Technological University of the Shannon

Postgraduate Prospectus 2024

Postgraduate Study at TUS Athlone Campus

TUS

Contents

Why Choose TUS for Your Postgraduate Study?

University Status

Ireland's first cross-regional university, established 1 October 2021

Top 25

Named a U-Multirank top 25 performing university for interdisciplinary research globally

European University

Founding member of new European alliance which will enable students to obtain a degree by combining studies in multiple EU countries

Athena SWAN

Athena SWAN Bronze award holder

1st

First technological university to accede to the prestigious AMBER SFI research centre

ISSE

Top rated for student satisfaction with their third-level experience

No.1

Leader in high-TRL research across the technological higher education landscape

5

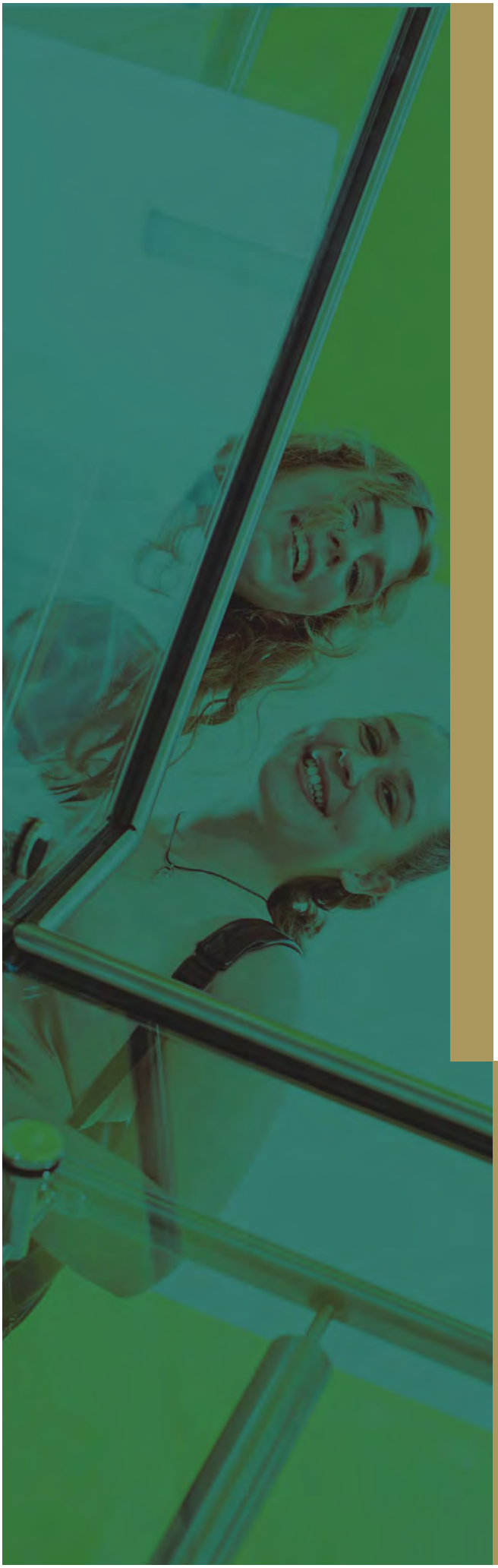
Member of five SFI research centres - CONFIRM, AMBER, CÚRAM, ADAPT and SSPC

Vibrant & Modern

TUS is a vibrant, contemporary university with six campuses in Athlone, Limerick, Thurles, Clonmel, and Ennis. A centre of academic excellence, the technological university plays an integral role in educating and upskilling Ireland's workforce in key areas of technological advancement. Building on the heritage of its forbearers, AIT and LIT, TUS is renowned for its applied, industry-focused offering, world-class research and development capabilities, and state-of-the-art facilities. Becoming a technological university has further strengthened TUS's teaching and research capacity and is providing new postgraduate opportunities for learners. This is critical to driving Ireland's knowledge economy forward.

TUS's Athlone campus (formerly AIT) is located in the heart of the Midlands, a stone's throw from the town of Athlone. The campus is home to 7,000 students across a broad range of disciplines and is renowned for its friendly and inclusive culture, which supports students in reaching their full potential. The Athlone campus has undergone a period of considerable development and expansion in recent years and now boasts a dedicated 13,000-square meter engineering and informatics facility. The university will shortly break ground on a brand-new STEM building on its Athlone campus, which will create capacity for 1000 additional students. This new state-of-the-art facility will span a floor area in excess of 65,000 square feet.

Learn more about the postgraduate programmes on offer at TUS:
www.tus.ie/postgrad




CROSSHATCH

Taught and Research-Orientated Programmes

With a diverse range of taught and research-orientated programmes to choose from, students looking to continue their study will easily find a course to suit their goals and career aspirations. TUS offers a variety of programmes on a full, part-time, blended and online basis which range from higher diploma right through to master's, PhD and beyond. TUS also offer several taught and research scholarships to support students in their studies.

TUS's offerings are distributed across six primary areas – science, health, business, hospitality, engineering and informatics. Within the Faculty of Science and Health, students will find a range of contemporary programmes in nursing and healthcare, social studies, social care practice, and child and youth studies. Elsewhere, in the Faculty of Business and Hospitality, TUS has innovative courses in data analytics, accounting, business and tourism. Each programme is designed to produce industry-ready graduates with confidence in their abilities, so that they can be an asset to a company from the word go. The faculty also offers one of the fastest routes to becoming a chartered accountant in Ireland, thanks to agreements with professional bodies like ACCA and CPA. Designed to meet the requirements of industry, programmes available through the Faculty of Engineering and Informatics are real-world calibrated and ensure students gain practical, industry-relevant skills. These innovative postgraduate degrees, taught in a state-of-the-art €36 million facility, range from cybersecurity and software engineering to artificial intelligence and virtual and augmented reality.

Students choosing to pursue their postgraduate education by research rub shoulders with world-leading academics at the forefront of exciting research in areas like smart drug delivery, antimicrobial resistance, decontamination, cybersecurity, materials science and virtual and augmented reality. Home to three strategic research institutes and two Enterprise Ireland technology gateways, TUS's Athlone campus conducts high-TRL research of international importance in collaboration with myriad industry partners. Linkages and crossfertilisation between teaching and research are constantly reinforced through academic staff engaging with these research centres and postgraduate research students.

Industry and Academia Partnerships

The campus's partnerships with five leading Science Foundation Ireland research centres - CONFIRM, SSPC, ADAPT, CÚRAM and AMBER – contribute to fundamental knowledge generation. For example, TUS recently established Ireland's first smart manufacturing research cell and pilot lines open to industry. Funded by CONFIRM, a €47 million smart manufacturing research centre aimed at improving Irish manufacturing competitiveness through technological advancement, the cell offers new opportunities for postgraduate students to learn about automation. CONFIRM's first publication resulted from research undertaken at TUS concerning the 3D printing of a robotic arm.

TUS is also the first technological university to accede to the prestigious Advanced Materials and BioEngineering Research (AMBER) centre, headquartered at Trinity College Dublin. This partnership is driving advances in materials science and translating research excellence into new products and technologies for society. TUS researchers are leading the development of new sustainable polymer strategies, such as polymer recycling and emerging biopolymers, as alternatives to the reliance on the traditional fossil fuel driven polymer sector.

Employment and Careers

The net result of these partnerships is a talent pipeline of highly educated, competent graduates capable of propelling Ireland's knowledge economy forward. TUS's emphasis on applied, industry-focussed postgraduate education and research translates to an impressive graduate employability rate – the vast majority of students find gainful employment within six months of graduating. Of that figure, a large swathe is employed in Athlone and the surrounding Midlands region, thanks to an abundance of multinational and indigenous employers in areas like life sciences, technology and global business services.

Top Tip

The suite of programmes on offer in the Faculty of Continuous, Professional, Online, Distance and Blended Learning are designed to facilitate flexible learning. These courses are ideal for those looking to upskill, change career or return to employment and furnish learners with the skills and competencies necessary to begin or advance their career in a wide array of sectors. As Ireland moves towards a digital economy, new technologies and opportunities are emerging which mandate that workers upskill to maintain the competitiveness of industry and business. Lifelong learning is crucial to being 'job-fit' in the modern workforce.

Learn more about the flexible postgraduate programmes on offer at TUS: tus.ie/flexible

Student Profile

What Our Graduates Say...

"Accounting is about more than sitting behind a desk crunching numbers and issuing invoices. Accountants are business leaders which is exactly what studying at Technological University of the Shannon has taught me to be. It's crucial that accountants take a holistic view of a business and view it as a whole. We're not just number crunchers. We have software and automation that can work with numbers, so our job is to use the knowledge we've gained through our education and careers to problem solve. To anyone considering accounting, I'd say go for it! Once you get your qualification, the world is your oyster."

Joy Salaja
Head of Accounting, EY Global Fusion
Master of Arts in Accounting

Different Modes of Study: Taught and Research

While some students favour the structure and support of a taught master's degree, other students may benefit from undertaking a master's degree in research mode or go straight to a PhD. Different modes of study suit different students and are dependent on your own career goals and aspirations.

Taught Programmes

Taught postgraduate programmes are typically 12 months in duration and result in a Master of Arts (MA), or a Master of Science (MSc) award. Similar to bachelor's degrees in structure, taught postgraduate programmes are assessed through a series of taught modules and require students to undertake a body of independent research. For students not wishing to complete a dissertation, or who wish to take a stepping stone approach, TUS also offers a range of NFQ Level 9 postgraduate diplomas.

Research Mode

Students who prefer self-directed learning and a more independent style of study often choose to continue their postgraduate studies with a Master of Research (MRes) or a Doctor of Philosophy (PhD). Obtaining a MRes takes two years and is achieved through critical investigation and evaluation of an approved topic. The MRes is often used as a training ground to prepare prospective PhD students to undertake doctoral research in a specific area. Subject to approval, MRes graduates can segue into the second year of a PhD programme. Prospective students will need to write a research proposal outlining a proposed research topic and find a suitable research supervisor.

Visit the Graduate School on **pg. 62** to learn more about finding a research supervisor, scholarships and funded PhDs.

Postgraduate Taught

Faculty of Engineering and Informatics

Programme	Mode	Contact	Email	NFQ	Webpage
HDip in Agile Software Design	FT	Dr Enda Fallon	enda.fallon@tus.ie	9	www.tus.ie/courses/hdip-agile-software-design/
MSc in Applied Software Engineering (Ericsson)	PT	Dr Enda Fallon	enda.fallon@tus.ie	9	www.tus.ie/courses/msc-applied-software-engineering/
MSc in Software Engineering	FT	Dr Enda Fallon	enda.fallon@tus.ie	9	www.tus.ie/courses/msc-software-engineering
MSc in Software Design with Cybersecurity	FT	Dr Enda Fallon	enda.fallon@tus.ie	9	www.tus.ie/courses/msc-software-design-with-cybersecurity
MEng in Engineering Management	FT/ PT	Alan Duffy	alan.duffy@tus.ie	9	
MEng in Energy Infrastructure	PT	Alan Duffy	alan.duffy@tus.ie	9	www.tus.ie/courses/meng-energy-infrastructure/
PgDip in Advanced Polymer Materials	FT/ PT	Breda Lynch	bredac.lynch@tus.ie	9	www.tus.ie/courses/postgrad-diploma-advanced-polymer-materials
MSc in Software Design with Cloud Native Computing	FT	Dr Enda Fallon	enda.fallon@tus.ie	9	www.tus.ie/courses/msc-software-design-with-cloud-native-computing
MSc in Software Design with Artificial Intelligence	FT	Dr Enda Fallon	enda.fallon@tus.ie	9	www.tus.ie/courses/msc-software-design-with-artificial-intelligence
PgDip in Software Design with Digitalisation	FT	Dr Enda Fallon	enda.fallon@tus.ie	9	www.tus.ie/courses/pd-software-design-with-digitalisation

Faculty of Science and Health

Programme	Mode	Contact	Email	NFQ Level	Webpage
MSc/PgDip in Biopharmaceutical Technology	FT	Dr Siobhan Kavanagh	Siobhan.Kavanagh@tus.ie	9	www.tus.ie/courses/msc-postgrad-diploma-biopharmaceutical-technology
MSc in Nursing in Leadership and Quality Healthcare	PT	Dr Lisa Kerr	lisa.kerr@tus.ie	9	www.tus.ie/courses/msc-nursing-in-leadership-and-quality-healthcare-pt
PgDip in Nursing in Leadership and Quality Healthcare	FT/ PT	Dr Lisa Kerr	lisa.kerr@tus.ie	9	www.tus.ie/courses/postgrad-diploma-nursing-in-leadership-and-quality-healthcare
PgCert in Nursing in Leadership and Quality Healthcare	FT/ PT	Dr Lisa Kerr	lisa.kerr@tus.ie	9	www.tus.ie/courses/postgraduate-certificate-nursing-in-leadership-and-quality-healthcare
MSc/ PgDip in Pharmaceutical and Chemical Analysis	FT	Dr Brian Murphy	brian.murphy@tus.ie	9	www.tus.ie/courses/msc-pgd-pharmaceutical-and-chemical-analysis

*Fees are subject to change. Click **here** for the 2023/24 fees schedule

MSc in Digital Health	FT	Dr John Larkin	john.larkin@tus.ie	9	www.tus.ie/courses/msc-digital-health/
MSc in Digital Health (part-time)	PT	Dr John Larkin	john.larkin@tus.ie	9	www.tus.ie/courses/msc-digital-health-pt/
PgDip in Digital Health	PT	Dr John Larkin	john.larkin@tus.ie	9	www.tus.ie/courses/postgraduate-diploma-digital-health/
PgCert in Digital Health	PT	Dr John Larkin	john.larkin@tus.ie	9	www.tus.ie/courses/postgraduate-certificate-digital-health/

Faculty of Business and Hospitality

Programme	Mode	Contact	Email	NFQ Level	Webpage
MSc in Data Analytics	FT/PT	Barry O'Loughlin	analytics@tus.ie	9	www.tus.ie/courses/msc-business-analytics-athlone/
HDip in Data Analytics	PT	Dr Jonny O'Dwyer	jonny.odwyer@tus.ie	9	www.tusflexiblelearning.ie/data-analytics-higher-diploma
MA in Accounting	FT	Luke Fannon	luke.fannon@tus.ie	9	www.tus.ie/courses/ma-accounting/
HDip in Business	FT	Dr Alison Sheridan	alison.sheridan@tus.ie	8	www.tus.ie/courses/hdip-business/
MSc in Digital Marketing	FT	Dr Aisling Keenan	aisling.keenan@tus.ie	9	www.tus.ie/courses/msc-digital-marketing-athlone
Master of Business	FT	Dr Teresa O'Hara	teresa.ohara@tus.ie	9	www.tus.ie/courses/mbus-business
MSc in Strategic HRM	PT	Josephine Corkery	josephine.corkery@tus.ie	9	www.tus.ie/courses/msc-strategic-hrm/
PgDip in Digital Marketing	Online	Dr Aisling Keenan	aisling.keenan@tus.ie	8	www.tus.ie/courses/postgraduate-diploma-digital-marketing-online/
MSc in Leadership	Online	Dr Alison Sheridan	alison.sheridan@tus.ie	8	www.tus.ie/courses/msc-leadership/

Faculty of Continuing, Professional, Online and Distance Learning

Programme	Mode	Contact	Email	NFQ Level	Webpage
PgDip in Financial Management	FT/PT		flexiblelearning.midlands@tus.ie	9	www.tusflexiblelearning.ie/financial-management/
MA in Financial Management	FT/PT		flexiblelearning.midlands@tus.ie	9	www.tusflexiblelearning.ie/financial-management-1-year-add-on/
PgDip in Quality Management and Validation	FT		flexiblelearning.midlands@tus.ie	9	www.tusflexiblelearning.ie/postgrad-uate-diploma-in-quality-management-and-validation/
MSc in Quality Management and Validation	FT		flexiblelearning.midlands@tus.ie	8	www.tusflexiblelearning.ie/quality-management-validation-one-year-add-on/
PgDip in Packaging, Innovation and Product Design	FT		flexiblelearning.midlands@tus.ie	9	www.tusflexiblelearning.ie/packag-ing-innovation-and-product-design/
MEng in Packaging, Innovation and Product Design	FT		flexiblelearning.midlands@tus.ie	9	www.tusflexiblelearning.ie/packaging-innovation-and-product-design-1-year-add-on/
PgDip in Executive Engineering	FT		flexiblelearning.midlands@tus.ie	9	www.tusflexiblelearning.ie/executive-management/
MA of Business Administration	FT		flexiblelearning.midlands@tus.ie	9	www.tusflexiblelearning.ie/business-administration/
HDip in Construction Data Capture & Analytics	FT		flexiblelearning.midlands@tus.ie	9	www.tusflexiblelearning.ie/business-administration/

*Fees are subject to change. Click here for the 2023/24 fees schedule

Faculty of

Engineering & Informatics

Higher Diploma in

Agile Software Design

Full-time (1 year)

NFQ Level: 8
Cost: **€7,500** EU applicants; €12,500 non-EU
Webpage: https://tus.ie/courses/hdip-agile-software-design/

Contact:
Dr Enda Fallon,
Head of Department,
Computer and Software Engineering,
Email: enda.fallon@tus.ie
Tel: (090) 647 1877

The HDip in Agile Software Design programme incorporates the design specification, implementation and testing of software solutions. Graduates of this course will be in a position to take up careers as software designers, programmers, web/cloud developers, database developers, software testers, administrators and technical salespersons. Existing computer professionals will keep up-to-date with latest techniques in the industry.

Ireland is likely to face an average increase in demand for high-level ICT skills of around 5% a year with the employment anticipated to rise to just over 91,000 according to the Department of Education and Skills. Due to unprecedented growth and innovation in the sector, the shortage of talent in ICT is a global problem. The shortage of software graduates in Ireland is particularly significant for professionals with experience as software designers and programmers. This course provides graduates with the practical skills required to gain employment in this innovative sector.

Master of Science in

Applied Software Engineering (Ericsson)

Full-time (1 year)

NFQ Level: 9
Cost: Free (bursary & stipend available)
Webpage:
www.tus.ie/courses/msc-applied-software-engineering/

Contact:
Dr Enda Fallon,
Head of Department,
Computer and Software Engineering,
Email: enda.fallon@tus.ie
Tel: (090) 647 1877

This MSc is run in association with Ericsson and ICT Skillnet and is free to eligible applicants. Upon successful completion of the taught component of the programme, students undertake a three-month internship with Ericsson, Athlone. Successful candidates are offered a full-time, permanent software engineering role. The programme covers the entire software development lifecycle – from the fundamentals of computing and software design to implementation and testing.

Students gain critical knowledge of the skills and particular technologies used in ICT product development. Applicants are required to undergo a three-month preparatory Certificate in Software Engineering prior to commencing the programme. Entry to the programme is on the basis of a competitive selection process.

Funding Available

* Scholarships available by contacting the TUS International Office: **international@tus.ie**

Master of Science in

Software Engineering

Full-time (1 year) or part-time (2 years)

NFQ Level: 9
Cost: €6,900 EU applicants; €14,500* non-EU
Webpage: www.tus.ie/courses/msc-software-engineering

Contact:
Dr Enda Fallon,
Head of Department,
Computer and Software Engineering,
Email: enda.fallon@tus.ie
Tel: (090) 647 1877

The MSc in Software Engineering is aimed at computer professionals and engineers who wish to enhance their knowledge and expertise in software engineering research and development. Students gain exposure to the various techniques for performing academic research. Throughout the programme, students also learn about new technological developments, ethical and social issues affecting the computer industry, and the requirement to uphold general professional standards. The expansion of the software industry in Ireland and overseas has resulted in a high demand for skilled software engineering graduates. Ireland's thriving software/ICT sector is home to more than 900 multinational and indigenous software companies.

Master of Science in

Software Design with Cybersecurity

Full-time (1 year) or blended/online (2 years)

NFQ Level: 9
Cost: €6,900 EU applicants; €14,500* non-EU
Webpage: www.tus.ie/courses/msc-software-design-with-cybersecurity

Contact:
Dr Enda Fallon,
Head of Department,
Computer and Software Engineering,
Email: enda.fallon@tus.ie
Tel: (090) 647 1877

The MSc in Software Design with Cybersecurity provides students with both theoretical and practical skills to understand and respond to computer security threats in modern business environments. Over the course of the programme, students are armed with a broad range of competencies, including an understanding of cryptographic algorithms and mechanisms, which equips them for a wide variety of security career roles.

Students will develop skills in both network and computer security – the combination of which will enable them to create a security bedrock of information technology infrastructure on which enterprise can conduct business. This brand-new master's programme has been designed in consultation with industry.

Master of Engineering in

Engineering Management

Blended (1year)

NFQ Level: 8
Cost: €9,250 EU applicants, €14,500 non-EU
Webpage: www.tusflexiblelearning.ie/engineering-management

Contact:
Alan Duffy,
Head of Department,
Civil Engineering and Construction,
Email: alan.duffy@tus.ie
Tel: (090) 644 2531

This programme is designed to combine specialised engineering knowledge and skills with enhanced theory and practice in engineering management. It has been designed by engineers, to develop engineering literate managers with the skills to contribute strategically to their organisations mission while leading innovative collaborative teams and meeting goals on time while managing available resources and costs. It aims to meet the needs of a rapidly changing engineering environment and address critical management skills gaps in industry. The flexibility and agility this programme offers, will allow participants to specialise in a pathway most suited to their skills, career aspirations, and employer needs while undertaking core modules that will give them a broader insight into engineering management.

After successfully completing the programme, participants will have demonstrated the competencies necessary to Adopt analytical, systematic approaches towards technical and non-technical problem solving and decision making. They will be equipped to participate in business planning and decision making at all levels from strategic to operational, manage complex technically challenging engineering projects.

