Ollscoil Chathair Bhaile Átha Cliath
Dublin City University

DCU





OFFICE OF THE VICE PRESIDENT FOR RESEARCH

# DCU Research Brochure 2011/12

# Contents

# Welcome from the Dean of Graduate Studies

## Dublin City University – a modern university with a focus on the future

*DCU's Graduate Studies Office was set up in April 2007 and is headed by Prof. Gary Murphy, formerly of the School of Law and Government. Prof. Murphy has been a member of the DCU community since 1993, is a specialist on Irish politics and a regular media commentator on Irish public affairs. The Graduate Studies Office consists of Prof. Gary Murphy, Dr Tracy Dixon and Mr Jonny Hobson.*

In its strategic plan *Leadership Through Foresight*, DCU set ambitious targets for graduate research growth as part of the Irish state's drive towards developing an internationally competitive fourth level sector. A key DCU initiative was the development of the institutional level Graduate Studies Office, which provides benefits to the whole graduate research population including a more structured and improved support system for our graduate researchers. Part of this involves putting in place specific disciplinary and indeed multidisciplinary advanced training programmes based primarily on our research strengths. This provides DCU with the opportunities for inter-institutional collaboration both nationally and internationally in relation to training networks for graduate researchers.

As part of its commitment to graduate research, DCU recognises outstanding achievements by those wishing to pursue a higher degree by full-time research through a number of schemes. In 2010, in order to honour the contribution of its founding president Daniel O'Hare, and to respond to a number of national strategic priority areas, DCU introduced a PhD research scholarship scheme, the *Daniel O'Hare Research Scholarships*, to fund research in the areas of Innovation; Sustainability; and Social Cohesion. Successful candidates are known as O'Hare Scholars and are paid a stipend of €16,000 for three years in addition to their fees.

DCU also funds a *Postgraduate Accommodation Scholarship* scheme. Up to five scholarships may be awarded (the deadline for applications is in July) to masters by research or PhD students who will be in their first year of study in September of that year. The scholarships consist of rental expenses in the Postgraduate Centre for one year. The Postgraduate Centre is a dedicated space for graduate research students and consists of leisure facilities and dedicated living accommodation space. The Graduate Studies Office also offers Graduate Research *Travel Grants* where each graduate research student can apply for a once-off €500 travel grant at any time in the period of his/her studentship which can be used to attend a conference or to travel to use external research facilities. We also administer internal scholarship schemes, help students with applications for funding from external agencies, and liaise with both internal and external bodies on behalf of our graduate researchers.

As part of its commitment to graduate research DCU library in November 2008 opened a dedicated space for graduate researchers – the *"Patrick J. Wright Research Commons"* – fully equipped with computers, printers, desks, a self-contained meeting room, and soft seating area. Students register online to gain access to this area. To ensure that the University is aware of graduate research student issues, the *Graduate Studies Board* which is responsible for policy formulation in relation to graduate research includes a graduate research representative ensuring student concerns are addressed. All four Faculty Research Committees also include graduate research representatives.

DCU has always been known for its personal touch and our Graduate Studies Office commits itself not only to excellence but also offers personal support and encouragement to all of our graduate researchers. We hope you enjoy your time here with us at DCU and if you have any queries do not hesitate to contact us.

**Professor Gary Murphy**
*Dean of Graduate Studies*

# Postgraduate Research at DCU

Candidates for a higher degree by research follow a directed programme of research for a prescribed period. This period will vary depending on the degree, on whether the candidate is studying on a full-time or a part-time basis and, in some instances, on the classification and content of their first degree. Provision also exists for research to be undertaken wholly or partly outside the University provided that suitable facilities and satisfactory joint supervision are available.

Candidates for a higher degree by research will be assessed on the basis of a written thesis and an oral examination.

## Postgraduate Research Degree Titles

The postgraduate degrees awarded by the University following successful completion of a directed programme of research are:

### PhD – Doctor of Philosophy

Traditional Model

Structured Model

### Professional Doctorate

DBA – Doctor of Business Administration

DPsych – Doctorate in Psychotherapy

EdD – Doctor of Education

DMusPerf – Doctorate of Music in Performance

### Masters Degree by Research

MA – Master of Arts

MBS – Master of Business Studies

MEng – Master of Engineering

MSc – Master of Science

LLM – Master of Laws

PhD – Doctor of Philosophy

## Entry Requirements

Prior to submitting an application, candidates must consult with the appropriate School on the proposed programme of study and must ascertain whether or not the School would be prepared to recommend their application to the Graduate Studies Board.

1.1 To register for a graduate research degree programme, a candidate must normally have obtained a primary degree classification (Level 8) equivalent to second-class honours degree, grade two, from an approved university or an approved equivalent degree-awarding body, or have an approved equivalent professional qualification in an area cognate to the proposed research topic.

1.2 Candidates with a taught Masters degree (Level 9) in an appropriate discipline with first- or second-class honours and candidates with a primary degree in an appropriate discipline with first- or second-class honours, grade one, may apply and be considered for direct entry to the PhD-track register and proceed towards a PhD degree. Such candidates will have to undergo a confirmation procedure after twenty one months research for full-time students (and at an appropriate corresponding time for part-time students). Such applications must be supported by the candidate's supervisor and will be subject to satisfactory performance in an oral examination conducted by a review panel within the student's school.

3.3 The form requesting the confirmation on the PhD register should be signed by the Head of School or appropriate nominee such as the Director of Research or Research Convenor within the School/Faculty and should include both a report on the oral examination and a general progress report on the candidate's research performance (as evidenced by a substantial body of work such as a significant written report). In determining whether or not such confirmation shall take place, the Graduate Studies Board will require evidence that the candidate's progress to date has been satisfactory and that the programme of research envisaged provides a satisfactory basis for work at PhD standard. If the outcome of the confirmation procedure is unsuccessful the student may, if appropriate, be invited to complete such research as will allow them to graduate with a Master's degree. In exceptional circumstances students may also be advised to reapply to transfer to the PhD register within a period of six months so that there is the option of the student transferring at a later date if the examiners believe there is real potential but that it is not possible to make a positive recommendation at the original transfer confirmation.

3.4 Candidates on the Master's register may apply for transfer to the PhD register under the same conditions, and using the same form, as PhD-track candidates requesting confirmation on the PhD register.

3.5 Students may appeal an unsuccessful confirmation or transfer result. The transfer/confirmation appeal should be dealt with by the Faculty Research Committee, and referred to the Graduate Studies Board only if not resolved by the Faculty Research Committee. The appeal should be made within 14 days of the written notification of the outcome/result. The appeal should be dealt with by staff members who were not involved in the original decision.

3.6 Candidates holding an appropriate Master's degree obtained by research may apply directly for a PhD degree in a cognate area.

3.7 In exceptional circumstances only, candidates for a Master's degree who do not meet the stipulated entry qualifications but who can demonstrate exceptional ability or aptitude for academic research may apply to pursue studies for a higher degree. Such candidates may be accepted by the Graduate Studies Board without a stipulation that qualifying taught modules first be undertaken; alternatively, one or more qualifying modules may be stipulated. The admission of candidates not holding prior degree qualification, cognate to the area of research being undertaken, shall be strictly limited and applicable in exceptional cases only. Such applications must be fully supported and endorsed by the School in which the research will be carried out and supervised. The onus will be on the sponsoring School and Supervisor to give clear reasons for their recommendation in such a case, and the Graduate Studies Board will make the final decision on entry.

## Period of Study

The period of study and research required by a full-time student will normally be two years for a Masters degree and three-four years for a PhD. When a candidate carries out the programme of research on a part-time basis, the period should normally not exceed four years for a Masters degree and six years for a PhD.

The part-time research format is aimed at facilitating graduates who are in employment and every attempt is made by the University to accommodate work, domestic and other commitments. Part-time students should investigate whether an employer will give financial assistance.

## Supervision and Progress

Each graduate student will be assigned an appropriate faculty member who will supervise and advise the student on a regular basis. Where collaborations have been arranged with another institution, an additional external supervisor from the cooperating institution may be appointed. It should be noted that continued registration for a higher degree is dependent on compliance with any special requirements which may have been prescribed by the University, either before or after initial registration, in addition to the submission of satisfactory annual progress reports.

## Categorisation of Candidate as EU or Non-EU

The designation of a candidate as EU or non-EU determines the fee levels to which they will be liable.

A candidate will qualify for EU status where they meet one of the following criteria:

(1) They are a national[1] of an EU member state and will be ordinarily resident in an EU member state for three of the five years prior to the commencement of the programme;

(2) They are a national of an EU member state and have received all their post-primary education within an EU member state;

(3) They have been in full-time employment in an EU member state for three of the last five years prior to the commencement of the first year of the course. This applies to candidates over the age of 23[2];

(4) They have been ordinarily resident in an EU member state for three of the five years prior to the commencement of the programme and their parents have been in full-time employment in an EU member state for three of the five years prior to the commencement of the programme. This applies to candidates under the age of 23[2].

All candidates are required to produce original documentation to evidence the above when they come to register at DCU for the first time. Copies of this documentation should be submitted with your application if available.

1 *A person is deemed to be a 'national' of an EU member state where they have:*

*a Birth Certificate or Passport or National ID Card from an EU member state*

*or*

*an Official Letter confirming Refugee Status in Ireland.*

2 *Before 1st January in the year prior to commencement of programme.*

## Evidence of Nationality (Criteria 1 and 2 above)

- EU passport; or
- Original Irish Birth Certificate; or
- Original EU Nationality Identity Card; or
- Official Irish Refugee Status (requires the appropriate original letter from the Department of Justice, Equality and Law Reform indicating that the appropriate status has been granted); or

## Evidence of Tax Residence/ Full-Time Employment (Criteria 3 and 4 above)

- 3 x P21 forms; and
- Work permit for three years, valid for the years of full employment; and
- Contact details of employer(s) where full-time work was engaged in for three of the last five years.

## Fees & Stipends

All matters relating to programme **fees** are dealt with by the Finance Office which can be contacted by email at: *fees@dcu.ie*; phone – 01 700 8836 (#8836); fax 01 700 8321 (#8321).

