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**SWANSEA
UNIVERSITY
TEXAS
STRATEGIC
PARTNERSHIP**



Welcome



Providing an outstanding academic environment that transforms lives and futures is at the heart of the Swansea University vision. Key to this are its strategic partnerships with leading universities around the world which foster collaborations that enhance both teaching and research, and create opportunities for students that equip them with the global perspective that is so essential in today's internationalised workplace.

Swansea University's longest established International Strategic Partnership is in Texas and it is a leading example of what a truly multi-dimensional international strategic partnership can and should be. This was recognised in 2015 and again in 2018 when it was shortlisted for a *Times Higher Education Leadership and Management Award* in the category of 'Outstanding International Strategy.'

Swansea's Texas Partnership has its foundations in the Texas-UK collaborative, a five-year UK Government initiative aimed at bringing together experts in

medicine and the life sciences to tackle some of the world's greatest health challenges. After joining the Collaborative in 2006, Swansea continued to develop its relationships in Texas, upscaling the number of partner institutions, expanding the breadth and depth of its collaborative activities, and extending the subject reach so that collaborations in Texas now reach across all of its Academic Colleges.

In recent years our Texas partnership has gone from strength to strength and we have established, developed and sustained robust, dynamic and mutually beneficial relationships with some of the world's best universities located in Texas.

The following pages illustrate some of our key achievements in Texas and demonstrate the benefits that the partnership has brought for the University, for its academic staff and – most importantly – for its students.

Dr Caroline Coleman-Davies
Head, International Strategic Partnerships

AT A GLANCE



8 partner institutions



190 joint publications



20,000 citations



243 students exchanged



85 guest lectures delivered in Swansea and Texas



£400,000 external scholarship and mobility funding secured

OUR TEXAS PARTNERS

UNIVERSITY OF TEXAS AT AUSTIN

Founded in 1883, the University of Texas at Austin is the flagship institution of the University of Texas System. It boasts more than 50,000 students and one of the world's largest collections of papers and manuscripts from Swansea-born poet and playwright Dylan Thomas. It ranked 39th in the 2019 *THE World University Rankings* and 65th in the *QS World University Rankings 2020*.

TEXAS A&M UNIVERSITY

Founded in 1876, Texas A&M was the first public institution of higher education in Texas. It is the flagship institution of the Texas A&M University System and has almost 70,000 students. One of the USA's premier research universities, it ranked 171st in the 2019 *THE World University Rankings* and 189th in the *QS World University Rankings 2020*.

RICE UNIVERSITY

Opened in 1912, Rice University is a small private research university located in Houston. A Carnegie Tier One university which is consistently ranked among the USA's top 20 universities, Rice is ranked as the 2nd most international university in the United States. It ranked 86th in the 2019 *THE World University Rankings* and 85th in the *QS World University Rankings 2020*.

UNIVERSITY OF HOUSTON

Founded in 1927, the University of Houston is the flagship institution of the University of Houston System and is the third largest university in Texas. It is ranked amongst the best colleges in the United States and is classified as a Carnegie Tier One "very high research activity" university. It has 46,000 students and is the second most ethnically diverse research university in the US.

HOUSTON METHODIST RESEARCH INSTITUTE

Houston Methodist Research Institute is the research arm of Houston Methodist Hospital, one of the most highly ranked teaching hospitals in the US. Its researchers lead in the development of new technologies and innovative medical techniques and its focus is the development and transfer of innovative science and technology from the lab to the bedside.

BAYLOR COLLEGE OF MEDICINE

The top ranked Medical School in Texas, Baylor College of Medicine is a health sciences university located in the Texas Medical Center in Houston. Its researchers have been at the forefront of many of the major advances in biomedical sciences over the last century including the treatment of polio, scoliosis, TB and cancer.

UNIVERSITY OF TEXAS MEDICAL BRANCH AT GALVESTON

Established in 1891, the University of Texas Medical Branch comprises four schools, three institutes for advanced study, a network of hospitals and clinics, and numerous research facilities.

UT HEALTH SCIENCE CENTER HOUSTON

A constituent institution of the University of Texas System, the University of Texas Health Science Center at Houston (UTHealth) is located in the Texas Medical Center, the world's largest medical complex. With over 5,000 students, it is the sixth largest Medical School in the US.