Master of Engineering in

Energy Infrastructure

Full-time (1 year) or blended/online (2 years)

NFQ Level: 9
Cost: €9,250 EU applicants
Webpage: www.tusflexiblelearning.ie/meng-in-energy-infrastructure-meci

Contact:
Alan Duffy,
Head of Department,
Civil Engineering and Construction,
Email: alan.duffy@tus.ie
Tel: (090) 644 2531

Today's energy systems are highly interdependent and very heterogeneous. The infrastructure that supports the generation and distribution of energy is varied, complex and dependent on a range of practical engineering and geographical considerations. This complex infrastructure requires and understanding of a range of interdisciplinary concepts for its design, construction, operation and maintenance.

This programme is designed to arm learners with the knowledge and imbue them with the practical skills for construction, analysis and management of energy infrastructure projects.

The programme will be delivered over two academic semesters in a blended mode, predominately through online lectures taking place in the evenings with some additional focused practical sessions taking place at weekends in our state of the art laboratories.

* Scholarships available by contacting the TUS International Office: **international@tus.ie**

Postgraduate Diploma in

Advanced Polymer Materials

Full-time (1 year) online or part-time (2 years)

NFQ Level: 9
Cost: €6,750 EU applicants; €12,000 non-EU
Part-time: €5,980
Webpage: www.tus.ie/courses/postgrad-diploma-advanced-polymer-materials

Contact:
Breda Lynch,
Head of Department,
Polymer, Mechanical and Design
Email: bredac.lynch@tus.ie

Graduates will be prepared to specify, work with and test polymer materials in addition to gaining hands on process knowledge and an appreciation for new and emerging materials and process methods. The core subjects include polymer materials, polymer chemistry and physics, polymer characterisation and polymer processing; students will also undertake modules in research methodology and programme management. The course content includes areas such as extrusion, injection moulding, additive manufacturing, recycling, polymer materials analysis, polymer bonding, structure/property relationships and many other areas relevant to the modern polymer scientist or engineer.

Students can choose to undertake a third semester focused on the completion of a research thesis to attain a MSc in Advanced Polymer Materials.

Master of Science in

Software Design with Cloud Native Computing

Full-time (1 year)

NFQ Level: 9
Cost: €6,900 EU applicants; €14,500 non-EU
Webpage: www.tus.ie/courses/msc-software-design-with-cloud-native-computing

Contact:
Dr Enda Fallon,
Head of Department,
Computer and Software Engineering,
Email: enda.fallon@tus.ie
Tel: (090) 647 1877

Cloud-native applications are designed to capitalise on the scalability and flexibility of the cloud. In contrast to traditional monolithic applications, cloud-native applications are built using multiple, independent microservices that are deployed in cloud environments. Cloud-native development takes an agile approach to creating new applications. Using a DevOps-based continuous delivery model, software development teams can quickly, iteratively and automatically add new features to an application. The course will provide students with both theoretical and practical skills to develop software systems which use Infrastructure-as-a-Service (IaaS) in order to run applications on servers that can be flexibly provisioned on demand.

Master of Science in

Software Design with Artificial Intelligence

Full-time (1 year)

NFQ Level: 9
Cost: €6,900 EU applicants; €14,500 non-EU
Webpage: www.tus.ie/courses/msc-software-design-with-artificial-intelligence

Contact:
Dr Enda Fallon,
Head of Department,
Computer and Software Engineering,
Email: enda.fallon@tus.ie
Tel: (090) 647 1877

As computers become smarter, artificial intelligence (AI) is making strides in simulating human thinking. Creating computer systems that automatically improve with experience has many applications, including robotic control, data mining, autonomous navigation, and bioinformatics. This course provides a broad introduction to machine learning and statistical pattern recognition. Students learn about both supervised and unsupervised learning as well as learning theory, reinforcement learning and control. This MSc in Software Design with Artificial Intelligence provides technical competencies in Java, JavaScript, C++, and .Net. Graduates of this programme can expect excellent employment opportunities.

Master of Science/Postgraduate Diploma in

Software Design with Digitalisation

Full-time (1 year)

NFQ Level: 9
Cost:
Webpage:

Contact:
Dr Enda Fallon,
Head of Department,
Computer and Software Engineering,
Email: enda.fallon@tus.ie
Tel: (090) 647 1877

Driven by the increasing availability and affordability of digital technologies, digitalisation refers to the process of using digital technology to transform traditional business process. The shift towards digitalisation has brought about several advantages, including increased efficiency, accuracy, and accessibility of information. One of the most significant benefits of digitalisation is the ability to store and retrieve large amounts of data quickly and easily. This is particularly important for businesses that rely on data to make informed decisions. Additionally, digitalisation has enabled companies to streamline their processes, reducing costs and increasing productivity.

Digitalisation also provides greater flexibility and accessibility, allowing individuals to access information from anywhere and at any time, as long as they have an Internet connection. This programme will enable the students to operate in innovative market sectors in order to develop, implement and evaluate digital strategies using the enhanced capability of Internet of Things based connected devices.

Student Profile

In Conversation With...

Why did you choose to study at TUS?
My journey started back in 2019, when I got the chance to get enrol in a Springboard+ course, developed by TUS. This marked the beginning of a new chapter in my academic career, as well as of my life. I was coming from a business background and deciding to change my career path to a new area, software engineering, was a big step – though it was one I was extremely excited to explore. This was also my very first experience of studying abroad and having the chance to do it in a highly recognised institution, such as Tus, has motivated me a lot.

What mode of study did you choose and why?
I started a HDip in Science in Software Development (Cloud Application Development) as part of the Springboard+ programme, upon completion of which I enrolled in the Master of Science in Applied Software Engineering (Ericsson). I did opt for the full-time mode of study when doing my diploma. I knew that getting into a new area would require greater efforts and more time allocated, so I decided to fully focus on the programme and dedicate as much time as possible to the course.

What are the most difficult and most enjoyable aspects of your programme?
I moved from my home country, Moldova, to Ireland the year before I started my HDip programme, so starting this course was just a great chance for me to meet new people here in Ireland and to make friends. This helped me to acclimatise myself quicker, which was great. Perseverance is key, and the fantastic support I have received from TUS lecturers has helped me overcome any difficulties and stay motivated. I really value the personal interaction I have had with them along the process. TUS provides an amazing array of resources which are intended to facilitate the student experience, and I was very happy to make use of them.

What advice would you give to prospective researchers/postgraduate students?
If you've got a genuine commitment to continuous learning and improvement, you'll do great. Don't fear new challenges just because you think they might result in failures; instead, challenge your beliefs about what you can do. Venture outside of your comfort zone. The fear of failing can cause us to do nothing and, therefore, resist moving forward. And because of this, we're likely to miss some great opportunities along the way.

Mariana Ciorba
Master of Science in Applied Software Engineering (Ericsson)

Spotlight on Cybersecurity

In Conversation With...

Why did you choose to study at TUS?
I chose TUS because its MSc in Software Design with Cybersecurity really aligned with what I wanted to achieve and focus on when learning. Along with a modern campus, the location of which makes it very easy to access from most parts of the country, TUS is a leader in innovation and really focuses on strengthening those links between academia and enterprise. My own company continues to build a successful relationship with TUS, and so, it was my first choice when pursuing a master's.

What mode of study did you choose and why?
I completed a taught master's programme. As I was working full-time throughout, the mode of delivery allowed me to balance my career with continuing my education. The lectures were in the evening a couple of times a week, and the fact they were also recorded provided greater flexibility should anything unforeseen come up. I chose a master's as the material was more focused and relevant to my career path, having already obtained experience and other academic certifications in the field.

What were the most difficult and most enjoyable aspects of your programme?
The most difficult aspect was certainly trying to maintain the work/study/life balance - whilst juggling a 4-year-old and the beginning stages of a pandemic lockdown! It was very challenging at times to maintain motivation and keep going; however, looking back it was a great learning experience and I gained some invaluable "working under pressure" skills!

We embarked on the programme as a cohort of five from my company and this group dynamic was one of the most enjoyable parts. We were able to study together, support each other through it all and have some laughs along the way. The lecturers were also really friendly and approachable, and we had some great banter with them through the year.

How has this mode of study helped you in your academic career?
Following on from the course, I have embarked on additional certifications relevant to the field. Due to material already covered in the master's, some of these required less effort and input than they usually would have to achieve. I have also supervised a couple of project groups with the current postgrads for the same course. This has been an invaluable learning experience seeing what it is like from the other side and been able to guide and support students to successfully completing their papers.

What advice would you give to prospective postgraduate students?
If it is an option, do the course with a colleague or a friend. If not, try to get to know your fellow classmates. It will be so much easier having others to bounce ideas off and you will provide support and encouragement to each other. Don't be afraid to fail. You will learn from that failure and come back better with a stronger will to succeed. For any postgrad, there are many sacrifices that will need to be made, but the achievement in the end will make it all worthwhile.

Louise Gallagher
Process Engineer and Project Management,
Global Security Fusion Centre, Hewlett Packard Enterprise,
MSc in Software Design with Cybersecurity

What Our Graduates Say...

"Learning new skills through the MSc in Software Design with Cyber Security allowed me to get a deeper understanding of how my organisation works end-to-end. It is important to have a range of skills when working in cyber security as you have to be constantly thinking outside the box. Not only have I have gained so much additional knowledge by undertaking this course, but it also helped me secure a work promotion. I would highly recommend studying with TUS as it gives you such a wide variety of cyber subjects to learn from, to help you choose what career path is right for you. To anyone considering a career in cyber security, this course will open so many new opportunities and experiences."

Sharon Gurry
Solutions Analyst, Business Security and Integrity Group,
Hewlett Packard Enterprise,
MSc in Software Design with Cybersecurity

Faculty of

Science & Health

Master of Science/ Postgraduate Diploma in

Biopharmaceutical Technology

Full-time (1 year)

NFQ Level: 9
Cost: €7,900 EU applicants; €16,500* non-EU
Webpage: www.tus.ie/courses/msc-post-grad-diploma-biopharmaceutical-technology

Contact:
Dr Siobhan Kavanagh
Programme Co-ordinator
Email: siobhan.kavanagh@tus.ie

The MSc in Biopharmaceutical Technology at TUS Athlone campus builds on departmental expertise and strong links developed with industry. This programme was conceived in response to significant job opportunities within Ireland's large and expanding biopharmaceutical sector. In addition to lectures and laboratory sessions and site visits to local biopharmaceutical plants, students undertake practical training at the National Institute for Bioprocessing Research and Training (NIBRT) in Dublin. NIBRT is a replica of a functional bioprocessing plant, equipped with all of the manufacturing equipment you would expect to find in a modern bioprocessing facility (for example, upstream, downstream, fill/finish and bioanalytical facilities). The NIBRT training will allow students to gain hands-on experience of the processes involved in biopharmaceutical production.

Master of Science/Postgraduate Diploma/ Postgraduate Certificate in

Nursing in Leadership and Quality Healthcare

PGDip & PGCert: Part-Time and Blended
MSc: Full-time, Part-Time and Blended

NFQ Level: 9
Cost: €10,800 EU applicants; €18,500 non-EU
Webpage: www.tus.ie/courses/msc-nursing-in-leadership-and-quality-healthcare-pt

Contact:
Dr Lisa Kerr
Programme Director
Department of Nursing and Healthcare
Email: lisa.kerr@tus.ie
Tel: (090) 644 2525

The MSc/Postgraduate Diploma in Nursing in Leadership and Quality Healthcare programme is aimed at graduate nurses who wish to advance their academic and professional development. The nursing profession is dynamic and evolving with societal needs and care needs of individuals, families and communities. Nurses are challenged by the sophistication of technological, medical and social advancement and with the ever-increasing divergence in social inequalities, presenting nursing with a new agenda for transformation. The Postgraduate Diploma in Nursing in Leadership and Quality Healthcare programme provides the nurse with a broad-based educational experience to practise at a higher level incorporating key concepts such as clinical decision-making, professional leadership, evidence-based practice, professional ethics, research knowledge and skills.

Upon successful completion of this programme, graduates will have developed a mastery of complex and specialised knowledge and a critical awareness of issues at the forefront of nursing. They will have an advanced understanding of how techniques of enquiry enable the critical and objective analysis, interpretation and application of research and scholarly evidence. Graduates are ideally placed to progress to Masters level studies.

* Scholarships available by contacting the TUS International Office: **international@tus.ie**

Master of Science in

Pharmaceutical and Chemical Analysis

Full time

NFQ Level: 9
Cost: €7,900 EU applicants; €16,500* non-EU
Webpage: www.tus.ie/courses/msc-pgd-pharmaceutical-and-chemical-analysis

Contact:
Dr Brian Murphy
Programme Co-ordinator
Department of Pharmaceutical Sciences and Biotechnology
Email: brian.murphy@tus.ie

Ireland is a major pharmaceutical hub for the entire globe with nine of the top ten global pharmaceutical and biotechnology companies having significant operations here.

The Master of Science in Pharmaceutical and Chemical Analysis at TUS Athlone was designed in response to the significant job opportunities for Analytical Chemists in the Pharma/Biopharma/Chemical sector in Ireland. The programme builds on extensive expertise of academic staff at TUS and enhances the provision of state-of-the-art modern analytical facilities to support the pharmaceutical, biopharma and chemical industries. The programme also utilizes and enhances our strong links with the growing pharmaceutical industry in the Midlands Midwest hinterland.

This interdisciplinary MSc programme is designed to provide graduates with industry informed expert knowledge, in addition to developing and honing analytical skills through engaging with a wide range of experimental focused modules and research project. The graduate will also be supported to develop highly sought after graduate transversal skills such as the ability to work both independently and as part of a team, communication, problem solving and critical analysis. Opportunities to engage with industry will be provided via Industry site visits, guest lectures and workshops.

Master of Science/Postgraduate Diploma/ Postgraduate Certificate in

Digital Health

Full Time/Part Time (Blended)

NFQ Level: 9
Cost: €10,800 EU applicants; €18,500* non-EU
Webpage: www.tus.ie/courses/msc-digital-health-pt/

Contact:
Dr John Larkin
Programme Co-ordinator
Department of Nursing and Healthcare
Email: john.larkin@tus.ie

The Master of Science in Digital Health is an interdisciplinary programme developed in partnership with, healthcare service providers and with clinical experts in the field of digital health. This course is aimed at postgraduate students who wish to enhance their knowledge, competencies, attitudes, and skills within the context of digital health and health care systems. The course will enable graduates to function efficiently as healthcare leaders and innovators within a digitally enabled healthcare environment.

The programme was developed and will be delivered by lecturers from the fields of computer and software engineering and nursing and healthcare. This is pivitol in preparing graduates to bridge the gap between healthcare and computing; to lead the transformative evolution of technology in healthcare delivery. As identified by the World Health Organization (2021) digital health can help health systems be more efficient and sustainable, enabling them to deliver good quality, affordable and equitable care. Likewise, the eHealth strategy in Ireland (Health Service Executive (2023) suggests that the use of technological-enabled solutions will lead to improved population wellbeing, health service effeciences and economic opportunities. The teaching strategies involve a problem based approach with development of practice based skills working with practice based problems which mirrors the challenges faced in the healthcare environment.

* Scholarships available by contacting the TUS International Office: **international@tus.ie**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Faculty of

Business & Hospitality

Master of Science/Postgraduate Diploma in

Data Analytics

Full-time (1 year) or part-time/blended (2 years)

NFQ Level: 9
Cost: EU full-time €7,000, €16,500* non-EU
Webpage: www.tus.ie/courses/msc-business-analytics-athlone

Contact:
Mr Barry O'Loughlin
Programme Coordinator
Accounting and Business Computing
Email: Barry.OLoughlin@tus.ie

This MSc is designed to furnish graduates with the skills and aptitudes necessary to excel in the emerging field of big data and data analytics. Students will develop skills in database technologies, data manipulation languages, including SQL and the R programming language, programming for big data, statistics and probabilities and the interpretation of data. Students will also undertake a practical data analytics project and associated thesis.

The ultimate goal of the programme is to provide industry with data-savvy practitioners capable of gleaning insights from vast quantities of data for the purposes of operational and strategic decision-making. The MSc in Data Analytics is open to graduates from a wide array of cognate disciplines.

Master of Arts in

Accounting

Full-time (1 year)

NFQ Level: 9
Cost: EU Full-time: €6,250, non-EU: €14,500*
Webpage: www.tus.ie/courses/ma-accounting/

Contact:
Mr Luke Fannon
Programme Coordinator
Accounting and Business Computing
Email: luke.fannon@tus.ie

This MA is a designed to prepare accounting and general business graduates with an accounting specialisation for entry into the accountancy profession. Graduates of the programme gain full CAP2 exemptions from Chartered Accountants Ireland and eight exemptions from ACCA. CPA Ireland award ten possible exemptions subject to an assessment of a graduate's underlying degree.

Graduates of this programme enjoy excellent employment prospects; the vast majority qualify as accountants within two years of graduation and rise to senior executive level in the public or private sectors.

* Scholarships available by contacting the TUS International Office: **international@tus.ie**

Higher Diploma in
Business

Full-time (1 year)

NFQ Level: 8
Cost: EU full-time €4,600, non-EU: €13,500 *
Webpage: www.tus.ie/courses/hdip-business

Contact:
Dr Alison Sheridan
Head of Department
Business and Management
Email: alison.sheridan@tus.ie
Tel: (090) 6471892

The Higher Diploma in Business is a one-year, career-focussed programme which is aimed at developing a wide range of cross-enterprise business skills required for modern competitive organisations. Building a strong business foundation, the programme is ideal for holders of a Level 7 or a Level 8 qualification in a non-business discipline, who wish to develop key business and management expertise over two semesters.

Incorporating modules such as Management and Strategy, Economics for Business, Marketing Management, Business Law, Financial Management and Decision Making, Business Applications and Human Resource Management, this programme provides an opportunity to pursue a dynamic career in management and leadership within many different types of organisations. Students are provided with a range of opportunities to gain practical and real-world experience by engaging in site visits, guest lectures, case studies and simulated work projects. Graduates are well-placed to respond to the skills needs of industry regionally, nationally and globally.

Students who successfully complete this programme, with a classification of 2.2 or higher, are eligible to apply for the Master of Business.

* Scholarships available by contacting the TUS International Office: **international@tus.ie**

Master of Science in
Digital Marketing

Full-time (1 year)

NFQ Level: 9
Cost: €7,000 EU applicants; €14,500* non-EU
Webpage: www.tus.ie/courses/msc-digital-marketing-athlone

Contact:
Dr Aisling Keenan
Department of Business and Management
Email: aisling.keenan@tus.ie
Tel: (090) 6471892

The MSc in Digital Marketing is a one-year industry-focussed programme which is aimed at providing a wide range of digital marketing skills required for modern competitive organisations. The programme is ideal for holders of a Level 8 qualification in a business discipline or for individuals who have experience in digital marketing who wish to develop their education expertise over two semesters.

Students have the opportunity to complete a thesis or work with a live industry partner for the year developing and implementing a digital marketing strategy.

Modules include: Digital Marketing Strategy, Social Media Marketing and Digital Advertising, Managing Search Marketing, Digital Technology and Design, Data Interpretation and Web Analytics, Social Media and ICT Law.

This exciting programme also provides professional certificates from Hubspot, Meta, Google and Stukent. These are embedded in the modules to ensure our graduates are industry ready.

* Scholarships available by contacting the TUS International Office: **international@tus.ie**

Master of
Business

Full-time (1 year)

NFQ Level: 9
Cost: EU full-time €6,350, non-EU: €14,500 *
Webpage: www.tus.ie/courses/mbus-business

Contact:
Dr Teresa O'Hara
Senior Lecturer
Department of Business and Management
Email: teresa.ohara@tus.ie
Tel: (090) 6471892

This programme provides students with an opportunity to enhance their career prospects in an increasingly competitive work environment. It also provides a potential pathway to further develop their research interests. A focus on innovation and creativity which includes working with start-up companies, assists students in developing a range of career-enhancing skills including interpersonal skills, teamwork, critical thinking skills and research skills.

In addition to completing a research project, modules such as International Corporate Strategy, Business Model Development, Business Strategy for a Sustainable World and Applied Innovation help the student to develop expertise relevant to a range of business settings. Engaging in real-world applied projects during the course of study provides a further opportunity to integrate and consolidate theory and practice.

Throughout the programme, enhanced subject knowledge is supplemented by problem solving, group work, research and report writing skills. Past students of the programme have secured roles in business development, digital marketing, logistics, HR, finance and project management.

* Scholarships available by contacting the TUS International Office: **international@tus.ie**

Master of Science in
Strategic HRM

Part-time/blended (2 years)

NFQ Level: 9
Cost: EU fee €6,350, non-EU: €14,500 *

Contact:
Ms Josephine Corkery
Programme Coordinator
Department of Business and Management
Email: josephine.corkery@tus.ie
Tel: (090) 6471892

This programme provides students with the opportunity to develop a theoretical, evidence-based approach to strategic people management, with a focus on practical application across different organisational contexts and industries. Students will learn to design and manage strategy, enhance advanced people management skills, and have a unique opportunity to deepen personal effectiveness and business acumen.

The opportunity to undertake a significant piece of research during the programme provides a further opportunity to consolidate key business skills. Research along with feedback from employers demonstrates the importance of strategic human resources to the design, implementation and execution of business strategy and vision.
Course modules are taught by a combination of full-time academic faculty researching in the field of Human Resources and Employee Relations, and experienced senior HR practitioners. This ensures that students graduate with a range of theoretical, analytical, critical and practical skills and knowledge. Close partnership with the CIPD will allow students the opportunity to attend and participate in regional networking and learning events.

This programme also provides the opportunity for students to gain a CIPD accredited Advanced Diploma in Strategic People Management in addition to the potential to gain CIPD Associate or Chartered membership level depending on experience.

