ and validating research findings at a speed and scale not previously possible. It will also be a catalyst for investment to the UK through collaborations with IT and pharmaceutical companies and build on its already strong collaborations among UK and International Researchers.

Speed and scale is not only pertinent to the research possibilities, but to the growth of the infrastructure in which that research operates: the people and the place. In 2014 PPNI supports 200+ jobs in comparison with just 20 in 2004. The Informatics Team has grown steadily to over 100 since the inception of ‘big data’ projects such as SAIL and CIPHER and is “well set” to continue at the forefront of research as the structures that make for success are in place: informatics; clinical trials unit; and research themes. And then there’s ILS itself, a physical testament of possibility, growing hand in hand with research: ILS1 (2007); ILS2 (2011); the new Data Science building due for completion in 2015; and the vision for ILS3 in 2020.

“‘It’s all about impact... about research results that are not just locally applicable, but internationally applicable.”
Professor Helen Snooks
Theme Lead PPHI,
College of Medicine, Swansea University

Going forward, the need for change is not seen: PPNI is on a solid footing and making a considerable contribution to the College of Medicine. It is on the right trajectory to attract and build capacity at all levels to take Swansea to the world and attract yet more money and more people of the highest calibre to Swansea. Professor Helen Snooks states it simply: “Do what we do; and do more of it!”
Ann is a clinician, researcher and educator. Her researches into the causes, effects and prevention of common mental disorders, suicide and self harm fall within the Patient and Population Health and Informatics Theme at the College of Medicine.

As Chair of the Public Health Wales National Advisory Group to Welsh Government on Suicide and Self Harm Prevention, Ann led the group that developed a Wales and Welsh version of ‘Help is at Hand’, a valued resource for people bereaved by suicide or other sudden traumatic death.

Ann is an honorary consultant in public health medicine for Public Health Wales. She shares her extensive experience with students on the Graduate Entry Medicine programme as co-lead of the Medicine, Health and Society strand.
Today, Microbiology is regarded as a discipline that warrants major investment. Throughout the last decade, the College of Medicine has recognised this, attracting some of the most prestigious players in the field and securing significant funding to position it as a world-wide centre of excellence.

Microbes and Immunity is one of the four broad Research themes within the College of Medicine. It was strategically identified in 2012 as a ‘bright spot’ that would bring its remit into sharp focus, building on its acknowledged strength and depth in exploring mechanisms of infection, host immunity and antimicrobial resistance, and exploiting microbes for the treatment and prevention of disease across the world.

Although the Research currently undertaken under the Microbes and Immunity theme is science of the moment, its roots stretch back over forty years to the Department of Biological Sciences at Swansea University at the end of the 1960s, and later to the Department of Genetics in the late 1970s and early 1980s.

Some of its most eminent researchers can trace their roots back to these early days: Professor Steven Kelly studied for both his BSc and PhD in yeast genetics in the ‘newly founded’ Genetics Department at Swansea in 1983. He has come full circle, returning to Swansea in 2004 to act as Chair of Research during the period of early establishment of the School of Medicine, courted by Professor Julian Hopkin’s medical vision and Andrew Davies’ political vision. So too, Professor in Microbial Genetics and Molecular Biology, Diane Kelly, who has for more than 20 years been working within the cytochrome P450 (CYP) field in relation to biodiversity and biotechnolog. Now working within the state-of-the-art laboratory facilities of ILS, her work started in the neighbouring Margam Building back in 1982.

Together, the professional partnership of the Professors Kelly is at the heart of an innovative Welsh Government EU-funded research partnership – BEACON, Biorefining Centre of Excellence. The BEACON Project is a collaboration between the Universities of Swansea, Bangor and Aberystwyth dedicated to developing industrial products from plants and to reduce reliance of fossil-based resources. On 4th April 2014 their ‘ground-breaking research and innovation’ scooped the prestigious European Commission’s top award for innovative regional development at the RegioStars Awards.

Another coup for the College was that of Professor Martin Sheldon, now Theme Lead for Microbes and Immunity who, in 2006 was awarded a three year Biotechnology and Biological Sciences Research Council (BBSRC) Research Development Fellowship to ‘invest in world-class bioscience research and training on behalf of the UK Public’ and to develop a full-time research career. In 2008 he moved from London to a new Chair at the Institute of Life Science. His work and that of his team concentrates on host-pathogen interactions and how microbes are sensed by the innate immune system, work that has seen him take the calibre of Swansea’s research to the world through a host of keynote presentations in USA, Canada, New Zealand and Japan. In July 2013, Professor Sheldon was awarded Fellowship of the Royal College of Veterinary Surgeons (PRCVS) for meritorious contributions to understanding the mechanisms of infection and immunity in the female genital tract. He is the first Swansea University academic to receive this award and is testament to the outstanding and significant research that is being undertaken at the College of Medicine.

