'EYE' on GMIT

RESEARCH UPDATE IN HERITAGE STUDIES AT GMIT

Following a HETAC panel visit, GMIT was recently given the go ahead to run Ph.D.s in the area of Heritage Studies. GMIT Masters graduate, John Towler, has become the first registered Ph.D. student and is presently pursuing a study of Galway city's transformation during the course of seventeenth century.

At Masters level, Charlene Bloe – who has previously worked as a festival organiser – has commenced research on an M.A. thesis entitled 'The Potential of Developing New Themed Festivals for Galway's Off-Peak Tourism Season'. Her work is being funded by the Technological Sector Research Strand I Postgraduate R&D Skills Programme. Both of the above projects are being supervised by Heritage Studies lecturer, Dr. Mark McCarthy and conducted under the auspices of the 'Irish Heritage, Culture and Arts' research group, based in the School of Humanities. Meanwhile, the results of a previous project (funded by GMIT's Internal Research Fund) on genealogy tourism have just been published in Volume 18 of the Polish tourism journal Turysm, by Marta Gergelyova, Mark McCarthy and Monica Nielsen. Mark McCarthy himself is currently engaged in the writing of a book dealing with the 1916 Rising and modern memory. Finally, the urban development of Loughrea is the focus of a study being conducted by Heritage Studies lecturer, Paul Gosling (as part of the Royal Irish Academy's Irish Historic Towns Atlas). For further details, contact Dr. Mark McCarthy.

GMEDTECH
GALWAY MEDICAL TECHNOLOGIES CENTRE

Engineers face many hurdles when developing novel medical devices. However, the final hurdle; understanding how the patient and the device work together; is often the most challenging. Traditionally, the product developer relied on fairly rudimentary anatomical models in the test laboratory in order to increase confidence that the new device would be likely to perform effectively in the human body. Testing in the lab would then be followed by a clinical trial on a large number of patients to confirm that the device was indeed safe and effective. Unfortunately, cases have been cited where; although anatomical models indicated that the new device would perform well in humans, problems arose in the clinical trials; problems which forced the trial to be halted and the device to be redesigned.

John Kelly, the Director of the Galway Medical Technologies Centre (GMedTech), has extensive experience in leading product development activities for several of Ireland's most prominent medical device companies. During his time with these companies, he recognised the need for more reliable anatomical models.

Funded by Enterprise Ireland, GMedTech (www.gmedtech.ie) was established in 2006 to offer a broad range of engineering design/development support services to the developers of medical devices. GMedTech is also involved in research, specifically focusing on the development of in vitro simulation test systems (that closely mimic human anatomical systems) in order to serve the needs of medical device companies and medical practitioners.

Device companies located in the West of Ireland became the first target 'market' for the GMedTech Centre. As the majority of these companies developed and manufactured devices for the treatment of vascular diseases, the GMedTech centre initially developed simulation models of the vasculature. These models are currently being used by product development engineers from several device companies, to test devices for the treatment of aortic aneurysms; coronary artery disease and cranial aneurysms. The feedback from the users of these simulation systems has been that the GMedTech systems more faithfully replicate the human anatomy than other systems which the product developers had utilised in the past.

John Kelly explained that the GMedTech researchers go to great lengths to ensure that the models better mimic the nuances of the human anatomy. "We use MRI & CT scans to understand the topography of the anatomy. We have identified materials that closely match the properties of the vessels being modelled and we source materials that closely mimic blood; as well as developing pump systems to push the 'blood' through the vessels in a realistic fashion" he said. The Centre uses materials such as silicone and polyvinalalcohol, materials with which the GMedTech researchers have become expert in handling.

GMedTech researchers work as a tightly focused team. "There are three engineers, seven post grads, and myself in the team" said John. As well as considerable experience in the development of test systems, the team also has a wealth of experience in medical device design. Probably because of this mix of experiences, the Centre staff are increasingly finding that they are being asked to aid device companies in designing out product issues that have been identified through the process of testing the new devices on the simulation systems developed by the Centre".

Further information on the GMedTech Centre can be obtained by contacting:

Mr. John Kelly, Centre Director, GMedTech
Tel: +353-91-742870 Email: john.kelly@gmit.ie

'EYE' on GMIT

Shelltec
APPLIED RESEARCH CENTRE

Established in 2005, the SHELLTEC Applied Research Centre conducts multi-disciplinary research on the condition and responses of crustaceans and molluscs to manmade and natural stressors. The main research themes of the centre explore:

1) Post-capture handling, storage and transport stresses in live shellfish marketing chains, and the development of new technologies to reduce their impacts;

2) Development of environmental monitoring techniques and protocols for novel contaminants in the aquatic environment using shellfish as markers (marine and freshwater);

3) Shellfish pathogens and parasites in the wild and captivity, and ways in which management can prevent or reduce associated impacts.