See *http://www.dcu.ie/finance/fees/index.shtml*

Alternatively, relevant staff can be reached at the numbers below:

### Fees Officer:

**Deirdre Kelly**

email *deirdre.kelly@dcu.ie* – tel. 01 700 5013 (#5013)

### Responsibility for Faculty of Science and Health:

**Marjorie Bacon**

email *marjorie.bacon@dcu.ie* – tel. 01 700 8786 (#8786)

### Responsibility for Faculty of Humanities and Social Sciences:

**Sorina Salveta**

email: *sorina.salveta@dcu.ie* – tel: 01 700 7079 (#7079)

### Responsibility for Faculty of Engineering & Computing:

**Ciara O'Regan**

email: *ciara.oregan@dcu.ie* – tel: 01 700 5153 (#5153)

### Responsibility for DCU Business School & Banking:

**Laura Masterson**

email *laura.masterson@dcu.ie* – tel. 01 700 8302 (#8302)

### Responsibility for Oscail/ Reception:

**Ciara O'Regan**

email *ciara.oregan@dcu.ie* – tel. 01 700 5153/8069 (#5153/8069)

### General Enquiries/Reception:

**Sorina Salveta/Ciara O'Regan**

email: contact email addresses as above.
tel: 01 7005153/7079 (#5153; #7079)
fax: 01 7005357

**Stipends** are processed through the Graduate Studies Office and are paid monthly in arrears into students' bank accounts.

### Contact Details:

**Jonny Hobson**

email jonny.hobson@dcu.ie – tel: 01 700 5136 (#5136)

## Postgraduate Research Studentships

In some cases, studentships are available and applicants are advised to discuss the possibility of obtaining a studentship directly with the school in which they are interested in undertaking research.

## Academic Regulations

The full guide on academic regulations for degrees by research and thesis is available at: *www.dcu.ie/info/regulations/postgraduate_regulations.shtml*

# English Language Requirements for Non-Native Speakers of English

In the case of all DCU applications, evidence MUST be provided of competence in the English language. The list below indicates the minimum standards in English language that should be met for entry into undergraduate and postgraduate courses at DCU.

| Examination | Level Required |
|---|---|
| Irish Leaving Certificate English | Ordinary Level Grade D3 |
| GCE A Level English Language | Grade D |
| IELTS | Composite score of 6.5 or above, with no less than 6.0 in any one component |
| TOEFL | 237 (computer-based)<br>580 (paper-based test) |
| Toefl iBT | Total Score of 92 |
| Cambridge Certificate of Proficiency in English | Grade C |
| Cambridge Certificate of Advanced English | Grade B |
| English Test for Academic and Professional Purposes (ETAPP) | Grade C1 |

In certain circumstances, results in examinations other than those outlined here may be accepted as proof of competence in the English language. This is the case, for example, for students who have successfully achieved Grade D or higher in examinations that are deemed by DCU to be the equivalent of GCE A Level examinations and for non-native speakers of English who have completed their education through the medium of English. Please include the details of any English language examinations and proof of successful completion when applying to DCU.

### English language requirements for Undergraduate and Postgraduate courses in DCUBS (Business School)

| Examination | Minimum entry requirements |
|---|---|
| IELTS | Overall score of 6.5 or above and 6.5 in writing and speaking. Other sections scores 6 or above. |
| TOEFL | Overall score of 580 or above and all sections scores 55 or above. |
| CBTOEFL | Overall score of 237 or above and all section scores 21 or above. |
| IBTOEFL | Overall score of 92 or above and all section scores 21 or above. |
| ETAPP | C1 |
| CAE | Grade B |
| CAP | Grade C |
| International Foundation Certificate | Optional one year programme for students with at least IELTS 5.5 or equivalent |

**DCU Language Services (DCULS), based on campus, offers English Language courses which may be of interest to international applicants. For further information, please refer to their website *www.english.dcu.ie***

# Student Services and Supports

## Banking Service

The campus banking service is provided by AIB Bank. The branch is situated in `The Street' in the Henry Grattan Building opposite the Registry. You can avail of a wide range of banking services, and the branch specialises in looking after student accounts. The campus bank is open each weekday at the following times:

10.00-12.30 and 13.30-16.00

Please note that each Wednesday the bank will open at 10.30.

There are three ATMs – one in The Hub, one in the Spar shop and the other at the entrance to the Henry Grattan Building, across from the main student restaurant.

## Bookshop

The campus bookshop, operated by Hodges Figgis, The Bookstore, is situated in the Hub.

During term time the bookshop will be open each day but the hours vary according to the time of year. (Any alterations to opening hours will be advertised on the main door).

In addition to the normal range of essential, recommended textbooks and general background reading, the bookshop also sells a wide range of course materials produced by the academic staff of the University.

If there are any requests or problems relating to textbooks or academic supplies in the bookshop, these should be directed either to Mr Simon Turner in the bookshop, the lecturer concerned or your class representative on the Programme Board.

## Car Parking

DCU has an on-campus multi-storey car park (Car Park 1). Access to this car park is via the Collins Avenue entrance. There are a total of 797 parking bays. Parking is available in Car Park 1 for staff, students and visitors and *should be organised and paid for in advance* unless you are using the car park as a visitor (in which case an hourly rate is charged – 24-hour car parking is also available). Staff and students can avail of discounted parking rates by buying "6 use tickets" from the car park office at the exit ramp *prior* to using the car park (ie. 6 entrances & 6 exits). These tickets are for 6 entrances & 6 exits, cost €7.00 and remain valid for 3 months. At present *annual* car park passes for Car Park 1 are not being allocated to staff or students who do not currently hold a pass.

For latest car park rates please visit *www.dcu.ie/info/regulations/parking.shtml*

Parking for students and staff in Car Park 2 and Car Park 3 is FREE (with staff/student card access). Car Park 2 is located beside the Henry Grattan Building (the crèche is in this enclosure) and Car Park 3 is located in front of the INVENT building. During term time these car parks are generally full from 9.15 am onwards. Any vehicles parked outside these areas are likely to be clamped with a release fee of €80.

Entrance to Car Parks 1 and 2 is via the Collins Avenue entrance only. Car Park 3 is accessed via the Ballymun Road entrance only.

Motorbikes and mopeds have the option to park in the multi-storey car park at an annual fee of €45. Bicycles on campus must be parked in the racks provided and not attached to railings, trees, lampposts, etc.

Address any queries to:

Estates Office Helpdesk –
Tel: 01 700 5336/5362 (#5336/5362)
email: *helpdesk.estates@dcu.ie*

Security Services (out of hours) –
Tel: 01 700 8990 (#8990).

## Catering Facilities

Trispace Ltd are the operators of the catering services on campus. Trispace is a company wholly owned by DCU.

The seven restaurants and cafes are located in the various parts of the campus. Wifi is available in all locations.

The menu is posted daily to the web and the opening times of the locations are displayed. A direct menu link is available from staff and student portals. The menus are annotated with symbols to help customers to eat in line with their dietary requirements. Trispace endeavour to cater for those with diverse food tastes within the parameters of widespread appeal.

1838 Club:
Located on the ground floor in the Albert College

Opening times: Monday to Friday 10:00-14:30

DCUBS Restaurant:
Located on the second floor in DCU Business School

Opening times: Monday to Thursday 10:00-18:30; Friday 10:00-15:00, Saturday 10:00-12:30

The ER Nurses Restaurant:
Located on the ground floor of the School of Nursing building

Opening times: Monday to Friday: 08:30-16:00; Friday 08:30-15:30

Invent Café:
Located on the first floor of the Invent Building

Opening times: Monday to Friday 10:00-14:30

Main Student Restaurant (includes Starbucks Coffee outlet):
Located between Henry Grattan building and Albert College

Opening times: Monday to Thursday 08:00-16:00; Friday 08:00-15:30

Zero One in the Library:
Opening times: Monday to Thursday 10:30-20:00; Friday 10:30-16:00; Saturday 10:00-16:00.

This restaurant may also open on Sundays during the exams.

Zest Juice Bar:
Located in the DCU Sports Club

Opening times: Monday to Friday 08:00-20:00; Saturday 10:00-16:00

## Clubs & Societies

There are currently over 100 clubs and societies on-campus which cover a range of diverse interests. Clubs refer to sporting activities, both recreational and competitive, whereas societies refer to the arts, musical, social awareness groups, political, religious and general interest groups. To see the full range of clubs and societies available at DCU visit *http://www.dcusu.ie or www.dcu.ie/studentsport*

## Crèche

DCU's on-campus crèche (Magic Days) provides a professional day-care service for infants and young children of students and staff. The fees for 2011/12 remain at the 2008/9 rate: €205 per week for babies up to age 1½ years (€888 per month) and €190 for toddlers/Montessori (€823 per month). The crèche opening hours are from 8.30-18.10 Monday to Thursday and 8.30-17.45 on Friday. You are strongly advised to make an early application if you want to use the crèche.

For further details on the crèche, Montessori (8.30-13.30) and After School (13.30-18.10) facilities, please contact Paula Murray at: Tel: 01 700 5200 (#5200).

## Information Systems & Services

The Information Systems & Services Department (ISS) provides computing and networking facilities throughout the campus for use by DCU students and staff. It also offers advice and support on the use of these facilities. As a student, you have access to computers located in laboratories throughout the campus. An increasing number of services available to you are delivered via the web, for example, personalised student portal pages, timetables, web publishing facilities and examination results. You also have personal access to general services such as email, the Internet, word processing, spreadsheet and graphics packages. Additionally, course-specific facilities are provided, such as mathematical and scientific processing packages and language development and business analysis tools. The University's network is directly linked to high-speed national and international networks, so you can access information, education and research resources available on the web. Access via Wireless technologies is available virtually throughout the entire campus. Student Computing Guides are published by ISS. The Student Advisory Helpdesk will also advise you on the use of the computing facilities and will sort out any problems you might have with them.

ISS Student Helpdesk is on the ground floor of the library, opening hours:

Monday to Friday 08:30-20:00;
Saturday 12:00-15:00

email: *iss.servicedesk@dcu.ie*

Tel: 01 700 5007 (#5007)

Check out the ISS website for further details:

*http://www.dcu.ie/iss/index.shtml*

ISS, located at the back of the Registry, also incorporates the Audio-Visual office.

To book audio-visual equipment including, portable screens, data projectors, camcorders and tripods, send an email to *iss.servicedesk@dcu.ie*.

Contact details:

*Iss.servicedesk@dcu.ie*

Opening hours:

08:30-17:30 all year round

## Library

The Library offers research students an excellent range of support services, facilities and access to world-class resources.

Research Support

The Library's team of Subject Librarians offer:

- Advice on the best scholarly resources available to meet your research needs
- Guidance on the use of the library's research databases and information management tools
- Information skills workshops as part of the university's graduate training programme
- One-to-one research consultations and training

Online Resources

DCU Library manages a world-class standard of online information and services. Research students have access to over 30,000 journals and over 100 databases, freely available on the DCU computer network and off-campus. The Library also manages DORAS, DCU's open access institutional repository of research publications and theses.

