

Welcome to the inaugural All-Ireland Conference for Undergraduate Research (AICUR), hosted by the Centre for Teaching and Learning and all University of Limerick faculties.

What is AICUR?

AICUR is just like any other academic conference but what makes it special is that the presentations will be delivered by undergraduate students showcasing research work they have done as part of their studies.

The main aim of AICUR is to promote and applaud the fascinating and worthwhile research work that goes on at undergraduate level. In multi-faceted ways, it supports and recognises the development of UL's Graduate Attributes: articulate, proactive, responsible, collaborative, knowledgeable, and creative. The conference is designed to give undergraduate students (from first to final year) from colleges and universities across Ireland the opportunity to present their research and discuss their creative accomplishments through posters, performances, demonstrations and oral presentations. The goal is to give undergraduate students from across the country the opportunity to present their research work at an academic conference. This year's participants are paving the way for all future AICUR events and should feel themselves pioneers, exploring the parameters of what undergraduate research in higher education can achieve.

We have carefully structured the programme to create interdisciplinary themes so that papers from different fields of study can come together allowing for, and encouraging students, and attendees alike, to interact with and learn from their peers across the academy. Apart from creating academic opportunities, we want to provide opportunities for a dynamic exchange of ideas as this is really at the core of AICUR. It is hoped that during the conference you will be able to meet and talk to undergraduate researchers and faculty across many disciplines and this, in turn, will provide an insight into how other disciplines approach research problems.

'By heightening awareness and creating dialogue, it is hoped research can lead to better understanding of the way things appear to someone else and through this insight lead to improvements in practice.'

Barritt (1986: 20)

The AICUR Steering Group  
Limerick, 2014



## AICUR Steering Group

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A very Special Thank You to the Deans and Faculties at the University of Limerick who contributed in many ways to the AICUR event.

The **AICUR Steering Group** would also like to thank our sponsors who have generously supported the AICUR awards.

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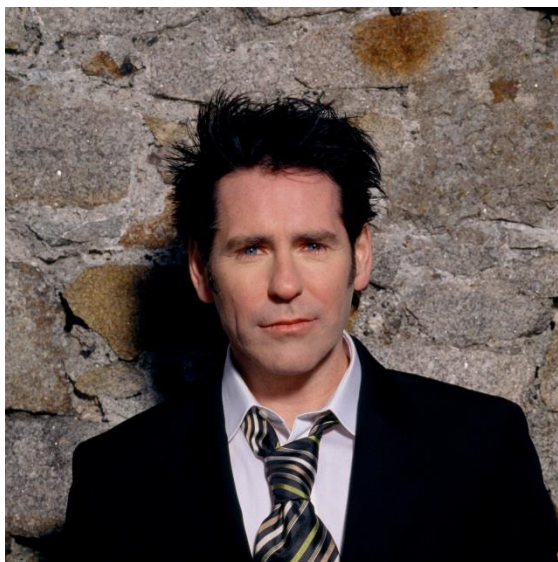
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## Plenary Speakers

### Dr Breandán de Gallaí

#### Biography



Dancer, choreographer and dance academic Breandán de Gallaí's involvement with dance is multifaceted. As a choreographer he has created several works, most notably *Nochtú* and *Rite of Spring*. In 2011, *Nochtú* completed a 5-week residency at the Irish Repertory Theatre in New York. On the back of this run the show was nominated for 2 Drama Desk awards, "Outstanding Choreography" and "Unique Theatrical Event". His second work, Stravinsky's *Rite of Spring* premiered at the opening of the Fleadh Fringe in August 2012 attracting 14,000 spectators. The work received a nomination for the coveted Allianz Business to Arts Awards (Dublin 2012). Breandán held the position of artist in residence at the Irish World Academy of Music and Dance in 2008/9.

As a dance scholar his interest lies in the contemporization of Irish dance. He completed a

performance-based doctorate in 2013, the first of its kind in Ireland. His PhD in Arts Practice title is - "Imeall-Siúl: A Choreographic Exploration of Expressive Possibilities in Irish dance". He earned an MA in Ethnochoreology in 2009, and was external examiner for the MA in Traditional Irish Dance Performance at the University of Limerick from 2004 - 2008. Breandán was acting Course Director of the Arts Practice PhD programme at the University of Limerick for 2012.

As a dancer, Breandán toured with Riverdance from 1994 - 2003, 7 of which in the position of principal dancer. His training is predominately in Irish step dancing, but is passionate about many dance genres and in 1988 he graduated from the Gus Giordano Dance Academy, Chicago, having been awarded a scholarship to study Ballet, Modern, Jazz and Tap dance.

Breandán's focus for 2014 is on his dance company *Ériu* and developing new Irish dance work which explores the Irish step dance idiom in a contemporary context. He is collaborating with director and writer Joe O'Byrne on his play "The Rising" which is due to tour Ireland in February 2014. They are also developing a new version of Wilde's "Salome" which will include both the text and dance. He regularly presents TV programs for RTÉ and TG4 and also holds a B.Sc. (Hons) in Physics.

### Presentation Title: The Arts Practice PhD: Navigating the Unknown

#### Abstract

This paper presents my intellectual, choreographic and performative experience in conducting a performance-based PhD, which followed a 15-year career as a professional dancer and choreographer. I was motivated to follow such a path by questions about the nature of my practice, one which seemed to be bounded within a strict tradition. These questions also seemed to be at times not immediately available to me, difficult to articulate, blurred and confused. The practice/research approach not only produced data and subsequently results, but also clarified those questions. It seems that the knowledge was embedded inside of me – in a way inscribed in my body, and was unleashed by this performative approach to my research. Being the first of its kind, this PhD venture was a rewarding one, but indeed was often fraught with uncertainty. The challenges associated with grappling with a relatively new approach to knowledge generation and research, are highlighted in the presentation.

## Tony Donohoe

### Biography



Tony Donohoe is head of education, social and innovation policy in IBEC. Following a career in business journalism, Tony has worked with the Confederation for over 25 years in a number of roles including publications editor and head of research and information services. He took up his current position in 2006. He is a member of the National Economic and Social Council, the Expert Group on Future Skills Needs, Business Europe Social Affairs Committee and the board of the European Centre for the Development of Vocational Training (CEDEFOP). He has also served on the boards of the National Qualifications Authority of Ireland and the Equality Authority. Ibec is the national voice of Irish business and employers, and is the umbrella body for Ireland's leading business sector groups and associations. It also provides a wide range of services to over 7,000 member businesses, representing over 70% of total private sector employment in Ireland.