The means by which these themes are explored range from simple, standard laboratory tests to the discovery/elucidation of novel protein biomarkers. The ultimate goal of the Centre is to conduct highly applied research that has a positive impact on industry, society and/or the environment health, and in doing so promotes sustainable regional development. Staff at the Centre continually interact with stakeholders and development agencies to ensure that the most effective and suitable, maximized added value technologies and methodologies are evolved through a process that is supported by robust, peer-reviewed applied research output. Through these interactions the Centre aims to be highly responsive and reactive in identifying core knowledge gaps and the research pathways to obtaining solutions.

The success of the centre to date has recently been acknowledged by the addition of further laboratories to the centre (proteomics, cell culture, microbiology and mass spectrometry) and capital equipment including Q-PCR, 2DE electrophoresis optimizer, DIGE gel bio-imaging system and a Q-TOF mass spectrometer for *de novo* sequencing, post-translation modification and the profiling of biomarkers. The resources at the Centre are available for collaborative projects with applied/commercialization researchers from all HEI's (www.shelltec.ie).

For further details contact martin.robinson@gmit.ie.

CISET : CENTRE FOR THE INTEGRATION OF SUSTAINABLE ENERGY TECHNOLOGIES

As sub-zero degree Celsius temperatures persists and oil prices rebound upwards it is comforting to know that over 20 academic/technical staff and postgraduate researchers within GMIT's Centre for the Integration of Sustainable Energy Technologies (CiSET) are working to deliver low-cost, reliable and sustainable energy technologies for the future. Supported by the Institutes' 'Build Environment' strategic research theme, CiSET's mission is to 'minimise CO2 emissions through the research, integration and demonstration of cost effective and reliable sustainable energy technologies'.

CiSET explores sustainable technologies that encompass energy demand and supply for a range of applications that include the build environment (domestic and commercial) and other industrial applications, such as agriculture and aquaculture. CiSET recognises the need for improved system design to minimise the overall energy requirement and new technologies and methodologies to integrate the sustainable solution more effectively.

CiSET continues to build its research and demonstration infrastructure and by summer 2009 it will operate the following sustainable energy (demand and supply side) technologies:

i) automated weather station

ii) four-zone thermally insulated underfloor heating system

iii) air-to-air and compost waste-to-air heat recovery systems

iv) five different thermal energy storage (water, ground and phase change material) facilities

v) energy management and control system (aquaculture recirculation facility)

vi) two biomass boilers

vii) two 15kW ground-source and two air-source (5kW and 8kW) heat pumps

viii) four small scale (2.5kW – 15kW) wind turbines

ix) six solar photo-voltaic collector panels

x) twelve solar thermal (flat plate and evacuated tube) collectors.

These systems will be supported by data acquisition systems that enable continuous performance monitoring. CiSET researchers are pleased to provide further details of these facilities or indeed discuss future projects with potential industrial or academic collaborators.

Dr. John Lohan (john.lohan@gmit.ie), Dr. Thomas Roche (tom.roche@gmit.ie), Dr. PJ McAllen (pj.mcallen@gmit.ie), Dr. Oliver Mulryan (oliver.mulryan@gmit.ie).

Centre for the Integration of Sustainable Energy Technologies.

‘EYE’ on GMIT

GMIT PRESENTS SCHOLARSHIPS TO TWELVE FIRST YEAR STUDENTS

Galway-Mayo Institute of Technology (GMIT) presented twelve scholarships to first year students from counties Galway and Mayo, under its new Access Scholarship Programme.

The twelve scholarships comprise a substantial monetary component and supports for the duration of the student’s programme of study. They were presented to the students at a reception in GMIT recently hosted by GMIT President Marion Coy and attended by career guidance teachers from the students’ respective secondary schools.

GMIT Registrar Bernard O’Hara says: “The Institute is delighted, thanks to a private donor, to provide special Access scholarships this year. The geographical spread of the winners ranges from Belmullet to Oranmore and from Carna to Ballygar. We wish the students well in their endeavours and thank all the secondary schools for their work on the students’ behalf.”

GMIT President Marion Coy at the recent presentation of scholarships to twelve first year students of the Institute.

GMIT OFFERS NEW IRISH DEGREE IN OFFICE INFORMATION SYSTEMS AND ADMINISTRATION

The School of Business at Galway-Mayo Institute of Technology (GMIT) has launched a new BA degree i gCórais Faisnéise agus Riaracháin Oifige (Office Information Systems and Administration).

The new three-year programme will provide graduates with excellent written and oral skills, as Gaeilge, for management and administrative roles in a modern office environment. The course has a high information technology component and will also have a compulsory work placement in second and third year. All lectures will be delivered through the medium of Irish.

Larry Elwood, Head of the School of Business, GMIT, says: “The School’s decision to offer this programme arose directly as a result of the drive initiated by the Higher Education Authority (HEA) in 2006 to increase the supply of graduates with specific Irish Language capabilities. Funding has been provided by the HEA to provide the course which has an anticipated intake of twenty students.”

“Given the status of Irish as an official EU language and the requirements being placed upon public bodies by the Languages Act, the need for graduates who can conduct business through the medium of Irish combined with an in-depth knowledge of the modern office and business environment, is likely to grow over the coming years.”