* Scholarships available by contacting the TUS International Office: **international@tus.ie**

Postgraduate Diploma in

Digital Marketing

Online

NFQ Level: 9
Cost: €4,950
Webpage: www.tus.ie/courses/postgraduate-diploma-digital-marketing-online/

Contact:
Dr Aisling Keenan
Department of Business and Management
Email: aisling.keenan@tus.ie
Tel: (090) 6471892

The Postgraduate Diploma in Digital Marketing is a one year online programme which equips professionals with key skills in digital marketing. The programme is ideal for holders of a Level 8 qualification in a business discipline or for individuals who have been working in the field of digital marketing and who wish to develop their educational experience.

Lectures take place online on Fridays and incorporate modules such as Digital Marketing Strategy, Social Media Marketing and Digital Advertising, Managing Search Marketing, Digital Technology and Design, Data Interpretation, Web Analytics and Social Media and ICT Law.

This unique programme also provides professional certificates from Hubspot, Meta, Google and Stukent which are embedded in the modules to ensure our graduates are industry ready. Students who complete this programme will have progression options for the MSc in Digital Marketing.

Master of Science in

Leadership

Blended

NFQ Level: 9
Cost: EU fee €6,350, non-EU: €14,500
Webpage: www.tus.ie/courses/msc-leadership/

Contact:
Dr Alison Sheridan
Department of Business and Management
Email: alison.sheridan@tus.ie
Tel: (090) 6471892

The Master of Leadership programme provides an opportunity for participants to develop and advance their leadership skills thereby enabling them to contribute more effectively across a range of strategic leadership roles. The programme will challenge participants to translate leadership concepts into practice by applying the ideas and frameworks to the actual challenges faced within their own organisations.

Reflection and analysis through the use of action learning sets and facilitated discussion will be a central feature of the programme. Reflective of the reality of today's organizational context where work is more complex and interdependent, this programme recognises the importance of developing leaders who are adept at collaboration and team working as well as being able to lead in a virtual context.

The programme will be delivered using a blended learning approach via a virtual learning platform and face-to-face connect at weekend workshops.

What Our Graduates Say...

"The PgDip in Executive Management has provided me with the skills and knowledge to compete in the contemporary working environment. The course has also introduced me to managers and leaders from different industry sectors, that bring a wealth of knowledge and experience. TUS understands that it is not easy to balance a part-time course with work and family commitments and are constantly monitoring feedback to facilitate the ultimate learning environment. The support mechanisms within TUS are unmatchable in my experience and bestows great piece of mind. The lecturers have a wealth of industry experience and are able to seamlessly demonstrate the transition from theory to practice and how different frameworks can be manipulated to meet different needs. If you are looking to upskill, or gain a greater knowledge of business, then this is the course for you."

Eamon Spillane
Postgraduate Diploma in Executive Management

The Faculty of

Continuing, Professional, Online and Distance Learning

Postgraduate Diploma in

Financial Management

Full-time

NFQ Level: 9
Delivery: Online
Cost: €8,250
Webpage: www.tusflexiblelearning.ie/financial-management/
Application open date: Tuesday, 2 April 2024
Closing date: Friday, 23 August 2023

Contact:
Email: flexiblelearning.midlands@tus.ie
Tel: 090 648 3050

The aim of the Postgraduate Diploma in Financial Management is to enable the student to achieve an integrated understanding of the operation and strategy of Financial Management, and to develop appropriate the knowledge, skills and competencies in the area of Financial Management.

***100%/90%** funding available under HCI Pillar 1

Springboard+ and HCI Pillar 1 are co-funded by the Government of Ireland and the European Union.

Master of Arts in

Financial Management

(1 Year add on)

Full-time

NFQ Level: 9
Delivery: Online
Cost: €2,250
Webpage: www.tusflexiblelearning.ie/financial-management-1-year-add-on/
Application open date: Tuesday, 2 April 2024
Closing date: Friday, 23 August 2023

Contact:
Email: flexiblelearning.midlands@tus.ie
Tel: 090 648 3050

The aim of the Masters of Arts in Financial Management is to provide an educational experience that enables the student to achieve an integrated understanding of the operation and strategy of Financial Management, and to develop appropriate intellectual and personal skills. Specifically the programme is designed to offer participants the opportunity to gain a detailed knowledge of the underpinning theory and effective practice of Financial Management which will be of particular benefit in a range of management and leadership roles as well as in specialized Financial Management roles.

Springboard+ and HCI Pillar 1 are co-funded by the Government of Ireland and the European Union.

Postgraduate Diploma in

Quality Management and Validation

Full-time

NFQ Level: 9
Delivery: Online
Cost: €8,250
Webpage: www.tusflexiblelearning.ie/postgraduate-diploma-in-quality-management-and-validation/
Application open date: Tuesday, 2 April 2024
Closing date: Friday, 23 August 2023

Contact:
Email: flexiblelearning.midlands@tus.ie
Tel: 090 648 3050

The Postgraduate Diploma in Quality Management and Validation has been designed to offer participants the opportunity to gain a detailed knowledge of the underpinning theory and effective practice of Quality Management and Validation which will be of particular benefit in a range of management and leadership roles as well as in specialized Quality Management and Validation roles.

***100%/90%** funding available under HCI Pillar 1

Springboard+ and HCI Pillar 1 are co-funded by the Government of Ireland and the European Union.

Masters of Science in

Quality Management and Validation

(1 Year add on)

Full-time

NFQ Level: 9
Delivery: Online
Cost: €2,250
Webpage: www.tusflexiblelearning.ie/quality-management-validation-one-year-add-on/
Application open date: Tuesday, 2 April 2024
Closing date: Friday, 23 August 2023

Contact:
Email: flexiblelearning.midlands@tus.ie
Tel: 090 648 3050

The aim of the Masters of Science in Quality Management and Validation is to provide an educational experience that enables participants to achieve an integrated understanding of the operation and strategy of Quality Management and Validation, and to develop appropriate intellectual and personal skills. Specifically the programme is designed to offer participants the opportunity to gain a detailed knowledge of the underpinning theory and effective practice of Quality Management and Validation which will be of particular benefit in a range of management and leadership roles as well as in specialized Quality Management and Validation roles.

Springboard+ and HCI Pillar 1 are co-funded by the Government of Ireland and the European Union.

Postgraduate Diploma in

Packaging, Innovation and Product Design

Full-time

NFQ Level: 9
Delivery: Online
Cost: €8,250
Webpage: www.tusflexiblelearning.ie/packaging-innovation-and-product-design/
Application open date: Tuesday, 2 April 2024
Closing date: Friday, 23 August 2023

Contact:
Email: flexiblelearning.midlands@tus.ie
Tel: 090 648 3050

The aim of the Postgraduate Diploma in Packaging, Innovation and Product Design is to enable the student to achieve an integrated understanding of the operation and strategy of Packaging, Innovation and Product Design, and to develop appropriate intellectual and personal skills. The programme is designed to offer participants the opportunity to gain a detailed knowledge of the underpinning theory and practice of Packaging, Innovation and Product Design which will be of particular benefit in a range of management and leadership roles as well as in specialized Packaging, Innovation and Product Design roles.

***100%/90%** funding available under HCI Pillar 1

Master of Engineering in

Packaging, Innovation and Product Design

(1 Year add on)

Full-time

NFQ Level: 9
Delivery: Online
Cost: €2,250
Webpage: www.tusflexiblelearning.ie/packaging-innovation-and-product-design-1-year-add-on/
Application open date: Tuesday, 2 April 2024
Closing date: Friday, 23 August 2023

Contact:
Email: flexiblelearning.midlands@tus.ie
Tel: 090 648 3050

The aim of the Masters of Engineering in Packaging, Innovation and Product Design is to provide an educational experience that enables the student to achieve an integrated understanding of the operation and strategy of Packaging, Innovation and Product Design, and to develop appropriate intellectual and personal skills. Specifically the programme is designed to offer participants the opportunity to gain a detailed knowledge of the underpinning theory and effective practice of Packaging, Innovation and Product Design which will be of particular benefit in a range of management and leadership roles as well as in specialised Packaging, Innovation and Product Design roles.

Postgraduate Diploma in

Executive Management

Part-time

NFQ Level: 9
Delivery: Online
Cost: €8,250
Webpage: www.tusflexiblelearning.ie/executive-management/
Application open date: Tuesday, 2 April 2024
Closing date: Friday, 23 August 2023

Contact:
Email: flexiblelearning.midlands@tus.ie
Tel: 090 648 3050

This Postgraduate Diploma IN Executive Management is designed for middle and senior managers, and business consultants. The Postgraduate Diploma in Executive will enable the student to achieve an integrated understanding of the operation and strategy of management, and to develop the intellectual and personal skills required to be an effective senior manager in an organisation.

Master of

Business Administration

Part-time

NFQ Level: 9
Delivery: Online
Cost: €8,250
Webpage: www.tusflexiblelearning.ie/business-administration/
Application open date: Tuesday, 2 April 2024
Closing date: Friday, 23 August 2023

Contact:
Email: flexiblelearning.midlands@tus.ie
Tel: 090 648 3050

The TUS Executive MBA has been specifically designed to meet the needs of both practising and aspiring middle and senior managers. The Executive MBA will enable the student to develop the appropriate skills, knowledge and competencies required to be an effective senior leader and manager in an organisation.

Higher Diploma in Engineering in

Construction Data Capture & Analytics

Blended (1 year)

NFQ Level: 9
Delivery: Online
Cost: €8,250
Webpage: www.tusflexiblelearning.ie/executive-management/
Application open date: Tuesday, 2 April 2024
Closing date: Friday, 23 August 2023

Contact:
Email: flexiblelearning.midlands@tus.ie
Tel: 090 648 3050

Today's construction industry is highly interdependent and diverse. The complex processes now required to deliver large infrastructure projects requires an understanding of a range of interdisciplinary concepts for its design, construction, operation and maintenance - key to this is the collection and interpretation of relevant construction survey data. This programme is designed to arm learners with the knowledge and imbue them with the practical skills for digital construction techniques, survey analysis and management of construction surveying.

This course was developed by a team of practicing engineers, construction managers & academics from Ireland and the UK. The course will be delivered by this team, ensuring a highly relevant and future proofed course. The particular skills have been identified as being in very short supply and there are many opportunities in Ireland and elsewhere for skills in data capture and ability in post-processing of this data,as well as the ability to provide accurate site control using modern methods and equipment.

Postgraduate Research

BRI
Bioscience Research Institute

What is the BRI?

The Bioscience Research Institute (BRI) acts as a campus-wide conduit for providing bioscience and health-focused R&D at TUS. It facilitates oriented, basic and applied research, innovation and enterprise in strategically important areas of microbiology, toxicology, parasitology, analytical chemistry, cell and molecular biology, bioinformatics, immunology and biotechnology.

Contract Services Offered:

- Bioinformatics, diagnostics, in vitro toxicology, chemical synthesis (small molecule), analytical chemistry and bioanalysis, protein purification
- Drug and food bioactive delivery systems
- Microbiology, toxicology and chemical analysis
- Antimicrobial susceptibility testing
- Image analysis, microscopy
- Environmental testing
- Pharmaceutics and pharmaceutical analysis

Agri-Food

- Functional foods/bioactives
- Pollination (disease prevention)
- Development of novel decontamination technologies for farmed fish and seafood applications
- Rapid detection and diagnostics of microbial pathogens and toxicants for farmed fish, seafood and livestock applications
- Functional genomics and biomarker discovery for human and animal health and performance
- Biotransformation
-

The Environment

- Novel decontamination approaches
- Fate and behaviour risk assessment modelling for pollutants in water
- Real-time diagnostics for detection of micopollutants in aquatic environ
- Ecotoxicology and nanotoxicology
- Molecular microbial ecology
- Bioinformatics and bioprocess technology

Pharma/Biopharma with Biotechnology

- Advancing drug candidates or biosimiliars and biobetters
- Pharmaceutical analytical chemistry drug encapsulation and phase solubility
- Novel molecule synthesis
- Molecular toxicology

Health (Human)

- Stem cell therapies
- Infection control/sterilisation
- In vitro diagnostics/therapeutics
- Personalised nutrition/health
- Biomedical materials and devices
- Sports science and rehabilitation therapies including physiology
- Wearables

Health (Animal)

- In vitro diagnostics
- Feed formulation

TUS Breathes New Life into Peatlands Bog with Aquaculture Research

Research looking at the use of cutaway peatland and poor agricultural land for freshwater fish production is underway at the BRI.

A team of researchers from TUS's Bioscience Research Institute is investigating the use of naturally occurring microalgae to help mitigate disease and improve fish health in freshwater fish farms.

This intensive sustainability initiative, which is being carried out in partnership with Bord na Móna as part of its move away from peat harvesting, is expected to 'breathe life back into the bog' through improved production efficiencies and management of farmed fish in new inland fisheries.

Aquaculture, the breeding, rearing, and harvesting of fish, is now the fastest growing food sector globally due to a rapidly increasing population. It is estimated cultured fish will make up 62% of all fish consumed by people by 2030.

"There are limitations with traditional aquaculture approaches, such as a lack of available freshwater and space for expansion of existing facilities," explained Professor Rowan, director of the Bioscience Research Institute. "The advances being made in the use of cutaway peatland and poor agricultural land for freshwater fish farming will enable us to meet increased demand for sustainable food production."

Peatland-based aquaculture differs from traditional aquaculture in that it harnesses water from rivers and lakes, whereas the traditional system must consider the environmental impact of expansion and possible threats from potential pollutants in raw, untreated wastewater such as agricultural run-off.

The researchers are harnessing the power of microalgae using real-time technologies. "We will be conducting the first studies on novel extraction of immune-stimulating bioactives and nutrients from these microalgae to see if they can be used to support a healthy fish population," explained a lead postdoctoral researcher within the Bioscience Research Institute.

This cross-cutting eco-innovation project highlights the great strides our world-leading researchers are making on a global stage in terms of addressing pressing societal challenges.

Aligned with the Regional Enterprise Plan 2020, the research is ensuring that the Midlands is well positioned to address the challenges posed by Ireland's transition to a low-carbon economy and renewable energy while harnessing the potential for sustainable food production and growth of these industries.

This low-cost, environmentally-friendly aquaculture applied research will aid the development of new eco-innovations and contribute to Ireland's position as a leading innovator in aquaculture that will underpin production efficiency and sustainability leading to increased competitiveness globally.

TUS Teams Up With USA Researchers to Tackle Complex Diseases Affecting Health of Our Bees

More than half of Ireland's bee species have experienced substantial declines since the 1980s.

With many managed and wild-bee species in severe decline globally, food security is being threatened. With this in mind, researchers from TUS's Bioscience Research Institute have joined forces with the University of Minnesota, USA, to tackle diseases affecting pollinators.

"Animal pollinators are critical for food security and ecosystem servicing that ensures the reproduction of the majority of wild flowering plants, as well as most flowering crops," said Professor Rowan, director of the Bioscience Research Institute.

87 of the main 124 crops used directly for human consumption require or benefit from animal pollination annually. Pollinator services contribute €153 billion and €54 million to the global and Irish economies respectively.

"Wild bees are often the most effective animal pollinators. However, domestic honeybees have been introduced worldwide for commercial crop pollination. In the 1980s commercial rearing and importation of bumblebee colonies for pollination of certain crops began," he explained.

Today, commercial bumblebee colonies are imported by over 50 countries and the practice has an estimated annual value of €55 million. However, many managed and wild-bee species are in severe decline that threatens food security worldwide.

"More than half of Ireland's bee species have experienced substantial declines since the 1980s, so this issue is of great national concern – evidenced by the publication of the All-Ireland Pollinator Plan.

"A critical contributing factor to pollinator decline is an increase in the spread of a broad range of parasites, including mites, protozoans, bacteria, fungi and viruses. Some parasites appear to be host-specific but most appear to infect multiple bee species.

"The host range, natural geographic range and virulence in different bee hosts are poorly understood for bee parasites. That reflects in part the absence of effective mitigation strategies to address this significant problem," Professor Rowan said.

He highlighted that there is also considerable concern that the human-influenced movement of managed bees for crop pollination purposes has led to the accidental introduction of bee parasites into countries and continents where they do not naturally occur.

"This exposes native bees to parasites which may have little resistance," he added. "Parasites can move between managed or commercial colonies and can even spill over into conspecific wild bee populations that is a serious concern.

It was pointed out that such disease associations have already occurred between managed and wild bees, both in the UK and Ireland. 73.5% of screened commercial bumblebee colonies imported to Ireland were infected with a least one harmful parasite.

"Mitigation measures that reduce parasite loads among managed bees must therefore be developed and implemented in order to protect wild bee populations," Professor Rowan stressed.

He highlighted that "multiple stressors" – such as exposure to pesticides – affect honeybee and bumblebee health, well-being and pollination functionality. "Uncertainty brought on by large variances in climate change may contribute significantly to this problem," he added.

Supervisor Profile:
Prof. Neil J Rowan

Professor Neil J Rowan is the director of the Bioscience Research Institute at TUS and an adjunct professor of the School of Medicine at NUIG. His research interests include parasitology, microbiology and toxicology for problem-solving and innovation. He works closely with regional, national and global industries which extends to risk modelling, biostatistics, sterility assurance. His research has a global orientation. He was formerly a senior lecturer at Strathclyde University (obtained 5* in UK RAE) and currently an expert evaluator H2020 for Future Emerging Technologies (FET), a national rep on EU Cost Action for Foodborne parasites, and an Irish partner on EU Interreg Atlantic Area NEPTUNUS and H2020 MSCA RISE.

Professor Neil Rowan,
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Exotic Mushrooms May Hold Cure to Tackling Pneumonia and Sepsis

With superbugs poised to become humanity's greatest threat, shiitake mushrooms may hold the key to preventing 'global disaster' of increasing antimicrobial resistance.

A five year, €600,000 joint research collaboration investigating the use of beta-1-3, 1-6-D-glucan - a naturally occurring sugar found in the cell walls of fungi - to combat chronic bacterial infections, has led to the development of a new therapeutic innovation that could drastically improve patient care and may provide a complementary or alternative intervention to using front-line antibiotics.

"We've managed to successfully harness the immune priming properties of medicinal mushrooms to treat lower respiratory tract infections caused by bacteria, that possess multiple resistances to antibiotics," said Professor Neil J Rowan, director of the Bioscience Research Institute at TUS and adjunct professor of the School of Medicine at NUIG.

"Pneumonia is one of the most common causes of acute lung injury and respiratory distress syndrome and accounts for 5% of deaths in Ireland - yet no specific therapy exists. Meanwhile, seven people are dying of 'silent killer' sepsis every day. Our findings have the capacity to radically transform our approach to dealing with antimicrobial resistance and human illness more generally."

"The overuse of broad-spectrum antibiotics has contributed to a dramatic spread of sophisticated multiple drug resistant bacterial pathogens that, if left unchecked, could cause a global disaster - In less than 30 years, antimicrobial resistance could cause even more deaths than cancer," he explained. "The findings from this research, which exploits the immune stimulation properties of exotic medicinal mushrooms, could be the key to addressing this increasingly global problem."

Under the lead supervision of Professor Rowan, Dr Emma Murphy, then PhD candidate, developed the world's first biotechnology process capable of producing high purity quantities of this fungal compound in a sterile formulation that's suitable for intravenous usage. The team is currently in the process of exploring commercial development of the process for scale-up and is also considering future needs for route to market.

Future research will explore the potential of this new therapeutic intervention to help patients with Chronic Obstructive Pulmonary Disease (COPD) and people living with Cystic Fibrosis - a chronic lung condition that causes the over production of mucus in the lungs.

SRI
Software Research Institute

What is the SRI?

Established in 2006, the Software Research Institute (SRI) acts as a catalyst to spur innovation through applied research collaboration with industry partners. The SRI conducts applied research in digital media communications and applications, and network and infrastructure management. The centre has built a reputation for applied research in the communications and network management domain and has collaborated extensively both with small and medium enterprises (SME) and multi-national companies, bringing cutting-edge research to the marketplace.

The SRI frequently collaborates with both multinational companies, like Ericsson and SMEs, and is also a partner of CONFIRM, Ireland's €47 smart manufacturing reseach centre. The SRI is currently conducting applied research in cloud security with partners UCC and DCU. The SRI also hosts the COMAND technology gateway, a research initiative whose goal is to foster assist companies develop expertise and innovate in the digital media space.

Supervisor Profile:
Dr Brian Lee

Dr Brian Lee is the director of the Software Research Institute (SRI) and holds a PhD from Trinity College Dublin in the application of programmable networking for network management. He has over 25 years experience in telecommunications network monitoring and has extensive experience of systems and software design and development for large telecommunications products. He has managed numerous internal and external projects including Celtic Plus projects (MAGNETO) and has been task and WP leader on both EU and Celtic projects. He was formerly the director of research for Ericsson, Ireland, with responsibility for overseeing all research activities, including external collaborations and relationship management. His research interests include network security, programmable networking for network management and distributed data analytics for infrastructure management. Dr Lee is active in driving research collaboration across industry and academia. He recently coordinated the H2020 PROTECTIVE project on network work security.

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TUS Leads Major EU Cybersecurity Effort

Researchers from theSoftware Research Institute (SRI) at TUS spearheaded a major pan European cybersecurity research project called PROTECTIVE, aimed at combatting the growth of cybercrime through special detection and monitoring systems.

The €4 million cybersecurity safety net, funded by Horizon 2020, was designed in partnership with several commercial and academic partners, including the University of Oxford, to help organisations pinpoint and alleviate threats to their computer networks.

PROTECTIVE uses a smart awareness tool for cybersecurity management and an enhanced threat awareness system to improve security monitoring and shared threat intelligence. It shields networks from threats like viruses and worms and gives security teams greater visibility and awareness of attacks. This innovative software solution empowers organisations to recognise and neutralise network threats as they arise, making it easier to protect the most vulnerable computers on a network.

According to Mary Pidgeon, a SRI research engineer, cybercrime is a world-scale problem of prodigious proportions. "The significant growth in malicious activity online helped considerably by the proliferation of new technologies, means that cybercrime is now costing the world economy €600 billion annually," she said. "This escalation has led to a massive technology arms race between attacker and defender with the two engaging in a cybersecurity game of cat and mouse."