Microbes and Immunity is on an upward trajectory and is positioned to capitalise on under-research and under-funding by attracting ‘rising stars’ in the sphere and continuing to attract revenue streams from the EU and Research capitalisation from the USA to build a platform to lever UK investment. This is amply demonstrated by the research council funding success of Drs Sam Sheppard and Cathy Thornton and by the recruitment of Professor Tom Humphrey. Microbes and Immunity is going forward into the next decade in an environment ‘open to scientific opportunity’ and with an ‘outward facing’ spirit that will impact positively on health, wealth and wellbeing across the world.

“We can achieve things here – it’s part of the deal. We can be up there in the top 5 UK academic environments.”

Professor Steven Kelly, Chair of Microbial Genetics and Molecular Biology, College of Medicine, Swansea University
Dr Samuel Sheppard, Associate Professor
College of Medicine, Swansea University

Sam’s world-class reputation in bacterial genomics and evolution has won awards on an individual and financial scale. A Wellcome Trust Research Career Development Fellow, his work within the College of Medicine’s Microbes and Immunity theme has led to the award of £8.5 million from the Medical Research Council to analyse the genetic data of bacteria that cause food poisoning, such as MRSA, E-coli and campylobacter, in collaboration with Warwick University.

Within this MRC Consortium for Medical Microbial Bioinformatics, Sam will lead activity that seeks to further explore the genetic codes of the millions of strains of bacteria and exploit this avalanche of data to translate it into real health benefits.
Research

Invention and innovation

The Devices theme is closely linked with the College of Medicine’s Enterprise and Innovation initiative. The theme actively links its expertise in biomedical research to industry with the aim of improving human health and the development of knowledge economies globally.

The Innovation Agenda had been brewing in the UK throughout the 1980s: the first class research and technology that was at work in its universities was undisputed. What was disputed however, was the poor dynamics of turning the knowledge of invention into commercially viable products that would extract and exploit inherent latent value.

Fast forward to 2007 when Prime Minister Gordon Brown announced the formation of the Department of Innovation, Universities and Skills. His reasoning: “Countries will increasingly derive their competitive edge from the speed at which they are able to innovate... and create new products and markets.”

But the College of Medicine was already ahead of the game. Enterprise and Innovation, which today lies at the heart of the commercialisation of medical devices within ILS, was also embedded as one pillar of the unique three pillar model that resulted in Swansea’s successful bid to be Wales’ newest Medical School in 2004. 2014, as well as marking the end of the first decade of GEM at Swansea, is also the 10th anniversary of the formal bid for funding that would see the concept of ILS realised just 3 years later in 2007 and which is integral to the story of Devices to date.

Professor Marc Clement, now Theme Lead Devices, is a key actor in this story. In 2003, as Professor of Engineering with an interest in medical devices, he knew that a facility that enabled ideas to be developed into novel medical devices and diagnostics, and that supported bio-entrepreneurship to take those devices from laboratory bench to bedside, would benefit the knowledge economy in Wales and beyond.

The rest as they say is history. The last decade has been about building: building on the track record of the globally acclaimed College of Engineering, acknowledging the strength for multi-disciplinary research leading to the creation of the £22 million Centre for Nanohealth (CNH) in 2011; building bridges between Research and the world of business and commerce through specialised projects where the many challenges of the Medical Entrepreneur are recognised and supported; building the continuing infrastructure of ILS that gives the vital landscape for ideas and enterprise to grow; and building on the speed of route to market which is critical to gaining competitive edge.

The story of Devices at the College of Medicine is one based on proactivity and an embracing of the skills agenda. Its successes are many and include a wide range of spin-outs that owe their existence to the unique facilitation of ideas to market offered at Swansea: Chromogenex (medical lasers) employing 140 people; Calon Cardio (LVADs) currently employing 25 but likely to increase with potential global market of millions envisaged by 2020; Cellnovo (insulin pumps) employing 60 people; and Sony, who diversified into medical device manufacturing, taking up incubation space at ILS in 2007, now employing 320 people in Bridgend and winners of the Factory of the Year Award (BFA) in 2013. And of course there is the Research itself: landmark papers on CyDen’s consumer light therapy product published in the Lancet confirmed its Research as world class as did its first submission to the Research Assessment Exercise (RAE) 2008 where 87% of the College of Medicine’s Research was judged of international quality or above.

“Traditionally in the UK we’ve been great at invention, but not so hot on the innovation... new products are always important and if we’re going to survive the 21st century, we’ve got to be innovative.”

