



# From the Editor

Dia duit agus fáilte romhat chuig an gcéad eagrán de Research Matters. If you're anything like me you're frequently intrigued to hear of the work researchers are conducting on our campus, but too often feel frustrated by the fact that you only ever get part of the picture.



Lindsay Deely, Editor

While opportunities to learn more about the work of our colleagues exist, there is still a disconnect between disciplines that hinders the collaborative community many of us seek.

Research Matters aims to change that. We want this publication to become a platform from which we can share ideas, meet collaborators, or just inspire one another. This publication is for you, and as such we want it to be not just *about* you but created *by* you. That's why we've enlisted the help of an Editorial Board with representatives from each of the five thematic research

priority areas to keep us abreast of developments across campus. We're also sharing the writing workload and have built a panel of contributing authors which we hope will grow over time. This first issue sees ten staff and students contribute articles.

We're proud of what we've accomplished in the past few months, and of this our first issue, but we know there is still plenty of work to be done. We have plans to develop greater platforms for communication of research information that will allow for dialogue and interaction. Developing an online presence that will allow us to share

news and information in real time, is one possibility that we're exploring. If you have other suggestions, please send them our way.

In order for us to achieve these lofty goals, we're going to need your help. So please get in touch- your feedback will help us evolve. We are the University, a dynamic community; let's create a magazine that reflects that!

## Opening up dialogue; request for feedback

“ There needs to be a good mix of stories from all levels ranging from the newest research students through to the longest serving professors. ”

“ Please don't print just email the link. ”

“ It must be inclusive and balanced and reflect the broad spectrum of research on campus. ”

“ Would like to see articles by researchers themselves rather than by non-specialist writers. ”

In every issue of Research Matters we'll post comments from our readers. Please share your thoughts, ideas, comments and criticism.

At the start of this process, we conducted a survey to gather your thoughts and comments on how we should proceed. Your responses were many and ideas varied. We've done our best to put some into action in this issue and will work toward achieving others over time. Here are some of your comments;

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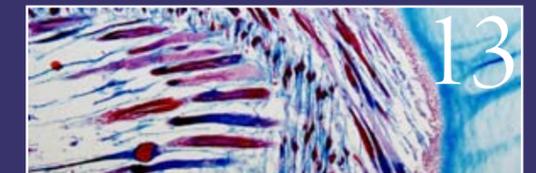
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# Harnessing the power of people

While we may not often stop to think about it, across a wide array of disciplines, and in a host of different ways, the staff and students of NUI Galway are helping to shape the future. Be it the development of new, more sustainable sources of energy, rapid tests for disease diagnosis or working to change policies to benefit the disadvantaged and those with disabilities, research groups across campus are changing the face of science, medicine, social science, the environment and more. But how often are we able to see our work have an impact on our local community? The Galway 2040 Initiative represents an opportunity to see our research put in to action right here in Galway city and county. Still in its infancy, this movement is at its core about harnessing the power of people to bring real change for the benefit of the future of this city.

Discussing the challenging position that Ireland and thus Galway find itself in, Galway 2040 Initiative founders Rory O'Connor, former Managing Director of HP Galway, and Paul Shelly, former President of the Galway Chamber, felt that they could moan about it or they could do something about it, "and we're of the do something about it school," smiles O'Connor. "I believe very strongly in the power of community, I don't believe that anyone really achieves anything on their own. But a community has to be willing to take responsibility for determining its own destiny." And that is just what the Galway 2040 Initiative wishes to facilitate. An evolving concept, the initiative commenced in 2010 and launched with a large public event in November. "But that was just the beginning of the conversation," explains Kevin Leyden, Honorary Research Professor of Social Science & Public Policy, CISC and a member of the 2040

steering committee. "We don't have all of the answers; we just want to get the conversation started and to include as many voices as possible."

A number of NUI Galway staff and researchers have already added their name to the list of volunteers, just as O'Connor hoped they would. "From the onset, we have looked to NUI Galway and GMT as leaders within the community. We want 2040 to be an evolving concept, one that will grow over time as more people lend their expertise. Ideas will flow from conversations as debate fertilises ideas."