## Presentation Title: What Are Modern Universities For?

### Abstract

Business is not the only, or indeed the primary, stakeholder in education. Clearly, the education system fulfils a vital role in society that extends well beyond the utilitarian one of satisfying enterprise's needs for skills or research. Universities are obviously a vital public good, making a crucial contribution to the intellectual, cultural, social and economic well-being of the country. However, if we are to have a partnership between business and education that will work, we should not view the requirement for employability skills and the cultivation of the intellect as some zero sum game. This paper attempts to demonstrate why this is a 'phoney' debate and how the objectives of higher education and business are more closely aligned than ever. It does this by looking at the concept of 'entrepreneurship' in a globalised post-industrial age, and its implications for the learning and research environment. It uses a definition of 'entrepreneurship' which suggests the creation of value that can be cultural, social or financial.

## Prof. Sarah Moore

### Biography



Sarah has researched and published in the areas of organisational behaviour, pedagogical innovation, academic professional development and on a range of topics central to promoting and enhancing teaching and learning in higher education. She has a strong commitment to developing creative and engaging learning dynamics between teachers and students. She has explored the process of academic development and uses what she has found to help academics, teachers, researchers and students to develop productive patterns of learning, innovation and professional development. Sarah holds an award for excellence in teaching, and has worked to develop a culture that supports and celebrates outstanding teaching and learning across all disciplines in higher education settings. Sarah has published several books and many journal papers

on academic and educational development including 'The Handbook of Academic Writing' (Rowena Murray) and 'The Ultimate Study Skills Handbook' (with Maura Murphy, Colin Neville and Cornelia Connelly) and 'New approaches to problem-based learning' (with Terry Barrett).

## Faculty Member Presentations

### How to Win a Nobel Prize!

Prof. Conleth D. Hussey, Dept. of Civil Engineering and Materials Science  
University of Limerick

#### Abstract

In its pursuit of truth, creative intelligent insight must defy and contradict current knowledge. The pervasive method of peer review of research proposals, and the channelling of research effort along well-furrowed ruts, therefore militates against the appearance of new truths. He shows that Nobel Prize winners, worthy of the title, have usually declared the irrational and the impossible, and gestated their activity in minimally funded clandestine work. He concludes with an audacious proposal for how UL might target and win the Nobel Prize in Physics.

### Becoming an academic: learning trajectories and associated challenges

Dr Ann MacPhail, Dept. of Physical Education and Sports Sciences  
University of Limerick

#### Abstract

On first entering my position as lecturer at the University of Limerick I had completed a four-year undergraduate programme, undertaken a short period teaching in schools, completed a research PhD and spent three years as a Research Associate, a privileged position that provided me a solid grounding in conducting research and writing for publication. Over the past eleven years as a lecturer and then Senior Lecturer at the University of Limerick I have engaged with the challenge of maintaining the dual roles of research, teaching and service as an academic in a higher education institution. I was Course Director for an undergraduate programme for five years before more recently becoming Head of Department. As reported elsewhere, there was no formalised professional preparation or induction into working in higher education as I transitioned from a Research Associate to working as a teacher educator in a university. Over the past eleven years I have sought and been provided with the opportunity to 'live' the experience of being an academic and, as a result, believe I have some understanding and appreciation of what being an academic entails. This ranges from my own practical learning experiences to distinguishing the most effective ways to design and deliver a meaningful and worthwhile student experience.

The aim of this presentation is to share my learning trajectories as an academic, discussing how interactions with university colleagues help inform what support structures and up-skilling is necessary to become effective, confident and competent members of an academic community.

## Student Presentations

### Parenting Interventions for children with Conduct Problems: A Literature Review

Oluwatoni Adeoye, Graduate Entry Medicine (University of Limerick)

#### Abstract

**Background:** The most common reason for child or adolescent psychiatric evaluations is conduct disorder. It is one of several externalizing behavioural disorders that are diagnosed in children or adolescents. This creates a great economic burden on society due to the long-term costs associated with behavioural disturbance and its sequel. Management involves parental training, childhood training, parental-child interaction therapy and/or teacher training. Current research suggests that parental training is the more beneficial option, hence the objective of this review to determine the most effective form of parental training.

**Methods:** Types of studies: Randomized controlled trial, pragmatic randomized controlled trials or quasi-randomized controlled trials meeting the inclusion criteria below were selected.

**Types of participants:** Parents of children less than 18 years of age who have been diagnosed with conduct disorder or have a score above the cut-off on standardised measures of conduct problems and aggressive behaviour. **Types of interventions:** All interventions must be based on behavioural and/or cognitive behavioural therapy. **Types of outcome measures:** Child and parental outcomes as measured by parental, teacher or independent observer reports and self-reports respectively.

**Results:** While all the parental interventions resulted in decreased problem behaviour, the decline was greatest and more likely to be sustained at the six month follow-up in a group based program compared to an online program. Additionally, there was a reduction in the use of primary care, hospital and social services.

### The Pure Drop Paradigm: An Account of the Development of Notions of Authenticity Within Irish Traditional Music

Ian Bascombe, BA Irish Music and Dance (University of Limerick)

#### Abstract

New, disappearing, and reappearing instrumentation has been a continual feature of the historical changes undergone by Irish Traditional Music, in part deriving from, and in part creating, a shifting hierarchy of instrument choice and preference by the 'traditional community'. These changes can be viewed as a fundamental element in accounting for changes in style and repertoire, and thus their study should form an essential part of stylistic analysis within Irish Traditional Music. This presentation poses the theoretical argument that a spurious paradigm of *authenticity* has impacted on instrument choice, style and repertoire and has thus served to marginalise developments within the tradition.

The development of this paradigm is traced by way of highlighting key historical processes and events: *Nationalism, Romanticism, The Gaelic League, Comhaltas, Globalisation and Modernisation*. The presentation concludes by suggesting that the spurious notion of *historical authenticity* may well in fact be in a dichotomous relationship with the fluidity, change, adaptability, and individual creativity that have been central features of Irish Traditional Music before and after the 'Revival'. Is it possible to imagine a challenge to the traditional paradigm of *authenticity* with a heteroglossic counter-agendum? Perhaps the quest for historical *authenticity* should be discarded in favour of a new strategy for defining the *authentic*?