The Patrick J. Wright Research Commons

The Patrick J. Wright Research Commons is the Library's dedicated study space for researcher students and staff. This facility, located on the lower ground floor offers the following:

- PCs with full Internet access to the Library's electronic research resources
- 24 desks equipped with individual lighting and data/power points for laptops
- Wireless internet access for laptops
- A meeting room
- A printer and a scanner
- Lockers
- A lounge area with armchairs

Researchers must register online to get access to the Research Commons. For more information on this and all other aspects of DCU Library's research support, go to *http://www.library.dcu.ie/information/researchers/researchers.shtml*

## Registry

The Registry is responsible for the management and development of the operational procedures and activities relating to academic administration within the University including *student admissions*, *registration*, *student records*, *examinations* and *graduation*.

The Registry is divided into two teams:

The *Student Enrolment* team is concerned with all aspects of the enrolment of new and continuing students within DCU including the processing of applications and registrations on all programmes of study within the University. Changes to student registration detail (including biographical updates, withdrawals, internal transfers, change of module options and deferral of academic year) are also maintained. The team is also responsible for the management of the Student Information Area.

The *Student Awards* team is responsible for all aspects of the examination process, including examination timetables, invigilation and examination results as well as arrangements for the graduation ceremonies. The team also provides services for the University in the area of postgraduate research and external examiner administration.

The Registry is the only office in the University authorised to provide students with statements of results, transcripts of academic records and other forms of official documentation/certification required for national and state agencies. Contact the Registry at 01 700 5338 (#5338) or email *registry@dcu.ie*.

Opening Hours:

Monday and Wednesday –
Morning 9:30-12:30,
Afternoon 14:00-17:00

Tuesday and Thursday –
9:30-17:00 (open during lunch)

Friday – Morning 9:30-12:30,
Afternoon 14:00-16:00

## Student Centre – The Hub

The Campus Student Centre (The Hub) includes a number of leisure facilities, services and shops. These include two lounge/coffee-bar areas, a games room, a supermarket, travel shop, secretarial services bureau, a bookshop, a range of meeting rooms for Clubs and Societies and a large entertainment hall for live performances and discos.

# Student Support and Development

Student Support and Development coordinate and administer a variety of student-focused services and assists the University in the formulation of policy. It comprises eight units which include the Careers Service, Counselling and Personal Development, Disability and Learning Support, Inter Faith Centre, Health Service, INTRA, Sports Development Service and the Student Advice Centre. The existence of Student Support and Development underlines the goal of the University to provide a professional, integrated service to students. Visit *http://www.dcu.ie/students/index.shtml* for more details.

Key units that may be of assistance to Research students include:

## Careers Service

The Careers Service provides advice and guidance to students as well as information on careers and employment opportunities. It is responsible for facilitating the graduate employment programme whereby employers recruit graduating students and graduates. Please check the Careers Service website for further details: *www.dcu.ie/careers*

## Counselling and Personal Development Service

This service provides professional and confidential counselling addressing personal and social issues/concerns that hinder academic performance. These may include depression, lack of confidence or self-esteem, family issues, unexpected pregnancies, suicidal thoughts, addictions, rape, abuse, eating disorders etc.

The service is located in the Henry Grattan Building and operates by appointment. To make an appointment, phone Marie McNamara at 01 700 5165. For further details visit *www.dcu.ie/students/counselling/*

## Health Service

The Health Service is available to all students attending DCU and is located in the Henry Grattan building. The service is provided by a team of health professionals and the nursing service is available on an 'open door' basis throughout the working week. There is also an appointment system for clinics. The doctors are only available during semester time, while the nursing service is available throughout the year. To make an appointment, please telephone +353 (0) 1 700 5143. In addition to its own range of services, the Health Centre provides an information and referral service with respect to services and agencies in the larger community. Please check the Health Service website for further details: *www.dcu.ie/students/health*

## Inter Faith Centre

The Inter Faith Centre is the focal point of religion and spirituality on campus. The Centre is a place of hospitality for all denominations as well as those who are simply looking for a quiet space to relax. All are welcome to avail of the services offered in the Centre. Many student groups and societies meet here.

## Sports Development Service

DCU is committed to providing high quality sport and recreation opportunities for students through the Sports Development Service. The Service strives to ensure that the appropriate pathways are in place to allow students to develop and succeed in sport at whatever level they wish to participate. The Sport and Recreation Officer is responsible for the development of student sport, and coordinating initiatives to develop an active campus. For more information visit our website at *http://www.dcu.ie/studentsport/*

## Student Advice Centre

The Student Advice Centre provides information and guidance in many areas including clubs and societies, financial assistance, university services and childcare. It is located on the ground floor of the Henry Grattan Building and is open from 9.30am-5.00pm, Monday-Friday and is also open throughout lunch. Feel free to drop in, ask a question, use the Internet or browse the many free information brochures that are available.

## Contact Details

**Student Support and Development**

email: *student.support@dcu.ie*
*http://www.dcu.ie/students/advice*

# International Office

Staff in the International Office have been working with students from all over the world for many years and have built up a wealth of expertise in the area of international education. Students can call in to find out about intercultural events being organised on campus, find the answer to everyday queries which may arise when living in a foreign country and receive help with various aspects of their studies at DCU.

The International Office website provides a wealth of useful information for students planning to study in Ireland: *www.dcu.ie/international/index.shtml*.

## Opening Hours:

Monday-Friday: 9.30-12.30 and 14.00-17.00
Friday: closed at 16.00

## Contact Details:

International Office
Henry Grattan Building
Dublin City University
Dublin 9

Tel: +353 (0) 1 700 7411
email: *international.office@dcu.ie*
Website: *http://www4.dcu.ie/international/contact.shtml*

# DCU Sport

DCU believes in a "Sport for All" philosophy and to embrace this philosophy DCU Sport has a huge variety of facilities and programmes for students to choose from. DCU Sport is made up of University Sports Club, DCU Sports Grounds and our 5-a-side Soccer Centre. There is a Sport and Recreation Officer responsible for the development of student sport and for coordinating initiatives to develop an active campus.

The University Sports Club has a 25m deck level pool with additional spa facilities, a state of the art fitness centre with over 100 pieces of equipment, a three court basketball sports hall, a climbing wall, two squash courts and several studios. For scholarship students and top athletes we also provide the largest High Performance Gym in the country, including Hammer Strength equipment and over a tonne of weights. Club membership is available to DCU students for either the academic or annual year.

Our Sports Ground has six grass pitches for GAA, Rugby and Soccer. The pavilion houses changing rooms, referees' rooms and ExWell Medical.

Our Soccer Centre has six 5-a-side pitches for recreational games and leagues and a larger pitch for squad training. Included in this centre is a covered four lane 75m sprint track.

It is our vision to be the sporting university of choice in Ireland combining world-class facilities and service. DCU Sport is an $O_2$ Ability Awards winner as well as a white flag facility.

For more information please visit our website on *www.dcusport.dcu.ie*

# Accommodation

## Postgraduate Residences – 12 month licences

The Postgraduate Centre offers high quality accommodation for over 100 postgraduate students in the heart of the research community. The accommodation is arranged in combinations of two, three and four bedroom apartments (each bedroom is en suite). The majority of the accommodation is let as single bedrooms on a 12-month licence basis only. However, depending on availability, entire apartments can be let to small families.

Each apartment comprises a kitchen, living room and en-suite bedroom, fitted and furnished to a high standard. Bedrooms have study desks and internet access. The Centre also has facilities on the ground floor for the use of all postgraduates and researchers on campus, including a Seminar Room, Function Room, IT Room, Study Room and Games Room.

If there are no rooms available in the Postgraduate Centre, research students may be accommodated in College Park (undergraduate residences) before being moved to the Postgraduate Centre as rooms become available.

Keys are available for collection from 19th September 2011.
A number of rooms are specially designed for wheelchair users and students with disabilities do get preference in the allocation of other rooms.

For information on postgraduate accommodation contact:

## Contact Details

Derek May
Accommodation Coordinator, Campus Residences Limited
Tel: +353 (0) 1 700 5344
Email: *derek.may@dcu.ie* or *campus.residences@dcu.ie*
Website: *http://www.dcu.ie/accommodation*

## Off-Campus Accommodation

Lists of houses, apartments and house shares are available online from June until September at *www.findahome.ie*

For further information, please contact Campus Residences Limited:

Tel: +353 (0) 1 700 5344
Fax: +353 (0) 1 700 5777
*www.dcu.ie/accommodation*

# Disability Service

The DCU Disability and Learning Support Service was established with the key objective of promoting equality of access and opportunities in DCU for learners with disabilities, long term medical conditions and/or specific learning difficulties. The work of the Service is governed by this objective and since its establishment, the University has seen a continuous growth in the number of learners with disabilities studying in DCU and successfully completing their programmes.

The role of this Service is to ensure that people with disabilities experience equal opportunity and access in all areas of University life. The Disability Service provides a wide range of reasonable supports to enable students to complete their programme of study successfully. While these are based on individual need they may include some of the following: examination support, tutor assistance, assistive technology support or learning support for students with specific learning difficulties.

Detailed information on the services offered can be found at *http://www.dcu.ie/students/disability/index.shtml*

Students choosing to access these services are encouraged to make contact with the Disability Service as early as possible.

## Contact Details

**Disability and Learning Support Service**
Room LG18
Dublin City University
Dublin 9
Ireland

Tel: +353 (0) 1 700 5927
Fax: +353 (0) 1 700 8661
email: *disability.service@dcu.ie*
*http://www.dcu.ie/students/disability/index.shtml*

## Opening Hours

Monday-Friday: 09.15-12.45 and 14.00-17.15

## Postgraduate Research Programmes

# Application Procedures

## How to Apply

All our schools and research centres are committed to graduate education. In making an EU or non-EU application to full-time or part-time **postgraduate research programmes**, the candidate must consult with the appropriate School regarding the proposed programme of study and must ascertain whether or not the School would be prepared to recommend his/her application to Academic Council.

All applications to undertake postgraduate research studies must be made online at *www.pac.ie/dcu* via the Postgraduate Applications Centre (PAC) in Galway. Paper application forms are not accepted. Please see *http://www.dcu.ie/research/graduate_research/how_to_apply.shtml* for details of how to apply, FAQs, etc. Certified copies of the supporting documentation e.g. transcripts, CV, research proposal must be submitted to PAC within 14 days of completing the online form.

## Closing Dates

Applications for graduate research are accepted on a rolling basis throughout the year.