Professor Marc Clement
Theme Lead Devices,
College of Medicine, Swansea University

Devices is a growing and dynamic context encompassing medical and consumer markets. As such, it has come into even sharper focus as one of the four major themes identified within the College of Medicine in 2012. The economic impacts it has achieved in the last decade paint a ‘pretty picture’ and with its aim to capitalise of the increasing investments in the field of Regenerative Medicine, it looks set to become even prettier.
Ilyas’s interests are in regenerative medicine, the science of growing tissues in the laboratory with the aim of safely implanting them when the body cannot heal itself. Funded by Arthritis Research UK and Orthopaedic Research UK, his innovative work in the biology of articular cartilage maturation has shown the progress of osteoarthritis can potentially be stopped and even reversed.

Using a specific combination of growth factors, cartilage can become stiffer as well as grow back. This internationally renowned expertise in the field of cartilage regeneration and arthritis is now being translated to new directions in nose and ear reconstruction.
Data to decisions

The College of Medicine is currently recognised as one of the world’s leading centres in the field of Data Science, which undoubtedly is the topic of the moment. But the story of Data Science at Swansea goes back a long way.

Health Informatics at Swansea University has a highly respected history. During the 1990s, Professor John Williams led Clinical Informatics at the School of Postgraduate Studies and was Director of the Royal College of Physician’s Health Informatics Unit Information Laboratory (iLAB) launched in 2004. iLab was a ‘revolutionary service’ that enabled Clinicians to improve the services they provided by monitoring and analysing data collected from patients who used those services.

Ten years have passed but the principles inherent in iLAB have been central to subsequent developments in Data Science: routine collection of health data; security and control; preservation of patient anonymity and confidentiality. Now Data Science is firmly embedded within the College of Medicine as a cornerstone of both its Research arm (it cuts across all four major research themes) and as a driver of a number of its very successful Enterprise and Innovation activities such as ehi2, HealthCloud and Lifescience Exchange. Its impact on the rate of growth and profile of the College is immense, as is its impact on the health, wealth and wellbeing of the population at large.

Two experts that have been driving its success through the last decade are Professor David Ford (Chair of Health Informatics 2012-) and Professor Ronan Lyons (Chair of Public Health 2005-). Together they attracted the major funding to the College in the form of a National Institute for Social Care and Health Research (NISCHR) long-term Centre grant which created the Health Information Research Unit in 2006. This produced the Secure Anonymised Information Linkage (SAIL) databank, the most extensive privacy protecting system for health records’ research in the UK to date.

Today SAIL underpins more than 100 funded research projects with a value exceeding £61 million. This initial success led to: the first Medical Research Council (MRC) funded centre (one of only two in Wales) in 2012; the Centre for Improvement in Population Health through E-records Research (CIPHER) led by Professor Lyons in 2012; and the first Economic and Social Research Council (ESRC) £8 million funded centre, the Administrative Data Research Centre Wales, led by Professor Ford in 2013.

In the last year, further capital investment by: the UK Department of Business, Innovation and Skills through the MRC, as part of the creation of the prestigious Farr Institute of Health Informatics Research; the ERC; the Department of Economy, Science and Transport; and Welsh Government, has led to the creation of the 2,900 square metre Data Science building (completion due 2015) to house this rapidly growing enterprise.

Forging strong partnerships is integral to success of Data Science research and enterprise: Ronan, as a Public Health Physician and David, as a Computer and Informatics Scientist are proof that together, we’re better. And then there are robust collaborations with the NHS and multiple public sector organisations and charities, designed to support the modern approach to academic research utilising data already collected for the provision of care and services. These relationships provide useful intelligence to inform the planning and improvement of services and a platform in which the technology sector can innovate in collaboration with academic and NHS partners.

“W'e'd like to be remembered through our research and innovation that makes a positive impact on people’s lives.”
Professor David Ford, Chair of Health Informatics
Professor Ronan Lyons, Chair of Public Health
College of Medicine, Swansea University

At the moment, Data Science is the hot topic as is the College of Medicine and at the forefront of world research. But there are competitors hot on its heels, making major investments in this field. Swansea needs to maintain its competitive edge; and by increasing the efficiency of its collaborations between academia, the NHS and technology industries, integrating the work of health and bio-informaticians and partnering with major international initiatives, it can.
Ronan and David are the driving force behind the College of Medicine’s success in Data Science, the cross-cutting technology that binds the four Research Themes. Between them, they lead and direct the College’s Public Health and Health Informatics research and innovation, including a vast collection of projects, initiatives and centres such as CIPHER, ADRC Wales, Farr Institute, DECIPHer UK, HIRU, ehi2.