What we should be looking at is not things – not songs, not tunes, not dances- but people singing, people dancing and people playing.”  
(Boyes 1999 p.43)



## “Deir m’anam” An t-amhránaí sean- nós Máire an Ghabha Uí Cheannabháin

Úna Canavan, BA Irish Music and Dance (University of Limerick)

### Abstract

The title of the paper uses a common phrase that *Máire an Ghabha* would always use when asked for a song. “deir *m’anam go ndéanfaidh*” translate to “on my soul I will”. This paper explores the life and singing of *Máire an Ghabha*, an iconic *sean-nós* singer from Carna, Co. Galway. Her son Michael, her grandchildren and great-grandchildren (including myself), all singers rooted in the *sean-nós* style, continue her legacy to this day. The paper will address issues important to the contextualisation of *Máire’s* singing, including ideas of place, repertoire (in particular religious repertoire) and transmission. Within these themes, the idea of *sean-nós* singing as a highly regarded art form will be engaged, focusing on the emphasis *Máire an Ghabha* put on connecting with the song and engaging with the story and the emotions within. The paper will include extracts from field interviews with family members who learned from her directly, as well as recordings of both her and her son Michael. It will also include relevant texts which outline her influence as a singer. As someone who is mentioned as contributing to the repertoire of iconic *sean-nós* singer Joe Heaney, as well as the strong presence of her descendants on the contemporary *sean-nós* singing world, *Máire an Ghabha’s* legacy will be examined and appraised.

## “It would be sweeter to kill him with her own hands than be parted from him”: An Analysis of the Influence of Gender and Class assumptions concerning Infanticide in Victorian Literature

Síofra Clancy, BA English and History (University of Limerick)

### Abstract

My research analyses the subject of infanticide in Victorian literature. Infanticide was a prominent social problem throughout the nineteenth century and reflections of this can be seen in the literature published at the time. My thesis is that certain assumptions concerning gender and class influenced these literary representations. In order to argue this the research has focused on three texts: *Esther Waters* (1894) by George Moore, *Adam Bede* (1859) by George Eliot and the short story ‘Wedlock’ by George Egerton. The project is divided into four topics: The Mother, the Victorian stereotype of the “Fallen Woman”, Psychological and Social Realism, and the role of the Child. I wanted to determine the similarities and differences within these three narratives and how this impacted the overall representation of the infanticidal mother. In pursuance of this I adopted an interdisciplinary approach with specific attention to the literary history of the topic. I found it beneficial to evaluate each of the texts in relation to the historical context within which they were published. This included looking at specific legal and social reforms taking place at the time and how this impacted contemporary perceptions of single mothers and infanticide. In conclusion, I found that writers such as Egerton, Moore and Eliot were influenced by gender and class assumptions. However, they challenged these assumptions by subverting the Victorian ideal of the maternal instinct and depicting a social system which condemned single working class mothers.

## Personal Identity: creation and reinforcement in social media and online communities

Emer Curran, New Media and English (University of Limerick)

### Abstract

It is generally assumed that social media home pages are direct representations of users' offline identities. However, many theories of personal identity suggest that individuals invest a certain level of impression management in performing their identity for others in face-to-face interactions. Therefore it is likely that individuals also manage and manipulate their identities in online settings, where they have greater control over self-creation and self-presentation. This undergraduate research study provides a theoretical background as to why individuals seek to express a complete identity, arguing that media, both new and traditional, serve to gratify this need. It then combines a quantitative and qualitative methodology to prove that users do not present an entirely authentic version of their identity on social media, but instead create an idealised version of their true self. This idealised identity highlights the individual's best attributes, but ignores those characteristics that would not win them social approval. The data collected also shows that individuals adapt their idealised identity according to the conventions of the platform they are using. This study contributes to the field of internet research, by providing further insight into the uses and gratifications of social media platforms. It also calls into question the ethics of online identities, perhaps prompting further research into internet ethics and behaviour.

## Míthuisicintí idir an Pobal agus Údaráis Logainmníochta i dTaobh Ainmniúchán Gaeilge Sráideanna

Ellen Curtin, BA Irish and Journalism (Dublin City University)

### Achoimre

Pléann an tionscadal seo an choimhlint agus na saincheisteanna a dtagann chun cinn i bhfeidhmiú polasaí sráidainmneacha Gaeilge. Le bunú an Choiste Logainmneacha ar an 19 Meán Fómhair 2013, tá rialúchán sráidainmneacha in Éirinn ag athrú. Tá sé mar aidhm ag an tionscadal seo léiriú a thabhairt ar an tábhacht a bhaineann le sráidainmneacha i gcaomhnú stair ceantair agus an tionchar a imríonn siad ar an tuiscint atá ag daoine ar an stair sin. Cuireann an tionscadal seo béim ar leaganacha Gaeilge de na sráidainmneacha a bhí leasaithe i gceantar na Saoirsí, i mBaile Átha Cliath, le blianta beaga anuas. Tá an taighde seo bunaithe ar fhoinse príomha, den chuid is mó; cáipéisí oifigiúla na Comhairle Contae, léarscáileanna de Chathair Bhaile Átha Cliath ó 1756, grianghraif agus cuntas ó staraí áitiúil san áireamh. Ceistíonn an tuairisc seo an tionchar a bheidh ag an gCoiste Logainmneacha ar rialúchán leaganacha Gaeilge na sráidainmneacha sa todhchaí agus scrúdaíonn sé iarmhairtí diúltacha an mhíchruinnis chomharthaíochta ar fhorbairt theanga oifigiúil na hÉireann. Tríd comparáid a dhéanamh idir a) leaganacha oifigiúla de na sráidainmneacha agus b) na leaganacha a fheictear ar an gcomharthaíocht agus na leaganacha atá in aigne an phobail, léiríonn an taighde seo easpa soiléireachta agus easpa leanúnachais i leaganacha Gaeilge na sráidainmneacha. Cuirfear an taighde i láthair i bhfoirm fise agus trí mheán na Gaeilge.