Defenders, like Mary, name cybersecurity attacks as one of the biggest threats to society today. "Everyday someone somewhere receives unsolicited, SMS or email messages asking them to click a link. Many people make the mistake of opening attachments that install a virus on their device and steal sensitive financial information.

"These cyber threats can look official and many people fall for them. The next thing they know, their bank accounts have been emptied. Ransomware is another common cyber threat unleashed by cybercriminals. Upon gaining access to a PC, attackers lock the owner's computer files and refuse to grant access unless a ransom has been paid," she added.

To combat this, Mary and her project PROTECTIVE colleagues created tools to improve the awareness of the risk posed by these cyber security attacks. "The goal was to use PROTECTIVE threat intelligence with other network monitoring organisations and provide a model of the network that shows which are the critical assets i.e. the most important computers on a network," she explained. "By creating a system through which data and security information can be collected, processed and shared, organisations can enjoy enhanced decision-making capabilities." Designed to service Security Incident Response Teams (CSIRT) and National Research Education Networks (NRENs), like HEAnet in Ireland, the software has also been made available to managed security service providers (MSSPs) who in turn provide assistance to SMEs vulnerable to cybercrime.

"Small to medium-sized companies often have limited resources and can struggle to protect themselves online. This coupled with what often is a limited understanding of cybersecurity and what needs to be done to safeguard their networks, means that they are particularly at risk," Ms Pidgeon finished.

The PROTECTIVE project commenced in September 2016 and was led by Dr Brian Lee, SRI Director. The project included key research partners from the Czech Republic, Romania, Poland, England and Germany. Its commercial partners included email Laundry (Ireland), SYNYO (Austria), ITTI (Poland) and GMV (Spain).

Supervisor Profile:
Mary Pidgeon

Mary Pidgeon is a research engineer at Software Research Institute (SRI). She holds a MSc in Information Technology from National University of Ireland (NUI) Galway and is Project Management Professional (PMP) certified. Working in the software industry for more than 20 years, Mary has analysed, designed, technically-led and project-managed software implementations to deliver several complex software systems. Java Programmer certified, her technical expertise is system analysis and architecture of the cloud based applications, implementation of applications using frameworks (Expressjs, Play, Yii, CodeIgniter) and programming using languages PHP, Java, mySQL, HTML, CSS, JS, D3JS, JqueryMobile as well as test automation using Robot Framework. Mary was the project manager of the H2020 cybersecurity PROTECTIVE project and technical lead for Internet of Things innovation projects with Irish Industry. She is currently working on a test automation project for industry.

Mary Pidgeon,
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MRI
Materials Research Institute

Did You Know?
SFI research centres link scientists and engineers across academia and industry to address crucial research questions.

What is the MRI?
The Materials Research Institute (MRI) specialises in processing and characterising polymer materials. The MRI, which was founded in 2005, builds on TUS's record in polymer engineering, which dates back to its predecessor's foundation in the 1970s. Polymer engineering and processing are key enabling technologies in a range of industries, including the plastics, medical device, construction, packaging and cleantech field. Polymer-based manufacturing is a vital contributor to the Irish economy, and our polymer graduates are highly sought after by a wide range of industries.

Research activities in the MRI incorporate activities in the Enterprise Ireland Funded Applied Polymer Technologies Gateway Centre (APT) and the Centre for Industrial Services and Design (CISD), and span a range of areas, including biomedical polymers, polymer-based smart manufacturing.

MRI - A Nationally Connected Research Centre
MRI researchers are involved with a range of funded projects from national centres including:

- The Enterprise Ireland-funded Irish Composites Centre (ICOMP),
- SFI-funded Research Centres - CÚRAM,
  - Solid State Pharmaceutical Cluster (SSPC), Advanced
  - Materials and BioEngineering Research (AMBER),
  - Centre for Smart Manufacturing (CONFIRM).

AMBER
AMBER brings together Ireland's leading material science researchers working across the disciplines of physics, chemistry, bioengineering and medicine; with an international network of collaborators and companies. Since the centre was established in 2013, Ireland's international ranking in the areas of nano-science and materials science has risen to 1st and 3rd respectively. Hosted in Trinity College Dublin, its researchers are concerned with everyday materials, such as mobile phones, knee implants and batteries.

CONFIRM
CONFIRM aims to transform Ireland's manufacturing industry to become a world-leader in smart manufacturing. Smart manufacturing optimises production systems, adding intelligence and enhanced information technology. These new technologies will be at the heart of the factories of the future, increasing product line adaptability, enabling real-time decision making, shortening supply-chains, and speeding up the development of new innovations to produce higher-quality goods at reduced costs across all industry sectors. TUS plays a key role in the CONFIRM consortium, leading efforts on internet security, virtual reality/augmented reality and providing world-class cloud-based polymer processing expertise and infrastructure.

Ireland's 'Polymer People' Lead Smart Manufacturing Revolution

Ireland is on the precipice of a fourth industrial revolution driven by advances in smart manufacturing – a convergence of the digital and physical world which enables machines to 'talk' to one another through the internet.

At the epicentre of this seismic technological shift is TUS's brand new smart manufacturing cell, which aims to take 'people out of the process', instead using robots, intelligent sensors and complex algorithms to improve the accuracy, reliability and speed of production lines.

The smart manufacturing cell, which is funded by CONFIRM, a €47 million SFI-funded smart manufacturing research centre aimed at improving Irish manufacturing competitiveness through technological advancement, is currently Ireland's only polymer-based test bed open to industry.

CONFIRM's six funded investigators – Dr Declan Devine, Dr Niall Murray, Dr Brian Lee, Dr Sean Lyons, Dr Enda Fallon and Dr Yuansong Qiao - all of TUS - are using the cell to educate and familiarise industry with new smart manufacturing technologies and the benefits of their subsequent adoption.

"While there's a lot of talk about smart manufacturing and industry 4.0, from a practical industry perspective, people's perceptions of it are still very vague. It feels intangible," said Dr Declan Devine, who is the Director of Materials Research Institute.

"For Ireland to move forward as a centre of smart manufacturing, it's crucial that industry gets behind it. We're trying to facilitate this by upskilling people in emerging technologies and giving industry a testing-ground to try out these new smart manufacturing capabilities."

In the Western world where the cost of labour is high, the only way for companies to compete with countries with low-cost labour is through highly sophisticated, automated processes.

"We have to act now before we get squeezed by low cost and high tech economies already embracing smart manufacturing. It's not a question of if we act, we have to act or else we'll haemorrhage jobs," Dr Devine explained. "People might fear automation, but the reality is smart manufacturing will have an incredibly positive impact on the economy."
"Current research indicates that for every robot brought into a company, three highly-skilled jobs are created. None of these jobs are going to be minimum wage – they'll be highly skilled, well-paid polymer, automation and software engineering jobs."

"We're known as the 'polymer people' across Ireland and Europe for good reason. Our smart manufacturing cell is a national resource for industry to utilise. We want companies big and small to know that we are open for business. We have the funding, we have the people and we have the expertise," Dr Devine added.

Supervisor Profile:
Dr Declan Devine

Dr Declan Devine joined TUS in 2011 after working as a senior project leader at the AO Research Institute, Davos, Switzerland, which is a world leading medically led orthopaedic research institute. He received EU funding to carry out a 2-year fellowship in the Harvard Medical School to further develop his research skills and to transfer this knowledge back to TUS. Following his fellowship, Dr Devine took up his current post as the director of the Materials Research Institute with a view to increasing TUS's research impact in the polymer space. The MRI specialises in developing research solutions to industry challenges and completes >100 industry-funded projects annually through its Enterprise Ireland-funded Applied Polymer Technologies Gateway (APT) centre and its internally funded Centre for Industry Services and Design (CISD). This research is underpinned by TUS's basic research activities, which are funded through a variety of sources, including the SFI-funded Confirm, AMBER and CÚRAM centres. His research interests in the polymer space include orthopaedic implant development, biodegradable stents, controlled research of active pharmaceuticals, additive and smart manufacturing.

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FUNMAT HT

Graduate Profile

In Conversation With...

What mode of study did you choose and why?
I started a research master's before transferring into a PhD programme, funded by TUS. I am extremely grateful to have had the opportunity to concentrate on my studies without having to worry about my living expenses. Not everyone is privileged or has access to EU/Irish study grants or other such resources. TUS offers a variety of funded research opportunities that give people, who might not otherwise have had it, access to higher education.

What were the most difficult and most enjoyable aspects of your programme?
I moved from my home country of Venezuela to Ireland the year before I started my master's, and while it took some time to get used to the different accents, ideals and humour, I soon made friends and built a new social circle. I met a group of driven, friendly researchers who made every effort to help me integrate into daily life in Athlone. I feel I have made friends for life through TUS. From an academic perspective, I received huge support from my supervisors in the Materials Research Institute who gave me room to try and fail and try again until I got it right. Their constant encouragement has been instrumental in helping me achieve my goal.

How has this mode of study helped you in your academic career?
Doing a master's degree by research and segueing into a PhD taught me perseverance and patience. Research is like a puzzle; it makes sense once it's been pieced together, but you need to understand the hows and the whys. Sometimes you have to go backwards to go forwards to gain a deeper understanding of your work.

What advice would you give to prospective researchers?
Don't be afraid not to know what's going on, as acknowledging your limits will allow you to surpass them. One the biggest challenges you'll face as a researcher is being confronted with your own ignorance; it can be daunting to realise how much there is still to be understood.

Dr Evert Fuenmayor
Materials Research Institute

TUS Leads Global Effort to Tackle Plastic Pollution and Develop Next Generation Materials

Developing a full plastics circularity has the potential to contribute to a significant reduction in greenhouse gas emissions, and boost resource efficiency and job creation.

Researchers from TUS's Materials Research Institute are spearheading a €5 million pan European Chinese research effort aimed at tackling plastic pollution - a global crisis of prodigious proportions.

The Horizon 2020 research innovation project, dubbed BioICEP (Bio Innovation of a Circular Economy for Plastic), is working to develop sustainable, environmentally-friendly alternatives to traditional petroleum-based plastic.

A number of innovative booster technologies are at the core of this solution - accentuating, expediting, and augmenting mixed plastics degradation to levels far in excess of those current achievable.

Researchers believe that it will take hundreds, if not thousands, of years for bacteria and the enzymes that they produce to evolve to a point where they can break down the long chains of molecules that compose plastic. As a result, the accumulation of plastic is causing serious problems in the environment. According to Dr Margaret Brennan Fournet, a foremost authority on materials science and leader of project BioICEP, there are microplastics in the air we breathe, the water we drink and the food we eat. Scientists have even found them in remote mountain ranges.

"It's been suggested that people are ingesting a credit card-sized amount of plastic every week," the MRI-based researcher said. "These scientific results are only starting to come out now and every few months we're hearing new, even more staggering results."

Using an innovative triple action process, Dr Brennan Fournet and the BioICEP team will attempt to accelerate the degradation of traditional plastic and turn it into biopolymers, which can be used as natural biodegradable replacement plastics.

"In essence, we're tacking in the mixed plastic waste at one end, treating it with bacteria and enzymes, recovering the molecules, fermenting them, and turning them into new bioproducts," she explained.

In many respects, plastic's weakness is actually its strength. Its sheer versatility and high resource efficiency has enabled innovations across many sectors, allowing for the development of new products and solutions.
Plastic has completely revolutionised how food is bought, stored and consumed. Its myriad applications and low production costs has ensured its indispensability to modern living.

With dependency on petroleum-based plastic showing no sign of abating, the race is on to create viable, ecological alternatives that won't negatively impact business or the consumer's bottom line.

"Our ultimate goal is not to change consumer behaviour as this alone isn't sufficient to solve

the problem. Instead, we're trying to target manufacturers and give them a better option that won't cost more and isn't harmful to the environment," Dr Brennan Fournet explained.

The Horizon 2020 project, which commenced in February, is being led by TUS, a third level institute who has long been at the forefront of plastics research and development. Trinity College Dublin and Limerick Institute of Technology are also partnering on the project.

Supervisor Profile:
Dr Margaret Brennan Fournet

Dr Margaret Brennan Fournet's current research is centred on bio-inspired tailored green technologies designed to overcome global challenges. She has more than 15 years demonstrated delivery of world-class collaborative research projects and outstanding student performances. Dr Brennan Fournet holds a BSc in Experimental Physics from UCD, and a PhD in the field of Nanomaterial Nonlinear Optics at the School of Physics, Trinity College Dublin. Dr Brennan Fournet was awarded a Marie Curie Fellowship at the Department of Bioelectronics at the Ecole Nationale Supérieure des Mines de Saint-Etienne (France) in 2013, where she carried out novel integration of nanophotonics with plastic bioelectronics. Dr Brennan Fournet also previously established an interdisciplinary research team NUI Galway, working on nanostructure plasmonics for applications in biomedical diagnostics and developed developing all-electronic medical diagnostic devices for PixinBio SAS, a spin out company from the Fresnel Institute at the CNRS (Marseille, France).

Dr Margaret Brennan Fournet
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One Pill to Cure Them all? TUS Researchers 3D Printing 'Made to Order' Medications

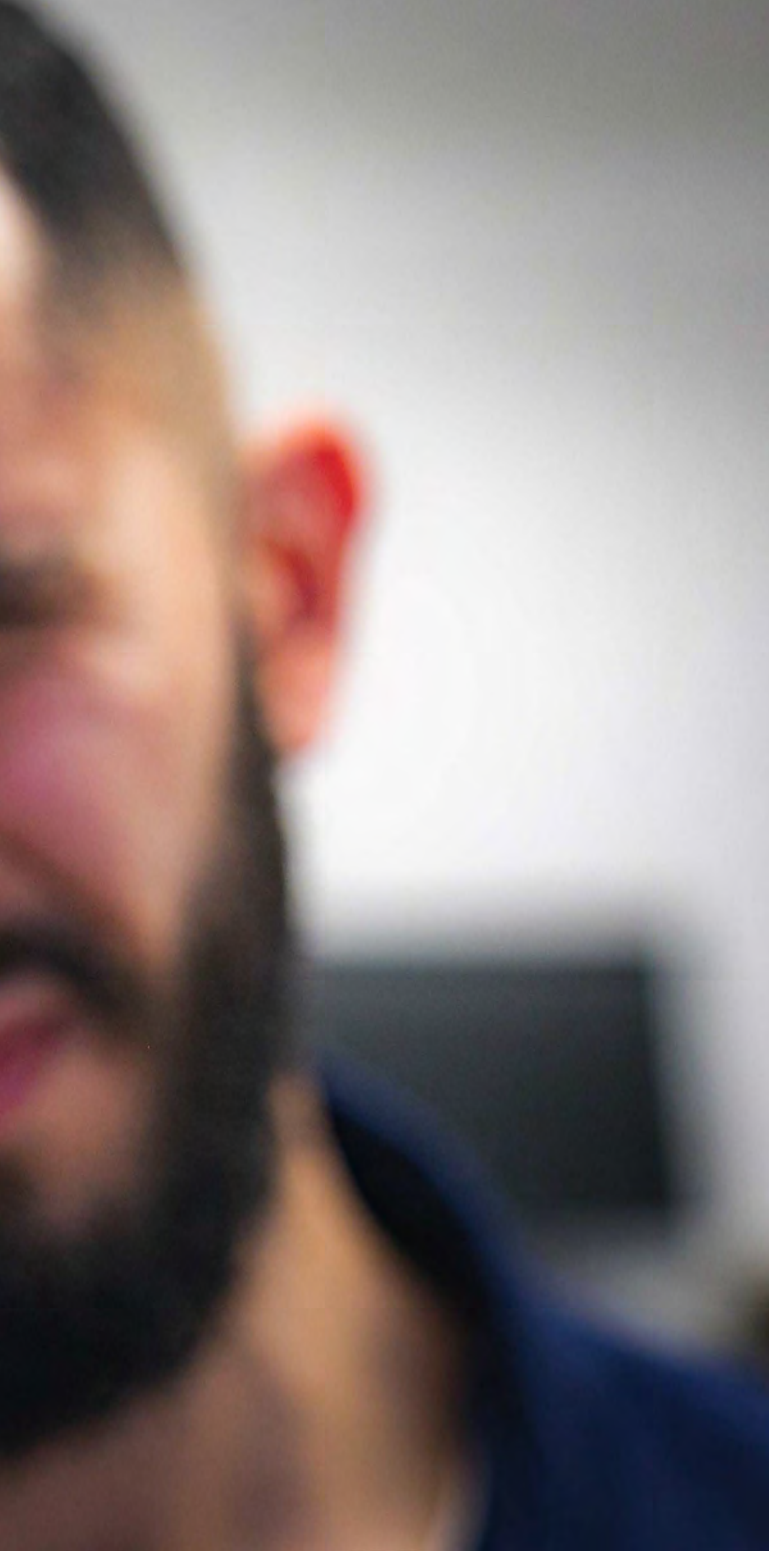
What if there were one 'magic' 3D printed pill patients could take which was capable of combining and releasing medications in the correct quantities and conditions as determined by their own unique genetic profile?

Researchers from Athlone Institute of Technology's Materials Research Institute have combined their extensive knowledge of materials science, additive manufacturing and injection moulding to address the issue of high pill burden and poor therapeutic compliance.

Doctoral candidate Evert Fuenmayor and his supervisor, Dr Ian Major, have developed a blueprint for customisable tablets, capable of combining and releasing drugs in the correct quantities and conditions over a prolonged period of time.

This drug delivery technology, which can be either ingested orally or sub dermally implanted, can be tailored to the specific needs of the patient as determined by their unique genetic profile.

"When we started this research, the idea that 3D printing with polymer could be used to deliver drugs to the body was really novel – no one was doing it," Evert explained. "What we've managed to create is highly personalised, adaptable healthcare technology."
It took three years for the PhD candidate to perfect the 3D printing technology which relies on specific



polymers and printing parameters to deliver active ingredients and formed the basis for his first two PhD publications.

He started off using caffeine as an active ingredient and soon realised that he could change the tablet's release profile – basically how and when it was delivered - by making small, incremental changes to the settings on his 3D printer.

"We blended and melted the material, made filament with it and fed it into the printer. Depending on which settings we selected, we're able to get entirely different drug profiles," he explained. "With as little as two clicks, I could make it so that the tablet could last three days in the body or six hours - it just depended on the needs of the patient."

Heralding a new era of modern, highly specialised healthcare, 3D printing technology has the capacity to help people live longer, healthier lives. Potentially, customisable drug technology could be brought to the high-street and tablets of different drug profiles could be 3D printed in-situ by pharmacists all over the country.

"Pharmacists will be able to make up the drug profile based on a patient's unique needs there and then. With the right drug-loaded polymers in stock and a small 3D printer, they'd be able to print your tablets in the actual pharmacy itself," he explained.

A key enabling technology for this new frontier of personalised medicine, 3D printing can easily and cheaply produce tablets that are customised for individual patients or population sub-groups.

While still at an early stage, this work has shown considerable promise in being able to produce customisable tablets which will facilitate revolutionary 'made to order' personalised healthcare.

Supervisor Profile:
Dr Ian Major

Dr Ian Major is a principal investigator on a European Regional Development Fund and Enterprise Ireland co-funded Commercialisation Fund project in the preclinical development of a synthetic composite device for peripheral nerve repair. He also has funded projects in the development of drug delivery systems and the 3D printing of solid dosage forms. Dr Major has secured €4.33m in funding from different international and national programmes, including a Horizon 2020 EU-China Bio Innovation of a Circular Economy for Plastics (BioICEP) and an ESA-funded project on the development of a PEEK 3D printer for space (IMPERIAL). Dr Major has strong international links in the polymer and biomedical sectors through long-term research collaborations, particularly in the UK. The current focus of his research is the fabrication of advanced composite structures by combining multiple processes and materials. This methodology not only overcomes the shortcomings of the individual processes e.g. expensive part modification of injection moulded parts, slow part production for 3D printing, but it also permits the production of parts with unique sets of attributes.

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Graduate School

Welcome to the Graduate School

It's a very exciting time in TUS, and the Graduate School is no exception. Our research students are part of a vibrant research community that contributes extensively to the new university.

Our mission is to provide student-centred, career-focused education, training and applied research programmes for a diverse cohort of learners within a professional and supportive environment. Our programmes of Masters by Research and PhD allow students to embark on a journey of exploration and discovery, and develop advanced skills in carrying out independent research with the guidance of a supervisory team.

The Graduate School supports our research students with core modules on how to design and conduct research, seminars on trending topics in research and activities to promote collaboration and discussion.

Thank you for your interest in being a research student at TUS. I hope you find the right route for you and look forward to welcoming you to the Graduate School.

Dr Máire Brophy
Dean of Graduate Studies and Research

Meet the Team....

Lorna Walsh, Funded Research Manager, Graduate School & Research
Lorna manages the Graduate School's day-to-day operation, answering queries of both supervisors and postgraduate students. As the Graduate School's funded research manager, Lorna helps academic staff, researchers and postgraduate students identify both funding opportunities and collaborative research networks and develop research proposals. In addition, Lorna manages the President's Doctoral Scholarship call and the research time release programme.

Susan Carroll, Graduate School & Research
Susan is your point of contact for assistance filling out the postgraduate research forms which underpin the postgraduate process from admission to graduation. As well as offering support to students and their supervisors, Susan also lends her expertise to the annual 3MT competition, which tasks applicants with communicating their core research ideas in under three minutes! Susan lends her expertise to the annual Postgraduate Projects of Poster Fest, 3MT. Susan provides administration support to the directors of TUS's research Institutes and maintains the Postgraduate Research Database.

Amanda Murray, Graduate School & Research
Amanda has particular oversight of the admission process and supports supervisors with postgraduate advertising and interviewing, as well postgraduate payroll and keeping student banner records updated.