Ronan has also been involved in numerous large scale observational, interventional and policy relevant research studies using linked health while David has brought in research grants and consultancy contracts valuing over £35 million in recent years.

Together, these two pioneers are ideally placed to harness academia, industry and the NHS to drive the College’s Data Science agenda.
Enterprise and innovation

Today, a framed napkin hangs proudly on a wall within the Institute of Life Science. Along with the wine stains is a sketch, hand drawn in ink which signifies the moment on 3rd November 2003 when a concept long in gestation suddenly became real.

What took form on that napkin was a sketch of a model that showed how a facility might be created to stimulate growth for the embryonic College of Medicine in Swansea and differentiate it from other medical schools in the UK.

At the heart of that model was the ethos of Enterprise and Innovation and the vision for ILS.

2014 marks a decade since that model became a formal bid for funding, the results of which are nothing short of spectacular.
In 2003 momentum was gathering towards the then Swansea Clinical School opening its doors for the first time to Graduate Entry Medicine in 2004. The key actors who had been driving that momentum since the go-ahead had been given in 2001 had been invited to speculate, and were aiming to raise capital funds to build on the positive track record that the Clinical School had achieved in just two short years.

Then
The political context in Wales at that time was very supportive. It was the era of the Welsh Development Agency (WDA) and the key actors involved in the vision for the College of Medicine: Mike King (Regional Director of the WDA); Peter Townsend (Pro-Vice-Chancellor, Swansea University); Founding Head of Swansea Clinical School, Professor Julian Hopkin; and Professor Marc Clement (then Professor of Engineering) were on a funding mission in New York.

As all funding for future growth would be drawn from outside, it was critical that people bought into the concept of what would be created at the College of Medicine. And that concept became the unique model that was set in ink on a napkin in a diner in New York that November day.

Daring to be different
Of course the raison d'être of the College of Medicine was to educate tomorrow’s doctors and life scientists; without that it would not be. But, the model created for Swansea dared to be different, and set it apart. The learning and teaching of doctors and life scientists would not occur in isolation, but would operate within an inter-disciplinary context of research and enterprise and innovation that was outward facing and engaged the wider community: within Wales; the rest of the UK; and across the world.

The rationale
This unique model would have huge potential for not only the growth of the College but for delivering sustainable benefits to the knowledge economy in Wales by linking scientific and medical advancement to both wealth creation and human health through improved prevention and treatment of disease.

Delivering the knowledge economy
In 2007 the concept of Enterprise and Innovation took on physical form as the £52 million Institute of Life Science (ILS) 1 building, the largest single investment by the Welsh Government on any University Campus. It was delivered on time and budget and was the beginning of a new epoch when innovators, inventors and business entrepreneurs came together in purpose-built facilities enabling ideas to be taken from the lab to the patient. Growing business had become the business of the College of Medicine and ILS1 created 207 high tech jobs, safeguarded 233 jobs and created 22 new companies.

The first phase of ILS was seen as a blueprint for further development which resulted in ILS2 coming on stream less than 4 years later in 2011, creating 300 high tech jobs and 17 new enterprises through its business engagement with clients in a variety of organisations: Pharmaceuticals; Medical devices; Wound management; Nanotechnology; Telehealth; Informatics; and Medical Processes.

ILS is the fruition of a successful and ongoing partnership between the College of Medicine, Welsh Government, the NHS through ABMU Health Board, IBM and many other business partners. The Enterprise and Innovation at the core of the College of Medicine has succeeded in attracting all its own funding from the EU, originally through Objective 1 funding and subsequently Convergence Funding, match funded by Industry.

Today and tomorrow
In 2014 Enterprise and Innovation beats at the heart of the agenda at the College of Medicine. It is the life-blood of the College, flowing into all aspects of its world-class research and learning and teaching and making a powerful economic impact throughout Wales. In 2015, the 3rd major facility – the multimillion pound Data Science building will open for business.

The following features exemplify how the spirit of Enterprise and Innovation is delivering the knowledge economy today and for tomorrow.
The Institute of Life Science is the embodiment of the research and enterprise and innovation pillars of College of Medicine. Its rapidly expanding physical presence in the landscape is a translation of how it is shaping the future for the benefit of the health and wealth of the people of Wales.

In 2008, the Rt. Hon. Rhodri Morgan, then First Minister for Wales, heralded ILS as ‘The Jewel in the Crown of Wales’: the first phase towards a vision where medical science could be advanced through multi- and interdisciplinary research for the benefit of human health and where those benefits could be linked to the economy by encouraging interaction with other organisations in a spirit of open innovation.