RESEARCH Collaborations

Swansea University's Texas Strategic Partnership emerged from research relationships developed through the Government sponsored Texas-UK Collaborative, and research collaborations remain at the heart of the partnership.

As the Texas partnership has grown, long-established research relationships in Medicine, Life Sciences and Engineering have been joined by collaborations in English, History, Politics, Languages, Law, Business, Economics, Geography, Biological Sciences, Health Science, Maths, Physics, Sports Science, Computer Science and Social Work.

Fostered and supported by dedicated funding and intensive programmes of researcher interactions, these collaborations bring together world-leading academics whose research synergies and complementary expertise have combined to deliver new research projects, joint grant applications, new academic networks, joint conferences and conference papers, and co-authored publications on both sides of the Atlantic.

AT A GLANCE

 190 joint publications

 20,000 citations

 197 journals

 103 Average number of citations per co-authored paper

 16.27 Average field-weighted citation impact per co-authored paper

NEW LAB-ON-A-CHIP TECHNOLOGY



Research led by Houston Methodist Research Institute has developed a new lab-on-a-chip technology that could help people with macular degeneration or retinal damage caused by over-exposure to electronic screen glare.

The team, which includes Swansea collaborative PhD student Ricardo Bessa de Castro, created a sophisticated retina cell network on a chip which makes it possible to screen possible drugs to repair damaged neuron and retinal connections much faster than existing technologies.

As well as speeding up diagnosis-to-treatment times, this may also limit the damage caused the 'bystander killing effect' in which damaged cells cause nearby healthy cells to die.

Funded by the National Institutes of Health (NIH), the research was published *Science Advances*, the journal of the American Association for the Advancement of Science (AAAS). It is hoped that the technology could have further applications in creating models for other conditions such as Huntington's and Alzheimer's disease.

ENERGY SAFETY RESEARCH INSTITUTE

Part of a global energy safety network with strong links to Texas, Swansea University's Energy Safety Research Institute (ESRI) was the UK's first dedicated centre for research into energy safety. It is a constituent member of the Global Energy Safety Institute (founded in Houston in 2011), a sister Institute of the Energy and Environmental Systems Institute at Rice University, and an associate of the National Corrosion Research Centre at Texas A&M University.

Its researchers have a number of active collaborations with Texas partner institutions, including an ongoing project with Texas A&M University on the physical modification of ultraconductive copper-carbon nanotubes, and work with the University of Houston into thermometric nanocomposites and solar cell materials which has resulted in four peer reviewed publications to date.

In addition, ESRI researchers are collaborating with Rice University and GE (New York) on a project to create highly conductive cables comprised of copper and carbon nanotubes. The research, which is funded by the Office of Naval Research (ONR), has resulted in two patent applications and seven peer reviewed publications to date.



DYLAN THOMAS



A collaboration between Swansea University and UT Austin will join together for the first time an exciting archive collection of Dylan Thomas material held in Swansea and Austin.

UT Austin's Harry Ransom Center is considered to have one of the most significant collections of Dylan Thomas' work, and this landmark project will digitise over 8,000 literary artefacts, including sketches, photographs and manuscripts.

The project, which started on International Dylan Thomas Day, will make the digitised archives - which will be held in both Swansea and Austin - available to academics and other audiences around the world.

The project is part of a wider series of Dylan Thomas initiatives at Swansea which includes the *Swansea University International Dylan Thomas Prize*, the world's largest literary prize for young writers, which features on its judging panel award-winning poet and author Kurt Heinzelman, Professor of English at UT Austin.

OIL PRICES, FINANCIAL LIQUIDITY AND GEOPOLITICAL RISK

The global interrelationship between oil prices, financial liquidity and geopolitical risk is the focus of a research collaboration between the School of Management's Dr Hany Abdel-Latif and Prof Mahmoud El-Gamal from Rice University.

Their research, published in *Applied Economics Letters*, adds to existing research on the relationship between global financial liquidity and oil prices by factoring in geopolitical risk, making it the first paper to consider all three global variables simultaneously.

The authors' analyses show that a significant fall in oil prices would increase geopolitical risk and reduce global financial liquidity, whilst an increase in geopolitical risk would lead to rising oil prices - a cycle that was observed during the first Iraq War.