Central to its aim is the initiation of a dialogue that will encourage citizens to look forward rather than back. As Leyden explains, "We want to set out a vision, directly influenced by the citizens of Galway city and county, of how they would like the city and region to be a generation from now. We want to get people thinking about possibilities for the future." The 30 year horizon of the project is not just deliberate, but inherent to its philosophy. "This initiative needs to be led in a selfless way," says O'Connor. "The community needs to think of the next generation. A 30 year time frame allows people to discuss possibilities that wouldn't be achievable in the short term, to dream of real change. I think we'll be surprised by how much we can achieve in just ten years if we don't limit ourselves. It's about shortening the odds to increase opportunities."

The Initiative has so far evolved into a series of pillars to cover sectors from Education to Marine and Energy, Galway Dockland Development to Agri-food Protection, Culture to Tourism. Prof. Terry Smith, VP for Research, is leading the Research pillar. "Our vision for 2040, in Research, is to harness and mobilise the

inherent creativity and inventiveness of our people living and working in the community; to enhance our community, environment, health and well-being; and to promote Galway as an attractive place to live and work." As future events are held and people step forward to voice their ideas or proposals, further pillars will be added.

So how can one get involved? "We want 2040 to be an organic, free flowing and indigenous movement. We aren't facing in to this with all of the big decisions already made; this is not a pre-packaged plan," says Leyden. "The key is to engage as many voices as possible, to really listen to the ideas and concerns of this community and to learn from one another." To that end, an event is being organised for NUI Galway staff and students to learn more about the initiative. It will be held on campus in the coming months.

Involvement in 2040 brings with it an opportunity to extend the reach of our research out to the community with the potential of having a meaningful impact on Galway. "We hope that colleagues at NUI Galway will help us by using their knowledge to affect change, to recognise the potential impact of their research and act upon it," says Leyden. The Galway 2040 Initiative provides an opportunity to be engaged; participation means a chance to provide direction to the movement. As O'Connor puts it, "it's a chance to throw a stone in the pond and get the ripples out there."

To learn more about to Galway 2040 Initiative and to get involved, visit their website at [www.galway2040.com](http://www.galway2040.com).

by LINDSAY DEELY  
Editor



“ We are making real academic and cultural partnerships that can impact and increase the resources, visibility and social solidarity of our institution. ”

PROF. NICHOLAS ALLEN

“ We are helping to alleviate human disease while also making a positive and long-lasting impact on Galway's dynamic medical device industry. ”

PROF. ABHAY PANDIT

“ Changes in society can be fuelled by innovation and research, but are always initiated within the community. ”

PROF. STEFAN DECKER

“ Ryan Institute research will help to promote Galway as an international maritime city with a strong focus on sustainability. ”

PROF. COLIN BROWN

The Galway 2040 initiative is a real chance for us all to work together to map our future and determine our own destiny as a city, region and a community. If we don't do it, who else will do it for us? Through the vision, leadership and stubborn determination of Rory and Paul, a start has been made to create the conditions and environment for Galway to become a city and region for families, communities and enterprises to thrive and grow together. But that's

all it is – a start. To achieve the Galway 2040 vision, we need participation in and contributions from a wide range of members of the community, interest groups, and stakeholders. The active participation of members of the NUI Galway community is very important given that we can provide leadership in a variety of areas, and use our expertise to improve our own community. To help determine the future for Galway and for your families, I would strongly encourage you to learn more

about the Galway 2040 initiative, and to find a way that you can contribute to this initiative. The benefits to the local community will in turn benefit our university, as a better Galway is in all our best interests. We can make a difference, but we need your help to do so.

by PROF. TERRY SMITH,  
VP Research

## Making history accessible online

The Digitisation Centre in the James Hardiman Library is engaged in digitising and making available items from the Library's Special Collections and Archives. The **Balfour Album** 1895-1896), comprised of photographs of Galway City and Connemara is one of the centre's recent projects.



**U**niversity calendars from the 19th and early 20th centuries were also recently made available online, along with the creation of an online exhibition of photographs from the **Shields Family Archive**. The centre houses three high spec scanners, one of which is the model used by Google Books and the only scanner of its type in Ireland. The other two scanners include a slide and film

scanner and another for scanning large format items and loose archival material.