## Misunderstandings Arising Between the Public and Placenames Authorities on Street Name Translations

### Abstract (English)

This project examines the conflict and issues which often arise during the implementation of changes in Irish language versions of street names. With the establishment of An Coiste Logainmneacha, on the 19<sup>th</sup> of September 2013, placename regulation in Ireland is continuing to change. The objective of this project was to show the important role street names have in the preservation of a place's history and the influences street names have on how that history is perceived. This project looks at Irish language names for streets that have been amended in Dublin's Liberties area in recent years. The research draws upon mostly primary sources including official County Council documentation, Dublin city maps dating back to 1756, photographs and an account from a local historian. It questions what effect the newly appointed Coiste Logainmneacha will have on the implementation of Irish Language street names in the future and examines the negative consequences inaccurate signage can have on a the progression of Ireland's official language. By comparing a) the official names of streets with b) the names that appear on signage and names embedded in public consciousness this research highlights the lack of clarity and continuity in Irish language versions of street names. The research will be presented in video format through the medium of Irish.

## Expressing Alternative Masculinities: A Case Study of the Character of Chandler Bing in *Friends*

Rachel Dawson, Applied Languages (University of Limerick)

### Abstract

The aim of this sociolinguistic study is to explore how gender is constructed through language used in the media. It is a case study that focuses on the male character of Chandler Bing in the American television series, *Friends*. The theoretical premise of this study is that gender is culturally constructed and performed, and that language shapes notions of gender and identity.

The primary objective of the investigation is to assess how the character of Chandler Bing expresses an alternative masculinity through language. A polarisation exists in the way men and women talk in much of the literature written on language and gender (Coates 1993, Kiesling 2007). This study challenges the assumption of a dichotomous gender system and recognises the existence of alternative masculinities. This dissertation also investigates whether the construction of Chandler's gender pushes the boundaries of currently accepted hegemonic masculinities. The analysis makes use of two methodological tools, conversation analysis and social media analysis. The findings of this study illustrate that through a balancing act between the expression of hegemonic masculinity and resistant discourses, Chandler does construct and perform an alternative masculinity. While he restrains emotion at times, and uses language of power and dominance, he also employs alternative discourses including gender and sexual ambiguity, the expression of vulnerability and homosociality, self-disclosure and metrosexuality.

## The portrayal of Irish women in Contemporary Irish plays

Eve Dignall, B.A in Language and Literature (University of Limerick)

### Abstract

Irish feminist scholarship has grappled consistently with the "Mother Ireland" trope, which as Rebecca Troeger observes, has meant that: "any Irish woman who intends to write must consciously deal with the fact that women in Irish literature are often symbols for an abstract idea." (Troeger 1) Whilst the effect of literary tradition and gender on Irish literature such as poetry, novels and short stories has been widely researched and written about, it is very difficult to find a contrast between the portrayal of women, Irish women in particular, based on the gender of the author.

The aim of this research paper is to try and discover whether such claims can be applied to contemporary Irish plays, and whether it is only women playwrights who must be wary of using women as symbols. Another aim is to try and discern whether there are significant differences between how Irish men and women playwrights portray relationships between women in their plays.

In order to establish these aims a number of theoretical influences such as literary tradition, historical background, supporting research in other forms of Irish literature, as well the comparisons and contrasts in the texts themselves have been taken into consideration.

Through the use of these methods during research it has been established that not only do claims regarding the antagonistic relationship between Irish women writers and literary tradition hold true, but there is also a surprising lack of mother- daughter discourse in the plays written by women playwrights.

## Cloning of Prokaryotic Voltage Gated Sodium Channels

Kelly Dwyer, Industrial Biochemistry (University of Limerick)

### Abstract

Voltage-dependant ion channels (Na<sup>+</sup>, Ca<sup>+</sup> and K<sup>+</sup> channels) are important in carrying out higher-order specialised functions in mammalian cells. Voltage-gated sodium channels (NavCh) in mammals play a role in excitability of nerve and muscle and underlie hormone secretion. They are considered to be important drug targets as mutations in NavCh have been implicated in conditions such as epilepsy, seizures, chronic pain and ataxia. A study into sensory voltage gated sodium channels as potential drug targets in 2008 by A. Momin, reported that a gain-in-function or loss-in-function in NavCh leads to a gain or loss in pain sensitivity in chronic pain patients, respectively. The same report found that the development of subtype-specific NavCh blockers is a feasible approach to pain control; however, it was described as “technically challenging”.

This project involves the amplification of the DNA sequence encoding for a prokaryotic (bacterial) voltage-gated sodium channel using PCR and then subsequent introduction of the product into an expression vector using standard cloning techniques. The resulting vector will then be introduced into an expression cell line to carry out expression trials. This will involve growing the cell line under preferable growth conditions and inducing the production of the voltage-gated sodium channel protein with IPTG. The quality of expression will then be analysed using SDS-PAGE.

The overall aim of the research project is to determine the 3D protein structure of the prokaryotic Voltage-gated sodium channel, so that this data may be used to assist clinical trials.

## Aspects of Irish Music and Identity: The Experience of non-native Irish Traditional Musicians living in Ireland

Maria Eccarius, BA Irish Music and Dance (University of Limerick)

### Abstract

Irish Traditional Music is practised all over the world. A significant number of musicians have physically moved to Ireland to pursue their musical interest in traditional music. In doing so, many of these musicians have encountered an ethnic barrier while trying to become a fully acknowledged member of the Irish Traditional Music community. This project sets out to explore the experience of these musicians and the role of their Irish music practice in constructing their identities and how that relates to their own ethnic backgrounds. The research will draw on the context of how Irish Traditional Music became a part of the Gaelic nationalistic movements throughout history and how identity, authenticity and ownership is constructed around this. This study will also examine identity challenges of non-native Irish traditional musicians. It aims to investigate their experiences as outsiders or foreigners coming into the well-established Irish music community and how they construct their identities as performers from elsewhere. The research will also include autoethnographic reflections which will be compared and contrasted with other findings through interviews with other non-native Irish traditional musicians. The results may conclude that ‘foreign’ Irish traditional musicians forge new identities after coming to Ireland, which are a result of adaptation, expectations and experiences of exclusion or inclusion. Another result might be the affiliation of ‘mobile’ identities which depend on different situations and locations within the Irish Traditional Music community. This may also include artificial identities which differ completely to the ethnic identity of their home country.