In addition to this ongoing research, the two academics have embarked on a new joint research project aimed at understanding income equality. The results of this collaboration have been presented at a conference at Stanford University and have been accepted for publication in the *Middle East Development Journal*.



JACOBAN DRAMA



Dr Eoin Price from the Department of English Literature and Creative Writing was awarded a Harry Ransom Center Research Fellowship by the University of Texas at Austin for his research project, *Early Modern Drama and the Jacobean Aesthetic*.

The Fellowship allowed him to spend a month undertaking research in the Harry Ransom Center's Performing Arts archive where he examined eighteenth-century Drury Lane Theatre prompt-books, playbills and print images to uncover the forgotten history of plays which were once extremely popular.

Although they are rarely studied today (and even less rarely performed) plays like *Beggar's Bush*, *The Pilgrim*, and *Rule a Wife and Have a Wife* entertained audiences for well over a century. By focusing on these plays, the project challenges the entrenched association of Jacobean theatre with lurid violence.

Dr Price's Fellowship followed a visit to Texas A&M University where he engaged with book historians, participated in workshops and delivered a paper which has been solicited for publication in the journal *Shakespeare Bulletin*.

RESEARCH AS ART

Unique to Swansea University, Research as Art is a competition designed to promote both engagement between researchers and public engagement with research.

With an emphasis on "telling" the research story, researchers submit an image and a short piece of text through which they can convey the emotion, beauty and humanity of their research.

Reaching an audience of over 50 million people worldwide, the competition has provided a stunning showcase for Swansea University's research and most recently has also acted as a platform for research engagement with partner universities in Texas.

Since 2016 an exhibition of Research as Art images has been on permanent display in UT Austin's Perry-Castañeda library, and lectures on the initiative have been delivered by the competition's founder and Director, Prof Richard Johnston to audiences of academics and students at partner universities in both Austin and Houston.



USING AND CHOOSING DIGITAL HEALTH TECHNOLOGIES



A collaboration between Swansea's Prof Harold Thimbleby, Prof Richard Street from Texas A&M University and others has explored the ways in which a communications perspective can be used to better assess, design and use digital health technologies (DHTs) to improve healthcare performance.

Non-verbal communication presents a particular challenge in the design and use of DHTs and can result in risk to patients and reduced staff satisfaction if lost, but if skilfully designed and implemented, DHTs can improve both healthcare performance and staff morale.

The research, published in the *Journal of Health and Organization Management*, uses the new multidiscipline of communications science to provide new insights into the use and understanding of DHTs which will help managers and researchers assess how a new technology can complement rather than degrade professional relationships, and how safer implementation and use of these technologies can be devised.

TEACHING Collaborations

Swansea University's teaching collaborations with Texas partner universities allow students to benefit from the expertise of academic staff in both Swansea and Texas as well as facilitate the development of mutually beneficial international relationships between academic staff.

Teaching collaborations to date include joint programmes, shared modules, faculty mobility for short teaching visits, shared best practice in programme development, and an extensive programme of guest lectures in both Texas and Swansea.

STREET LAW

A collaboration between academics from Swansea's School of Law and the University of Houston Law Center has given Swansea students the opportunity to engage with school and community groups about the law.

Drawing on the expertise of Prof Ellen Marrus, a University of Houston academic who specialises in juvenile law, children's rights and professional ethics, Swansea has developed a new Street Law module in which students create and deliver sessions as part of a free legal education programme for schools and community groups.

The programme empowers audiences by informing them about the law, legal system and human rights, and gives students the opportunity to gain skills and confidence in communicating complex areas of law to members of the public. Since its introduction in 2017, Street Law sessions have been delivered by Swansea students to almost 600 young people in schools and youth clubs in the Swansea area.



LEARNING TECHNOLOGIES

Following a fact-finding visit to Texas partner universities, Swansea University has developed new 'active classrooms' on its Singleton and Bay campuses which allow academics to integrate learning technologies into their learning and teaching.

These active learning spaces are equipped with state-of-the-art technologies which support teamwork and collaborative learning, enhancing both student engagement and learning outcomes.