## Scholarships/Studentships

Please check the website of the School/ Research Centre in which you are interested and the Graduate Studies Office for details of scholarships and studentships that may be available.

## Application Fee

A non-refundable fee is payable for a complete application. The cost is €45 paid online with a €5 administration charge for offline payments.

## Assessment

Applicants are assessed and ranked based on their performance at university, and the details provided on their postgraduate research application. Candidates may be called for interview and/or assessed on the basis of written work/proposed area of research.

All potential research programme applicants are advised to visit the following web page to read detailed information on how to apply:

*http://www.dcu.ie/research/graduate_research/how_to_apply.shtml*

## Outcome of an Application

Applicants will be updated via email throughout the process. It is essential that your contact details are correct and current and your mail filters are set to receive email from pac.ie and dcu.ie. Please submit all relevant information and respond to any queries as soon as possible to process your application without delay. Please allow 2-4 weeks for your application to be processed.

# Applicants with Disabilities

Applicants with disabilities, a specific learning difficulty or a medical condition apply online through the Postgraduate Application Centre (PAC) *www.pac.ie*. Applicants have the opportunity to disclose their disability on their application, however it is not a mandatory requirement. Disclosure of a disability means that the Disability & Learning Support Service is made aware of the applicant's details and works to ensure reasonable supports are provided during their time in DCU.

No applicant will be disadvantaged as a result of disclosing information pertaining to a disability.

To access any of the supports on offer, registration with the Disability & Learning Support Service is required and students are strongly encouraged to contact the Service as early as possible.

For more information on the services and support available to students with disabilities, please visit: *http://www4.dcu.ie/students/disability/index.shtml*

## How to Apply – Quick Reference

**Postgraduate Research Programmes – Full-Time and Part-Time (All Applicants)**

| Category | Closing Date | Applicant Information | Contact Details |
|---|---|---|---|
| EU Applicant | Any Time | Apply online at *http://www.pac.ie/dcu*<br>**Note:** updates on application status will be issued by email | Registry, Dublin City University, Dublin 9, Ireland<br>Tel: +353 (0) 1 700 5338<br>Fax: +353 (0) 1 700 5504<br>*www.dcu.ie*<br>*http://www.dcu.ie/postgraduate-students.shtml* |
| Non-EU Applicant | Any Time | Apply online at *http://www.pac.ie/dcu*<br>**Note:** updates on application status will be issued by email | The Postgraduate Applications Centre<br>1 Courthouse Square, Galway, Ireland<br>Tel: +353 (0)91 549260<br>Fax: +353 (0)91 563056<br>**Opening Hours:**<br>9:30am-5:00pm |
| All Applicants | | *http://www.dcu.ie/research/graduate_research/how_to_apply.shtml* | |

- Non-EU candidates who are nationals in a non-EU state where a study visa is required will not be eligible for a visa for part-time or distance learning courses.

# Getting to DCU

DCU is just a short distance from Dublin city centre, Dublin Airport, and the M50 and M1 motorways. The campus is bordered by Ballymun Road and Collins Avenue.

## Public Transport

DCU is serviced by the following buses which stop outside the University at the Ballymun Road and Collins Ave entrances; or near to the University with stops on the Swords Road and Glasnevin Avenue.

Routes servicing DCU include: **3, 4, 11, 11A, 11B, 13, 13A, 16, 16A, 17A, 19A, 33, 41, 41B, 41C, 46X, 58X, 103, 104, 105** and **109A**

### Key to Bus Numbers

1. Numbers **4, 11, 11A, 11B, 13, 13A** and **19A** – to and from city centre
2. Numbers **4, 11, 11A, 11B, 13, 13A** and **19A** – to and from city centre
3. Number **17A** – from Kilbarrick to Finglas via Glasnevin Ave
4. Number **3** – to and from city centre
5. Terminus of route **16** – to and from city centre
6. Number **103** – to and from Clontarf Dart Station via Collins Ave

   Number **105** – to and from Malahide via Collins Ave (operates during semester time only)
7. Number **33** – to and from Balbriggan via Swords Road

   Numbers **41/41B/41C** – to and from Swords via Swords Road
8. Number **104** – from Clontarf Dart station to Cappagh Hospital via Swords Road

   Number **16A** – from Lower Rathfarnham to Dublin Airport via Swords Road
9. **Drumcondra Train Station**

   Maynooth Station to Drumcondra Station via Leixlip, Castleknock, Coolmine and Ashtown areas

   From Drumcondra train station, you can take the following buses to DCU:

   **3, 11, 11A, 11B, 16, 16A, 33, 41, 41B, 41C**

**46X** comes from Dun Laoghaire (7.30am) via Donnybrook, Leeson Street and Drumcondra.

**58X** comes from Shankill (7.30am) via Donnybrook, Leeson Street and Drumcondra, and the evening service departs from the airport at 5.10pm.

A number of the above buses also operate via the city centre with a stop on O'Connell Street:

**3, 4, 11, 11A, 11B, 13, 13A, 16, 16A** and **19A**

### Bus Éireann

**Number 100X** – Dundalk, Drogheda, Dublin via the Swords Road

**Number 101** – Drogheda, Balbriggan, Dublin via the Swords Road

**Number 109A** – Navan, Dunshaughlin, Ratoath, Airport, DCU

### DART

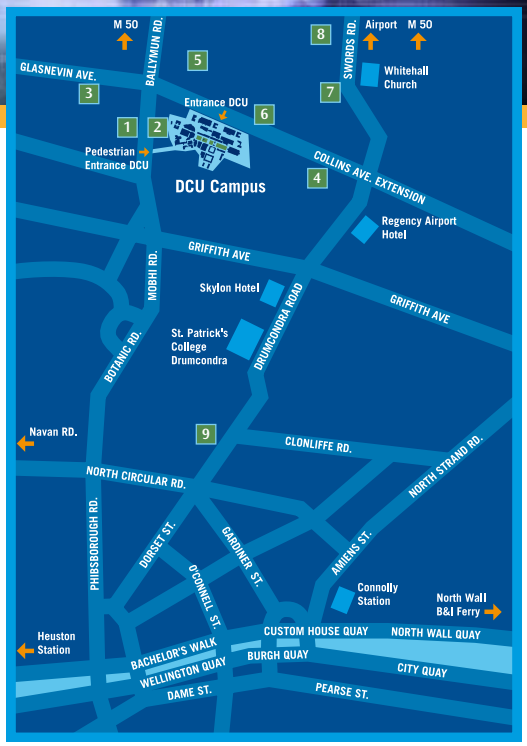
The terminus of the **17A** bus is at **Howth Junction Dart Station**.

The **103** and **104** buses operate via **Clontarf Dart Station**.

### By Car/Coach

#### M50 Southbound

Proceed along the M1 until you come to the roundabout that intersects with the M50 (Junction 3). Proceed along the M50 and take the Ballymun Road exit (Junction 4). At the traffic lights on the roundabout, take a left and drive through Ballymun. Turn left at the Collins Avenue/Ballymun Road crossroads (approx 500 metres). DCU is located to the right after the third set of traffic lights on Collins Ave.




#### M50 Northbound

Drive through the Westlink toll bridge and continue along the M50 until the Ballymun exit (Junction 4). At the traffic lights on the roundabout, take the third exit and drive through Ballymun. Then, follow the directions for DCU as outlined above.

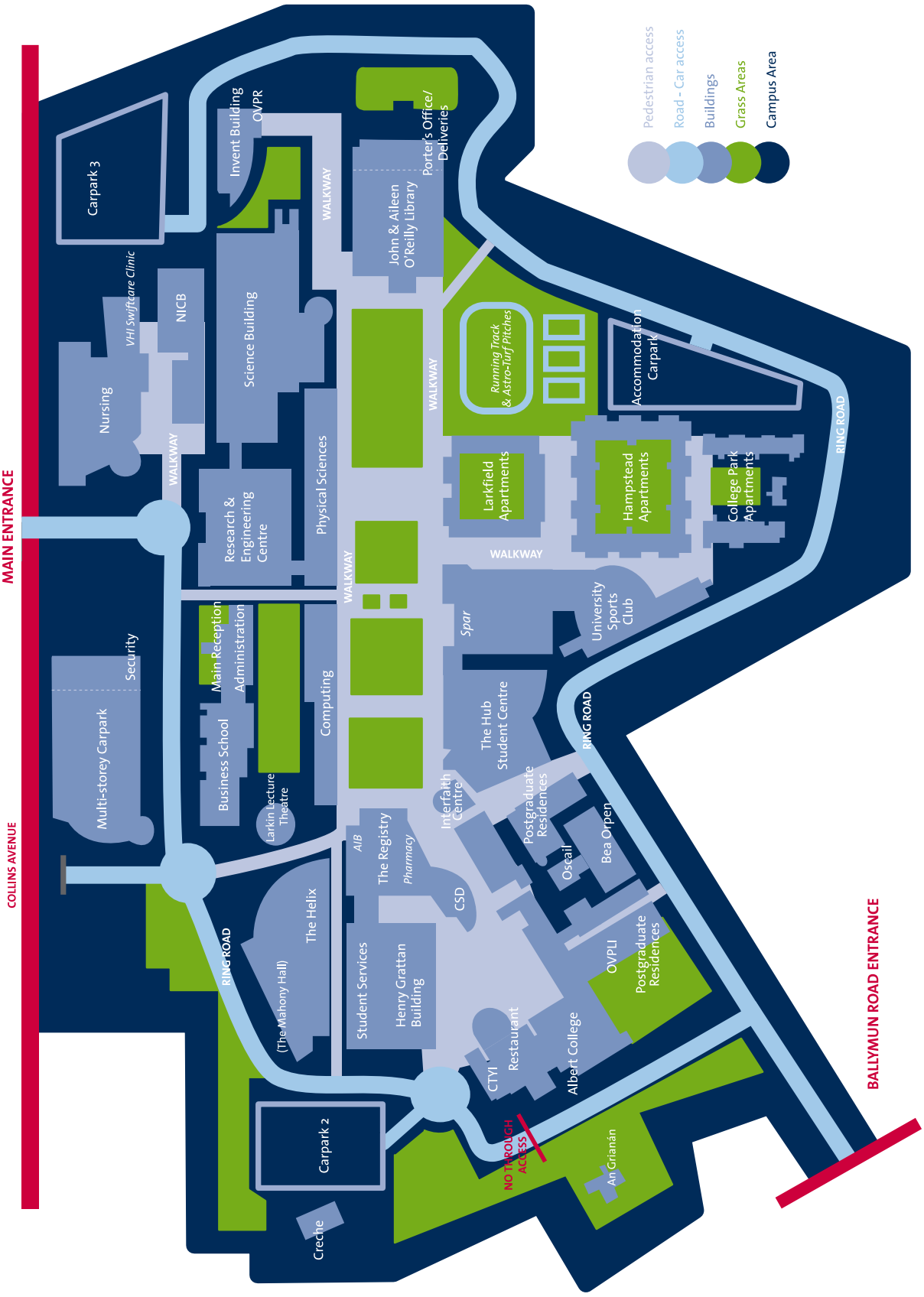
#### From City Centre

Follow the airport road, which takes you through Drumcondra along the N1, towards the M1. Continue past the junction for Griffith Avenue until you reach the junction at Whitehall. At this crossroads turn left onto Collins Avenue. Continue along Collins Avenue until you pass St. Aidan's CBS on your left hand side. DCU is located after the school.