The Digitisation Centre is committed to supporting research at NUI Galway. Current and past projects carried out in support of research include: digitisation of the Dublin Penny Journal as part of the Texte project at the Moore Institute, and digitisation of the Catholic Directory 1834-1878. This latter was part of

'The Correspondence of Paul Cullen (Irish Manuscripts Commission)' project. The project recently received a major grant from the Irish Research Council for the Humanities and Social Sciences.

by **FERGUS FAHEY**,  
Institutional Repository and Digitization  
Librarian, James Hardiman Library



## Introducing our Editorial board

**Eithne O'Connell**, Deputy Editor, Research Office

**Dr Sarah Knight**, Science and Outreach Editor, Ryan Institute

**Dr Meghann Drury**, Business & Social Science Editor,  
Centre for Innovation and Structural Change

**Dr Paul Kavanagh**, Science Editor, Ryan Institute and School of Chemistry

**Dr Patrick Lonergan**, Humanities Editor, Moore Institute and School of English

**Dr Paul Breen**, Engineering Editor, School of Electrical and Electronic Engineering

**Dr Jim Duggan**, IT Editor, College of Engineering and Informatics

**Sinéad Ní Neachtain**, Adviser, Press and Information Office

## Turning Waste into Power

A scanning electron microscope image of an exoelectrogen biofilm of nanostructured electrodes.

**S**oaring oil prices and the threat of climate change highlights the need to source sustainable alternatives to fossil fuels. Researchers in the School of Chemistry, NUI Galway are developing technologies which harness power from a unique fuel source - wastewater. The Biomolecular Electronics Research Laboratory (BERL), headed by Dr. Dónal Leech, are developing microbial fuel cells (MFCs), which use microbial degradation of wastes, to generate electricity. MFCs contain biofilms of special microbes, known as 'exoelectrogens', that act on organic compounds by stripping electrons from them and transferring these electrons to electrodes, providing electrical power, whilst degrading them into simpler, less harmful, products such as CO<sub>2</sub>.

Because MFCs employ naturally occurring microbes as catalysts, they could cost a fraction of that of chemical fuel cells, which use expensive platinum catalysts. Unlike chemical fuel cells, MFC versatility is based on microbial diversity, permitting use of a wide range of sources to