## The Effects of Participation in Facebook, as a Virtual Online Community, on the Personal and Social Lives of Irish College and University Students

Grace Farrar, New Media and English (University of Limerick)

### Abstract

Facebook is currently one of the leading online social network sites that allow users to present themselves to an online audience and interact with other users. Existing research has outlined the popularity of the site in amongst adolescents and young adults (approximately 13- 29 years of age), in particular. These researchers examine how and why users interact with the site but significant knowledge gaps exist in the analysis of how Facebook participation has affected its users offline.

The purpose of this study is to examine how participation in Facebook has affected Irish college and university students' lives offline. The researcher identified three aspect of social and personal life that could be affected by the presence or absence of social media, these aspects were:

1. Ability to disclose/share feelings in face to face communication.
2. Ability to maintain friendships and personal relationships without social media.
3. Exploration and maintenance of personal identity.

The research methods used were a combination of qualitative and quantitative research, and two research instruments were used to gather data; a web-based survey and a semi-structured group interview.

The data collected from the research instruments highlights the importance of Facebook as a tool for users to present themselves to others in certain ways and the value of Facebook in communication. In general, participants reported that Facebook did not affect their ability to communicate offline, but merely provided an additional form of communication for when offline communication was not possible. In regards to their personal identity, almost all participants agreed that their Facebook pages are true representations of themselves.

## Nutritional Assessment of Collegiate Students

Hope Faulkner, Judith Mulcahy, Food Science and Health (University of Limerick)

### Abstract

The purpose of this study is to evaluate the nutritional status of college students and to gain an insight and understanding into their food choice and physical activity levels. Body composition, dietary habits, food choice attitudes, and physical activity were assessed from 40 collegiate students. Bioelectric impedance was used to calculate anthropometric (body) measures including body mass index (BMI), basal metabolic rate (BMR), weight, body fat, muscle mass and visceral fat. Participants recorded their diet for 3 days. Food portion size was determined using a food atlas. Dietary intake data was analysed using weighed intake software package (WISP) to determine average daily nutrient intakes. On average 13.22% of energy came from saturated dietary fats; exceeding the recommended saturate fat intake level of 10%. This may encourage unnecessary weight gain. Alcohol can also contribute to weight gain; on average 78% of participants consumed alcohol on a weekly basis with 33% consuming between 10-15 beverages in one sitting. In females, alcohol consumption was mainly from spirits with an average of 10 units consumed per sitting (518 calories). In males, beer was the alcoholic beverage most commonly consumed with on average 28 units consumed per sitting (1280 calories). This study showed that college student's attitudes towards health and nutrition can be influenced by variables such as gender and their chosen degree programme. Most college students are not meeting dietary and physical activity guidelines, suggesting the need for prevention interventions and increased understanding of food choice determinants which may lead to overweight in college students.

## An Exploration of Dance

Sarah Fennell, BA Irish Music & Dance (University of Limerick)

### Abstract

My practice based research topic deals with the process of identifying my personal performance style and creative identity. My research involves three main 'informants' of my dance practice to date. They include: Irish Dance, Yoga and Contemporary Dance. Through creating a solo piece that includes elements of these three forms of movement and dance, my aim is to further develop my creative process and interests as a dancer. I have started to record, analyse and reflect upon my approach to creating my dance piece. In addition, I have engaged in extensive research on the three forms of movement I am working on. The piece I am choreographing is a personal journey of movement. It is a combination of Irish dance step work, yogic sequential patterns and postures, and contemporary dance principles. I have taken techniques and motifs of a number of influential figures within the canon including the work of Colin Dunne, Breandán de Gallaí, Alan Kenefick, and Jean Butler as a means of acknowledging their influences within my own practice. In addition I have taken on board advice given to me by those that I have worked with in The Irish World Academy, including students of the MA in Contemporary Dance, Mary Nunan, director of the MA in Contemporary Dance, Dr. Olive Beecher, tutor of Movement Awareness of the BA in Irish Music and Dance, Ann Burke, my dance tutor on the BA, and Dr. Orfhlaith Ni Bhriain, Director of the MA in Traditional Dance Performance. This piece and thesis that informs it, embraces the idea that I have begun to explore dance in a way that interests me personally. I can identify aspects of my practice and acknowledge other dance practices and forms of movement that I have been exposed to and am curious about and this recognition has become an important reflective aspect of my developing performance practice.

## “You can’t say that!” - What is politeness and how does it affect cross-cultural communication?

Roisin Flynn, Applied Languages (University of Limerick)

### Abstract

#### What is politeness?

How is it possible that while I may consider something acceptable and therefore deem it polite, another person may find the exact same action, whether verbal or non-verbal, to be unacceptable or even downright rude?

The way in which we view the world is undoubtedly shaped by the culture in which we live in, which is why no one person perceives the world in the exact same way. From my time spent living in both an English-speaking culture, i.e. Ireland, and a Spanish-speaking culture, i.e. Spain, I have noticed differences in how people from these different cultures perceive politeness, what is deemed socially acceptable vs what is taboo and consequently what is meant to be “polite”.

#### So how does this affect cross-cultural communication?

Differences in realisations of politeness are a key consideration when engaged in any type of communication, especially when two different cultures come into contact. One must consider the ways in which their actions and/or words may hinder effective communication. This involves being sensitive to the cultural norms of their counterparts and taking these into consideration so as to avoid miscommunication and/or indeed offending the other party.

#### How do cultures differ?

Cultures can differ in both linguistic and non-linguistic ways, such as:

- Conceptions of time
- Body language/use of hand gestures
- Sense of personal space
- Use of formal addresses forms
- Use of slang/taboo language

Where is this relevant?

This topic is most relevant in the field of socio-linguistics, in particular pragmatics. In a more practical sense, this topic is hugely important for anyone who wants to engage in international business relations.