For further information about transport links to DCU, visit *www.dcu.ie/info/get_to.shtml*

*Information about buses/trains and directions is correct at time of going to print.*

# Campus Map


Pedestrian access
Road - Car access
Buildings
Grass Areas
Campus Area
MAIN ENTRANCE
COLLINS AVENUE
BALLYMUN ROAD ENTRANCE
Carpark 3
Invent Building
OVPR
Porter's Office/ Deliveries
John & Aileen O'Reilly Library
WALKWAY
Nursing
VHI Swiftcare Clinic
NICB
Science Building
Running Track & Astro-Turf Pitches
Accommodation Carpark
RING ROAD
Research & Engineering Centre
Physical Sciences
Larkfield Apartments
Hampstead Apartments
College Park Apartments
Security
Multi-storey Carpark
Main Reception
Administration
Business School
Computing
Larkin Lecture Theatre
Spar
University Sports Club
The Hub Student Centre
Interfaith Centre
Postgraduate Residences
Oscail
Bea Orpen
AIB
The Registry
Pharmacy
CSD
The Helix
(The Mahony Hall)
Student Services
Henry Grattan Building
OVPLI
Postgraduate Residences
CTYI
Restaurant
Albert College
An Grianán
NO THROUGH ACCESS
Carpark 2
Creche

# Office of the Vice-President for Research

Established in 1997, the Office of the Vice-President for Research (OVPR) is responsible for the development of a vibrant research environment that supports the production of world-class research through the formulation, communication and implementation of research policy and strategy at DCU. It consists of two units: Research Support Services and Invent.

## Research Support Services

Research Support Services, in conjunction with DCU Invent, provide professional advice and support to staff and researchers at DCU with a range of activities associated with internal, external research funding and international collaborations.

The Research Support Services office:

- Represents research interests in decision-making on appropriate external bodies.
- Develops quality care procedures for the University's research effort.
- Establishes, implements and evaluates research promotion initiatives.
- Develops the physical and organisational research infrastructure at DCU.
- Provides ongoing support and advice to staff on research funding opportunities.
- Facilitates the operation of the University Research Committee, Research Advisory Panel and Research Ethics Committee.

Services provided include:

- Provision of information on internal and external funding opportunities.
- Management of internal funding opportunities.
- Liaison with all external funding agencies on behalf of researchers.
- Support and advice with preparing grant applications.
- Approval and submission of grant applications.
- Advice and assistance with costing and pricing research proposals.
- Preparing and/or supporting institutional proposals.
- Facilitation of discussions between researchers and potential industrial partners.
- Coordination of contract review and other legal requirements.
- Institutional research contract approval.
- Review and/or provision of Non-Disclosure Agreements, Material Transfer Agreements, Collaborative Research Agreements and Memoranda of Understanding.
- Establishing inter-institutional arrangements for the transfer of funds to research collaborators at other institutions.
- Advice and support throughout the duration of a grant.
- Provision of ethical approval process through the university Research Ethics Committee.
- Provision of management information on research.
- Provision of subsidised DCU Laboratory Notebooks.
- Audit liaison.
- Point of contact for external organisations seeking access to DCU Research.

The Office welcomes any general academic queries in relation to research, by email to: *research@dcu.ie*

For further information on the OVPR, visit: *http://www.dcu.ie/research/rss-about.shtml*

# Graduate Studies Office

The Graduate Studies Office, overseen by the Dean of Graduate Studies, provides support and advice on the strategic development of postgraduate research activities at DCU. It is also responsible for the administration of internal research funding, including postgraduate scholarships, and manages the Daniel O'Hare Research Scholarship, the Postgraduate Travel Grants and Accommodation Scholarships (open to research students only). The Graduate Studies Office also oversees the cross-campus Graduate Training Programme which provides both transferable and discipline-specific training opportunities for all DCU postgraduate research students.

The Graduate Studies Office is currently located in the Invent Building. Check out the Research website for information on graduate research and feel free to contact Jonny Hobson (*jonny.hobson@dcu.ie*; 01 700 5136 #5136) or Dr Tracy Dixon (tracy.dixon@dcu.ie; 01 700 7655 #7655) if you have any queries that you need help with.

## Postgraduate Scholarships

Details on scholarship opportunities can be obtained from the school or research centre in which you are interested in conducting your research. Information is also available from the Graduate Studies Office. Below are details for internal and external scholarship opportunities and funding.

## Internal Funding

### Postgraduate Accommodation Scholarships

Dublin City University, through its Postgraduate Accommodation Scholarships, recognises outstanding achievement at undergraduate level by students due to commence the first year of their Masters or PhD programme by full-time research at DCU. Up to **FIVE** scholarships may be awarded annually. Accommodation Scholarships consist of rental expenses in the Postgraduate Residences for one year starting in September.

The closing date for applications is 1 July each year. Applicants must also submit an online application to Postgraduate Residences by 1 July.

## Postgraduate Travel Grants

Each postgraduate research student (full-time or part-time) can apply for one €500 travel grant in the period of his or her studentship. Applications are accepted on a rolling basis throughout the year. For information on how to apply, please visit: *http://www.dcu.ie/research/graduate_research/scholarships.shtml*.

## External funding

### Irish Research Councils

Both the Irish Research Council for Science, Engineering and Technology (IRCSET) and the Irish Research Council for the Humanities and Social Sciences (IRCHSS) offer a number of graduate opportunities each year.

IRCSET has one call per annum with a deadline in February. Applications are made online and results are published in April/May. For further information on the Postgraduate Scholarship Scheme visit: *http://www.ircset.ie*

IRCHSS has one call per annum with a deadline in January for commencement in October of that year. For further information on the Postgraduate Scholarship Scheme visit: *http://www.irchss.ie*

For further information on the Graduate Studies Office, visit: *http://www.dcu.ie/research/graduate_research/index.shtml* or email *graduate.research@dcu.ie*

# Invent – Transforming Knowledge into Commercial Success

DCU students with entrepreneurial flair have the opportunity to transform ideas into successful businesses in a state-of-the-art innovation and enterprise centre. Invent is a groundbreaking centre for innovation, a catalyst for technology transfer, providing a dynamic knowledge environment for entrepreneurs. It is responsible for the management of the University's research based Intellectual Property, as well as its commercialisation through technology transfer, licensing and the creation of campus companies. It also manages the Innovation & Enterprise Centre located in the heart of the campus.

Specifically, Invent offers:

- Concept development deskspace
- Business units of flexible size to meet the needs of start-up companies
- State-of-the-art telecommunications infrastructure
- Professional support covering financial, legal and business advice
- Direct linkage into University facilities and resources; research laboratories, library and computer facilities
- Central reception and office services
- Specialist centres and support programmes for enterprise development, technology transfer, innovation and industrial liaison
- Conference and meeting facilities

For further information visit the Invent Centre or contact: *maeve.freeman@invent.dcu.ie* or visit our website at: *www.invent.dcu.ie*

# Research Strategy

Dublin City University's Research Strategy for the period 2009-2014 maintains, and builds further on our strategic prioritisation of translational research and support for our critical mass research teams through targeting of enhanced facilities, strategic alliances and structured graduate programmes. The strategy emphasises the importance of enhanced external impacts of our research in terms of knowledge transfer and commercialisation.

The strategy for 2009-2014 continues our consolidation of our research strengths within the context of the overall national framework. It recognises the challenging external environment arising from the recent dramatic deterioration in national finances and the emergence of key global challenges. This requires a targeted strategy delivering greater short-to-medium-term impact and with a clear focus on value for money. The strategy document provides information on achievements to date which evidence the university's research track record and underpin its clear commitment to delivering on its future objectives.

The full DCU Research Strategy is available to download at the following *link: http://www.dcu.ie/research/downloads/strategy.pdf*

# DCU at a Glance

## Student Population*

Undergraduates: **7,640**

Taught Postgraduates: **2,579**

Research Postgraduates: **785**

Non-Award Students: **438**

Total: **11,442**

## Staff*

Academic Staff: **478**

Non-Academic Staff: **408**

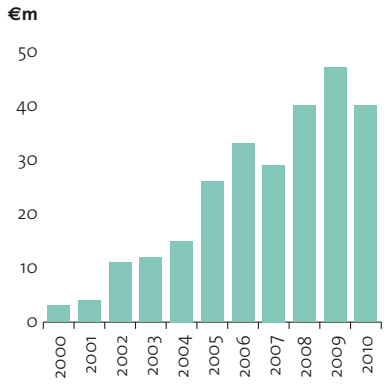
Research Staff: **277**

Research Support Staff: **61**

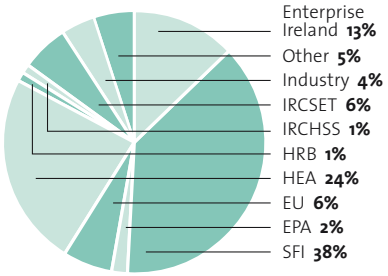
Total: **1,224**

** Based on 2009/2010 data.*

## Research Expenditure 2000-2010




## DCU Research Income by Source 2010




## National Research Centres and Institutes

- **National Centre for Plasma Science & Technology** (NCPST) *http://www.ncpst.ie/*
- **National Centre for Sensor Research** (NCSR) *http://www.dcu.ie/~ncsr/*
- **The Rince Institute: Researching Innovative Engineering Technologies** *http://www.rince.ie/*
- **National Institute for Cellular Biotechnology** (NICB) *http://www.nicb.dcu.ie/*

## Large Scale Research Initiatives

- **Biomedical Diagnostic Institute** (BDI) *http://www.bdi.ie/*
- **Centre for Next Generation Localisation** (CNGL) *http://www.cngl.ie/*
- **CLARITY: Centre for Sensor Web Technologies** *http://www.clarity-centre.org/*