Postgraduate Application Process

Entry

Route 1

Come up with an Idea

Approach Graduate School

Get matched with research supervisor

Submit research proposal

Commence research if selected

Route 2

Apply for advertised research position

Attend interview

Commence research if selected

Fees per annum for PhD/Master of Research candidates

EU students
Engineering/Science: €5,750
Business/Humanities: €5,150

Non-EU students
Master by Research: €12,900
PhD: €12,900

*Fees subject to change

Scholarships & Funding

Contact the Graduate School to find out more about funded PhDs

President's Doctoral Scholarship
The President's Doctoral Scholarship is funded internally and complements other funded postgraduate programmes, such as the IRC Government of Ireland, HEA Government of Ireland and co-funded PhD awards.

Our President's Doctoral Scholarship features:
- Individual, prestigious awards for excellent research in the name of the applicant
- An objective selection process using independent expert peer review
- Funding across all disciplines

Our President's Doctoral Scholarship offers:
- A stipend of €12,000 per annum over four years
- Postgraduate fees wavier for four years
- Direct research expenses of €1,500 per annum

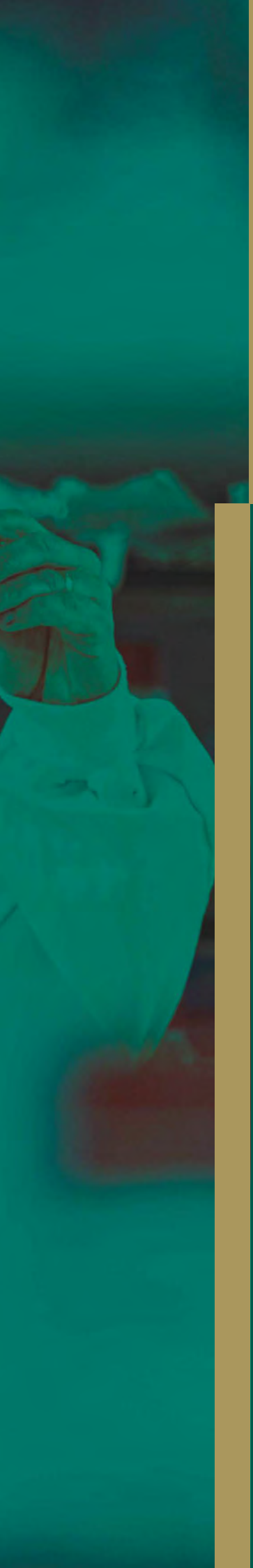
Women in Research Award
The Women in Research award recognises the contribution female academics make to the scientific canon and attempts to redress the imbalance in gender representation across key areas of academia and research. This award, which was inaugurated in 2018, consists of a bursary of €37,000 to fund a postdoctoral researcher for one year.

Government of Ireland Scholarships
Government of Ireland postgraduate scholarships are funded by the Department of Further and Higher Education, Research, Innovation and Science. They are unique in the Irish research landscape and complement other channels for funded postgraduate education in the Irish ecosystem.

The scholarship includes:
- A stipend of €18,500 per annum;
- A contribution to fees, including non-EU fees, up to a maximum of €5,750 per annum; and
- Eligible direct research expenses of €3,250 per annum.

TUS International Student Scholarships
Scholarships of €1,000 to maximum of €3,000 may be awarded based on academic achievement, personal statement outlining exceptional achievements, student ambassador programme, alumni scholarship and sibling scholarship to Non-EU students who apply through International Office or Country Advisors for TUS campuses.

Alumni of TUS who wish to apply for a taught master's will qualify for €3,000 reduced fee scholarship. For more information, email: international@ait.ie.



Find a Research Supervisor

In this section you will find a list of potential research supervisors and some information about their research interests. Prospective students need to prepare a proposal outlining a research topic and find a suitable supervisor to guide their research.

Faculty of

Engineering & Informatics

Department of Computer and Software Engineering

Research group: TIIMEx

Truly Immersive and Interactive Multimedia Experiences (TIIMEx) conducts research on the design, development and quality of experience (QoE) evaluation of immersive and interactive multimedia experiences. Housed within TUS's Department of Computer and Software Engineering, it focuses on multisensory media (olfaction, haptic etc.), augmented and virtual reality as well as wearable sensor systems. TIIMEx application-focused research looks at how multimedia can be employed within the following domains:

- Education - examining how multisensory multimedia can support novel and enhanced learning experiences
- Health - working on projects on motion analysis for total hip replacement recovery and GAIT re-education, and the design of VR scenarios to address independent living/social interactions in persons with autistic spectrum disorder
- Tourism - developing immersive multisensory VR tourism experiences as part of QoE evaluations
- Entertainment - QoE evaluations of multisensory multimedia synchronization
- Gamification - serious gaming
- Quality of Experience => Quality of Life
- Industry 4.0 - AR, VR and wearable systems in smart manufacturing

Virtual/Augmented Reality

Contact: Dr Niall Murray
Email: niall.murray@tus.ie

Dr Niall Murray is a researcher and a lecturer within the Department of Computer and Software Engineering at TUS. He founded the Truly Immersive and Interactive Multimedia Experiences (TiiMEX) Research Group in 2014. Dr Murray is also a Science Foundation Ireland (SFI) funded Investigator for Confirm Centre for smart manufacturing and ADAPT, the global centre of excellence for digital content and media innovation. Dr Murray supervises master's and PhD students in the areas of immersive (virtual and augmented reality) and multisensory multimedia, QoE and wearable sensor systems.

Computer Engineering

Contact: Dr Yuansong Qiao
Email: yuansong.qiao@tus.ie

Dr Yuansong Qiao is a principal investigator at the Software Research Institute (SRI). He received his PhD in Computer Applied Technology from the Institute of Software, Chinese Academy of Sciences (ISCAS), Beijing, China, in 2007. He obtained a BSc and a MSc in Solid Mechanics from Beihang University, Beijing, China. After graduation, Yuansong Qiao joined the ISCAS, where he held roles as a network administrator and as a research engineer and team leader in research and development, working on protocols and products in the areas of computer networking, multimedia communication and network security. His current research interests include future internet architecture, immersive media system and multimedia distribution.

Graduate Profile

In Conversation With...

Why did you choose to study at TUS?
TUS was a natural choice for me, as I'm living in the Midlands. I returned as a mature student in 2012 and completed a Level 7 and a Level 8 (add-on year) in software engineering. The level of support I received from academic staff and direct access to state-of-the-art equipment was a core influence in my decision to continue in academia and pursue a PhD.

What mode of study did you choose and why?
During the final year of an undergraduate course, students work to complete a Final Year Project (FYP). This provides a great degree of freedom and flexibility to work on a project which specifically interests them. I really enjoyed the experience and developed an interest in research during this time. This was driven by the level of support I received from my academic supervisor (Dr Niall Murray) who introduced me to research as an alternative career path. This experience led me to explore and eventually pursue a PhD.

What are the most difficult and most enjoyable aspects of your programme?
Working on state-of-the-art research is challenging. You may be focussing on a topic that only a handful of others across the globe specialise in. As a result, when you solve problems it's extremely rewarding. There are difficulties no doubt, but the fantastic research community (students and staff) at TUS are always on hand with encouraging words of support.

How has this mode of study helped you in your academic career?
Research can take you around the world; I've attended and presented at academic conferences in Europe, Asia and North America. These events are crucial to your own career development, as they provide a networking platform with specialists in your field. Closer to home, TUS is actively engaged with industry at a national and international level. Through these links, I've worked on projects for research and industry partners, thus further developing my own skills.

What advice would you give to prospective researchers?
TUS provides a fantastic array of postgraduate opportunities for students to further develop their skillset for future employment. I chose research as it provided opportunity and flexibility to explore and develop skills in my own specific interest. Over the last four years, I've not only developed technical skills but also interpersonal and communication skills.

Dr Conor Keighrey
Department of Computer and Software Engineering

Graduate Profile

In Conversation With...

Why did you choose to study at TUS?

TUS had so many advantages when compared to other universities. The location in the centre of Ireland makes for easy access to public transportation. Other advantages include the cost of living, accommodation, and the good infrastructure of laboratories and equipment available to students.

What mode of study did you choose and why?

I chose to do a PhD (research) because I always wanted to explore technology and applications beyond classroom. A research student can always take advantage of the proximity with other research centres and researchers. Those projects allow us to explore and expose our research through conference, seminars, and journals.

What were the most difficult and most enjoyable aspects of your programme?

The most difficult aspects of the programme were the self-learning process, which include the state-of-art review and the need to propose a novel contribution within the degree. The most enjoyable aspects are the dissemination of work, which is when we finally get a contribution published, and also the opportunity to work independently.

How has this mode of study helped your academic career?

This PhD is helping me further my career and enhance skills such as presentation skills, using a second language, and help students and other researchers. I am now part of the lecturing team in the Faculty of Engineering and Informatics, which my doctoral studies helped me achieve.

What advice would you give to prospective researchers?

It's important to always think ahead and plan your career. When deciding a research topic, is it important to choose a subject of interest that the student can get unique contributions from it. I'd also advise to discuss your research topic with potential supervisors, read some scientific magazines, keep up to date with technology, and look out for research opportunities on the TUS website.

Dr Thiago Braga Rodrigues
Department of Computer and
Software Engineering

Software Design with VR and Gaming

Contact: Dr Mark Daly
Email: mark.daly@tus.ie

Dr Mark Daly has more than 30 years of mathematical physics and computer vision research experience. Following the award of a first-class honours degree in physics, Mark went on to complete a PhD in Theoretical Physics specialising in Quantum Physics and Non-Linear Dynamics. He held lecturing posts in MU and DCU (St Pats) before joining TUS in 1998. He has supervised MSc and PhD students in the area of artificial intelligence, machine learning and computer vision and has published extensively in international peer reviewed journals. Mark is a co-founder of ViDS (Visual Data Solutions) through which he has worked with Irish and UK Government agencies and European based multinational companies providing computer vision solutions.

Software Design

Contact: Dr Sheila Fallon
Email: sheila.fallon@tus.ie

Dr Sheila Fallon worked with Ericsson as a senior software engineer from 1997-2012 where she was involved in a wide variety projects in in the fixed and mobile telecommunications domains. She had overall technical responsibly for the development of the Ericsson operation and maintenance solution for heterogeneous networking. Since joining TUS in 2012, she has delivered modules in Data Architecture and Databases on a number of programmes at undergraduate and postgraduate level. Her research focuses on distributed processing architectures for large data sets. Her work has been published extensively in major international conferences including IEEE Consumer Communications and Networking Conference (CCNC), IFIP Wired and Wireless Internet Communications (WWIC) and IEEE Globecomm.

Computer Engineering

Contact: Dr Ronan Flynn
Email: ronan.flynn@tus.ie

Dr Ronan Flynn is a lecturer in the Department of Computer and Software Engineering. He has industrial experience in telecommunication product design and development for international markets, having previously worked with a number of multinational companies. Dr Flynn is actively engaged in research, supervising both MSc and PhD students. His research interests include speech recognition, speech enhancement, emotion recognition in speech and multi-modal affective computing

TUS and The NPD Group Launch €1M Artificial Intelligence Lab

TUS has partnered with a global market research firm to launch a million-euro ICT research technology lab.

The lab, which will develop, test and optimise artificial intelligence strategies for real-time market analysis, is being established in partnership with The NPD Group, which has been operating in Athlone for 10 years.

"Our close working relationship with The NPD Group has given us a practical insight into the kinds of technical challenges faced by multinational market analysis companies," explained Dr Enda Fallon, who heads the Department of Computer and Software Engineering at TUS.

According to Dr Fallon, who is also the founder of the Software Research Institute at TUS, such collaborations create "rich opportunities" for undergraduate and postgraduate students.

The formation of the research lab exemplifies how close collaboration between the academic institution and industry can create both commercial and academic benefit, the former Ericsson software engineer added.

The NPD Group, which is headquartered in Long Island, New York, opened its global IT and operations centre in Athlone in 2010. Dermot Ainsworth, the general manager of The NPD Group, Athlone, credits the "deep talent pool of well-educated and multilingual people" as a key influencing factor in the decision to relocate.

"The presence of TUS was a major factor in our decision to locate in Athlone in 2010," he explained. "The results of our collaboration have shown just how productive such a collaboration can be."

The NPD Group, which operates in 26 countries and is a leading provider of consumer and retail market research solutions globally, has already undertaken a series of projects in artificial intelligence and data analytics.

Speaking about the formation of the ICT research lab, Dr Sean Lyons, Dean of Faculty of Engineering and Informatics at TUS, said: "We have a demonstrated track record of engagement with industry and this collaboration serves to further illustrate what can be achieved through our close links with local companies."

Department of Civil Engineering & Trades

Research group: SUstainable Infrastructure (SUIR)

The sustainable Infrastructure research group is based in the Department of Civil Engineering and is led by Dr Paul Archbold. The team comprises academics and postgraduates students working in the general area of sustainable infrastructure. Key areas of focus include sustainable concrete technology, digitisation of construction processes, innovative construction materials and processes, and quality management in construction.

SUIR members have worked on projects with industry partners in the area of durability of FRP components, innovative reinforced concrete, development of novel structural insulated panels and others.

Other group expertise includes structural dynamics, structural condition monitoring and assessment, and construction project management. Members have been or are involved with SFI project calls and Enterprise Ireland schemes. The group is well represented in COST Action networks, research organisations and advisory bodies and has an excellent track record in both academic publications and securing funding. In addition to national collaborations, the group have partners in UK, China, Sri Lanka and Brazil.

Civi Engineering and Construction

Contact: Dr Paul Archbold
Email: paul.archbold@tus.ie

Dr Paul Archbold is the Director of the SUstainable Infrastructure Research Group (SUIR), a member of the Materials Research Institute and a lecturer in the Department of Civil Engineering & Construction. He is also the programme leader for the BEng (Hons) Civil Engineering programme in TUS:Midlands. Having obtained a PhD from UCD, Ireland in the area of Dynamic Pedestrian Loading in 2004, he joined TUS in 2005. He currently serves as a member of organising and scientific committees of several national and international conferences. He is a regular reviewer for notable journals including Composites for Construction; Journal of Building Pathology & Rehabilitation; Bridge Structures. He has also worked as a reviewer for international funding programmes and is an expert reviewer for the European Research Council. He has successfully supervised masters and PhD students to completion and led industry supported research projects. He is currently supervising 3 PhD students. His main areas of research interest are structural dynamics (specifically pedestrian loading and human-structure interaction), FRP composites for construction; concrete technology (specifically sustainable concrete constituents and reinforcement materials); innovative construction methodologies (including modular construction and 3D printing) and quality in construction. Paul is open to exploring supervision/collaboration opportunities on any research topics listed above or within the civil engineering and construction sector.

Department of Polymer, Mechanical and Design

Research group: TERG

The Technology Education Research Group aspires to have an international impact on the advancement and provision of technology, engineering and graphics education at all levels of education. The nature of research activities within TERG are varied. The group conducts basic research, use-inspired basic research, and applied research in the context of technology, engineering and graphics education in areas such as:

- Human intelligence, development, and cognition
- Heuristics, behaviours, and decision making
- Educational psychology
- Technology enhanced learning
- Technology mediated interactions
- Educational assessment and holistic judgement
- Pedagogical content knowledge

Key words: Technological capability, design driven activity, innovative pedagogical practice, assessment, and cognition.

Technology Education

Contact: Dr Niall Seery
Email: niall.seery@tus.ie

Dr Niall Seery is currently Chair of Technological Education at TUS and directs TERG, having served as Director of the Technological University Project and Vice President of Academic Affairs and Registrar before taking the role. He is a qualified post-primary teacher with a PhD in Engineering Education and has a background in Engineering and Technology Teacher Education, where he spent 15 years as an academic with a specialist interest in pedagogical practice. He has served as director of studies at undergraduate and masters level, while also developing an emerging research agenda. In 2010, Niall founded and continues to direct the Technology Education Research Group, where he is active in research development and mentorship. He has supervised a number of PhD students to completion and actively contributes to a number of journal editorial boards in the area of Design and Technology education. Niall's research interest focus on the development of engineering and technological capability, with a particular interest in pedagogical practice and supporting design-based teaching and learning. In 2013, he received the Regional Teaching Excellence Award in Higher Education. Niall has also served as a visiting Associate Professor of Technology Education at the Royal Institute of Technology, KTH in Stockholm and has experience in hosting international education conferences and participation in international research projects. He is committed to advocating for Technology and Engineering education research and supporting the development of associated policy and practice both nationally and internationally.

Polymer Technologies

Contact: Dr Noe; Gately
Email: noel.gately@tus.ie

Dr Noel Gately is centre manager of the Applied Polymer Technologies (APT) gateway, which is hosted at the Materials Research Institute at TUS. Leading applied polymer technologies in industrial applied research, the gateway is consistently a top-performing centre in the Technology Gateway programme. Driving industrially steered strategic research, building on key niche capacities to develop next generation plastics and raising TUS profile as a pivotal stakeholder in Ireland's high performing polymer economy. Dr Gately holds a first-class honours degree in toxicology and completed his PhD in polymer science (drug delivery platform) in 2014. Following his PhD studies, Noel worked on an industry based post-doctoral research within APT before gaining medical device experience as an R&D Engineer in Creagh Medical Ltd./Surmodics Ireland. Before returning to his studies, Noel has over 12 years industrial experience in Polymer (Athlone Extrusions), Engineering (Powerscreen Ltd.) and Electrical (Parkmore Switchgear) industries. Dr Gately has coordinated the funding of €4.1 Million for cutting-edge equipment in Enterprise Ireland Capital call as well as a leading role in a €2.67M DTIF funding for next generation Ostomy care products. His research interests include natural polymers and medical/phramaceutical polymer systems.

Technology Education

Contact: Dr Jeffrey Buckley
Email: jeff.buckley@tus.ie

Dr Jeffrey Buckley is a Lecturer in Research Pedagogy at the Technological University of the Shannon: Midlands Midwest, Ireland, and an Affiliate Faculty Member of the Department of Learning at KTH Royal Institute of Technology, Sweden. He is a member of both the Technology Education Research Group (TERG) and the Learning in Engineering Education and Progress (LEEaP) research group. Jeff is currently the Associate Editor of the International Journal of Technology and Design Education, and serves on the Editorial Boards of Educational Psychology Review, the European Journal of Engineering Education, SN Social Sciences, and The Educational and Developmental Psychologist. His main research interests lie in technology and engineering education. In particular he studies how people learn with a focus on spatial ability, and conducts meta-research into current research practices in technology education with an emphasis on replicability and transparency.

Technology Education

Contact: Dr Rónán Dunbar
Email: ronan.dunbar@tus.ie

Dr Rónán Dunbar qualified as a secondary school teacher of Engineering, Technology and Design and Communication Graphics in 2005. His subsequent doctoral studies investigated the effects of purpose designed educational interventions on the self-efficacies of undergraduate engineering students. Following a number of years teaching at second level and the completion of his doctoral research at the University of Limerick, he then became a mechanical engineering lecturer at TUS. He has been a member of the Technology Education Research Group (TERG) for more than 10 years and his current research in engineering education is primarily focused on managing a funded project working with industrial partners (First Polymer Training Skillnet) to investigate the effects of developing spatial skills for industrial training. He supervises postgraduate researchers at master's and doctoral level, investigating a number of engineering education topics which place emphasis on the "T" and "E" within the STEM disciplines.

Materials Science

Contact: Dr Michael Nugent
Email: michael.nugent@tus.ie

Dr Michael Nugent is a principal investigator in the Faculty of Engineering and Informatics. Dr Nugent's research interests include the application of polymer science, engineering and nanotechnology. He leads a multidisciplinary group who have played a pivotal role in the development of materials for pharmaceutical and biomedical applications. Dr Nugent was successful in grants totalling €3.9 million on topics ranging from brain tumour nanotechnology to drug delivery systems. Dr Nugent has ongoing international and industrial collaborations on biotechnology projects. He has authored +80 peer-reviewed journal publications and book chapters and delivered presentations at national and international conferences. He is a member of the editorial board of Polymer, an academic journal dedicated to the science and technology of polymers. He is presently supervising eight PhD students.

Materials Science

Contact: Dr Joseph Geever
Email: joseph.geever@tus.ie

Dr Joe Geever began working in TUS as a polymer materials and processing lecturer in early 2016, after spending almost 20 years in industry primarily in R&D and project management roles. During this time, he supported the development of commercial technologies for several pharmaceutical and medical device companies. In many instances this involved managing customer projects from initial quote phase right through to high volume manufacture. All aspects of project implementation were overseen, including project timelines, costs, product and process development, test method development, validation, PFMECAs and process optimisation. Since returning to TUS, he is a principal investigator for two President Seed Fund projects and has collaborated on multiple Enterprise Ireland Innovation Partnership applications, including the development of a polymer based smart self-sterilisation system for medical devices and the development of novel polyester fibre formulations for high-end applications.

Sustainable Packaging Technologies

Contact: Dr Romina Pezzoli
Email: romina.pezzoli@tus.ie

Dr Romina Pezzoli holds a Materials Engineering Bachelor degree specialising in Polymers and a PhD in Polymer Engineering from TUS funded by SFI. Dr Pezzoli's work is dedicated to the development of next-generation sustainable packaging solutions, actively working on industry-focused packaging innovation projects at the Applied Polymer Technologies Centre and MRI. She leads the Packaging Research in Meat (PRIMe) project as part of Meat Technology Ireland Phase II together with collaborations with other national and European projects in biodegradable packaging, reusable packaging technologies, flexible packaging manufacturing and waste management.

Her research focus is laying the foundations for the evolution of packaging materials and manufacturing technologies as well as contributing to the development of human capital to lead the sustainable packaging revolution. Dr Pezzoli is a part-time assistant lecturer for the Faculty of Engineering, Design and Informatics and the Department of Lifelong Learning delivering polymer and packaging modules for Level 9 courses.