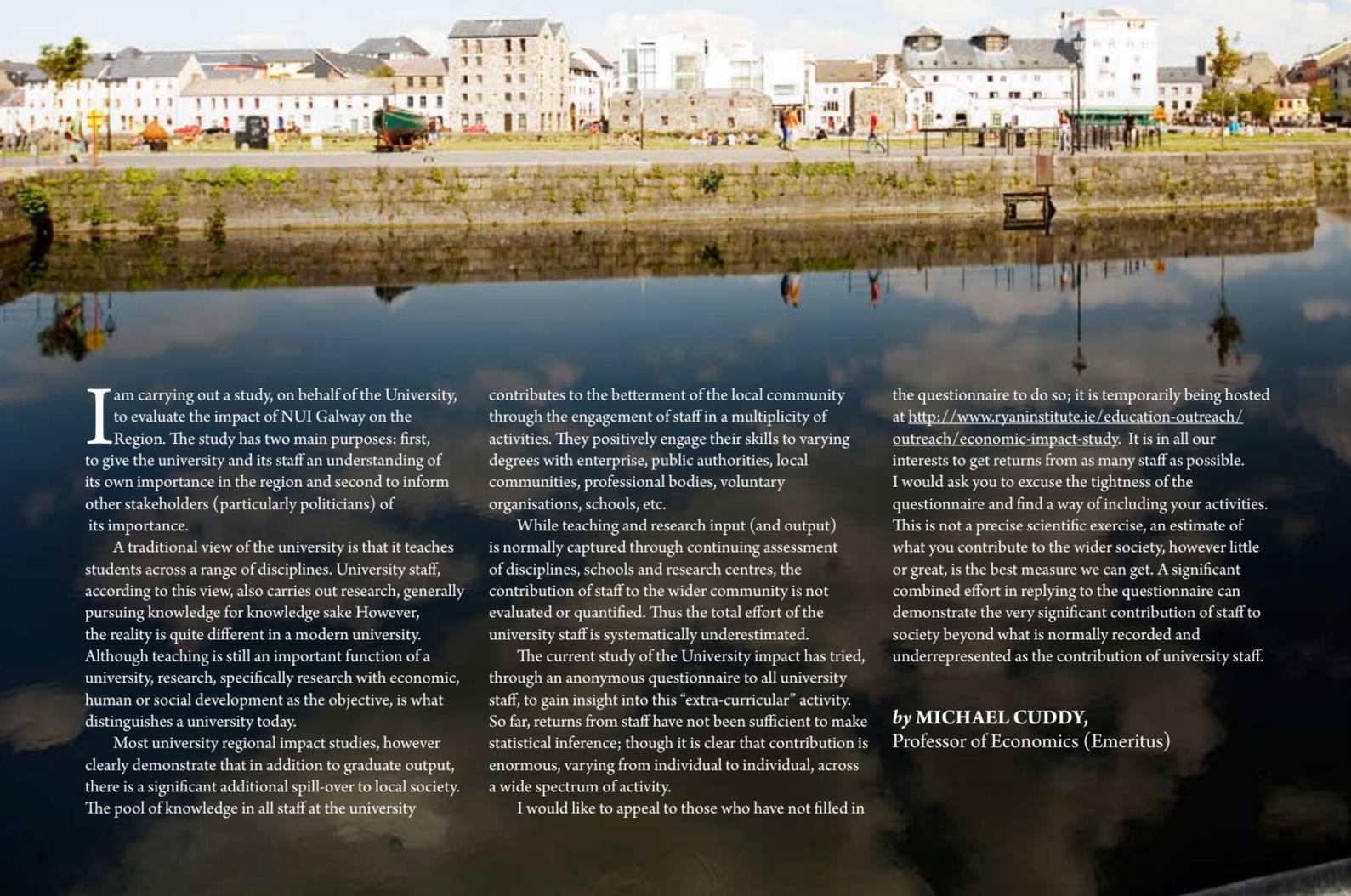
fuel the cell, with fuels as diverse as slaughterhouse wastewaters and grass silage effluent<sup>1</sup> already demonstrated by BERL, in collaboration with the Microbial Ecology Laboratory led by Prof. Vincent O'Flaherty. Research interaction with the School of Engineering has led to a 'proof of concept' MFC, capable of powering a fan using wastewater (video can be [seen here](#)). "This research, whilst still at an early stage, shows promise as a technology for waste degradation, or production of higher value chemicals from renewable resources, whilst conserving energy through electrical power generation" says Dr. Leech.

Recent research by the consortium, reported in the March edition of *Journal of Power Sources*<sup>2</sup>, has highlighted adaptation of MFC biofilms to low temperature environments, providing results that show promise for application of the technology in milder climates, without requirement for heating reactors to maintain power output. BERL research is also focused on attempting to unravel how biofilms transfer electrons to

electrodes, as the complex mechanism at the heart of the operation of a MFC is, as yet, poorly understood. Studies on cultivation of "exoelectrogenic" biofilms on electrodes, as recently reported on by BERL<sup>3</sup> can provide insights into MFC biofilm electrochemistry, leading to improved technology. It is envisaged that this research, supported by the EU and a Charles Parsons Energy Research Award (SFI), may lead to commercial opportunities in Ireland for sustainable energy recovery from wastes.

by **DR. PAUL KAVANAGH**,  
Charles Parsons Research Fellow,  
Biomolecular Electronics Research  
Laboratory, School of Chemistry  
& Ryan Institute

# As I See It: Regional impact of NUI Galway



I am carrying out a study, on behalf of the University, to evaluate the impact of NUI Galway on the Region. The study has two main purposes: first, to give the university and its staff an understanding of its own importance in the region and second to inform other stakeholders (particularly politicians) of its importance.

A traditional view of the university is that it teaches students across a range of disciplines. University staff, according to this view, also carries out research, generally pursuing knowledge for knowledge sake. However, the reality is quite different in a modern university. Although teaching is still an important function of a university, research, specifically research with economic, human or social development as the objective, is what distinguishes a university today.