The design and construction of the first multi-million state-of-the-art building reflected the spirit of openness and ambition of the fast-growing College of Medicine: six storeys of high-tech laboratories and support space that became home to over 200 professional specialists in medical research, business incubation and technology transfer. It enabled the permanent housing of the Blue C Supercomputer, dedicated to life science research, through an effective collaboration with computer giant IBM; it attracted even more Researchers of international calibre to Swansea and offered a new space to those who had been excited by Professor Julian Hopkin to be part of the College’s mission.

ILS delivered from the start and encouraged the development of a life science and healthcare cluster in the southwest Wales region. In 2007 it provided the perfect environment for the Boots Centre for Innovation and, from this first anchor tenant, continued to attract a growing number of client organisations. In 2007, the building also won the Large Commercial Schemes category in the Swansea ‘Built in Quality’ Awards. This award for the sustainability and quality of the fabric of the building also symbolised the work that was going on inside.

The immediate success of ILS1 meant that it outgrew its physical space and needed room to flex its muscles. Hot on its heels came the second phase of development with the opening of ILS2 by First Minister for Wales, Carwyn Jones, in 2011. His signature is to be found on the wall there and it marked another significant milestone in the short history of the College of Medicine and the opening of a new chapter in its story.

ILS2 is a £28 million award-winning expansion that, as well as providing a range of fully-operational business incubation units, houses ILS’s other greatest assets: the new Joint Clinical Research Facility partnering with the NHS; a Siemens Healthcare Imaging Suite; an up-to-the-minute base for Patient and Population Health and Informatics research; and the £22 million Centre for NanoHealth, the first facility of its kind in Europe for the development of cutting-edge nano-technologies.

ILS reflects collaboration on campus between the Colleges of Medicine, Engineering and Science and in the wider context between: Swansea University; Welsh Government; Abertawe Bro Morgannwg University (ABMU) Health Board (it is sited on land transferred to the College of Medicine that physically connects the University and Singleton Hospital); and many other private businesses and organisations.

Much has been realised in the seven years since the pioneering concept of ILS opened for business in 2007. ILS Swanse contributing significantly to, and capitalising on, what is recognised as one of the most fertile sources of technology transfer in the world.

“I am immensely proud of what our colleagues have achieved in the years since the first phase of ILS was opened. Subsequent phases will provide additional capacity to address vital research agendas in medicine and also help to expand Swansea University’s role in economic regeneration.”

Professor Richard B. Davies, Vice-Chancellor, Swansea University

But ILS is work in progress and there is still much more to be done as it moves towards the opening of the Data Science building in 2015 and achieving its vision for ILS3 in 2020. By continuing to embrace the skills agenda, build on the impacts of phases 1 and 2, accommodate even greater commercial facilities, and further define its innovation model to attract and grow companies, that future is certain.
Dr Sabarna Mukhopadhyay, Founder Owner Director and CEO SymiConnect Ltd, based at the Institute of Life Science

“Our vision is to enable secure, safe and seamless communication of health record information between existing systems and people beyond geographical or organisational boundaries, by sharing relevant information on demand from appropriate users to achieve informed, joined-up, collaborative decision making in a cost-effective way.”

Being based at the ILS has made the life science cluster and NHS in south west Wales more accessible. In 2014, SymiConnect became one of just five innovative companies to win the Betsi Cadwaladr University Health Board SBRI project, funded by Welsh Government and the Technology Strategy Board, to develop and introduce new and innovative ideas to help improve patient care.
At the heart of the matter

Based in the College of Medicine’s cutting edge Institute of Life Science, Calon Cardio-Technology Ltd is developing the next generation of affordable, implantable micro blood pumps for the treatment of chronic heart failure.

The success story of Calon Cardio-Technology is one of many such stories happening at ILS. It is an endorsement of ILS’s marketing tags proudly etched on its two buildings: Leading Discoveries and Together, we’re better. It is an exemplar of the College of Medicine delivering on the Enterprise and Innovation agenda at its heart throughout the last decade.

Rewind to 2005. It was at a Downing Street reception that Professor Marc Clement, then Professor of Engineering at Swansea University and an entrepreneur in the field of Medical Devices came together for the first time with Professor Stephen Westaby, Cardiac Surgeon. They were tasked with this demand by Sir Nigel Crisp: “We need better and affordable pumps.”

The ‘we’ refers to the UK and the ‘pumps’ refer to what are commonly known as ventricular assist devices (VADs) used to effectively manage chronic heart failure, a disease that affects around 20 million globally. In 2005 there were fully implanted assistive pumps available; but they were mostly from the USA and though proven to be clinically effective, these early generation pumps were extremely expensive, very large, and required highly invasive and lengthy surgery.