## SFI Strategic Research Clusters

- **Molecular Therapeutics for Cancer, Ireland** (MTCI) *http://www.mtci.ie/*
- **Irish Separation Science Cluster** (ISSC) *http://www.separationscience.ie/*
- **Precision – Plasma Technology for Nano Manufacturing** *http://www.ncpst.ie/precision/*

## PRTLI V Programmes

- **Translational Research Hub** (TRH) *http://www.trh.ie/*
- **Bio-analysis and Therapeutics** (BioAT) **Structured PhD Programme** *http://www.dcu.ie/bioat/*
- **Telecommunications Graduate Initiative** (TGI) *http://www.tgi.ie/*

## PRTLI IV Programmes

- **INSPIRE – nanoscience and nanotechnology** *http://www.inspire.dcu.ie/*
- **National BioPhotonics Imaging Platform** (NBIP) *http://www.nbip.dcu.ie/*
- **Irish Social Sciences Platform** (ISSP) *http://www.issplatform.ie/*
- **An Foras Feasa** *http://forasfeasa.ie/*
- **Targeted Therapeutics and Theranostics** (T3) *http://www.dcu.ie/T3/*

## Externally Funded Large Scale Research Programmes

- **Centre for Bioanalytical Science** (CBAS) *http://www.cbas.ie/*
- **International Centre for Neurotherapeutics** (ICNT) *http://www.dcu.ie/icnt/*
- **Institute for Ethics** *http://www.dcu.ie/institute_ethics/*

## University Designated Research Centres

- **Centre for International Studies** (CIS) *http://www.dcu.ie/~cis/*
- **Materials Processing Research Centre** (MPRC) *http://www.mecheng.dcu.ie/MPRC/navindex.shtml*
- **Centre for Society, Information and Media** (SIM) *http://www.sim.dcu.ie/*
- **Leadership, Innovation and Knowledge Research Centre** (Link) *http://link.dcu.ie/*
- **Centre for the Advancement of Science Teaching & Learning** (CASTeL) *http://www.castel.ie/*
- **Centre for Digital Video Processing** (CDVP) *http://www.cdvp.dcu.ie/*
- **Centre for Translation and Textual Studies** (CTTS) *http://www.ctts.dcu.ie/*
- **Centre for Scientific Computing and Complex Systems Modelling** (SciSym) *http://sci-sym.computing.dcu.ie/*
- **Centre for Preventive Medicine** (CPM) *(no web address at time of print)*

# Graduate Training at DCU

Advanced graduate education and training where students are given the opportunity to undertake a number of generic and specific modules during their research is an increasingly important element in graduate research at DCU. The intention of such a structured approach to graduate research is to produce researchers who have a broader appreciation of problem solving and are more attuned to further career opportunities within social, industrial and business sectors. We expect some of our graduates to avail of such opportunities while others may choose an academic career.

In essence graduate education and training involves additional educational and training elements which develop the advanced knowledge, skills and competencies required for successful original research. Such training supports the acquisition of both significant disciplinary learning and more generic transferable skills, while also making students aware of possible opportunities to commercialise or further their research. To that end DCU offers modules in areas such as Research Ethics, Commercialisation of Research and Tutor Training. All four faculties also offer specific modules for research students in a number of specialised areas. Further details of graduate education/training modules are available from the Graduate Studies website at *http://www.dcu.ie/graduate_research/training.shtml*

# Faculty and School Research Contacts

DCU staff contact details can be searched at the following link: *http://www.dcu.ie/info/staff.shtml*

**The information below is correct at time of going to press.**

## Faculty Associate Deans for Research

| Faculties | Associated Schools | Faculty Associate Deans of Research (ADR) |
|---|---|---|
| **DCU Business School** | Business School | Prof. Colm O'Gorman<br>email: *colm.ogorman@dcu.ie*<br>Tel: #6941 |
| **Faculty of Engineering & Computing** | Computing<br>Electronic Engineering<br>Mechanical & Manufacturing Engineering | Dr Dermot Brabazon<br>email: *dermot.brabazon@dcu.ie*<br>Tel: #8213 |
| **Faculty of Humanities & Social Sciences** | School of Applied Language & Intercultural Studies (SALIS)<br>School of Communications<br>School of Education Studies<br>Fiontar<br>School of Law & Government | Dr Patrick Brereton<br>email: *patrick.brereton@dcu.ie*<br>Tel: #5440 |
| **Faculty of Science & Health** | Biotechnology<br>Chemical Sciences<br>Mathematical Sciences<br>Nursing<br>Physical Sciences<br>Health & Human Performance | Prof. John Costello (acting ADR)<br>email: *john.costello@dcu.ie*<br>Tel: #5304 |

## School Secretaries/Research Convenors/Coordinators

| School | Secretary | Research Convenor/ Coordinator |
|---|---|---|
| **Business School** | – | Prof. Colm O'Gorman, Research Convenor |
| Economics; Finance; Entrepreneurship | – | Dr Declan Curran |
| Accounting | – | Dr Barbara Flood |
| Marketing | – | Dr Yuhui Gao |
| Human Resource Management | – | Dr Brian Harney |
| Management and Information Systems | – | Dr Caroline McMullan |
| **Computing** | Patricia Lacey | Dr Stephen Blott |
| **Electronic Engineering** | Breda McManus | Prof. Paul Whelan |
| **Mechanical & Manufacturing Engineering** | Suzanne Dockery | Dr Abdul Olabi |
| **Applied Language & Intercultural Studies (SALIS)** | Caroline Whitston | Dr Jennifer Bruen |
| **Communications** | Mary Nulty | Dr Roderick Flynn |
| **Education Studies** | Kirsty Rickard | Dr Geraldine Scanlan |
| **Fiontar** | Sally Ni Fhatharta | Emer Ni Bhradaigh |
| **Law & Government** | Martina Reddy | Dr Eoin O'Malley, Director of Graduate Studies<br>Dr Iain McMenamin, Research Convenor |
| **Biotechnology** | Deirdre Donnelly | Dr Enrico Marsili |
| **Chemical Sciences** | Julie McArthur | Prof. Robert Forster |
| **Mathematical Sciences** | Karen O'Shea | Dr David Reynolds |
| **Nursing** | Anne Burke/ Sylvie Byrne | Dr Anne Matthews |
| **Physical Sciences** | Lisa Peyton | Dr Tony Cafolla |
| **Health and Human Performance** | Aisling Scally | Dr Donal O'Gorman |

## Additional Research Centre Administrators/Convenors

| Centre | Research Administrator | Research Convenor |
|---|---|---|
| **National Centre for Censor Research (NCSR)** | Mary Comiskey | Prof. Dermot Diamond, Director |
| **Research Institute for Networks and Comms Engineering (RINCE)** | Ger Lardner | Prof. Barry McMullin, Director |
| **National Institute for Cellular Biotechnology (NICB)** | Mairead Callan | Dr Robert O'Connor |
| **National Centre for Plasma Science and Technology (NCPST)** | Sheila Boughton | Dr Mike Hopkins |
| **Institute of Ethics** | – | Prof. Bert Gordijn |

## Scholarship/Stipend Administrators

| School/Faculty/ Research Centre | Research Administrator | Room/ Phone Nos |
|---|---|---|
| **DCU Business School** | Rachel Keegan; *Rachel.keegan@dcu.ie* | Q101; #5734 |
| **NICB** | Mairead Callan; *mairead.callan@dcu.ie* | JG08; #5702 |
| **Engineering & Computing** | Irene Farragher; *irene.farragher@dcu.ie* | L108; #6857 |
| **Humanities & Social Sciences** | Goretti Daughton; *goretti.daughton@dcu.ie* | C234; #5014 |
| **Science & Health** | Tanya Sereti; *tanya.sereti@dcu.ie* | HG04; #5542 |

# DCU Research Profiles by Faculty

*There are four faculties in DCU, each focusing on key areas of research. While some research is exclusive to a particular faculty, other research calls for the expertise of other faculties, institutions and/or organisations, creating an interdisciplinary, national and sometimes international approach.*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NIGHTMARE
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IRELAND'S BEST-S
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Housel
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cost u
€100
More pain a
brings in 'p
Fionnan Sheahan
Political Editor
ALMOST all households are
GLORY
GAMES
Sports Weekend
GO WITH CA
HOLIDAY SCA
CAFE SOCIETY
Dublin
Galway
Belfast
arena
ded
financially motivated as it would
cost the IRFU more to renegotiate
with the quarter, while also avoid
head-hunting, should Ireland have
a successful campaign in New Zea-
land
has nothing to do with that
Browne "We have a
and everyone
what


# Dublin City University
# Business School

# Research Profiles by Faculty

**The following section contains summaries of the research interests of individual schools and faculties. All faculties and schools provide research opportunities on a full-time and part-time basis.**

# Dublin City University Business School

## DCUBS Research Community

DCU Business School has established a reputation for high quality research based on scholarly work with relevance to professional practice in both commercial and non-commercial settings. In DCU Business School we undertake research in areas such as management development and its impact, various aspects of innovation, finance and its role, consumption and consumer behaviour, and accounting, all from the perspectives of one or more of the business disciplines. Individually and in teams and clusters we disseminate our work at national and international conferences and workshops, and publish regularly in scholarly journals and texts.

DCU Business School provides a stimulating research environment for its faculty and research scholars. DCUBS has a large community of doctoral and post-doctoral researchers (approximately 70). DCU Business School comprises five academic groups: Accounting; Economics, Finance and Entrepreneurship; Human Resource Management and Organisational Behaviour; Management; and Marketing. Details on the research interests in each of the five groups can be found at *http://www.dcu.ie/dcubs/interests_in_research.shtml*. Details of the research interests of our faculty and our research scholars are available on the website: *http://www.dcu.ie/dcubs/staff_research_interests.shtml*.


LINK, the Leadership, Innovation and Knowledge Research Centre is a university designated research centre (UDRC) *(http://link.dcu.ie)*. In each of three core strands, individuals and teams are engaged in research projects that are cross-disciplinary, collaborative and translational. These research projects reflect current national and international concerns with issues such as innovation in SMEs, commercialisation of third level IP, digital participation and education. It is a member of the Irish Social Sciences Platform.

DCU Business School staff have many formal and informal research collaborations with national and international partners. These include, for example, a PhD programme with Reutlingen University, Germany.

DCU Business School staff have successfully won research funding from both national and international funding agencies, and from national and international industry partners. These include, among others, PRTLI V, IRCHSS, INTERREG, Health Research Board, Fáilte Ireland, Teagasc, Nominet Trust, Cambridge University Press, and McDonalds Corporation.