Most university regional impact studies, however clearly demonstrate that in addition to graduate output, there is a significant additional spill-over to local society. The pool of knowledge in all staff at the university

contributes to the betterment of the local community through the engagement of staff in a multiplicity of activities. They positively engage their skills to varying degrees with enterprise, public authorities, local communities, professional bodies, voluntary organisations, schools, etc.

While teaching and research input (and output) is normally captured through continuing assessment of disciplines, schools and research centres, the contribution of staff to the wider community is not evaluated or quantified. Thus the total effort of the university staff is systematically underestimated.

The current study of the University impact has tried, through an anonymous questionnaire to all university staff, to gain insight into this "extra-curricular" activity. So far, returns from staff have not been sufficient to make statistical inference; though it is clear that contribution is enormous, varying from individual to individual, across a wide spectrum of activity.

I would like to appeal to those who have not filled in

the questionnaire to do so; it is temporarily being hosted at <http://www.ryaninstitute.ie/education-outreach/outreach/economic-impact-study>. It is in all our interests to get returns from as many staff as possible. I would ask you to excuse the tightness of the questionnaire and find a way of including your activities. This is not a precise scientific exercise, an estimate of what you contribute to the wider society, however little or great, is the best measure we can get. A significant combined effort in replying to the questionnaire can demonstrate the very significant contribution of staff to society beyond what is normally recorded and underrepresented as the contribution of university staff.

by **MICHAEL CUDDY**,  
Professor of Economics (Emeritus)

# Support Services News

The Research Office, the Institutional Research Officer and the Library are working together on a IUA SIF project which will allow access to an extensive suite of tools and resources (Irish National Citation Report) for strategic research analysis and reporting to support cross-institutional research, 4th level collaboration, institutional bench-marking, and planning and decision-making on a local and national level.

The Library also organise a 'Researcher Workshop Series' which includes information on Reviewing the Literature, Keeping up-to-date With New Research, Research Ethics and Getting Published & Disseminating Your Research. See the full programme of training events aimed at research postgraduates and post-doctoral staff here.

The Library is pleased to announce the recent acquisition of the following electronic resources which can be accessed via the Library catalogue: Papers Invited – a resource for identifying new calls for conference papers; and The Huston Archive – collection of director, writer and actor John Huston's papers and recordings was presented to the University in November.

## Featured Research Image: Clonmacnoise

This breathtaking image of the lower panel of the west face of the Cross of the Scriptures at Clonmacnoise was created by Dr. Thierry Daubos of the Moore Institute. The image was taken using the Polhemus FastScan handheld laser scanner and later processed using a wavelet filtering technique in order to enhance the details of the panel.



## Speeding up Diagnostics to save lives

When it comes to improving patient outcomes, few factors are as important as a rapid and accurate diagnosis. To that end, two biomedical science research groups are carrying out research to speed up the time it takes to get an accurate diagnosis on diseases from cancer to Group B Streptococcus.



The Glycoscience Research Group is developing future technologies that will enable fast and accurate analysis of glycosylation in blood samples from cancer patients. All cells and most proteins in blood are glycosylated, that is they are coated with sugars, and these sugars are known to be altered in many diseases, including cancer. High throughput technologies to analyse these altered sugars, or glycan biomarkers, will allow scientists to diagnose

different forms of cancer from a simple blood test without the need for biopsy. GlycoHIT (Glycomics by High throughput Integrated Technologies) will also further develop sugar testing technologies to allow this rapid form of diagnosis to be used in a clinical setting.

The Molecular Diagnostics Research Group (MDRG) has been developing molecular diagnostic tests for microbial species identification for over 20 years. These diagnostic tools enable the detection of a

range of bacterial pathogens including Mycobacterium tuberculosis, Group B Streptococcus (GBS), Staphylococcus aureus, and the food pathogens Listeria monocytogenes and Salmonella. One rapid test developed by the group can determine whether a woman in labour is infected with Group B Strep, which could potentially be harmful to the newborn if left untreated.