This area of research and development had both great need (only 1% of those with chronic heart failure had their needs met – usually with heart transplant); and great economic potential (99% didn’t have their needs met!). This initial meeting between Professors Westaby and Clement was the catalyst for Calon Cardio; for it was there that they had the vision to develop an innovative UK heart pump through an innovative technology that would address the problems inherent in the US models. Professor Clement was a man on a mission central to the ILS concept at the College of Medicine. By initiating this project in Swansea, a sustainable venture would be created that could advance medical science through research and innovation for the benefit of the knowledge economy and wealth creation in Wales, and would positively impact human health worldwide.

Key people were sought and brought together to make it happen. Along with Professor Marc Clement, co-founder and now Chairman of Calon Cardio and Professor Stephen Westaby, co-founder, a third element in the original company was Dr Graham Foster, now Chief Technology Officer at Calon Cardio but then working in the automotive industry after leaving Swansea’s globally-acknowledged College of Engineering. He had what it took to conceive, design and, importantly, take to market the innovative device that Calon Cardio would become renowned for.

But the other major player in this story is undoubtedly ILS itself. Under one roof, it facilitated all the necessary medical device entrepreneurship dynamics and ‘know how’ that went far beyond scientific research and technology: finance; intellectual property and pipeline; the market; operations; and clinical safety, efficacy and claims.

ILS offered a unique combination of office and wet lab facilities and conference rooms: a start-up company like Calon Cardio would have found it prohibitively expensive to purpose-build similar facilities.

“Next year we’re initiating clinical trials. We have the potential to see global sales of £100 million + by 2020.”

Dr Graham Foster
Chief Technology Officer,
Calon Cardio-Technology Ltd.

ILS operated in an open culture that allowed for the productive exchange of ideas and gave people the “freedom to get on with it with no road blocks”.

The rest as they say is history. By 2007 Calon Cardio was founded, seed-funded, had patents filed and had achieved PoP. By 2011 Dr Foster had met the goals set for the design of the Calon MiniVAD and achieved excellent laboratory data resulting in being voted UK Trade and Investment ‘best breakthrough technology’ and receiving Medi Wales ‘Judges’ Award’ for innovation.

Calon Cardio is history in the making and ILS continues to provide the perfect home for it to thrive and develop. Calon Cardio currently employs twenty five highly skilled people and with completion of the clinical programme due in 2015, and a global market beckoning, ILS3 in 2020 will perhaps provide yet more room to grow.
Dr Graham Foster, Chief Technology Officer
Calon Cardio-Technology Ltd, based at the Institute of Life Science

“The location and the quality of the ILS facility are first class, providing access to the engineering, design, analytical, electronic and medical skills we require to be successful and additionally provide sufficient space for Calon to expand as and when we require it.”

Calon Cardio-Technology has gone from strength to strength at the ILS from securing £1 million from the Technology Strategy Board (TSB) in early 2010 to gaining backing by the venture capital organisations Longbow Capital and Finance Wales in 2012 and winning a further £1.66 million TSB Biomedical Catalyst Award in 2013.
Making an impact

Dean and Head of College, Professor Keith Lloyd, looks at how Swansea’s medical school is delivering on its vision statement to make a difference to health and wellbeing and to produce tomorrow’s doctors and life scientists.

In 2012 Welsh Government published its “Science for Wales” strategy the overall goal of which is “to build a strong and dynamic science base that supports the economic and national development of Wales”. The strategy then goes on to spell out how Wales needs to increase its share of the most prestigious research income from research councils from 3.3% in 2009/10 to 5%. Well, the College of Medicine has been growing its research income year on year. Best of all, last year (2012/13) it secured £14.5 million of grant income – second only to the College of Engineering in terms of grant capture across Swansea University. More importantly, 62% of that income came from research councils.

The College is on track to do something similar again this year. Now the challenge is to maintain it. That achievement is the response to a story told recently by a professor who worked in Swansea but left after he was told by the then head of a research council that if he wanted to keep his grants he would have to leave Swansea as there was no chance of him hanging on to those grants if he stayed. Times change. Indeed over the last five years the College has become host to several research council centres conducting cutting edge research spanning basic laboratory science to population health and informatics.

Learning and teaching success is helping deliver tomorrow’s doctors and life scientists. Graduate employability for geneticists and biochemists is among the best in the country. Trainee doctors have the opportunity to learn to be researchers and soon will be able to learn to be entrepreneurs as well. The numbers of doctoral students is increasing year on year as are the master’s programmes.

In terms of business and innovation the college has delivered ILS1 and ILS2. These projects have created many jobs, companies and spin-outs and delivered premium accommodation for scientists and business partners on time and within budget. The Data Science building is under construction and next, more ILS.