Materials Science

Contact: Prof. Clem Higginbotham
Email: clem.higginbotham@tus.ie

Prof. Clement Higginbotham is a principal investigator in the MRI, which he founded in 2005. His research interests include the development of biomaterials, polymers for drug delivery and tissue engineering applications, medical device coatings, hydrogel and smart material synthesis and characterisation, and organic synthesis. He is a principal investigator in the Applied Polymer Technologies (APT) gateway where he secured €1.2M for its establishment. He has authored more than 160 peer-reviewed journal publications, books and book chapters. His h-index is currently 31 with more than 2700 citations. Prof. Higginbotham has numerous ongoing industrial and academic collaborations including projects with Medtronic-AVE, Alkermes, Abbotts, Mergon International, Creagh Medical and Shabra on the industrial side and NUIG, Trinity College Dublin and Harvard University on the academic side. Prof Higginbotham has supervised to graduation 31 PhD students and seven MSc students and has supervised and mentored eight postdoctoral researchers, and one Marie Curie Fellow.

Materials Science

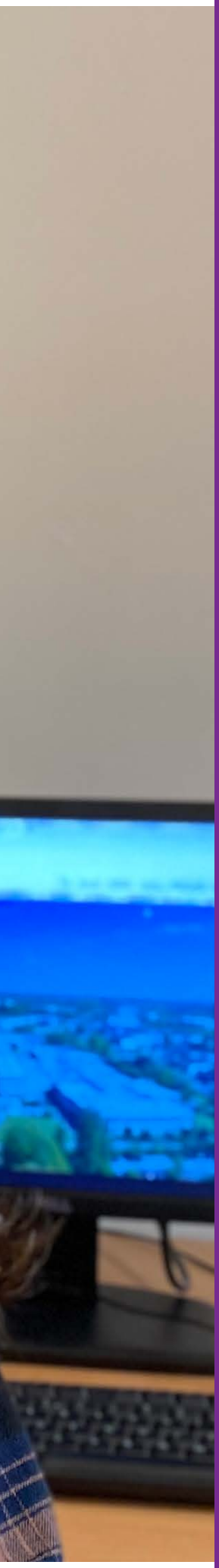
Contact: Dr Luke Geever
Email: luke.geever@tus.ie

Dr Luke Geever is a polymer materials specialist with over 15 year's R&D experience. He is a Founding Principal Investigator and Strategic Director for Ireland's National Centre for Polymer Materials & Processing Research, the Applied Polymer Technologies (APT) Gateway which is located at the Materials Research Institute in TUS. His current role is Technology Innovation Manager in the APT Gateway, where he leads one of the largest polymer materials research groups in Ireland, the Smart Polymers Research Group. Over the past number of years he has fulfilled various research based managerial positions, playing a key role in securing €9 million in research funding awards, attracting significant competitive state (EI, SFI, EPA, Fulbright, IRC, IOTI, etc.) and industry funding including over €5.7 million as Principal Investigator since 2012. He has excellent experience in managing and delivering output associated with collaborative research projects and currently works with an extensive network of distinguished industry, clinical and academic partners. He has gained international research experience as a Fulbright International Scholar at Harvard Medical School and the Mayo Clinic (USA). His main research interests are centred on the development of polymer and smart polymer materials for controlled & targeted drug delivery applications. His research supports the high level training of undergraduate, MSc, PhD and postdoctoral researchers and he has over 100 journal and conference publications. To date, he has graduated 16 PhD and 10 MSc research students, all of whom hold positions with leading companies and academic institutions throughout the world.

Mechanical Engineering

Contact: Dr Niall Burke
Email: niall.burke@tus.ie

Dr Niall Burke is a researcher and lecturer in TUS's mechanical engineering department. Niall received his doctorate in 2010, evaluating the performance of ground and air source heat pump systems operating under the Irish maritime climate. His research and publications to date focus on utilising and integrating sustainable energy technologies, having accumulated industrial experience installing solar systems and small scale wind turbines, along with energy management consultancy. Currently, he is researching energy policy within corporate governance, and also the maximisation of sustainable energy sources on the Irish electrical grid utilising storage, distribution and bitcoin mining.



Student Profile

What Our Students Say...

"I arrived in September 2020 from Brazil to undertake a PhD in polymer engineering at TUS. I am a chemist, and I chose TUS because I had the opportunity to visit the university a few years ago, and I really liked Athlone as a place to study. In addition, my brother completed a PhD at TUS and always gave me a very good impression of the university. In Brazil, I worked in a forestry research company, mainly with projects that use forest waste materials for the development of sustainable materials and technologies. In my PhD, I intend to use my background and work with waste from plants and trees to create novel sustainable materials. Being here today at TUS and being part of the student life is very rewarding. The support we receive from the university is great, and I have an opportunity to meet many new friends and fellow PhD candidates, and get to know a little about their culture. Despite all the issues that we have faced in recent times from COVID-19, being here today has been a very positive experience. I see my PhD as a great possibility for growth in my expertise and knowledge, and I know that it will help me in my career in the future.

Tielidy Angelina de Morais de Lima
PhD Candidate,
Department of Polymer and Mechanical Engineering

Faculty of

Science & Health

Department of Pharmaceutical Sciences and Biotechnology

Research group: Organic Synthesis/Biocatalysis

This group investigates the use of biocatalysis in the asymmetric synthesis of chiralamines and diamines. Due to pressure on cost and environmental legislation, there is a need for greener and more economic alternatives to current chemical production methods in the pharmaceutical and fine chemical industry. Biological systems, in particular isolated or immobilised enzymes (biocatalysis), offer a sustainable and greener alternative to traditional catalysts for advanced chemical manufacture.

Key words: synthetic organic chemistry, biocatalysis, green chemistry

Microbiology

Contact: Dr Carmel Kealey
Email: carmel.kealey@tus.ie

Dr Carmel Kealey is the head of the Department of Pharmaceutical Sciences and Biotechnology and obtained her BSc Hons in Microbiology from NUI Galway, a MSc in Medical Genetics and Immunology from Brunel University, UK, and a PhD in Molecular Genetics from Trinity College Dublin. Carmel completed her postdoctoral training at the University of Pennsylvania, Department of Medicine in Pharmacogenetics. In 2008, Carmel joined the Department of Pharmaceutical Sciences and Biotechnology and has been involved in teaching, new programme design, academic quality assurance and research. Carmel has supervised PhD students to graduation in the areas of microbiology and toxicology and has published over 25 journal papers. Her research areas include lipid metabolism, antimicrobials and microbial biofilms of human and veterinary significance.

Organic Chemistry

Contact: Dr Noreen Morris
Email: noreen.morris@tus.ie

Dr Noreen Morris is an experienced lecturer within the Department of Pharmaceutical Sciences and Biotechnology. She holds a PhD in Synthetic Organic Chemistry from NUI Galway. Noreen is currently researching the use of biocatalysis in the asymmetric synthesis of chiral amines and diamines. In the pharmaceutical and fine chemical industry, there is a need for greener and more economic alternatives to current chemical production methods due to pressures on cost and environmental legislation. Biological systems and in particular isolated or immobilised enzymes (Biocatalysis) offer a sustainable and greener alternative to traditional catalysts for advanced chemical manufacture.

Pharmaceutical Science

Contact: James J Roche
Email: james.roche@tus.ie

James J Roche lectures in pharmaceutical and analytical chemistry in the Department of Pharmaceutical Sciences and Biotechnology. James is a chartered chemist, a member of the Royal Society of Chemistry, and a member of the Institute of Chemistry of Ireland. A recipient of support grants from several funding bodies, his research interests include topical product development and related in vitro functional testing, pharmaceutical trace analysis, especially using high-performance liquid chromatography, cleaning validation, oligomer synthesis and biosimilar characterisation, intellectual property law of pharmaceuticals with special regard to the origins of the patent specification and patenting of gene-derived therapeutics and the application of quality assurance management systems (QAMS).

Biological Science

Contact: Cathy Brougham
Email: cathy.brougham@tus.ie

In 2017, Cathy joined the Department of Pharmaceutical Sciences and Biotechnology in the Faculty of Science and Health. Cathy is a researcher in the biological sciences and strives to inspire young female leaders in STEM. Embedded in these roles is a strong advocacy of and commitment to equality and diversity. Her research encompasses stem cell technology and the link between mesenchymal stem cells, breast cancer and obesity. Cathy's focus is on the potential link of microRNAs which are gene expression regulators and their therapeutic and diagnostic applications in breast cancer as well as other diseases. Cathy has collaborated with a translational research laboratory and other biomedical diagnostic institutes in DCU and NUI Galway investigating the design of a biochip or 'lab on a chip' based on microarray platform technology for diagnostic application in

Epithelial Immunology

Contact: Dr Natasha McCormack
Email: natasha.mccormack@tus.ie

Dr Natasha McCormack joined the Department of Pharmaceutical Sciences and Biotechnology in 2019. Her current research areas include epithelial cell migration and wound healing and molecular mechanistic pathways and cellular responses to natural compounds and novel therapeutics. Her PhD research focused on the cellular and molecular mechanisms involved in respiratory epithelial regeneration and was based in the Institute of Immunology. She was involved in the set-up of a new research institute at Technological University Dublin. During this time, she was involved in research within the Centre for Eye Research Ireland (CERI) on the cellular and molecular mechanisms involved in myopia. She is currently co-supervising a student within CERI aimed at investigating the role of zinc in modulating growth factor expression in the retinal pigment epithelium. injury.

Student Profile

In Conversation With...

Why did you choose TUS?

TUS was an easy choice as they offer substantial hands-on lab time within their science programmes, an essential component of any science degree. I returned to college in 2013 to complete the BSc (Hons) in Biotechnology programme, a degree which laid the foundations for my PhD.

What mode of study did you choose and why?

TUS offered opportunities throughout my undergraduate degree which allowed me to complete internships in the research hub and meet potential supervisors across many disciplines. It was through one such internship in polymer processing that I decided which research area to pursue. I am now in my final year of the structured PhD programme, combining my biological background with my interest in materials science to develop a novel 3D printed device for peripheral nerve injuries in humans. This project is under the supervision of Dr Ian Major, who supervised my internship, and Dr Therese Montgomery who supervised my undergraduate fourth-year project. My research would not have been possible without the vital links formed through TUS.

What are the most difficult and most enjoyable aspects of your programme?

The transition from undergraduate study to postgraduate research can be an intimidating leap. As a researcher, you are investigating novel ideas and attempting to put them into practice in a new environment, surrounded by new peers. However, the level of support and guidance offered not only by the supervisors, but also by the entire research community are unrivalled. I was encouraged quite early in my research career to build a network of like-minded researchers and this has been key to my success.

How has this mode of study helped you in your academic career?

The structured PhD programme in TUS offers a range of modules to help prepare you not only for research, but for a career in both academia and industry. Within these modules are self-directed credits which I have chosen to use toward completing modules relevant to my career choice. This programme has also enabled me to travel to international conferences in my research area, which allows for expansion of research networks as well as developing necessary dissemination skills.

What advice would you give to prospective researchers?

TUS offers a range of ways to get involved in research before committing to a research programme. Get involved, meet the principal investigators, meet the researchers and get a feel for the overall space. Research is challenging and takes commitment, but it has been one of the most rewarding experiences of my life.

Ciara Buckley
PhD Candidate,
Materials Research Institute

Department of Bioveterinary and Microbial Sciences

The research activities of the department are diverse reflecting the expertise and scientific interests of our academics. Research endeavours are broadly centred on two intersecting themes of i) Bioveterinary Science; encompassing animal physiology, health and nutrition and ii) Microbiology; exploring topics such as antimicrobial resistance, pathogens and environmental toxicology.

Key words: animal, microbiology, nutrition, genomics, green chemistry, reproduction, pathogen, virology

Microbiology

Contact: Dr Cormac O'Shea
Email: cormac.oshea@tus.ie

Dr Cormac O'Shea is the Head of the Department of Bioveterinary and Microbial Sciences. He holds a BAgrSc and PhD from University College Dublin and is interested in farm animal nutrition and health. Cormac was lecturer in poultry science at the University of Sydney and associate professor of non-ruminant science at the University of Nottingham. He was awarded a Lord Dearing Award at Nottingham in 2020 for recognition of his contribution to the student experience. Cormac maintains collaborations with colleagues in the United Kingdom and Australia and has received funding to support his research from a variety of international bodies. He sits on the editorial boards of the Journal of Agricultural Science and Animal Production Science. Cormac's research group adopt multidisciplinary approaches to address challenges related to the production of safe and nutritious food from healthy animals and these findings have been reported in over 50 publications and numerous presentations to the international scientific community.

Microbiology

Contact: Dr Andy Fogarty
Email: andy.fogarty@tus.ie

Dr Andy Fogarty studied at NUIG and Ohio State University, USA. Andy lectures in microbiology, environmental science and ecotoxicology in TUS and at the University of Applied Sciences, Emden/Leer, Germany where he was appointed an adjunct professor in 2010. He is currently an external reviewer for the Czech Republic Science Foundation and has served as a Microbiology and Toxicology technical advisor to The Irish National Accreditation Board (INAB). Andy's research work primarily focuses on (i) multitrophic ecotoxicity assessment of industrial effluents (ii) microbial investigations and development of in vitro urinary tract models, (iii) histopathological analyses of the effects of EDCs in fish and (iv) ecotoxicological assessment of novel wastewater treatment techniques. He has published over 40 peer reviewed journal articles, two book chapters and over 100 research communications.

Microbiology

Contact: Dr Sean Gerrity
Email: sean.gerrity@tus.ie

Dr. Seán Gerrity obtained a B.Sc in Microbiology (2009) and a Ph.D in Microbiology (2014), both from NUI Galway. His doctoral and subsequent postdoctoral research focused on (i) the microbial ecology of bioreactors used to treat wastewater and noxious gases, and (ii) the impact of emerging contaminants in wastewater. He also spent several years working in the biotechnology industry and as a technology transfer officer at AIT. Seán joined the Department of Bioveterinary and Microbial Sciences in 2020 and lectures in the areas of microbiology, environmental science and biotechnology. His current research interests include environmental microbiology, waste bioprocessing and environmental biotechnology.

Epithelial Immunology

Contact: Professor Neil Rowan
Email: neil.rowan@tus.ie

Professor Neil Rowan graduated with First Class Honours Degree in Microbiology from the University of Galway, thereafter he achieved an MSc in Biotechnology and PhD in Biomedical Sciences at the University of Strathclyde where he was employed as a Senior Lecturer. He co-founded the Roberston Laboratories at Strathclyde where his research was rated as top of scale (5*) in the UK Research Assessment Exercise. His expert subject areas include microbiology, toxicology, sterilization, novel processing, risk assessment and sustainability. He has supervised 40 PhD students to completion, mentored 19 postdoctoral Researchers, published ca 350 journal and conference papers, and 8 books. He has delivered 9 Key note speeches at global conferences.

He is an editorial board member for several high impact factor journals including Science of the Total Environment, Case Studies in Chemical and Environmental Engineering and Sustainability. He holds honorary Professorships at several universities worldwide including the Faculty of Medicine, Nursing and Health Science at University of Galway. He is a Principal Investigator at CURAM Medical Device Research Institute at University of Galway. Neil frequently acts as independent evaluator for Horizon Europe for high risk high gain proposal. He holds fellowships to Institute of Food Science and Technology (Ireland and UK).

Neil directed the Bioscience Research Institute at TUS for 12 years and continues his research activities in the Department of Bioveterinary and Microbial Sciences that informs his teaching. He is currently research funded under 3 MSCA ITN and RISE fellowships, Interreg as well as DAFM funding. He is PI for the Centre of Sustainable Disinfection and Sterilization and the Empower Eco Research Group at TUS. He is developing sustainable aquaculture and bio-based innovation in the peatlands at Mount Lucas (midlands) with a bioeconomy dimension. He was lead TUS partner on the SFI Cell Explorers Initiative since 2012 for outreach to 56 primary schools. He appears on the 2023 Standford's list of World Top 2% Scientists for his career contributions to his fields of study. He participated on working group for Science Foundation Irelands 'Creating our Future' that reviewed 18,000 ideas from citizens to shape a better nation.

Immunology

Contact: Dr Mark Lynch
Email: mark.lynch@tus.ie

Dr Mark Lynch joined the Department of Bioveterinary & Microbial Sciences in 2023, after previously working as Research Hub Officer in the TUS Research Hub for 5 years. Mark obtained a B.Sc in Biology and Chemistry from Maynooth University in 2009. In 2014, he completed his PhD in DCU in the area of Immunology.

His research focused on the interaction between the pathogenic bacteria Clostridium difficile and the host immune system – specifically how proteins on the surface of the bacteria could modulate the inflammatory response. He then moved to a postdoctoral role in Trinity College, researching the efficacy of novel drug candidates for autoimmune diseases such as multiple sclerosis. Mark currently lectures in the areas of Pharmacology and Bioveterinary Science, and his research interests include inflammatory disease, immunomodulation through bioactive compounds, and molecular biology.

Epithelial Immunology

Contact: Dr Natasha McCormack
Email: natasha.mccormack@tus.ie

Dr Natasha McCormack joined the Department of Pharmaceutical Sciences and Biotechnology in 2019. Her current research areas include epithelial cell migration and wound healing and molecular mechanistic pathways and cellular responses to natural compounds and novel therapeutics. Her PhD research focused on the cellular and molecular mechanisms involved in respiratory epithelial regeneration and was based in the Institute of Immunology. She was involved in the set-up of a new research institute at Technological University Dublin. During this time, she was involved in research within the Centre for Eye Research Ireland (CERI) on the cellular and molecular mechanisms involved in myopia. She is currently co-supervising a student within CERI aimed at investigating the role of zinc in modulating growth factor expression in the retinal pigment epithelium. injury.

Microbiology

Contact: Dr Dawn Howard
Email: dawn.howard@tus.ie

Dr. Dawn Howard holds a PhD in Evolutionary and Population Genetics from University College Dublin and has postdoctoral experience in Teagasc's Animal Bioscience Research Centre where she was one of the founders of the Teagasc bovine DNA bank which established a genetic resource underpinning the implementation of the national genomically assisted breeding programme for dairy cattle in Ireland. She has had roles as a Microbiologist with pharmaceutical companies Allergan Botox and Bioniche Pharma –Mylan and before joining TUS she was the Research officer for the European Union Horizon 2020 research funding instrument for the College of Science, NUI Galway. Dawn is joint Course Coordinator for the BSc Hons Microbiology Degree Programme and also Final Year Research Project Coordinator. Her current research interests include metagenomics and the importance of microbiome health to human and animal health and she is currently primary supervisor for an MSc student in this area. Dawn is also a full member of the Microbiology Society.

Veterinary Nursing

Contact: Gillian Coughlan
Email: gillian.coughlan@tus.ie

Gillian graduated from Athlone Institute of Technology with a BSc in Veterinary Nursing in 2007. Having practiced in both a first opinion companion animal practice and a referral equine practice, she returned to college to study Agricultural science and a Post Graduate Diploma in Education. Gillian commenced her role at AIT in 2011 lecturing on the BSc in Veterinary Nursing. Her role includes the education and training of veterinary nurses, updating and progressing the Veterinary Nursing programme and working to ensure the programme delivered by AIT is maintaining standards set out by the Veterinary Council of Ireland (VCI).

Since joining the team at TUS, Gillian has been a member of the VCI's Veterinary Nursing Training and Education Committee and has completed an MSc by Research through NUIM in Veterinary Microbiology entitled 'Studies on the novel detection and destruction of the enteroparasite Giardia lamblia and other veterinary problematic microorganisms examined under varying culture conditions' . Gillian has been successful in several funding calls including SATLE, PDS, and N-TUTORR, and is a collaborator on an Enterprise Ireland Commercialisation grant for "PolyBo", a long-term delivery system for ruminants. She is currently working with colleagues supervising postgraduate students in PRISM.

She has a keen interest in agricultural sustainability, animal welfare and the ONE Health approach to achieve better public and environmental health.

Bioinformatics

Contact: Dr Antoine Fort
Email: antoine.fort@tus.ie

Dr Antoine Fort graduated with a MSc in Plant Biotechnology from Bordeaux University, France, and later on obtained his PhD in NUI Galway on the theme of crop improvement through genetic engineering. This was followed by several post-doctoral positions, where Antoine worked on a variety of organisms ranging from crops, seaweeds, invertebrates and microbes. Antoine's expertise and research work is multidisciplinary in nature and ranges from bioinformatics to cas9 genome editing & molecular ecology, with over 25 peer-reviewed research articles published to date. He joined TUS in 2021 and his current research interests are focused on the discovery of novel bioactives from the seaweed microbiome. Antoine is involved in several national and international (European Union) research projects, and is always on the lookout for motivated (post) graduate students to participate in research projects.

Biochemistry

Contact: Dr Caitriona Collins
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Dr Caitriona Collins is a lecturer in the Department of Bioveterinary and Microbial Sciences. She has a PhD in biochemistry and cell biology from the National University of Ireland, Galway. Caitriona is interested in the highly complex molecular biology of sperm cells and the role that the sperm epigenome plays in male fertility. During her doctoral work she studied sperm cell production using the fruit fly drosophila melanogaster as a model system. This work, which was published in the scientific journal Nature Communications, led to the discovery of novel and very unexpected mechanisms required for sperm production in flies. In 2019, Caitriona was awarded the prestigious NUI Postdoctoral Fellowship in the sciences to conduct a study into sperm function and fertility in Irish bulls. Her work led to the identification of biochemical differences between bull semen samples of low and high fertility.

Microbiology

Contact: Dr Antoinette Sweeney
Email: antoinette.sweeney@tus.ie

Following graduation from University College Dublin with a Bachelor of Science (Physiology), Postgraduate Diploma in Toxicology and Certificate in Quality Assurance, Dr. Antoinette Sweeney entered the pharmaceutical sector first with Elan Pharmaceutical, Athlone as a Quality Control Analyst and subsequently with Ferndale Laboratories, Michigan, USA, as Quality Control Manager. Returned to Ireland and continued education at Athlone Institute of Technology graduating with a Ph.D. in Toxicology specializing in the field of Reproductive Toxicology. The field of toxicology was further broadened by engaging in modular training in Applied toxicology at the University of Surrey and the American Society of Toxicology training programme in the areas of Target Organ toxicity, Food Chemical Safety and Toxicity Testing Methods .