COLLABORATIVE PHD

In 2012 Swansea University established a collaborative PhD programme with Houston Methodist Research Institute (HMRI). HMRI aims to transform medicine by bringing together interdisciplinary teams which can bring a range of technologies and perspectives to medical challenges.

The collaborative PhD - which emerged from research collaborations in Nanotechnology - enables students to spend the first year of their PhD at Swansea and the second and third years in Houston. Seven students have participated in the programme to date, with research projects focusing on topics such as cartilage repair, disease diagnostics, ovarian cancer and prostate cancer.

Simone Pisano from Italy arrived in Houston in May 2018 at the start of the second year of his PhD. His doctoral research focuses on the development of new therapies to treat ovarian cancer which use the body's own biological nanoparticles to re-stimulate the immune system against the tumour.

“ Houston Methodist Research Institute is a unique place where leading experts from a range of scientific fields merge to form a multidisciplinary environment.

In order to find a final cure for cancer we need to approach it from different perspectives, and somewhere like Houston Methodist is the perfect place to do this. ”



FACULTY-LED VISITS



Swansea University supports inward faculty-led visits from Texas partner universities and is able to offer expert lectures, practitioner visits and access to University facilities.

To date it has welcomed faculty and students from Texas A&M University's Aggie STEM International Summer Camp, and from the University of Houston's Graduate College of Social Work and its College of Nursing.

EARTH IN 2100

A collaboration between the Jackson School of Geosciences and the Department of Geography has allowed students at UT Austin to benefit from the expertise of Swansea academics.

Swansea's Prof Mary Gagen - a climate scientist who specialises in looking at how climate has changed in the past, and what clues that gives us about how it might change in the future - contributed to *Earth in 2100*, a new online module which develops students' knowledge of the science behind climate change, its potential impact, and the challenges facing the energy industry.

"Earth in 2100 is a fantastic module" says Prof Gagen, "because students can work through online content created by specialists and combine this with their classes. It's a really powerful learning combination."



INVENT FOR The Planet

Led by Texas A&M University, *Invent for the Planet* is an Intensive Design Experience which engages students at universities around the world and tasks them with solving some of the world's most pressing problems in just 48 hours.

Students work in local teams to develop possible solutions to challenges such as food security, access to clean water, and waste management, and are required to develop a prototype, elevator pitch and technical white paper for presentation to a panel of judges at the end of the 48 hours.

Swansea was one of just 14 universities worldwide invited to participate in the inaugural event in 2018, and it remains the only UK university invited to take part in the competition. Since then the competition has grown to include 31 universities in 21 countries and students use state-of-the-art technologies to discuss ideas with teams and mentors from around the world, giving them the opportunity to collaborate internationally without ever leaving Swansea.

In 2019 the Swansea judges awarded 1st place to team SuperSocials who developed an App to tackle loneliness. SuperSocials was one of just seven teams worldwide selected to participate in the *Invent for the Planet* Grand Final at Texas A&M University where they were awarded 3rd place and prize money of \$1000.

AN APP TO TACKLE LONELINESS

A large portion of the population spends at least a portion of their lives feeling isolated and lonely and students were tasked with designing a system that connects people and reduces loneliness that is better than current social media.

SuperSocials' winning idea was an App that promotes face-to-face social engagement and activities, to help prevent loneliness. Users can earn points by meeting new people and creating and participating in events which can later be redeemed for products or at local businesses.



“Competing in *Invent for the Planet* was exciting and challenging.

As the only UK university selected for the Grand Final in Texas, our team were aware of the responsibility to represent not only Swansea University, but also Wales and the UK as a whole!