But really what the vision is all about is making a difference to human health and wellbeing. Here are some examples of how the College is doing that.

Reducing the burden of emergency hospital attendances

Calls to emergency health services have increased substantially and the traditional ‘lights and siren’ ambulance response and transport to hospital is no longer sustainable. Professor Helen Snooks and colleagues have undertaken a major research programme to identify and evaluate alternatives to ambulance dispatch and onward transport.

Collaborations with the NHS to reduce the burden of emergency hospital attendances for patients, carers and health providers by improving out-of-hospital care has resulted in Professor Snooks winning the 2014 AgeUK Award for Outstanding Impact in Public Policy and Services at a recent University awards ceremony.

Over several years, Professor Snooks’ team has worked to identify safe and cost-effective alternatives to ambulance dispatch and onward transport to hospital. The approach is founded upon collaboration and engagement – with policy makers, the NHS and patients as full partners – helping to prioritise and shape all aspects of the research. The team formed the UK wide 999 Emergency Services Research (EMS) Forum and TRUST research groups – both of which build capacity across trauma and unscheduled care research, help set research priorities and promote evidence based care. The impact on emergency care is profound. In England, for example, emergency calls not leading to hospital transport rose from 480,000 in 2001 (10%) to 4.1 million in 2013 (45%) with savings from avoided ambulance journeys of £60 million (source: Health and Social Care Information Centre).

Identifying drugs that harm our DNA

Professor Gareth Jenkins was a runner up at the same awards ceremony in the GE Healthcare Award for Outstanding Impact in Health and Wellbeing for his group’s work on how the concept of “DNA damage thresholds benefits patients and the pharmaceutical industry”. Their work showed that before we know if drugs are safe we need to know if they have the potential to damage our DNA. This genotoxicity is important for cancer development. The group’s big step forward
was to be first to show that drugs and chemicals have genotoxicity thresholds. The real world test came in 2007/8 when an HIV drug was accidentally contaminated with a genotoxin. The group was able to offer reassurance to the 25,000 HIV infected people treated with that drug, that they were not at risk. The group’s work led to changes in international regulations relating to low-level genotoxin contamination.

Understanding childhood epilepsy
Over time Professor Mark Rees’s group has methodically hunted down four of the five genes that predispose children to a life threatening condition called hyperekplexia, and developed the fifth. In creating the leading global centre providing genetic diagnosis and clinical support for hyperekplexia, he has made a difference to the lives of children with this condition and their families by providing a valued public-sector service to an international network of neurological centres.

Developing anti-fungal agents to improve food and human health
Professor Steven Kelly has developed biological materials and software tools that provide a comprehensive screening platform to identify selective anti-fungal agents active against human or plant pathogens. These biological techniques are now being tailored to the needs of three international companies to use in their research to discover antifungal agents.

Better patient records
Finally Professor John Williams showed wide variations in quality of hospital records and led the development of evidence-based standards for those records that received wide endorsement from professional and statutory bodies. His group’s research has helped change institutional and organisational norms through evidence-based lobbying. This work has also helped pave the way for the College’s current success in health informatics now being matched by bioinformatics.

In conclusion
What is special and unique about Swansea’s College of Medicine, is how far it has come in a few short years.

Specifically:
• the learning and teaching on offer
• the ILS and its approach to business, job creation and the knowledge economy
• eHealth, informatics and bioinformatics
• emergent strengths in regenerative medicine and geno-toxicology

And above all it is the all the people who work here and have worked here that make it something truly unique and worth celebrating!

“Learning and teaching success is helping deliver tomorrow’s doctors and life scientists. Graduate employability for geneticists and biochemists is among the best in the country.”

£14.5m
In 2012/13 £14.5 million of grant income was secured

62%
62% of total grant income in 2012/13 came from research councils
Towards 2020

Professor Keith Lloyd, current Dean and Head of the College of Medicine, is sitting in the conference area of his office in the Institute of Life Science (ILS2) as he reflects on how far the College has come in the last ten years and discusses where it sees itself positioned 10 years down the line.

Could you tell the story of your personal involvement with the College? How did you come to be heading up this relatively new but fast growing institution?

I think what’s important to say from the outset is that I just happen to be here at this point (2014) looking after the shirt if you like, taking stewardship of the position to maintain ambition and focus for as long as I’m in role. As for how I came to be here, it was in 2012 when the opportunity came up and was too big to miss. I succeeded Professor Gareth Morgan as Head of College in October 2012. I already had a history with the College as one of several Professors appointed in 2004 thanks to Julian. The vision was there from the beginning and it was too good an opportunity to miss. I succeeded Professor Gareth Morgan as Head of College in October 2012. I already had a history with the College as one of several Professors appointed in 2004 thanks to Julian. The vision was there from the beginning and it was too good an opportunity to miss.