While actively involved in research, Dr. Sweeney was also employed by the campus company Bioserv (1996-1998) as Study Director / Lecturer. Presently a full time Lecturer and Researcher in the Department of Bioveterinary & Microbial Sciences teaching Biology, Clinical Trials, Toxicity Testing methods and Occupational Toxicology. Served on the AIT Academic Council and Learning Enhancement Committee.

Genomics

Contact: Dr Michael Mullen
Email: michael.mullin@tus.ie

Dr Michael Mullen is a lecturer and principal investigator in the Department of Life and Physical Sciences and Bioscience Research Institute and is a visiting assistant professor of the School of Agriculture and Food Science at UCD. He was formerly a research scientist for Teagasc where he received an Excellence in Science Award for the co-development of a market leading animal genotyping approach which still remains the approach of choice for development and implementation of genomically assisted breeding strategies for dairy and beef cattle industries in Ireland and internationally. His research interests include the development of bioinformatic and computational tools, genotyping approaches, complex trait analysis, functional and integrative genomics and biomarker identification to improve animal health, performance and selective breeding efforts. He has co-authored >150 scientific communications including popular, industry, technical, reviews, conference, book chapters and journal articles.

Chemistry

Contact: Dr Sean Reidy
Email: sean.reidy@tus.ie

Dr Sean Reidy holds a PhD in Natural Product Chemistry, NUI Galway; a MSc in Pharmaceutical Science, TCD; a MSc in Environmental Health and Safety Management, TUS; and a Diploma in Management, TCD. He worked as a forensic scientist with Forensic Science Ireland, Department of Justice and Equality, before joining TUS. He lectures in general chemistry, organic chemistry, green chemistry, analytical science, forensic science, pharmacognosy and risk management. His research interest include (i) green chemical methods including alternative oxidations and reduction methods, synthesis and separations using enzymatic techniques (biocatalysis), (ii) development of extraction procedures of active materials from herbal sources and their analysis using GC/MS, and (iii) research on enzyme inhibitors used to treat patients with Alzheimer's disease (cholinesterase inhibitors).

Veterinary Nursing

Contact: Dr Lisa Murray
Email: lisa.murray@tus.ie

Dr Lisa Murray MVB is a lecturer and researcher at TUS Midlands. Lisa graduated with a Bachelor of veterinary medicine from University College Dublin. She practised in companion animal and farm animal medicine and surgery before completing a MSc in veterinary microbiology from Athlone Institute of Technology. Her research area of interest is antimicrobial resistance (AMR) in agriculture, epidemiology and public health with a primary focus on the One Health implications of extended spectrum beta-lactamase producing Enterobacteriaceae (ESBL) and carbapenemase producing Enterobacteriaceae (CPE) in Irish agricultural settings. Lisa is also a holder of a Bachelor of Arts in Law and is the co-author of a text book entitled Veterinary Law and Practice in Ireland with Clarus Press.

Department of Nursing and Healthcare

Research group: Nursing and Healthcare

Research in the Department of Nursing and Healthcare has an interdisciplinary focus with many students working across disciplines with supervisors from other research institutes such as software and materials. The translational/applied nature of our research means that many co-supervisors and advisors are clinically based, which enhances the quality of student learning and engagement with clinical partners and stakeholders. Our research ensures impact for our work through dissemination and applications of findings clinically.

Key words: nursing, health, health systems, interdisciplinary research, pharmacy research

Nursing

Contact: Dr Des Cawley
Email: desmond.cawley@tus.ie

Dr Des Cawley is the Head of Department of Nursing and Healthcare and obtained his PhD in Health from the University of Ulster. Des is a registered general nurse and registered children's nurse, specialising in adult and paediatric intensive care nursing. As an experienced academic, Des continues to collaborate with the HSE, NMBI and other national and international professional bodies. He has supervised several postgraduate students exploring health issues and has disseminated work through peer reviewed publications and conferences. Des has received funding from external bodies such as the Irish Research Council and was shortlisted for an Irish Education Award in 2018 for this project.

Quality of Life and Ethics

Contact: Dr Mary McDonnell Naughton
Email: mary.mcdonnellnaughton@tus.ie

Dr Mary McDonnell Naughton is a registered nurse, midwife, and registered nurse tutor, and currently a lecturer and the chairperson of TUS's Research Ethics Committee. She holds a PhD from the UCD College of Medicine. She has extensive research experience with all members of the interdisciplinary, and prior to joining TUS, she was involved in collaborating international research across disciplines. Mary has supervised students and engaged in various areas of research from child health, smoking, alcohol and learning disability to aspects associated with the older person. Presently, she is involved in supervising PhD students in various areas from centenarians and factors contributing to successful ageing, through to novel ICT enabling technologies that enhances quality of life to cross generational changes in relation to food preferences. Mary's interests rest in ethical issues, social and community engagement, the older person, primary healthcare and child health. Mary enjoys developing partnerships that promote the ethos of good research and she contributes and organises an annual ethics seminar to promote good ethical practice in research.

Nursing Practice

Contact: Dr Lisa Kerr
Email: lisa.kerr@tus.ie

Dr Lisa Kerr completed her undergraduate studies in BA (Hons) in Nursing Studies and Advanced Diploma in Midwifery in Sheffield, England. She obtained her MSc in Healthcare Practice and Education in 2002. She has worked as a lecturer in nursing studies at undergraduate and postgraduate levels in both England and Ireland. In 2016, Lisa was awarded a Doctorate in Education from Sheffield Hallam University researching advanced nursing practitioners' (emergency) perceptions of their role, positionality, and professional identity.

Currently she is the programme director of the Master of Science in Nursing in Leadership and Quality Healthcare at TUS.Her teaching interests include research methodologies, evidence-based practice, advanced practice, and nurse education. Throughout her career Lisa has supervised and mentored research students at both undergraduate and postgraduate levels, including MSc and PhD. She continues to be research active with particular interest in advanced nursing practice, healthcare practice and healthcare systems and has published widely in these areas.

Dementia and Palliative care

Contact: Dr Laura Dempsey
Email: laura.dempsey@tus.ie

Dr Laura Dempsey is a lecturer in the Department of Nursing and Healthcare. She holds a PhD in Nursing, NUI Galway; a MSc in Nurse Education, TCD; a Postgraduate Diploma in Clinical Health Sciences Education, TCD; and a Bachelor of Nursing Science, NUI Galway. She worked as a lecturer in the School of Nursing & Midwifery at NUI Galway from 2003-2018 before joining Athlone Institute of Technology. She lectures on the Bachelor of Science in Nursing general and psychiatric programmes and the Master of Science in Nursing in Leadership and Quality Healthcare programme. She has many years' experience as a programme director for master's programmes as well as supervising postgraduate research students. Her research interests include dementia and palliative care and has a variety of published papers in these areas. Her current research involves examining nursing students' experiences of working clinically during the COVID-19 pandemic.

Healthcare

Contact: Dr Gary Stack
Email: gary.stack@tus.ie

Dr Gary Stack is a lecturer and researcher in the Department of Nursing and Healthcare. Gary holds an undergraduate degree in pharmacy and a PhD in pharmaceutical chemistry from Trinity College Dublin. He also holds an MBA from Bradford University. Gary has a wealth of experience as a practicing community pharmacist and has worked extensively with the Irish Pharmacy Union and the Irish Institute of Pharmacy. He is a member of the Pharmaceutical Society of Ireland and the Royal Society of Chemistry. His research interests include pharmaceutical chemistry, drug discovery, pharmacy practice and organisational change.

Healthcare

Contact: Dr John Larkin
Email: john.larkin@tus.ie

Dr John Larkin is a Lecturer in the Department of Nursing and Healthcare. John qualified as a Registered General Nurse in 1994 and a Children's Nurse in 1997. John undertook a BSc in Nursing in University College Dublin and a MSc in Health Service Management at Trinity College Dublin. John is Programme Coordinator for the MSc in Digital Health.

Johns PhD research involved the undertaking of a need's assessment including online discussions on social media about alcohol to inform the development of a potential online intervention to address alcohol misuse. John was also recently a member of a national advisory group that advised the Nursing & Midwifery Board of Ireland on the development of digital health standards and requirements for undergraduate nursing in Ireland.
John has a particular interest in leadership, management and digital health in healthcare. In addition to his lecturing role John has supervised undergraduate and postgraduate students throughout his career and continues to be research active with particular interest in undergraduate nurse education and curriculum design.

Healthcare

Contact: Dr Alison Fagan
Email: alison.fagan@tus.ie

Dr Alison Fagan is a lecturer and researcher in the Department of Nursing and Healthcare. Alison is a registered general nurse and has a wealth of experience from clinical practice, specialising in care of the older person, chronic illness and community nursing. Alison's PhD research explored the role of social factors in shaping longevity amongst Irish centenarians and her novel work has been disseminated through peer reviewed publications and conferences, both nationally and internationally. Her current research interests include the older person, in particular the sociology of ageing, the social determinants of health, health promotion and chronic disease management.

Sociology

Contact: Ms Lorraine Gaffney
Email: lorraine.gaffney@tus.ie

Ms Lorraine Gaffney is a lecturer in the department of Nursing and Healthcare. She is a registered general nurse. She holds a BA in Sociology/ Politics and English from UCG and a MSocSc from UCD. Lorraine is currently undertaking a PhD in Sociology, at Maynooth University, investigating family food practices in Ireland. She has been involved in the supervision of both undergraduate and postgraduate students to MSc and PhD level. Much of her scholarship centres on the sociology of health and illness, social gerontology and the sociology of food and food practices. Her research interests stem from a core interest in health and health inequalities, specifically social influences on health. She is a member of the Sociological Association of Ireland.

Healthcare

Contact: Dr Laurence Leonard
Email: laurence.leonard@tus.ie

Dr Laurence Leonard joined the Department of Nursing, TUS in 2021, as lecturer in nurse education with considerable experience in the development, delivery & review of programmes in health and nursing education. He is a registered nurse (RN) and nurse teacher. Having undertaken RN training at St George's, London, he worked in varied clinical areas and completed a number of continuing practice development and post-graduate studies.

In 2000 he moved to the role of Senior Lecturer with St George's London and Kingston University, where he gained extensive experience of nursing education. He also had a significant role in developing a degree programme for the London Ambulance and South East Coast Ambulance Services.

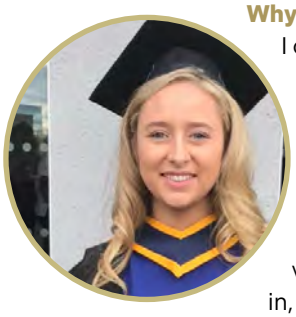
Prior to his position with TUS, he lectured in nurse education with Queen's University Belfast. In addition to teaching on the BSc undergraduate programme, he developed and delivered postgraduate and Master's level courses. These included Advanced Health Assessment for RN's and other healthcare professionals. His strong and sustained contribution to nurse education continues in his role with TUS, where he delivers modules at undergraduate level and successfully implemented a new postgraduate course in Advanced Health Assessment.

Dr Leonard has undertaken a range of advisory roles, such as reviewing for QQI and External Examiner for BSc Nursing programmes. He is currently External Examiner for ATU, BSc Nursing Programme and editorial member for the Journal of Perioperative Practice. He has a number of publications and has presented at national and international conferences.

He has regularly been academic supervisor to students (including international) undertaking MSC research projects. His academic interests focus on nurses and emotional aspects of clinical practice. Other interests include infections, health assessment, pre-hospital emergency care and public health.

Spotlight:
Nursing & Healthcare

In Conversation With...



Why did you choose to study at TUS?

I choose TUS as an undergraduate student. I graduated in 2017 with a BSc (Hons) in General Nursing. Nursing education in TUS involved both the inclusion of theory, and clinical practice at three general hospitals in the HSE Midlands area. This allowed the student nurse to become competent through the transfer of evidence-based knowledge to clinical practice. The lecturers in TUS were very approachable. TUS was an exciting environment to learn in, as we grew into competent health care professionals.

Where are you in your research journey?

am a part-time student as I work full-time as a staff nurse. It is a privilege to be part of a research project that aims to improve clinical practice, amend policies, and procedures appropriately. Moreover, improve the patient journey. I aspire to have a career in academia with the aim of continuing to progress nursing as a profession, and to enhance knowledge. I would like to give my appreciation to all the many authors whom have shaped nursing as a profession.

I am very fortunate to have two excellent supervisors who continue to guide, and inspire me within my research. From the completion of one year of my masters, I have increased my level of knowledge in the area. This knowledge provides the researcher with the confidence, and competence to continue on the research journey. My aim is to successfully complete my masters, and transfer onto the PhD programme.

Do you feel prepared for life after college or further research?

I feel excited to see what the future holds for me as a researcher. I am currently completing core modules as part of the structured research programme. These modules equip the researcher to become competent while developing skills. These modules to date for me have been a very positive experience, while expanding my knowledge in research. I also feel my supervisors are positively preparing me for my research journey.

What advice would you give to other students interested in pursuing postgraduate research?

I would encourage postgraduate research, as it has been an exciting experience for me to date. It is wonderful to enhance to your creativity, and knowledge in an area you are passionate about.

Seána Nic Dhonnacha

Master of Science in Nursing by Research,
Department of Nursing and Healthcare

What Our Students Say...

TUS is a terrific place to study for many reasons. Its smaller class sizes mean that students are on a first name basis with their peers as well as their lecturers which is immensely helpful when undertaking a demanding degree like nursing! The nursing lecturers are extremely passionate about their subject of expertise and are incredibly supportive. I am currently researching centenarian health and population aging as a PhD candidate in the Department of Nursing and Healthcare.

I have experienced first-hand the openness, the friendliness, support and inspiration that is abound in TUS in Athlone. There is a culture here that I have yet to see anywhere else, which makes it such an exciting place to be a student - I really cannot recommend it enough. To any prospective students out there considering pursuing a career in nursing, I'd say go for it. Although challenging at times, a career in nursing and healthcare is immensely rewarding.

Alison Fagan
PhD Candidate,
Department of Nursing and Healthcare

Department of Social Sciences

The Department of Social Sciences has a number of registered MA/PhD research students who are conducting their research in partnership with agencies, such as Sophia Ireland, Midlands Simon and Kinship Care Ireland. Prospective students can undertake a structured Masters in Applied Social Studies (by Research) with the option of progressing to doctoral studies.

Research group: Parenting and Family Studies Alliance

The Parenting and Family Studies Alliance promotes ongoing critical inquiry into the changing nature of parenting and family life in Ireland by creating networking opportunities for professionals (academia/practice) and collaborative research activities.

Key words: family, parenting, caregiving, social change, social inequality

Social Sciences

Contact: Dr Ashling Jackson
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Dr Ashling Jackson is a senior lecturer in the Dept of Social Sciences. She lectures in sociology and research methods, and supervises postgraduate (MA and MA/PhD) research. She is a co-editor of Community Development in Ireland: Theory, Policy and Practice (Dublin: Gill and Macmillan) and Learning on the Job: Parenting in Modern Ireland (Cork: Oak Tress Press). Ashling was previously joint editor of the Irish Journal of Applied Social Studies (2016-2022) and is presently actively involved in the European Family Support Network. Her research interests are in the areas of family, parenting, social change and social inequality. She is particularly interested in research co-production using qualitative research methodologies/ methods.

Social Sciences

Contact: Dr Chris McDermott
Email: chris.mcdermott@tus.ie

Dr Chris McDermott lecturers in the areas of child law, family law and human rights law. Chris graduated with a BCL degree from NUI Galway in 2003 and with an LLM in Public International Law from the University of Edinburgh in 2004. He completed a PhD in International Human Rights Law at the Irish Centre for Human Rights, NUI Galway, in 2009. He is a qualified attorney-at-law (New York) and a legal consultant with New Horizon, an asylum seeker and refugee support group. He previously served on the board of the Irish Refugee Council and was a contributor to the MPhil in International Peace Studies at Trinity College Dublin. He has previously supervised research students in the areas of human trafficking and refugee law.

Graduate Profile

In Conversation With...

Why did you choose to study at TUS?

My decision to study at TUS was based on my previous positive experiences of the institute. TUS has a reputation of providing high quality education in a practical and person-centred way that affords students excellent opportunities for their futures. It was important to me at this stage of my career to have a study path that was personalised to meet my needs. The supportive and inclusive atmosphere that is fostered in TUS inspired me to take on my current course of study. TUS tailors the learning experience in a relaxed and professional way with plenty of additional resources and expertise that are readily accessible. This takes a lot of the stress out of study!

What mode of study did you choose and why?

I chose to study part-time, as this option allowed me to advance the academic experience and to continue with my career in the health service. I have gained great insight and knowledge from my studies that have supported my everyday work and vice versa. The support from the library services, writing skills department and the array of online support services enhanced my learning experience and made balancing my work, study and family life possible.

What were the most difficult and most enjoyable aspects of your programme?

During the initial stage of the programme, I found it challenging to develop a study routine as it was a long time since I had undertaken any formal studies. My supervisor was really supportive and gave me great tips and guidance on how generate a style and flow for studying that suited me. I found the online supports and the research department useful in supporting me to navigate a study plan and progress through the stages of the programme. Once I gained that all important flow, I really enjoyed the mindful experience of working towards achieving my goals. The structured modules, which entailed a wide variety of topics pertaining to research across the disciplines, gave me the opportunity to meet and share experiences with other postgrad students. The friendly and engaging atmosphere made the whole experience more collaborative and enriched my learning with new insights and ideas.

How has this mode of study helped your academic career?

This experience has enhanced my research abilities in the social care field. It has increased my opportunities to write academically and to utilise research and evaluation techniques and strategies in a variety of ways. Through this pathway, I have gained the experience and knowledge to expedite policy and practice developments in my area of research. My confidence to embark on research and to use narrative inquiry to explore social care issues has increased greatly. This course of study has complemented my career by opening up possibilities for me to teach and to advance solution-based practice.

What advice would you give to prospective researchers?

I would recommend that prospective students spend time in the initial phase of study familiarising themselves with the campus and all the facilities and supports available both onsite and online. I found it useful to pace myself and to use a study plan that fits well with my current lifestyle. Invest some time getting to know other students doing similar studies as this will keep you on track and make the experience more holistic, fruitful and enjoyable.

Gráinne Powell

MA in Applied Social Studies
(by Research)

Department of Sport and Health Sciences

Research group: SHE Research Group

The SHE Research Group aims to bridge the gender data gap in sport, health and exercise research. The group works around two principal thematic areas: sports participation and performance, and exercise, nutrition and health. The group includes academic faculty from the Department of Sport and Health Sciences, and collaborators from across TUS and other higher education institutes.

Key words: sports science, nutrition, physical activity, exercise and health, sports performance

Exercise and Health

Contact: Dr Aoife Lane
Email: aoife.lane@tus.ie

Dr Aoife Lane is the head of the Department of Sport and Health Sciences. She holds a BSc in Sport and Exercise Science from UL, a MA in Health Promotion from NUI Galway, and completed a PhD at WIT. Her doctoral research investigated the public health impact of the Women's Mini Marathon in WIT, in 2011. Aoife is a founder of the Women's Gaelic Players Association and has a particular interest in addressing the gender data gap in sports science and health research. Aoife has supervised master's students across the discipline of physical activity: in clinical groups, ethnic minorities, adolescents and in sport particularly the health promotion potential of the sports club setting. Aoife is currently supervising PhD students looking at the contribution of organised sport to physical activity.

Sports Performance

Contact: Dr Ciarán Ó Catháin
Email: ciaran.ocathain@tus.ie

Dr Ciarán Ó Catháin has a BSc in Sport Science and Health from DCU, a MSc in Applied Sports Nutrition from St Mary's University London, and a PhD in Biomechanics and Exercise Physiology. During his PhD, Ciarán developed novel technology that provides real-time biofeedback to runners and allows them to intuitively adapt their running style to reduce the risk of developing overuse running injuries. Ciarán's primary research interests focus on a multidisciplinary approach to improving sporting performance, reducing injury risk and addressing the current gender data gap that exits in this area. This involves examining how biomechanics, physiology, and nutrition interact in order to provide a more holistic understanding of the underlying mechanisms that can be targeted to improving athletic performance and reduce injury occurrence.

Sports Performance

Contact: Dr David Kelly
Email: david.kelly@tus.ie

Dr David Kelly obtained a BSc in Sport Science and Health (2010) and a PhD in Exercise Physiology (2014), both from DCU. His doctoral studies investigated high intensity interval training and repeated sprinting in field-based invasion team sport athletes. David is a member of the Irish Society for Sport and Human Performance and also part of the Exercise is Medicine (EIM) Ireland National Centre Advisory Board. David has supervised multiple students to master's level in exercise science and is currently supervising and co-supervising a number of PhD students. His research utilises a multi-disciplinary approach through the use of concurrent physiological, nutritional, and biomechanical methodologies. David's current area of research interest is in training specificity, athlete workload monitoring and performance profiling of elite and sub-elite team sport athletes.

Exercise and Health

Contact: Dr Kieran Dowd
Email: kieran.dowd@tus.ie

Dr Kieran Dowd completed a BSc (Hons) in Physical Education with concurrent Mathematics Teaching at the University of Limerick in 2007, before receiving his PhD in 2013. His research interests include the examination of sedentary patterns and physical activity behaviours in free-living environment, the examination of the associations between sedentary patterns, physical activity behaviours and indices of health and the implementation of interventions to modify health behaviours. He has supervised doctoral students to completion in the areas of physical activity, sedentary behaviours and cardiovascular disease in Irish adults and in the tracking of physical activity and sedentary behaviours from youth to early adulthood. Kieran is currently supervising PhD students looking at the contribution of organised sport to physical activity, looking at the effect of role models on sports participation in youth and the effect of specialist targeted interventions in primary school physical education on physical activity and health.