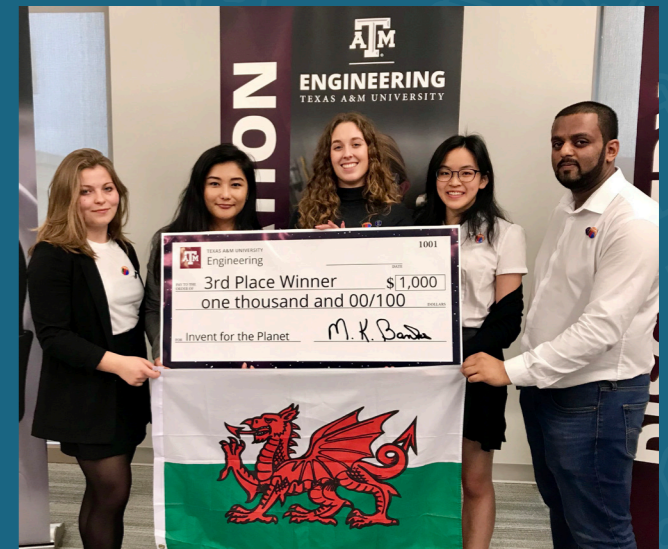
Having the chance to compete in Texas was incredible. The feedback we received from students and staff has helped us improve our idea - which we hope to develop and launch as a business.

Winning \$1000 has given us the opportunity to grow our business faster than we expected.”

Tofazzal Rashid,
Member of Team SuperSocials

AT A GLANCE

- 48 hours
- 21 universities
- 31 countries
- 52 Swansea students
- 3rd place Grand Final



Participant Feedback:

- 74% improved their project management skills
- 81% improved their public speaking skills
- 87% improved their teamwork skills
- 90% improved their communication skills

STUDENT Mobility

Swansea University is committed to giving every student the opportunity to undertake study abroad as part of their degree, and key to this are the student mobility opportunities offered by its partner universities in Texas.

Reciprocal student exchange agreements with the University of Houston, Texas A&M University and the University of Texas at Austin offer Swansea students a choice of destinations in Texas, with both semester and year abroad programmes on offer. A number of short programmes and placements also give students the opportunity to spend time in clinical, laboratory and research settings at Texas partners.

Swansea is a popular study abroad destination for Texan students who enjoy the University's stunning location, close-knit campus community and proximity to the rest of the UK and Europe.

Since the first Texas student exchange in 2013, almost 250 students have participated in mobility between Swansea and Texas, and over €340,000 has been secured from EU Erasmus+ funds to support mobility.

BRITISH AMERICAN FOUNDATION OF TEXAS (BAFTX)

The University's student exchange programmes with Texas are supported by the British American Foundation of Texas (BAFTX), a charity established to provide financial assistance and educational opportunities to academically-gifted students in the United Kingdom and the United States.

BAFTX offers a dedicated scholarship programme for students participating in Swansea University's reciprocal exchange programmes with Texas A&M University and the University of Houston, with 20 recipients to date.

Aimed at students who can demonstrate both academic excellence and financial hardship, it has supported many students who may not otherwise have been able to afford to undertake study abroad.

Almost 80% of Swansea University recipients have gone on to graduate with a 1st class degree.



Participant Feedback:

Texas student mobility participants who received Erasmus+ funding said that their study abroad experience had improved their skills and employability:

- 87%** improved their team work skills
- 93%** improved their subject-specific skills
- 93%** increased their self-confidence
- 100%** increased their chances of getting a job

STUDY ABROAD INTERNSHIP IN POLITICS

A study abroad internship in Politics offered by Swansea's College of Arts and Humanities offers students from UT Austin, the University of Houston and Texas A&M University the opportunity to undertake an internship during their semester abroad at Swansea.

Students are placed with Members of Parliament or Members of the National Assembly for Wales, or with NGOs such as Race Council Cymru and Swansea City of Sanctuary. In exchange, Swansea students can access internship opportunities at partner universities in Texas.



“ My time in Wales was far better than anything I could have possibly imagined!

The internship offered me a wide variety of skills that I will be able to take into my future work environment. Every day I was tasked with something new - everything from casework to speech writing - and every new task taught me something different and useful.

The internship program was an adventure and an experience that I will cherish and remember forever. ”

Giovanni Ontiveros, UT Austin



“ I had the opportunity to undertake an internship in the Texas State Capitol where I worked for a State Senator from San Antonio.

My responsibilities included policy research in relation to potential legislation, writing speeches for the Senator, explaining legislation for constituents, writing press releases, and lobbying other state officials on behalf of constituents.

I also had the opportunity to suggest and draft an equal pay bill to be put before the Senate, which was pretty amazing. ”

Tara Murphy, Swansea University



SUMMER INNOVATION PROGRAMME

A bespoke Summer Innovation Programme at Baylor College of Medicine offers students from Applied Medical Sciences the opportunity to spend six weeks in the Texas Medical Center, the world's largest medical complex.