## Research in focus

A competition for budding photographers on campus, Research In Focus will showcase individuals' unique take on a given theme expressed through the medium of photography. The best submissions on each topic will be printed in the following edition of Research Matters.

The topic for the next issue is **Change**. Send a hi-res image, plus a sentence or two about what inspired your photo by Friday 8 July to [researchmatters@nuigalway.ie](mailto:researchmatters@nuigalway.ie).



## Tribute to Professor Anthony Moran

It was with great shock and sadness that the friends and colleagues of Professor Anthony Moran heard of his sudden and untimely death on the 30th of September at 49 years of age. A native of Westport, Co. Mayo, Tony was a B.Sc. and Ph.D. graduate of UCD, and was conferred with a D.Sc. by the National University of Ireland in 2006.

Tony joined NUI Galway in 1992 and held a Personal Professorship in Microbiology since 2005. Tony was the leader of the Infection and Immunity Cluster within the School of Natural Sciences, a PI in the Alimentary Glycoscience Research Cluster, and an Adjunct Professor at the Institute for Glycomics at Griffith University, Queensland, Australia.

During his career, Tony achieved international recognition in the biomedical sector of microbial glycobiology, as well as bacterial pathogenesis and immunity, especially for infections associated with important human and veterinary pathogens. Moreover, Tony was an expert in the areas of endotoxin research, infection- and immunisation-induced autoimmunity and vaccine safety. He had established productive collaborations with numerous colleagues across Europe, North America, Australia, and South Africa. His research standing was reflected through regular invitations to lecture and chair sessions at international conferences, to act as a book and journal editor, as well as an external assessor of research. His distinguished achievements were recognised by the Royal Irish Academy, to which he was elected as member in 2003. He was an active member of the European Helicobacter Study group, as well as a number of other prestigious national and international committees and he organised 3 international scientific conferences in Galway.

Collectively, Tony published over 500 scientific communications, including 180 peer-reviewed papers, 221 peer-reviewed abstracts and reports, 16 conference proceedings and 173 conference abstracts. In addition, he authored 25 book chapters, edited 4 books and was working on his 5th book. In addition to research, Tony

was extremely active in undergraduate and post-graduate teaching. He supervised to completion several M.Sc. students, as well as 2 M.D.s and 12 Ph.D. students. He had a further 4 Ph.D. students at various stages of training in his research group.

Tony had an immense capacity for work; he was passionate about his research and was dedicated to its development and his students.

Tony will be greatly missed by the NUI Galway community, and we offer our sincere condolences to his wife Mari, his daughter, son, and mother, and all his friends and colleagues. Ar dheis Dé go raibh a anam.

by DR. ANN RYAN,  
Research Office



# In the Community: Engineering a recreational cycling industry

Engineers in Civil Engineering, NUI Galway, have teamed up with the National Roads Authority (NRA) to develop guidelines for the roll-out of a National Cycling Network (NCN) across Ireland. This has the potential to help rejuvenate the Irish tourism sector while opening up rural Ireland to recreational and activity based holidays.

The main aim of this study is to focus on a major route corridor in the proposed NCN – the NS9 Galway to Clifden. Engineering and economic issues, such as route selection, design considerations and cost benefit analyses, will be examined. Best practice guidelines for the development of the NCN will be the end result of this work being carried out by principal investigator Dr.

Eoghan Clifford and graduate student Richard Manton.

The benefits of a NCN, as proposed by the NRA, are clear. Jobs would be created in the design and construction of these cycle-ways with ongoing employment generated in maintenance and upgrade works. Local tourism industries would be developed with opportunities for cyclist friendly lodgings along the NCN. Using existing pathways such as disused railway lines (the abandoned Galway-Clifden railway, for example) and canal tow-paths could also provide commuter cyclists close to towns and cities with safe and often shorter travel routes to and from work/college.

“It is well documented that cycling tourists in some European countries spend at least as much money, if

not more, than other tourists while on holiday,” says Dr Clifford. “Ireland is world renowned for her scenery and the NCN presents an ideal opportunity to exploit our natural advantage in a sustainable, environmentally friendly way.”