## **An Examination of Pre-Service Science Teachers' Perceptions and Attitudes Towards Educational Theory**

Liam Guilfoyle, Bachelor of Science (Education) in Biological Sciences with Physics (University of Limerick)

### **Abstract**

Educational theory is widely regarded as core and fundamental to initial teacher education. Internationally, teacher educators have lamented over pre-service and in-service teacher's lack of engagement with educational theory (Dewhurst & Lamb 2005). Ireland is no exception but views of pre-service teachers have not been widely explored here. The purpose of this research was to explore how pre-service teachers viewed, engaged with and utilised educational theory during their initial teacher education. A cohort of final year pre-service teachers was surveyed about their beliefs, values and use of theory. A selection of the cohort was also interviewed to further the depth of exploration. Pre-service teachers expressed a wide range of understanding of educational theory. The majority of participants expressed a belief that practical experience is the most important aspect of learning to become a teacher. Utilisation was reported to be somewhat limited and there appears to be a dissonance in the mind of pre-service teachers between their initial teacher education and the 'reality' that faces them in the school setting. Looking forward to their graduation, only a third of participants felt adequately prepared to enter the teaching profession. The Irish education system and schools were viewed by participants as being unchangeable, particularly as novice professionals, and the assessment driven culture is taken for granted. Strikingly pre-service teachers report, that despite their knowledge of teaching and learning, their own style of learning has remained unchanged and they continue to believe in and use a surface learning approach which admittedly permeates their teaching.



## The cause and effect of the absence of foreign languages in the Irish Primary School Curriculum and the role of the Modern Languages in Primary Schools Initiative

Lorraine Healy, Applied Languages (University of Limerick)

### Abstract

Ireland is one of few countries in the European Union that does not teach a modern language in its primary schools. Primary school usually lasts from approximately 6 to 12 years of age in most European countries. That being said, according to the widely debated 'age factor' in second language acquisition, after primary school, students begin to move outside the 'optimal' period for second language acquisition in relation to age. The aim of this project is to investigate if and how 'formal' instruction at an early age affects foreign language acquisition. The Modern Languages in Primary Schools Initiative (*MLPSI*) has been discontinued. The pilot project went on for 14 years and introduced modern languages into Irish primary education. This project attempts to highlight the advantages of an early start. Language learning at such an influential age may help develop positive attitudes to other cultures and keep xenophobia and prejudice at bay. The investigation focused on the observations made by teachers of their students' language competency. Interviews were conducted in a secondary school in Cork to gather teachers' observations of their first year students' performances in the target language. The resulting data displays the existence of a difference not only in language capacity while supporting the consensus that previous instruction in a foreign language is advantageous in long term acquisition (cf. Krashen, Long, Scarcella, 1979) but in classroom participation in terms of attitudes to learning, confidence in speaking and motivation.

## Player Choice in *Bioshock*: Morality and Gamified Ethics

Diarmuid Healy, BA New Media and English (University of Limerick)

### Abstract

In recent years there has been a rise in the numbers of video games which confront players with moral dilemmas which they must resolve. Moral education theories suggest that confronting such situations may have benefits for a player's moral reasoning and could strengthen their moral values. Current research has focused on the effects that different kinds of video game content might have on players. Very few publications have addressed the efficacy of the assertion that moral choices in games can aid players' moral development. Furthermore, the lack of evidence concerning the ethics employed by players to resolve these moral conundrums makes affirming such a claim impossible. This presentation will examine the moral dilemmas in *Bioshock* (2K Games 2007) and how players resolve these problems. This researcher found that there are several different interconnected moral quandaries presented to the player in *Bioshock* but very few players actually confronted these issues from a moral perspective.

## Spanish Accent Variation: A Matched-Guise Test Analysis of Attitudes towards the Various Accents Encountered in Castilian Speaking Spain

Jaimie Keating, B.A. Applied Languages (University of Limerick)

### Abstract

This particular research was undertaken in the third year of my degree and addresses people's perception of the various accents within the Castilian speaking region of Spain, i.e. the monolingual Spanish speaking areas of the country. A group of native Spanish speakers from geographically distinct parts of Spain, along with a number of non-native speakers currently participating in Spanish language education at third level, were examined in order to attend to attitudes towards both natural speech and the variety of Spanish used in educational settings. The aim of this analysis is to ascertain whether a particular accent is viewed more favourably when compared with representative accents from other regions with a view to addressing the area of inter-language prestige in mainland Spain, a particular prevalent area of interest for sociolinguists and sociologists alike. The methodology employed is based on the matched-guise technique, which acts as a manner of perception analysis by means of a Likert scale orientated survey requiring participants to rate speakers on a number of attributes pertaining to a range of characteristic categories having listened to pre-recorded speech in a number of distinct accents. Perhaps unsurprisingly, the Spanish language-learners' response reinforced the notion of prestige surrounding the standard variety of language, i.e. the variant used in educational settings. With regards to native Spanish speaking participants, whilst positive results relating to personal appeal indicate solidarity towards speakers from southern Spain, in most every other category, it is clear there are still strong stigmas attached to this linguistic variety.

## The Construction of Women in Popular Video Games

Tara Kelly, New Media and English (University of Limerick)

### Abstract

My study focuses on the construction of female characters in popular video games and their apparent lack of diversity. Women in video games have become a rare breed, despite making up approximately 50% of the world's population. Only 1 in 5 characters featured in video games are women, and only 11% of game developers are women. This lack of female contribution to character design has resulted in a male-centred perspective that actively constructs and reconstructs gendered stereotypes. This upholds the dominant hegemonic ideology of patriarchy and is counter-productive to the feminist case in establishing equality in all walks of life. This study deals with the performance of gender by these characters, and the various situations and clothing that construct the "damselled" feminine figure and her heroic, male counterpart.

The project arose from the realisation that the majority of academic material dealing with female representation in video games was largely conducted through secondary means. Minimal research had been done by academics who had actually played and enjoyed a video game.

I noted that while it is important to enjoy a piece of media, it is just as important that we, as consumers, remain critical of it. My research lead to Stuart Hall's encoding/decoding model and the consumption of media as a force whose meaning must be interpreted. The model acted as a means to conduct my research, where I conversed with both men and women on the portrayals of female characters in their favourite video games. At the end of the project, I had gathered sufficient evidence that gendered roles in video games do not impress gamers by any means. In fact, the stereotyping of women was listed as one of the most frustrating aspects of the storyline and gameplay.