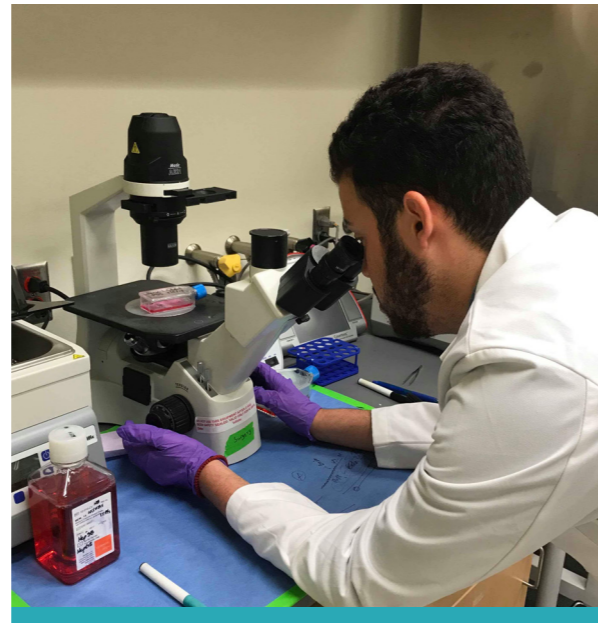
Hosted by the Department of Surgery's Interdisciplinary Surgical Technology and Innovation Center (INSTINCT) the students take part in activities such as surgery observations and simulations, clinical shadowing, laboratory tours, workshops and 'Think Tanks'.



The students also undertake individual and group projects in which they are tasked with developing inspiring and innovative solutions to medical problems such as pressure ulcers, respiratory failure, and opioid-induced respiratory depression.

The students' projects to develop cutting-edge solutions for the detection, prevention, and improved management of pressure ulcers were entered into the Department of Surgery Incubator's annual Innovation Challenge - a competition open to researchers, surgeons and physicians from across the US. One of the Swansea teams was named joint winner and shared the \$25,000 R&D funds prize which allowed work on the project to continue.

To date 26 Swansea students have participated in the programme and have been awarded over \$20,000 in R&D funding for projects developed whilst in Texas.



“ I was attracted to the Baylor College of Medicine Summer Innovation Programme as I am considering a career in medicine and research, specifically surgery and surgical techniques.

The experience changed me as a person: it made me more able to speak spontaneously, to lead, and prepared me for my next years of study. I have been able to build strong networks with people in Texas which will help me in my future career. It was an unforgettable experience which has helped shape the person I want to be. **”**

Poornima Ramesh, Swansea University



EXCHANGE STUDENT Case Studies

Ben Bottrill,
Swansea University



“ The main attraction of the Texas exchange was personal development, not just in an academic way but also in a social and cultural way.

The exchange definitely changed me: it allowed me to become more confident and proved to me that I have the ability to be able to solve problems successfully. My experience in Texas was a challenging one but one which I will relish for a long time. **”**

“ Signing up for a study abroad program was the greatest decision I've ever made.

Being a student in Swansea was great - the courses offered matched my degree plan and are all at your pace. Best perk though? Exiting class and being able to step right onto the beach. I would definitely go back and do it all over again because it was the best 5 months of my life. **”**

Charlene Morrison,
Texas A&M University



Modupe Sobwana,
Chemical Engineering,
Swansea University



“ I was attracted to the Texas A&M exchange as it offered the opportunity to study abroad and gain global connections. As a student in Texas, I put a lot more thought into what path I would like to take career-wise and got a lot more involved in careers activities, such as company networking events.

The experience changed my work ethic and I have a greater vigour for academic and professional pursuits. I have a renewed sense of global mindedness and have proved that I can adapt to new environments. **”**

“ One of the greatest things about my experience abroad was meeting people from different countries, cultures and backgrounds.

I made so many new friends from around the world and the memories I shared with them are something I will cherish forever. My advice to anyone thinking of studying abroad at Swansea University is DO IT! **”**

Erika Patino,
University Of Houston



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 [@SUinTexas](https://twitter.com/SUinTexas)