For further information on our research activities and on opportunities to do research at DCU Business School, please visit: *http://www.dcu.ie/dcubs/dcubs_research.shtml* or email *phdbusiness@dcu.ie*. A number of three-year research studentships are available for exceptional PhD scholars. These cover the cost of fees, together with an annual scholarship.

## Research Interests within Dublin City University Business School

**J.K. Barrett,** *BComm, MBS, DBA, HDipEd, Dip SHWW, FCIPD, FIITD*

Industrial relations, trade union and employment law

Industrial relations institutions

Trade union organisation

Employee discipline and grievance procedures

Conflict resolution: conciliation, mediation and arbitration

**J. Bosak,** *Dip Psychology, Phd*

Discrimination in the Workspace

Gender & Leadership

Work Engagement

Safety Climate and Safety Behaviour

Health in Organisations

**M. Brady,** *BE, MMangtSc, Diplome d'Ingenieur (ENSPM), MBA, PhD*

Game theory, duopoly, strategic interaction and competitive advantage

Analytical and simulation methods

Business processes and quality systems

**F. Buckley,** *BA, HDipEd, PhD*

Motivational issues in organisational functioning

Psychological contract breach

Workplace trust

Organisational change and culture change

Workplace stress

Employee selection and development

Management learning and the development of communities of practice

The effectiveness of management education and training

New forms of leadership

Quality of work life

Mentoring and career development

Gender and diversity integration

**M. Byrne,** *BComm, MMgtSc, PhD, FCA, AITI*

Students' approaches to learning

Conceptions of learning

Perceptions of the quality of accounting education

The relationship between student characteristics and academic performance

Students' perceptions of the accounting profession

Accounting within the second-level school curriculum

History of accounting education in Ireland

Factors influencing second-level students' career choices

Communication apprehension

**P.J. Byrne,** *B. Eng, Nat Dip, PhD*

Supply Chain Design, analysis and optimisation

Environmental Impacts of Supply Chain Construction

Company Outsourcing Decision Making and Costing

Industrial Operational Research

**M. Canning,** *BComm, MBS, DPA, PhD, FCA*

Accountability and transparency of professional accounting bodies' disciplinary processes

Public and private interest roles of professional accounting ethics

Roles of professional accounting ethics

Decision making within accounting profession's disciplinary processes

Perceptions of auditor independence

Audit expectations gap

**J. Connolly,** *MBS, PhD*

Green Consumption

Sociology of Sport

**R. Connolly,** *MSc, PhD*

Electronic commerce

Strategic information systems

eCommerce security and risk management

Ubiquitous computing and ambient intelligence

Health informatics

Medical information systems

**E. Conway,** *MSc, PhD*

Employee perspectives on HRM including:

- HRM in the health service
- HRM in a change context
- HRM and performance, including organisational citizenship behaviour
- Management education and development, including leadership development
- Personal development planning
- Psychological empowerment

**P. Davis,** *BSc, MIE, MBA, MIIPMM, MCILT, PIIE*

Supply chain management

Operations strategy

Public sector procurement

**O. Feeney,** *BBS, MBS, ACA*

The role of accounting in New Product Development

Structuration theory

The changing role of the accountant

Accounting information usefulness

**B. Flood,** *BA, MAcc, PhD, FCA*

Professional accounting education and training

Accounting education within higher education and the profession: students' learning experiences, conceptions of learning, learning approaches, perceptions of teaching and course quality, students' motivations, expectations and preparedness for further study

**P. Flood,** *BComm, MBS, PhD (LSE), ITP (ISBM)*

Top management teams

Leadership

High performance work systems

Leadership and top management teams

Team effectiveness

Healthcare management

Psychological contract

**A. Foley,** *MA*

Export performance in manufacturing and services

Enterprise and entrepreneurship, new ventures, SMEs and fast growth firms

Irish industrial development, foreign direct investment and indigenous industry

Economics of the alcohol market and industry

International trade and European integration

Public economic policy

**L. Gallagher,** *MA, PhD*

Finance and capital markets

International finance

Applied financial econometrics

Nonlinear modelling

Investment economics

Fund management

Financial market microstructure

Equity investment strategies

Stock price behaviour

Bond market analysis and strategies

**M. Gannon,** *BComm, MBS, HDipEd, PhD, MMII*

Foreign market entry strategies of European organisations

The small firm in international markets

The role of public policy in the internationalisation of business

**Y. Gao,** *MA, PhD*

Marketing research

Culture and its relationship to international marketing

Marketing performance measurement

Marketing's contribution to firm value

Managers' personal values and their relevance to marketing

**P. Grace,** *BComm, MBS, PhD*

Employee reward and pay systems

Recruitment and retention

Career choices and career anchors

**Julie Griffin,** *BSc (Acctg), MBus, ACA*

Management accounting change in public sector organisations

Changing roles of accountants in public sector organisations

The role of the accountant in the Implementation of Integrated Systems in the private sector

Student motivation and student self-efficacy

Accounting education within higher education

**B. Harney,** *BA, MBS, MA, PhD (Cambridge)*

HRM in smaller firms

High performance work Systems

University Technology Transfer

Strategic Management

**M. Heffernan,** *BBS, MBS, MCIPD*

High performance work systems and employee outcomes

Organisational justice and HRM

Employability and the psychological contract

People management in the ICT sector

**T. Hogan,** *BA, MBS, PhD*

Financing of SMEs

Small business economics

Venture capital

Enterprise policy

**L. Hourihane,** *BSc, MSc*

New enterprise development

Capital structure and SMEs

Performance measurement systems in SMEs

**S. Ingle,** *BSc (Eng), MIE, PhD, Chartered Engineer, MIEI*

Business incubation measurement and management

Entrepreneurship and new enterprise development

Entrepreneurship education

Online trading quality dimensions for Irish SMEs

World class manufacturing and related organisational technologies in Irish industry

**H. Kawakatsu,** *BA, MS, PhD, PGCHET*

Econometrics

Time series analysis

Computational statistics

**Claire Kearney,** *BA Mod (BBS/Econ), MA (Econ)*

Financial markets

Fund management; portfolio selection, risk and the investment mandate

International finance, bond market analysis and strategies

Equity markets, valuation and performance attributio

**W. Kelly,** *MA*

Economics and finance

**M. Kirrane,** *BA, PhD, MIPD, MPSI, MBPS, MEAWOP*

Managing change

Leadership

Work-life balance

Individual differences

Team working

**V, Kumar,** *BTech, PhD*

Service Operations

Supply Chain Management

Service Quality

Lean and Agile Systems

**A. Largey,** *PhD*

Social capital

Urban economics

Transport economics

**B. Leavy,** *BSc, MBA, PhD, CFPIM*

Strategic leadership

Industry and competitive analysis

Value innovation

**J. Loonam,** *BA, MBS, PhD*

Strategic Leadership & Information Systems

Top management & ERP implementation

Strategic Change in Healthcare Organisations

**J. Lynch,** *BA, MA, MBS*

Branding

Business-to-business marketing

Customer relationship management

Strategic marketing management

**T. Lynn,** *BBLS, MBS, PhD*

Corporate governance

Institutional investors and corporate behaviour

Strategy for digital content publishing

Applied learning technologies

**R. Mattimoe,** *BA (Mod), Dip Stats., MA, FCA, PhD*

Management accounting techniques and pricing routines in Irish hotel and tourism entities

Accounting information for decision-making

Cost control and pricing in high technology companies

New developments in management accounting practices

Qualitative research methodology

Learning styles of executives

Public sector accounting

**T. McCluskey,** *BComm, PhD, FCA, AITI*

The effects of earnings and dividend announcements on:

- Irish share prices
- Stock market efficiency

**P. McDonagh,** *BSocSc, MBA, PhD*

Director, Centre for Consumption Studies

Consuming identity: bohemia and the pressures of commercialism for musicians within market economies

Consumption studies: green management, global policy and the environment, consumer society and sustainable consumption

Management and strategic marketing communications: with particular focus in the agribusiness, food marketing, and marketing communications sectors