## UL40 Bridging the gap between Undergrad and Postgrad

Shane McHugo, B.Sc in Production Management (University of Limerick)

### Abstract

In the initial stages of my UL40 research the lecturer Mr. Mooney wanted a student with a manufacturing background to investigate a means by which the process of Decellurlisation can be automated. During this time I was also given the task of researching biomedical devices such as competitor analysis, materials analysis, investigation of patents directly related to the devices and investigations into the human anatomy.

The aim of these tasks was to give a better understanding of how the devices being developed would be game changers once inserted into the market. The aim of automating the process of decellurlisation is to take out the human factor and thus eliminate human error giving more accurate results.

Most of the research I conducted was done using the internet as all the competitors publish articles and host seminars relating to their products. In the case of Decellurlisation multiple hours were spent in the labs dissecting pig aortas (Heart valves) and decellurlizing the tissue. Once the tissue was decellurlized we then had to complete a DNA analysis. This was done using a UV Spectrophotometric analyser, to show if DNA was present in the tissue and at what concentration levels.

From my time spent in the Materials and Surface Science Institute (MSSI) I was able to offer deliverables back to Mr. Mooney such as an in-depth product analysis of the various biomedical devices to help get them to market and a means of Automating the process of Decellularisation.

## A Mathematical Model of Facebook Application Growth

John McCarthy, Mathematical Sciences (University of Limerick)

### Abstract

A Facebook application is a self-contained piece of software designed for a specific task by third party developers and hosted on Facebook. These include games and applications to interact with websites and other third parties. Investigating the growth of applications on social media websites such as Facebook is important for a number of reasons. Industry and application developers wish to utilise information on how applications spread among social groups to maximise growth, popularity and profitability. Network scientists are also interested in how applications grow.

The aim of the project was to investigate if it was possible to generalise the growth of Facebook applications in general, but also based on their popularity. The data which was used was based on the growth of 2705 different applications over a period of 1209 hours (7 weeks). This data was supplied by collaborators J-P Onnela and F Reed-Tsochas [Proc. Nat. Acad. Sci. USA, 107, 18375 (2010)]. The total number of installations of each application was recorded at intervals of approximately one hour. The project focused on the activity over each interval which is defined to be the net growth over that time period.

Using a statistical model known as Auto Regressive Moving Average (ARMA) multiple appropriate models were proposed. These models were then compared with each other. The optimal model was selected based on several criteria.

We found that in general applications grew randomly and that very popular applications follow a MA(1) model, suggesting short-term memory effects are important in Facebook application installation activity.

## **Third Space Dance Solos**

Aisling Minogue, Rachel Horkan, Amy Walsh, BA in Voice and Dance (University of Limerick)

### **Abstract**

Our pieces were created from a fusion of our own personal interests and styles with contemporary dance. We each come from a different background including hip hop, African, and ballet. Throughout the class we all experienced a unique creative process which developed and expanded with the help of constructive feedback. The feedback structure we are working from is Liz Lerman's critical response. This process will be explained in depth by each of us after each performance. We will then open the floor to any questions the audience members may have.

## **The Tensions between the Baltic States and the Russian Federation: NATO and the E.U. Enlargement, Russian Speaking Minor Ethnicities, and Energy Hard Power Policies**

Hoa Nguyen, English literature and International Relations (Ulster University at Coleraine/ Wesleyan College GA, United States)

### **Abstract**

Estonia, Latvia, and Lithuania geographically lay right next to the Russian Federation, and to some extent, are buffered politically and militarily between Russia and the West. This research investigates reasons explaining tense relations between the Baltic States and the Russian Federation, as well as drafting a brief solution for the region. This report met these aims through an extensive study of literature and statistical comparisons. In conclusion, the Baltic States had rough relations with the Russian Federation due to three equally distributed elements: the control and punishment of Russian energy supply policies, the Russian speaking minorities' tensions with local people, and the insecurities and distrust since the Baltic States joined and were active member states of NATO and the EU. These reasons created a circle of tensions and retaliations as well as distrust between these states: Russia was not pleased with the Baltic States' policies, thus punishing the Balts. The Balts, consequently, were upset and responded to Russia by military exercises with NATO, thus causing deeper tensions and stirred up turmoil already existed domestically between the indigenous people and Russian speakers. Russia needs to realize that these Baltic countries are independent. Leaders in the Baltic States might want to consider policies agreed upon NATO Member states while still showing Russia some diplomatic respect so that the population, both local people and the Russian-speaking minorities, can live and cooperate together. That way, peace and security could remain, both at national and individual level.

## Development of Next-Generation Vanadium Redox Flow Battery Electrodes

John O'Donnell, BSc. in Energy (University of Limerick)

### Abstract

Due to the intermittent and non-dispatchable nature of renewable energy resources such as wind, there is a need for significant grid-scale storage to further increase the deployment of renewable energy technologies. One of the most promising storage solutions involves the use of vanadium redox flow batteries (VRFBs). VRFBs are ideal candidates for grid scale storage as they can offer greater grid stability and improved load shifting due to their fast reaction speeds and long operational lifespans.

VRFBs use two electrolytes,  $V^{II}/V^{III}$  in the negative half-cell and  $V^{IV}/V^{V}$  in the positive half-cell. The electrolytes are pumped through carbon felt electrodes in each half cell of the battery. This results in limitations in size and efficiency due to the relatively high pressures needed to pump the electrolyte through the electrodes. The pumping pressure required can result in damage to the cell walls or membrane. Furthermore, the power required to pump the electrolyte reduces the overall energy efficiency of the system. The development of 'flow-past' electrodes would significantly reduce pressure, while increasing efficiency, reliability, operational lifespan and the maximum size of VRFBs.

A key requirement for 'flow-past' technology will be improved electrode kinetics. Therefore it is essential to characterize the reaction kinetics of the carbon fibres which the current felt electrodes are composed of. This presentation will present an investigation into these fibres using scanning electron microscopy (SEM) and electrochemical techniques.