Fáilte Ireland recently found that in 2009, only 2 % of tourists (114,000) cycled while staying in Ireland. This figure is above 20 % in Germany and the Netherlands, adding credence to the quote from a famous film: “If you build it, they will come”!

by **EDMOND O'REILLY,**  
Postgraduate Researcher,  
Civil Engineering

# Engaging General Election candidates on equality issues

Stakeholder groups were recently given a unique opportunity to engage a number of General Election candidates who took part in a pre-election event organised by the Life Course Institute (LCI). As Professor Pat Dolan, Academic Director of the Life Course Institute notes “scrutinising party policies in relation to children and families, persons with disabilities and older people is critically important, particularly in a time of limited resources”.

The political spectrum was well represented at the meeting with all of the main political parties represented. Fidelma Healy Eames stated that “Fine Gael’s vision is for a just society” and that Fine Gael believed in taking a very strong pro-enterprise business approach balanced with “a strong social justice wing”. Derek Nolan stated that the Labour Party believed “that there should be a social floor for participation and rights” that no one should fall below that floor. He stated that the party was “committed to protecting current rights and as resources allow, to progressively raise that floor for everybody”.

Eamon O’Cuiv said that one of the challenges for disability payments “was to differentiate between the different levels of disability so that you could grade payments”.

Many issues were raised across the life course, including intergenerational conflict, the children’s rights constitutional referendum, the right to independent living in the community and direct payments for persons with disabilities. All of the candidates from the main political parties stated that they were committed to a constitutional referendum on children’s rights. The candidates for Fine Gael and Labour acknowledged the difficulties in delivering services across the life course due to fiscal constraints but stated that they were committed to the progressive realisation of rights.

Donncha O’Connell, School of Law and event rapporteur highlighted an acknowledgement by all parties that there were less resources available to the State requiring a more radical assessment of

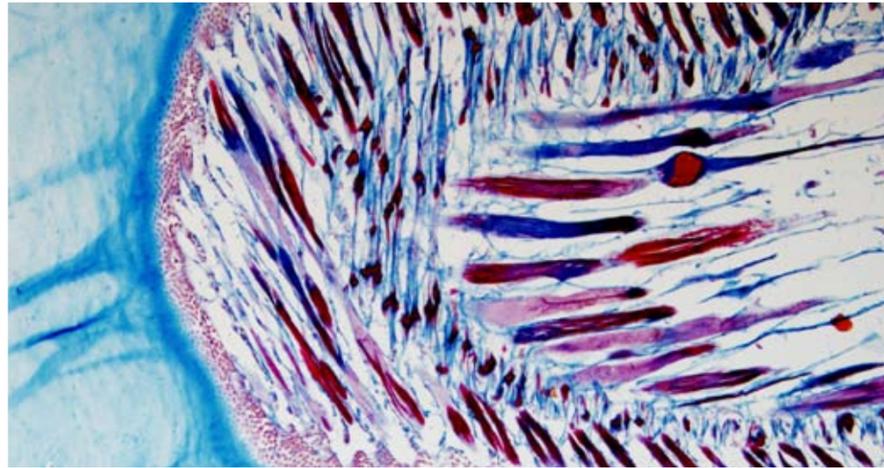
service delivery. He suggested the need to review the disproportionate concentration of power located in the executive and department of finance, which was disconnected from people and their needs.

The LCI comprises a multidisciplinary facility, which is intended to integrate and enhance the work of three existing centres at NUI Galway, the [Centre for Disability Law & Policy](#), the [Child & Family Research Centre](#), and the [Irish Centre for Social Gerontology](#). The Institutes recently prepared its inaugural [Critical Perspectives Paper](#), a statement of the major policy challenges facing the next Government across the life course.

by **CHARLES O'MAHONY,**  
Postgraduate Researcher, Centre  
for Disability Law & Policy  
& **MARY KEOGH,**  
Postgraduate Researcher, Centre  
for Disability Law & Policy

# Work in Progress: A Zoological Wonderland

Since the times of Aristotle people of science have tried to identify and explain the components of life. One field of this, zoology, developed as a result of chasing the proverbial rabbit down the rabbit-hole. Zoology contains five major fields of research; behaviour, anatomy, physiology, evolution and taxonomy.