For further details contact larry.elwood@gmit.ie

STUDENT LEADERSHIP (SIF II PROJECT)

GMIT is the lead institute implementing a major SIF II project on Student Leadership. The project was allocated over €2m in funding by the HEA last March. However, this amount was considerably reduced in the amount received for the first year of the project.

Student Leadership consists of two strands: ‘Student Led Learning’ in collaboration with Athlone Institute of Technology and ‘Curriculum Reform’ in collaboration with NUI, Galway.

Strand One: Student Led Learning (AIT partner)
This strand is centred on students’ engagement in their learning, their impact on the change agenda of the participating institutes and their longer-term leadership role.

Strand Two: Curriculum Reform (NUIG partner)

This strand aims to design a model for continuous curriculum development at institutional, programme and module level. This collaboration between GMIT and NUI, Galway will focus on the practical aspects of the implementation of Bologna and the National Qualifications Framework (NQF) in the two institutions.
The collaborators have different experiences and emphases to date and the focus will be on curricular reform and the related quality imperatives. Joint peer review of activities and learning from other sectoral partners will be an inherent part of the strand.

'EYE' on GMIT

Modularisation is a key strategic objective of GMIT and this project enables the institute to continue this transformation.

Progress to-date
Progress to-date has been impressive considering the project only began proper in October. This is attributed to the management structure, making a number of key appointments to the project and good working relations with our partners.

Considerable effort has been invested in setting up and piloting the PAL project with Athlone Institute. This programme will be piloted this term in four individual courses in each institute. Both students and staff are very excited about this new innovation. Following evaluation of the pilot PAL will be mainstreamed to all programmes commencing in September 2009. Further information on PAL is available on the AIT and GMIT websites (www.gmit.ie/pal).

GMIT developed and approved a common institute module called Learning to Learn (L2L) and this will be mandatory for all first years starting in Sept. '09. This module is quite novel as only the learning outcomes are prescribed in the module descriptor, allowing each discipline area to contextualize the delivery and content. The key rationale for the module is to ease the transition from second to third level.

An assessment seminar and workshops was held in December on innovative assessment methodologies which was very well attended and received positive evaluations. A staff development day to support the student leadership curriculum initiatives is scheduled for mid-February and is open to the partner institutions.

Progress is ongoing in relation to the introduction of an IT system to store, monitor and track changes to modules. This is important from a QA perspective but equally from a student engagement perspective it allows informed choice to be made in relation to electives for existing students and programme selection for prospective students. It also affords staff the opportunity to design new pathways to awards by having access to the complete module descriptors.

Planning has already started with NUIG on hosting a major conference in June on 'Curriculum in Higher Education and Assessment.' Progress is only possible with the support of staff and management. Fortunately this project is strongly supported by all stakeholders and will continue to achieve it's objectives as a consequence.

GMIT LETTERFRACK – BSC (HONS) IN DESIGN AND TECHNOLOGY EDUCATION

The Galway-Mayo Institute of Technology's courses in Letterfrack are run in partnership with Connemara West (a community and rural development organisation based in North-West Connemara). Since 1987, the partnership has managed and run programmes related to all aspects of the furniture industry. Currently the college has 234 full time students. GMIT Letterfrack is a very unique campus in the third level sector. Nestled in the heart of north-west Connemara the college has developed over the past 20 years into an internationally recognised educational centre of excellence for furniture technology, manufacture, design and conservation.

Programmes at GMIT Letterfrack have been designed and developed in response to the ever changing needs of the Irish furniture industry and all programmes include professional work placements as part of the programme syllabi. In 2006 however, this campus embraced a new discipline and launched a 4 year ab-initio programme entitled Bachelor of Science (Honours) in Design and Technology Education. This programme educates students to become teachers in the fields of post-primary technological subjects. It was developed in response to a demand for improvements in the confidence and ability of the current graduates to demonstrate the required knowledge, skills and competence to teach these particular subjects. The programme modules and syllabi have been designed to reflect the changes taking place in those subjects at second level, particularly in Design and Communication Graphics which now has a greater emphasis on design, sketching and computer modelling.

The first intake of students on the programme was in September 2006 and this group will graduate in October 2010. The programme incorporates intensive skills building in first year and education modules are introduced in the second and subsequent years. Students undertake micro teaching and undergo an 'Observation' week in second year, while two teaching practice blocks take place in the third and final year of the programme.

The programme has been strongly endorsed by many education stakeholders such as the Department of Education and Science, the National Council for Curriculum and Assessment, HETAC and the Techno Teachers Association, with whom the college has a close association. This is a hugely positive development, not just for GMIT Letterfrack, but also for the Institutes of Technology of Ireland as it is the first programme of its kind in the sector and it builds upon the strong technological aspects of programmes and expertise which already exist within the Institutes of Technology.

In September 2009 GMIT Letterfrack will also offer its first Higher Diploma in Education (Technology). This programme has been specifically designed to allow graduates of other programmes in Letterfrack to also qualify as teachers of technology subjects at second level. This programme is a twelve month programme and also incorporates two teaching practice blocks in secondary schools.

Samples of work from first year students