## Breacstaidéar ar bheartas teanga na Gaeilge

Jason Ó Faoláin, BA Applied Languages (University of Limerick)

### Achoimre

Is éard a chuireann an páipéar seo faoi bhráid ná spléachadh ar an mbeartas teanga a bhaineann leis an nGaeilge in Éirinn sa lá atá inniu ann. Cíoraítear tríd síos an ról a ghlacann an stát i gcruithú na hidé-eolaíochta i leith na Gaeilge. Déantar imscrúdú ar na modhanna uile ina mhúnlaíonn an stát meon an duine i leith na teanga agus i leith na mionteanga, ach go háirithe. Díreann aird ar mheicníochtaí uile an bheartais teanga agus na himpleachtaí a bhíonn acu ar mheon an tsaoaránaigh. Iníúchtar tríd síos an pháipéir an nasc docht daingean a mhaireann idir an náisiún, an beartas teanga, meon an duine agus cleachtais teanga. Cuirtear moltaí áirithe ó ghort na sochttheangeolaíochta agus fo-dhisciplín an bheartais teanga san áireamh ann freisin.

## Development of an Optical Monitor for the State-of-Charge of Vanadium Redox Flow Batteries

Marcus O'Mahony, BSc Energy (University of Limerick)

### Abstract

The availability and use of abundant renewable resources will reduce our dependency on imported fuels, and help meet our obligations under the relevant EU directives. Because of their intermittent nature, the efficient use of such sources requires energy storage methods to be employed. However, developing suitable storage poses significant challenges. Vanadium redox flow batteries (VRFBs) have emerged as a particularly promising means of such storage. Consequently, there has been an explosive growth internationally in this technology, both in Ireland and abroad. VRFBs are a type of flow battery in which the two half cells contain Vanadium ions in four different oxidation states. A unique colour is associated with each oxidation state of the Vanadium ions.

Several factors contribute to the development of an imbalance in concentration between the positive and negative half-cells, and hence a loss of capacity. Therefore, crucial to the efficient operation of VRFBs is the accurate determination of the state-of-charge (SoC) of both half cells. In this presentation, I will present a summary of the comprehensive investigation carried out at the University of Limerick into the spectroscopic behaviour of VRFB catholytes. This work lays a firm foundation of understanding for precise methods of optical monitoring of these flow batteries and I will present preliminary research into the construction of an in-situ spectrometer for the determination of the SoC.

## Environmental Cycles: Waste Utilisation in Biofuels production

Daniel O'Nolan, Industrial Biochemistry (University of Limerick)

### Abstract

Reduce, re-use, and recycle is the foundation of today's culture- an attempt to reduce greenhouse gases and their global effect. Fossil fuel use causes devastating effects on the atmosphere and alternatives must be sought. The basis of my work is to improve feasibility for current alternatives.

Biofuels are a renewable, green substitute to fossil fuels, derived from biomass. However, in order to be seen as a viable replacement, its properties and economic aspect must be improved. One method is to seek out uses for its waste streams.

For chemical industries, a consequence of eco-conscience is green chemistry. This looks to improve the industry's safety, economy, and environmental impact. Catalysts speed up reactions. Vastly important to the industry, a way of making them safer is paramount to the green chemistry initiative. Encapsulating these catalysts in a solid, permeable support system is a way of achieving this. This is known as heterogeneous catalysis.

Char, a waste stream of biofuels production, was used as the support system. This catalyst is then used in esterification reaction for the production of butyl-butyrate, a biofuels refiner. Through anaerobic digestion, microorganisms can break down waste into butyric acid and n-butanol, the precursors of butyl-butyrate. We will demonstrate how utilising char can develop a green cycle to further improve biofuels.

In 24 hour reactions, catalysts derived from the energy crop *Miscanthus x giganteus* and extracted cellulose applied for esterification showed competitive conversion rates compared to liquid sulphuric acid. This shows the potential profit found in waste streams of biofuels production.

## Electrical Energy from Synthetic Bone Minerals

Ciara Quinn, BSc. Energy (University of Limerick)

### Abstract

Bone has an amazing property called piezoelectricity, meaning that it can produce electricity when a pressure is applied. Every time we walk, jog or run, this electricity is produced and plays a vital role in the growth of bone and in repairing bone damage caused by day to day living. When bone in the body is unable to do repair, diseases such as osteoporosis can result making bone more prone to fracture due to a lack of bone mineral. Bone has two major constituents: bone protein (mainly collagen) and bone mineral. Bone mineral has been largely known as incapable of piezoelectricity, so the piezoelectric nature of bone is largely attributed to bone proteins. The amount of electricity that can be obtained from bone protein is small as it is not very stiff. On the other hand, bone mineral is stiff but is very weakly piezoelectric, so again, would produce very small amounts of electricity.

Synthetic bone minerals have been widely used in bone grafts and fillers but the piezoelectricity found there is rather weak. In my Fourth Year Project (FYP) work I have used a simple low temperature electrical polarisation that enhances piezoelectricity in synthetic bone mineral by about six orders of magnitude. A special form of sintering and crystal engineering was required to make this material easily polarisable. The energy that can be harvested from synthetic bone mineral treated in this way is three orders of magnitude higher than what can be harvested from bone protein's natural piezoelectricity.

## The challenges of modelling 1950's vehicles with modern computer aided design software

Alan Rochford, Seán Roche, & Edmond O'Donoghue, Mechanical Engineering (University of Limerick)

### Abstract

The project was carried out for ME4003 (Computer Aided Design), under the direction of Dr. Philip Griffin. The brief was to model any motorised vehicle with PTC Creo 1.0. The MV Agusta 60cc Monomoto Superleggera was chosen due to the unique appearance and the technical challenge posed in modelling design features of that era. The objective was to obtain a comprehensive understanding of PTC Creo 1.0 and to significantly expand existing computer aided design skills such as plane manipulation, surface modelling, mechanism assembly/animation and rendering. To develop existing knowledge of common mechanical systems such as: synchromesh gearboxes, internal combustion engines mechanisms, mechanical linkages and welded frame assemblies to an advanced level. Using images of the original machine, relative sizes of components were extrapolated and basic dimensioned sketches were produced. This allowed the components to be modelled in PTC Creo 1.0. A c.1960 MV Agusta motorbike engine design was used as a basis for the crank assembly. The three speed synchro-mesh gear box with barrel (drum) selector is a design common to many motorbike gearboxes. Images and a video of the model were rendered using Keyshot 4. The main challenge to be overcome in the course of the project was modelling a vehicle that had not been originally designed with any computer aided design. A significant challenge was observed when generating surfaces to match the hand beaten panels of the fuel tank as well as many parts unique to that era of vehicle design.

Notes





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