Sports Performance

Contact: Dr Niamh Ni Cheilleachair
Email: niamhniamh.nicheilleachair@tus.ie

Dr Niamh Ní Chéilleachair graduated from the University of Limerick with a BSc (Hons) in Sport and Exercise Sciences and a PhD, which incorporated a multi-disciplinary approach to investigate alternative training methods for endurance athletes. She is an accredited performance physiologist with the Sport Ireland Institute and has worked with high performance athletes across a range of sports, including rowing, swimming and athletics. Her research interests are of a multi-disciplinary, applied sports science nature and involve physiological and biomechanical approaches to improve the performance of well-trained and elite athletes. Niamh has supervised a number of master's students across the discipline of sports science and is currently supervising PhD students investigating methods of improving performance in team sport athletes, including high intensity interval training and resisted sprinting. This is in addition to supervising PhD students investigating fundamental movement skills in Irish primary school children and the psychology of musculoskeletal injury.

Exercise and Health

Contact: Dr Máiread Cantwell
Email: mairead.cantwell@tus.ie

Dr. Mairéad Cantwell is an assistant lecturer in the Department of Sport and Health Sciences at TUS. Mairéad graduated from Dublin City University with a first class honours degree in Sport Science and Health, and completed her M.Sc. at Liverpool John Moores University in Clinical Exercise Physiology, where she graduated with distinction. Mairéad worked as a clinical exercise physiologist in Ireland, the UK and Australia from 2011-2018 where she gained extensive experience in cardiac, pulmonary and oncology rehabilitation in both hospital and community-based settings. Mairéad completed her PhD at Dublin City University in 2019 in the area of oncology rehabilitation. Her PhD was funded by the Irish Cancer Society and Mairéad was the recipient of the Irish Cancer Society's First PhD Researcher of the Year Award. Mairéad began her current role at TUS in 2018. Mairéad's research interests focus on the development, implementation and evaluation of interventions for individuals living with chronic conditions (e.g. cancer, cardiovascular disease) and examining the effects of physical activity on indices of physiological and psychological health. Mairéad's research interests also include the primary and secondary prevention of chronic disease in the workplace, and health behaviour change intervention development, implementation and evaluation.

Exercise and Health

Contact: Dr Robin Healy
Email: robin.healy@tus.ie

Dr Robin Healy has a BSc in Sport and Exercise Sciences and completed his PhD in Sport Biomechanics from the University of Limerick in 2019. His PhD research focussed on the assessment of sprint performance and reactive strength in track sprinters. His current research interests include monitoring long term changes in sprint kinematics, kinetics and performance in team sports, improving assessment methods of high speed running and sprinting within training and match environments, and providing biomechanical support to evaluate and enhance performance in track and field athletics.

Exercise and Health

Contact: Dr Kris Beattie
Email: kris.beattie@tus.ie

Dr Kris Beattie is an assistant Lecturer in the Department of Sport and Health Science at TUS. Kris has a BSc in Sport and Exercise Science from Ulster University, an MSc in Sports Physiology from Liverpool John Moore's University, and a PhD from the University of Limerick where his research focussed on the physiological adaptations of strength training in endurance athletes. A UKSCA accredited S&C coach since 2010, Kris has coached within Rugby Union, Athletics and Rowing. His research interests include the physiology of strength, speed and endurance training and athlete assessment.

Nutrition and Health

Contact: Dr Patricia Heavey
Email: patricia.heavey@tus.ie

Dr Patricia Heavey completed her undergraduate studies in nutrition at the University of Ulster, where she also obtained her PhD investigating new methodologies for studying the human infant gut. In May 2009, Patricia was appointed manager of the National Nutrition Surveillance Centre, University College Dublin. This involved monitoring trends in health status and advising on these findings for health planners. Dr Heavey also managed the WHO Childhood Growth Surveillance Study in Ireland which included the collection of anthropometric and lifestyle data on over 5,000 children in both 2008 and 2010. This interest in obesity and public health continues and Dr Heavey is currently the chairperson for the Association for Health Promotion Ireland. Throughout her career, Patricia has supervised or mentored both MSc and PhD students and continues to be research active with particular interest in the role of nutrition in obesity, functional foods and public health nutrition.

Nutrition and Health

Contact: Dr Geraldine Cuskelly
Email: geraldine.cuskelly@tus.ie

Dr Geraldine Cuskelly has a BSc in Nutrition and Dietetics from Trinity College Dublin and a PhD in Nutrition from University of Ulster. Her research career began at a time when intakes of folate, one of the B vitamins, was widely believed could be met through means other than fortification. Her research proved definitively that fortification was the only effective means to achieve adequate intakes in women. Since this ground-breaking research was published, numerous countries have implemented folic acid fortification, including US, Canada, Chile and 72 other countries. Geraldine has supervised postdoctoral fellows and PhD students on subjects ranging from B vitamin status in the elderly, omega-3 fatty acid status from meat consumption, and measurement of biomarkers of both carcinogen and food processing residue exposure.

Find out more about funded PhD opportunities at TUS

Spotlight:
SHE Research Group

In Conversation With...

Why did you choose TUS?

For me, studying in TUS has given me the opportunity to study in an exciting and challenging environment while developing an extensive skill set and preparing me for a range of career opportunities. The Department of Sport and Health Sciences in TUS is equipped with modern, state-of-the-art facilities in the sport science and biomechanics labs, athletic therapy clinical room and world-class International Arena and gym and having access to these amazing facilities provides many opportunities and attracted me to TUS. My choice in studying in TUS was encouraged by the presence of the specialist Research Hub which signifies the importance of research and its consideration as an essential part of TUS.

Where are you in your research journey?

I am currently in the final year of my PhD. Completing a PhD in TUS has given me the opportunity to develop from being a student to an accomplished researcher. Pursuing a PhD allows for excellent educational and career benefits and I am lucky to be supported by excellent supervisors who have really invested in me and have prepared me for a successful career as an academic by constantly encouraging me and providing endless guidance.

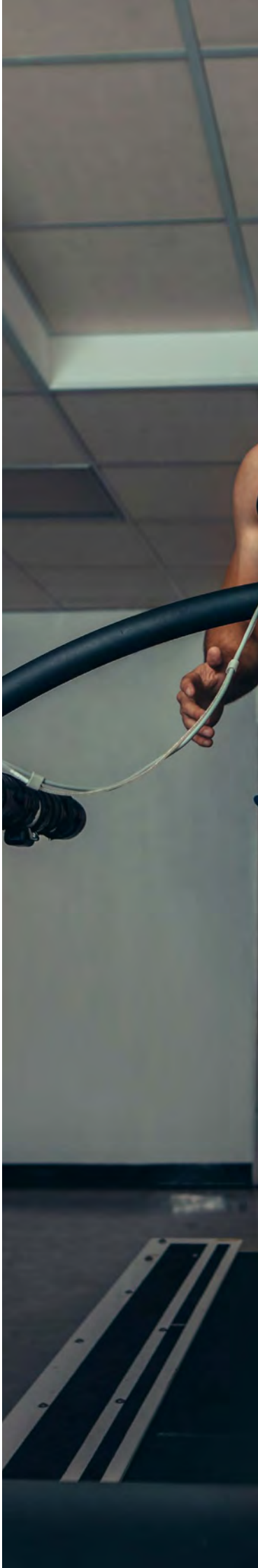
Do you feel prepared for life after college or further research?

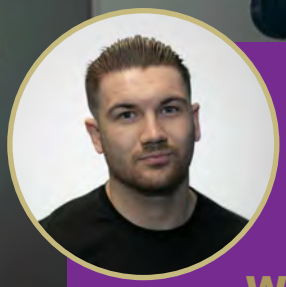
Studying in TUS allows extensive collaboration with sports clubs within communities across the Midlands and it is through both these theoretical and practical learning platforms that I feel prepared for life outside of TUS. Completing my PhD in TUS has also afforded me many opportunities to disseminate my research nationally and internationally through the attendance at conferences and seminars. This opportunity has not only provided extensive opportunities for networking with experts in the area of sports psychology and sports and exercise medicine but has also allowed me to develop transferable communication, leadership and motivational skills allowing for personal and professional development.

What advice would you give to other students interested in pursuing postgraduate research?

A PhD is a long and often gruelling process, but it is a journey full of wonderful experiences. Completing a PhD in TUS allows you to make some amazing friends while also working with and learning from sports science, and sports and exercise medicine experts in the department. Nonetheless, I have learned always try to set realistic goals, stay organised and remember things are not always meant to go to plan, so it is OK to have a plan B!

Sinead O'Keeffe
PhD Candidate,
Department of Sport and Health Sciences





What Our Students Say...

"I came to TUS because I wanted to be part of a progressive, like-minded community. I am currently investigating nutritional periodization and endurance training in invasive team sport athletes. This builds upon my previous research investigating sports nutrition knowledge amongst Gaelic football players. It's an exciting topic, as I believe my findings could have a large impact upon sporting performance. The support I have received from my supervisors is unparalleled, and by far the best I have received throughout my academic journey to date. Since the beginning of my time at TUS, my capacity as a researcher has grown exponentially. I can only thank my supervisors for this. I see the course, not only as an education programme for the attainment of a master's degree, but a training programme for a fruitful research career to follow."

Michèle Renard
PhD Candidate,
Department of Sport and Health Sciences

Faculty of

Business & Hospitality

Business

Contact: Michelle McKeon-Bennett
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Michelle McKeon-Bennett is the Dean of Faculty of Business and Hospitality in the Technological University of the Shannon: Midlands Midwest – Athlone Campus. She has an MSc from UL and a PhD in submission to TCD. Her background is in science, management, business development, enterprise and knowledge transfer, and she has overseen the development of numerous undergraduate and postgraduate programmes across disciplines along with research output and knowledge transfer activities.

Ms McKeon-Bennett joined AIT (now TUS Athlone) from LIT in 2019 where she spearheaded research, development and innovation since 2005 with the establishment of four research centres and groups and income of over €4million in RDI activities as main outputs. Two research groups, of which she is Principal Investigator, are internationally recognised for Enterprise Development and niche R&D activities for SMEs. In particular, the CELLS Research Group has a long-standing relationship with NASA's Kennedy Space Centre (KSC) in Florida, where Ms. McKeon-Bennett was seconded to as a Research Fellow in September 2003. Outputs from this relationship included 15 postgraduate students, of which Ms McKeon-Bennett was supervisor, who successfully trained as space life science technologists for future manned space flight and planetary colonization.

Ms. McKeon–Bennett and CELLS formed part of the H2020-SPACE funded EDEN ISS consortium, which comprises of 14 leading European, Canadian and US-American universities, research institutes, corporations and SMEs, which involved the development of safe food production and technology for on-board the International Space Station and for future space exploration. Her research focus in TUS Athlone is the application of these frontier food technologies to terrestrial applications such as assisting SMEs in establishing large scale fresh food production for regional consumer supply.

Department of Hospitality, Tourism and Leisure

The Department of Hospitality, Tourism and Leisure is interested in supervising innovative research which examines the role of tourism in society, the economy, and the natural environment. Potential areas of study may include, among others:

- Tourism policy and planning
- Destination management
- Tourism marketing and entrepreneurship
- Tourism sustainability
- Cultural tourism and heritage
- Festival and event planning
- Sport tourism

Research group: Tourism

Research into tourism policy and planning, tourism marketing, festivals, events, tourism and sustainability and tourism entrepreneurship.

Key words: tourism policy, tourism planning, destination management, tourism marketing, tourism sustainability

Hospitality, Tourism & Leisure

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Dr Emma Reardon is Head of the Department of Hospitality, Tourism & Leisure Studies at Technological University of the Shannon: Midlands Midwest - Athlone Campus. Previously, Emma held the position of Senior Lecturer in Hospitality Management at the School of Hospitality and Tourism Management at the University of Surrey.

In 2021, Emma was awarded the Lewis Elton Award for Educational Innovation by the Surrey Institute of Education. Emma brings a wealth of industry knowledge and hands-on practitioner experience to higher education from positions held in the five-star Merrion Hotel in Dublin, Dromoland Castle Hotel and Country Estate, Hayfield Manor, Aghadoe Heights Hotel and Spa, and The Inn at Dromoland.

Emma completed her PhD in The Economics of Quality Management in the Irish Hotel Industry at Technological University Dublin in 2020, holds an MA (First Class Hons) in International Tourism from the University of Limerick and a BA (Hons) in Business Studies with Event management from Limerick Institute of Technology. During her time at the University of Limerick, Emma was awarded The Kemmy Business School and Northern Trust Outstanding Scholar Award for her academic achievements.

Tourism

Contact: Dr Kelly Maguire
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Dr Kelly Maguire is a lecturer in tourism management at TUS where she also supervises master's and doctoral research studies. She has previously held the position of senior lecturer in international tourism management and events management at Liverpool John Moores University, and she is a Fellow of the Higher Education Academy (AdvanceHE). Her doctoral research study provided nationwide baseline findings on local authority sustainable planning for events management in Ireland (2018). She has worked with local authorities in planning large-scale outdoor public events and has acted as co-principal investigator on industry research funded by the NTDA of Ireland. Kelly undertakes conceptual and applied research across tourism and events contexts focusing on the sustainable planning and management of destinations and events and developing evidence-informed approaches to planning for such industries. She publishes regularly in a range of journals and reviews articles for a number of established journal publications. She had co-edited a number of projects, most recently 'A Research Agenda for Event Impacts' (Edward Elgar Publishing, 2022) and 'Places, Practices and (soft) Power' (Sage Journals, 2019).

Sport and Leisure

Contact: Joe Tierney
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Joe Tierney is a sport and leisure industry professional with comprehensive experience at operational and management level. Joe holds a BSc in Leisure Management, MA in Design for Digital Media (DIT) and an MSc in Exercise and Nutrition from the University of Chester. As an independent auditor for Ireland Active's National Quality Standards Awards, Joe maintains contact with the industry. Joe brings his academic/industry qualifications, practical experience, and passion for physical activity for all to his research and lectures. Joe is currently completing a part-time PhD exploring the potential of outdoor physical activity to promote sustainable exercise participation amongst older adults. The research focuses on the motivations of those older outdoor adventurers that do participate. In recent years, Joe has presented at a number of international and national conferences including; the Adventure Tourism Research Associations (ATRA) International Adventure Conference; the International Council on Active Ageing (ICAA) Leadership Summit and the Tourism and Hospitality Research in Ireland Conference (THRIC).

Graduate Profile

In Conversation With...

Why did you choose to study at TUS?

Last summer, after having lost my job in the tourism industry due to the pandemic, I was very happy to see that Athlone Institute of Technology offered a PhD program with a tourism focus. Funded tourism PhD opportunities are hard to come by, so I was delighted to be accepted for the program. AIT is also in a great location, being so central and with good motorway connections.

What mode of study did you choose and why?

My PhD project is "Brand activation in thanatourism", and I will be looking at marketing opportunities for two festivals. Thanatourism is also known under the term dark tourism, an activity where people travel to have a (symbolic) encounter with death, disaster or suffering. Thankfully the dark tourism festivals I am studying are at the lighter end of the dark tourism spectrum, focusing on spooky encounters and on entertainment and fun. I chose to apply for this project as it represents an opportunity for me to further my career in the tourism and/or event industry - and because dark tourism festivals are fun!

What were the most difficult and most enjoyable aspects of your programme?

I really think the support from the staff at TUS and especially my supervisor is excellent. I really enjoyed getting my head around the existing literature and partaking in interesting lectures with inspiring speakers. As part of a tourism module I took this semester, excellent guest speakers and experts in the industry were invited. You never feel like you are on your own, even though the pandemic and lockdown have been challenging. I suppose the most difficult aspects at the moment are the social isolation in general and the lack of opportunity to network and communicate new ideas with others.

How has this mode of study helped your academic career?

I am only in my first year of study but I know that completing this program will help me further my career. I also like that there are so many different options at the end. I am not sure at this point where I want to take my career but having all the options is brilliant. From being able to work in the tourism/event industry to a career in teaching or research, all the options are there.

What advice would you give to prospective researchers?

Be open-minded and make the most of this time. It's very different from your average job and you will probably not get the chance again to immerse yourself so deeply in one subject area again. Also if you think you are on your own, you are not! There is plenty of support available, just ask.

Luisa Golz
PhD Candidate,
Department of Hospitality, Tourism and Leisure

Department of Accounting and Business Computing

Predictive Analytics

Contact: Dr Paul Liston
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Dr Paul Liston joined TUS in 2018 and lectures in the field of data analytics. He has previously worked as a research fellow at Dublin City University and at the University of Limerick, and as a global commodity manager and a supply chain consultant with Dell.Paul has lectured in Discrete Event Simulation at Dublin Institute of Technology, Supply Chain Planning at the University of Limerick, and Lean Principles and Practices at the Institute of Banking. His primary area of research is business process analysis with particular emphasis on systems modelling and simulation. He has worked closely with industry in nationally and internationally funded projects to apply these techniques across a broad range of business sectors including manufacturing, supply chain, healthcare, customer support and financial services. Paul currently supervises master's and PhD students in the areas of predictive analytics and digitalisation.

Machine Learning

Contact: Dr Jonny O' Dwyer
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Dr Jonny O'Dwyer received the BEng (Hons) in Software Engineering from TUS and his PhD from TUS where his research involved the generation of novel feature sets for input to machine learning algorithms for affect prediction. He has worked as a software engineer in the aftermarket automotive sector where he was involved in data pipeline, data and compute reliability, and data visualisation projects. He was a Government of Ireland Postgraduate Scholar. His research interests include affective computing and machine learning.

Department of Business & Management

Human Resources

Contact: Dr Alison Sheridan
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Dr Alison Sheridan is head of the Department of Business and Management at TUS Midlands Midwest. She holds a BComm from NUIG and an MSc in Strategic HRM from Sheffield Hallam University. Having gained significant experience in both private and public sector HR management roles, Alison joined the Department of Business and Management in 2008. As a lecturer she has delivered modules in areas such as Human Resource Management, Resourcing Talent, and Reward Management in addition to supervising MBS students in both business and HR areas. Alison recently completed her PhD in DCU which focused on the nature of HRM in service sector SMEs. Her current research interests include the influence of social media on HR practice in SMEs.

As a chartered member of CIPD Alison actively contributed to the CIPD Midlands Region Committee for over 10 years, including terms as Chairperson and Vice-Chair of the Committee. She is also a member of the national judging panel for the CIPD Ireland HR Awards.

Digital Marketing

Contact: Dr Aisling Keenan Gaylard
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Dr Aisling Keenan Gaylard is a lecturer and researcher with the Faculty of Business and Hospitality. Aisling's research interests lie in the area of digital marketing, employee brand advocacy, and technology adoption and usage. Aisling graduated from the National University of Ireland, Galway, with a MBS in eCommerce and a PhD in Marketing. Aisling's doctoral studies focused on the correlation between eWOM initiatives and employee brand advocacy within Irish agri-food businesses. Aisling enjoys supervising PhD and master's by research students and contributes annually to the Irish Academy of Management and the Academy of Marketing conferences. Aisling is currently part of a steering group with Athlone Chamber of Commerce and Destinations Athlone, who are developing a marketing campaign to rebuild a strong and resilient tourism and retail sector for Athlone post COVID-19.

Strategic Management

Contact: Dr Teresa O'Hara
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Dr Teresa O'Hara lectures in the areas of strategic management, ethical decision making and business model development. She holds a MBA from UCD, a MSc in Health Planning and Financing from the London School of Economics, and a PhD from University of Limerick in social networks, power and top management teams. Teresa has supervised MBS and MBA students and is currently supervising PhD students in the areas of leadership, teams and social business incubators. She has an interest in healthcare leadership and organisational ethics in healthcare. She is a council member of the Irish Academy of Management and treasurer of New Horizon, a refugee and asylum seeker charity.

Strategic Management

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Dr Marc Cashin has worked in several high profile blue chip, multi-national organisations in the food processing, manufacturing, telecommunications and IT industries, with over 25 years' experience in technical, managerial and senior leadership roles. He is a former member of Cambridge University's Technology Roadmapping User's Group. Marc has in-depth experience in finance, technical development, programme and project management, business development and strategic management and entrepreneurship. He has considerable experience in strategic knowledge management and learning and development, supporting organisational change and growth through professional development and action learning. Marc has almost 20 years academic experience at undergraduate and postgraduate level, including doctoral supervision of DProf, DBA and PhD candidates. He was the founder and former director of InnovAIT – Innovation and Entrepreneurship Academy.

Human Resources

Contact: Dr Jason Palframan
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Dr Jason Palframan is a lecturer and researcher in human resources management, organisational behaviour and applied social psychology. He is formerly a lecturer in work psychology at Liverpool John Moores University and social psychology at the Open University. Jason is a chartered psychologist with the British Psychological Society and chartered member of the CIPD. He holds an MSc in HRM from the Open University, an MSc and PhD in Psychology from Liverpool John Moores University, and MBA from University of Hull. His research interests focus on workplace spirituality, personal values and person-organisation fit, comparative HRM, self-transformation, and qualitative research methods. Jason has supervised master's projects in the fields of general business, human resource management and organisational behaviour. He is currently supervising PhD students exploring topics such as personal values fulfilment in the workplace and virtual leadership. Prior to joining academia, he worked in both the private and public sector as a human resources professional in both junior and management roles.

Business and Law

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Alison Hough BL practised as a barrister for eight years and now lectures law in TUS. She is an experienced researcher in the area of environmental law governance in Ireland and the EU, in particular the Aarhus Convention. She has also carried out research in the area of Legal Technology Innovation and Education. She presents regularly at conferences in Ireland and abroad, and has published in several peer-reviewed journals. She has extensive experience of working with Irish and international NGOs on environmental issues and sits on an advisory body to the Department of Communication, Climate Action and the Environment. She has made written and verbal submissions on issues of national importance, for example giving evidence on the impact of Brexit on environmental governance on the Island of Ireland to the Oireachtas Committee on implementation of the Good Friday Agreement.

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