The zoology department of NUI Galway has dug into these five major groups, employing far-sighted research teams in an effort to progress our understanding of nature.

Currently research at NUI Galway includes; the conservation of the Irish red squirrel, pine marten and European eel, elucidation of venom production in scorpions and centipedes, evolution and development in

frogs, centipedes and jellyfish, and the evolution of HIV and the emergence and transmission of drug resistance.

We have expanded away from the traditional major fields and groups are involved in obtaining extracts from organisms such as barnacles and sponges. They are being analysed for potential applications such as underwater adhesives and biochemical compounds. Zoological research in the past has provided many interesting

and insightful results, all kinds of wonderful ideas and applications have yet to be found down the rabbit-hole at NUI Galway.

by PAUL MCEVILLY,  
Postgraduate Researchers,  
Zoology, Ryan Institute

# Celebrating Success

The Director of the HRB Clinical Research Facility, Professor Francis Giles has been **awarded the Annual Saint Luke's Silver Award** by the Royal Academy of Medicine in Ireland. This is the highest honour bestowed by the Academy and Professor Giles is the first NUI Galway recipient.

Professor Peter McHugh from Mechanical and Biomedical Engineering, College of Engineering and Informatics, is the 2011 **recipient of the Silver Medal of the Royal Academy of Medicine in Ireland (RAMI)**. The coveted medal is awarded by the RAMI Section of

Bioengineering for outstanding career contributions to the field of bioengineering.

The **European Commission has appointed Professor Nicholas Canny** of NUI Galway to the governing body of the prestigious European Research Council (ERC). The ERC is the first pan-European funding organisation for frontier research. Professor Canny is the first person from Ireland to be appointed a member of the Scientific Council, the ERC's governing body.

A book by Dr. Niamh Reilly - Women's Human Rights: Seeking Gender Justice in a Globalising Age' has been selected as an **Outstanding Academic Title for 2010 by the American Library Association/CHOICE**. Niamh is a senior lecturer in Women's Studies at the School of Political Science and Sociology at NUI Galway.

# The Human Touch: NUI Galway's Future Olympian



Future Olympic medallists may be in the office right next door! Dr. Niamh Bhreathnach, Lab Manager in the Microbial Ecology Lab based in the Ryan Institute at NUI Galway, is currently training in Archery for the 2012 Olympic Games.

Niamh started Archery in 2004, and has since shot ahead in the field (no pun intended), receiving many honours in the sport. She has received 5 NUI Galway sports awards, and was the undefeated champion in the University intervarsity league 5 years in a row. She still holds the highest score and intervarsity record to this day.

Selected for the National Irish Archery Team in 2004, she has since represented Ireland in competitions in England, France, Germany, Holland and Croatia. The year she took up Archery and joined the National Team, she set her first National Record, and has broken it on 12 occasions since. For three years running, she has been the National Indoor Barebow champion, twice setting

new national records and National Outdoor champion for 2 years in a row, again setting new national records on both occasions. In 2009 she was ranked 10th in the world outdoor ranking and 1st in the world indoor ranking! In May of 2009, she was awarded the Galway VEC award for special achievements in her career and sport.

Clearly Niamh was called to this sport, but she is not single-minded in her pursuit of it. She is also a fluent Irish speaker, an accomplished traditional Irish musician in bodhrán and tin whistle, and a very dedicated researcher. When asked how she manages to maintain such a work-life balance she had this to say "Achieving a good balance between two things that you love to do is always a challenge! My daily lab manager duties as well as my research in monitoring microbial pathogens in water definitely keeps me on my toes but is hugely satisfying. As they say though, 'all work and no play....' Having a release in the form of Archery is something

I can do to switch off my academic mind and focus on something else. To reach this level involves years of hard work, dedication, a huge amount of focus and sacrifice but it's so worth it! The buzz you get from stepping onto that line, drawing back the bow and hitting the gold 70m away.... there's no feeling like it! I'm a very competitive person anyway and want to do well in whatever I do so aiming for the Olympics is a target I mean to hit! (all puns intended!!!)"

We wish Niamh the very best of luck!