From an outside perspective that seems like a big career shift, why were you certain it was the right move for you? People. The right people. Julian’s ambition and philosophy. He took people with him: “If we can believe in it, we can achieve it – but only if we work together,” he used to say. This is what I was attracted to – as were countless others – and it is this ethos that has driven the College to achieve the success it is enjoying today and will drive the agenda for the next ten years.

Did you have a free reign as regards remit?

I was attracted by the clear mandate I was offered to develop a clear strategic vision for Swansea’s medical school. Research excellence had been central to the model of establishing the College of Medicine since the beginning. This was clever. Julian and Gareth realised that to put Swansea on the medical map, we had to attract the best researchers and build from there. We had been told by the Medical Research Council and others that to grow further we needed to focus on what we do best. Hence the four major research themes that are spearheading success and growing profile, already positioning Swansea and its Life Scientists as leaders of significant research that will advance medicine on a global scale.

Could you be a little more specific about successes to date?

Well, where to start? The success in Research couldn’t have happened without the infrastructure – the buildings, the facilities, the people – a unique and potent mix. We’ve gone from zero to the 2nd highest earning college in Swansea University in just 10 years. In the same vein, we’re the only College on the Singleton campus to create new buildings namely ILS1 in 2007; ILS2 in 2011; and the new Data Science building, which will be completed in 2015. And we are already thinking about the buildings after that.

The first research council centre in the College of Medicine was the EPSRC UK National Mass Spectroscopy Facility. Then came a series of big data and health informatics successes. Next up are bioinformatics, regenerative medicine and nano-toxicology. The momentum is building.

And your proudest moments so far?

From a College perspective the General Medical Council (GMC) recognition this year of Swansea as a university that can award primary medical qualifications has to stand out. As does winning the Farr Institute. There’s a whole bunch of other stuff, but pride is nothing compared to building for the future – a bit like planting trees that you will leave to mature for others to enjoy.

So exactly how will you keep momentum going?

It will not just be me. I am privileged to have with me a very ambitious and strong team with the commitment and vision to keep the momentum going. In ten years the College of Medicine has gone from, ‘Who?’ ‘Where?’ to ‘Yes, Swansea – they do this, they do that’. We have shaken people’s perceptions and achieved recognition: visitors are surprised at what they find here – the science, the setting and, above all, the people.

What is so special about Swansea’s College of Medicine that will bode well for the future?

It’s the strength of the science, the learning and teaching, and the interfaces with industry and the NHS.
Are you confident about that future?
Absolutely. We have to believe in ourselves now that other people are beginning to recognise and believe in us too. We are building a virtuous circle – attracting bigger grants, more students, more companies – and providing a platform to go further. We’ve only been here ten years yet we know that our ambition to be in the top quartile of Medical Schools in the UK within the next decade is already within reach.  

We are strategically well positioned at the College to attract talent to Swansea; people want to come. We have a unique relationship between the NHS, Business and Academia, bringing together the clinical, research and innovation functions of the College. This is critical in continuing to attract and retain the best staff in Swansea and keep our home-grown talent.

And then we have the city itself which is busy reinventing itself, slowly transforming the drab, post-war centre into something worthy of its natural assets. There have been challenges attracting people in the past but perceptions are changing and we’re on the map.

Who will be the key characters in the ongoing story?
To answer this I’ll go back to the beginning and our vision: to educate and train tomorrow’s doctors and innovative life scientists in an environment offering an interdisciplinary approach to translational medicine. So it will be all the people who have made the journey so far possible, and all those who will be here in the future.

“We’ve only been here ten years yet we know that our ambition to be in the top quartile of Medical Schools in the UK within the next decade is already within reach.”
Professor Keith Lloyd
Dean and Head of College of Medicine, Swansea University
Get in touch

The College of Medicine offers a range of opportunities to get involved from studying and working with us to collaborative research and setting up as a client organisation in the Business Centre.

Contact us
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Support our growth
St David’s Medical Foundation (SDMF) is an independent charity raising funds to support the ground-breaking work in medical research and education at the College of Medicine. It supports the advance of the health of people in Wales and across the world.

The Foundation is grateful for all donations large or small from substantial donations to underpin major research projects to regular giving or donations in memory of a loved one. They all make a difference to people’s lives and health.

Find out more at
www.stdavidsmedicalfoundation.com

St David’s Medical Foundation is a registered charity, number 1122688.

With thanks
The College of Medicine would like to extend sincere thanks to all those involved in creating this commemorative publication.