**S. McGovern,** *BBS, BSc (Maths), MSc (Econ), PhD*

Economic methodology

Philosophy of science and social science

History of economic thought

**D. McLaughlin,** *MSc, MBA*

Information technology sourcing

Social capital

Management information systems

Technology management

**Caroline McMullan,** *PhD, MPhil, BA (Hons), MEPS*

Business Continuity Management

Crisis Management in Small and Medium Sized Enterprises

Building Resilient Organisations & Communities

**M. Mulgrew,** *BSc, MSc, PGHET, PhD*

Corporate governance

Earnings management

Financial statement analysis

Corporate social responsibility

Accounting education

**B. Murphy,** *BComm, MAcc, ACA*

Professions

Professional competence

Professional accounting education

**E. Murphy,** *BA, MBS, ACA*

Professional Accounting Education and Training

**C. O'Gorman,** *PhD*

Entrepreneurship and enterprise policy

High-tech entrepreneurship

Management of small and medium sized enterprises

High growth firms

**B. O'Kelly,** *BEng, MBA, MScIT, PhD*

Fixed income investments

Collateralised debt obligations

Credit risk

Banking

**N. O'Reilly,** *BA, MBS*

Retail impact on local communities

Community

Consumer sentiment towards marketing

Women as consumers

**B.J. Pierce,** *BComm, PhD, FCA, FCCA*

Management control

Management accounting practices

Changing roles of management accountants

Performance management

Money laundering and control

System effectiveness

**V. Poti,** *BBA, MBS, PhD*

Financial markets

Volatility and correlation time series

Performance attribution and portfolio management

Asset pricing

**M. Quinn,** *BA, MSc, ACMA, PhD*

Processual change in management accounting and control

Accounting and control in small firms

Information systems and accounting

**R. Sharma,** *BA, MBA, PhD*

Stock market efficiency

Stock price and exchange rate movements

Initial public offerings

**A. Sinnott,** *BA, MBA, PhD*

Quality management

Management of service quality

Management of service businesses and customer service strategies

**D. Turley,** *MA, PhD*

Senior marketing

Bereavement and consumer behaviour

Qualitative research methods in marketing

Marketing and ethics

**P. Willis,** *BComm, DPA, FCA*

Students' approaches to learning

The relationship between student characteristics and academic performance

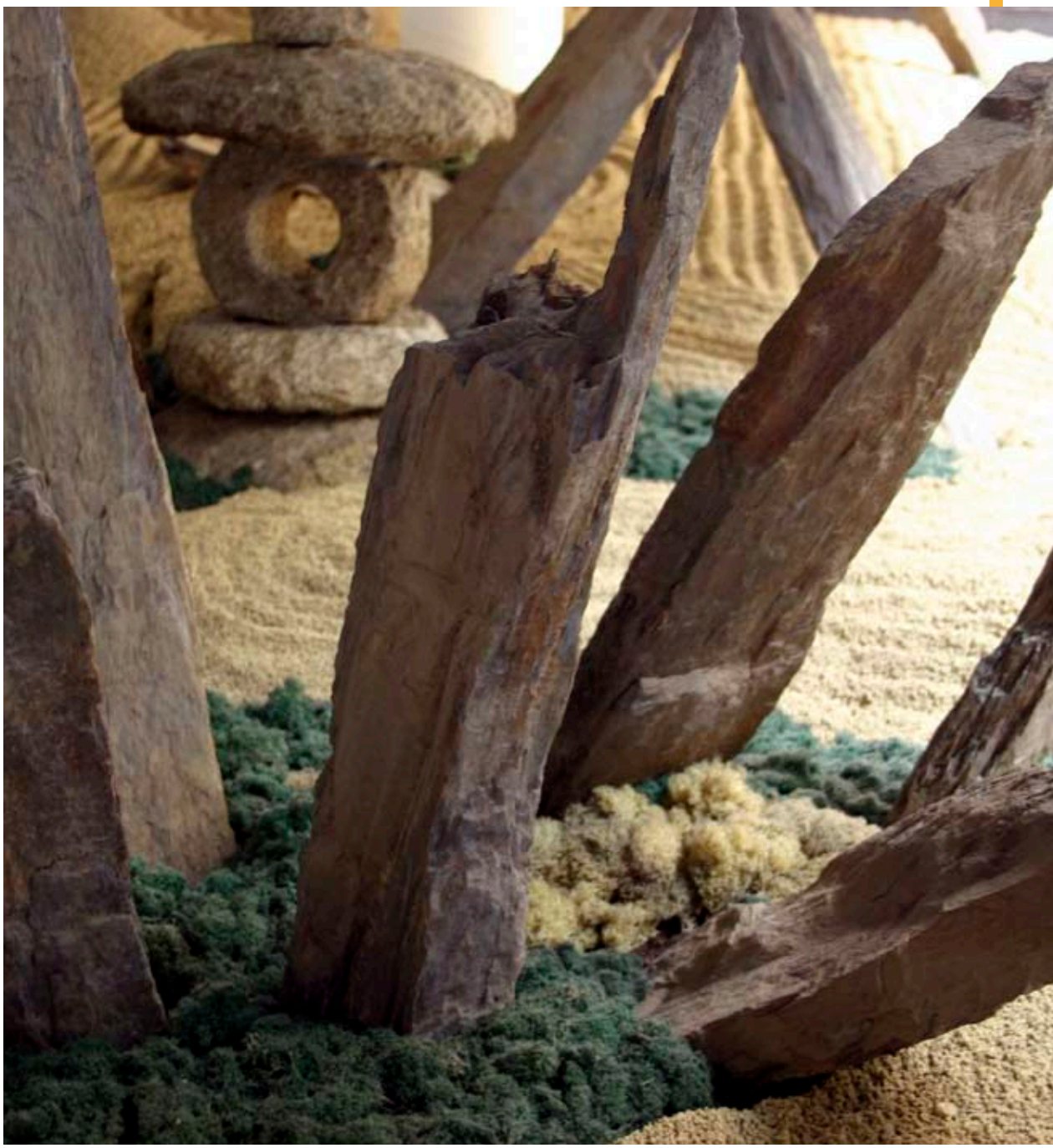
Students' perceptions of the accounting profession

Accounting within the second-level school curriculum

Factors influencing second-level students' career choices

Factors affecting accounting students' career choice

Occupational reality shock within the accounting profession



## Dublin City University

# Faculty of Humanities and Social Sciences

# Faculty of Humanities and Social Sciences

## Introduction

Researchers at the Faculty of Humanities and Social Sciences examine and interrogate the ways in which an increasingly complex society works and understands itself. The Faculty incorporates five schools, Applied Language and Intercultural Studies (SALIS), Communications, Education Studies, FIONTAR and Law and Government. The Faculty includes over 100 registered research students. These students complement the activities of academic staff undertaking research in a wide-variety of disciplines. Critical scale research expertise is evident in the areas of: translation, knowledge society, social exchanges, intercultural studies, international relations, governance and issues of civil society, law and society, medical ethics, media content analysis, media policy and history, social aspects of digital media, journalism practice, information and communication technologies in education and training, policy and structures in Irish post primary and further education.

The Faculty is targeting interdisciplinary research as a means of achieving critical mass and generating new ideas in order to realise its research potential and contribute to the national and international goals of the Government's Strategy for Science, Technology and Innovation (2006-2013). The Faculty has enjoyed significant successes in PRTLI-4, IRCHSS and HEA funding bids and is committed to growing its collaborative research capability.

# Institute of Ethics

The Institute was established in September 2008 with the mission to create ethical awareness in relation to all fields of the university's activities and to play a leading role in raising public awareness of, and stimulating debate about, ethical issues.

The Institute is committed to creating a community of scholars able to engage with professionals working in the private and public sectors, as well as with researchers from other academic disciplines to promote a systematic approach to applied ethics in various fields – including business, technology, politics, media, healthcare and the life sciences.

## Research Interests in the Institute of Ethics

**Professor B. Gordijn,** *MPhil, PhD*

Bioethics and of Technology Ethics

Applied Ethics

**Dr S. de Colle,** *BA, MA, PhD*

Business Ethics

Stakeholder Theory

Code of Ethics development and implementation

Corporate Social Responsibility

Socially Responsible Investing

Social and Ethical Accountability

# School of Applied Language and Intercultural Studies (SALIS)

**Research Convenor – Dr Jennifer Bruen**

## Contact Details

Dr Jennifer Bruen
Tel: +353 (0) 1 700 5779
email: *jennifer.bruen@dcu.ie*
*http://www.dcu.ie/salis/research.shtml*

## Introduction

Research in SALIS focuses on the interdisciplinary study of art, cultures, languages and literatures. Research is divided into several distinct but interrelated areas: Comparative Literature Studies; Intercultural Studies; Language Studies; and Translation Studies.

The Research Centre for Translation and Textual Studies, which is based in SALIS, has the status of a University Designated Research Centre.

Specific research areas of interest to colleagues in SALIS include:

- Community interpreting
- Comparative literature
- Comparative studies
- Computer-aided language learning
- Computer-mediated communication in language learning
- Corpus linguistics
- Cross-cultural communication
- Cultural identity and modernity
- English as a foreign language
- Film studies
- Foreign language pedagogy
- French studies
- German/Austrian studies
- Hispanic studies
- Intercultural business management
- Intercultural issues in education
- Intercultural workplace
- Interpreting studies
- Irish studies
- Linguistics and socio-linguistics
- Second language acquisition
- Translation history
- Translation technology
- Translation theory

## Centre for Translation and Textual Studies (CTTS)

### Director – Dr Dorothy Kenny

Established in 2000, the Centre for Translation and Textual Studies (CTTS) is a university-designated research centre of Dublin City University. The CTTS is a leading centre for translation research in Ireland. Areas of research undertaken by the CTTS include computer assisted translation, corpus-based translation studies, community interpreting, conference interpreting, screen translation, translation pedagogy and translation history.

## Contact Details

**Dr Dorothy Kenny**
**Director**

Tel: +353 (0) 1 700 5516
email: *dorothy.kenny@dcu.ie*
*www.ctts.dcu.ie/*

## Research Interests within the School of Applied Language and Intercultural Studies

**Dr F. Blin,** *Maitrise MASS, PhD*

CALL and the development of learner autonomy

Educational technology and activity theory

Computer-mediated communication and collaborative language learning

Language for specific purposes (e.g. science, engineering and computing)

Learner autonomy

**Dr J. Bruen,** *MA, PhD*

European language portfolio

Language planning and policy

Foreign language acquisition

Language teaching and learning

'DaF' (German as a foreign language)

German for business

Particular interest: language learning styles and strategies

**Dr G. Carty,** *MA, PhD*

Film: History and history of criticism of Spanish cinema

Comedy in film

Italian neorealism

Translation: technical translation from Spanish to English

**Professor M. Cronin,** *MA, PhD*

History of translation in Ireland

Questions of language and identity in contemporary travel writing

Socio-cultural aspects of tourism industry in Ireland

Translation theory and minority languages

Materialist theories of interpreting

Literary representations of science

**V. Crosbie,** *BA, MA, HDipEd, DipAppLing*

Capability approach

Cosmopolitan citizenship

The European language portfolio

Plurilingual and pluricultural identity

Intercultural communication

Foreign language pedagogy and the dynamics of teaching and learning

**Dr B. Duffy,** *BA, MA, PhD*

Samuel Beckett (French and English texts)

Narrative and identity

Contemporary English and American fiction

Richard Ford

**F. Gallagher,** *BA (Hons), MEd, HDipEd, DipTEFLA*

Second language acquisition

Teacher development

Teaching methodologies

Intercultural communication

Learning styles

Design of language teaching materials

**R. Graham,** *BA, MLitt*

Spanish language teaching and acquisition

Changes in peninsular Spanish

The influence of second language teaching/learning on third-level teaching and learning

EFL, in particular for native Spanish speakers

**M. Holborow,** *Lés Lettres, MA, RSA, HDipEd*

Language and ideology

World English and world Englishes

Globalisation, neoliberalism and language

**J.P. Imbert,** *Licence és L Maitrise és L, CAPES*

Comparative literature

French and Mexican surrealism (literature/visual arts)

Gender and queer studies

Literature and the sacred

Mythocriticism

Teratology

20th century French fiction, short fiction as a genre

The literary, aesthetic and sociocultural expressions of suffering, evil, turmoil, anguish, the taboo, madness, death, exile

**Dr N. Kelly,** *BA, PhD*

Morpho-phonological and non-morphological word formation processes in Japanese secret languages

Lexical innovation processes in standard Japanese

Morpheme order studies and second language acquisition

Language minority students in Irish primary schools

**Dr D. Kenny,** *BA, MSc, PhD*

Computer-based linguistics

Machine translation

Computer-aided translation

German scientific translation

Terminology

**Dr B. Le Juez,** *BA, MA, PhD*

Comparative literature studies: history and theory of comparative literature

Literary myths

French and Irish literary connections (in particular the reception of Gustave Flaubert in Ireland)

Literature and painting (ekphrasis, art criticism by literary figures)

Literature and cinema (cinéroman, film adaptations of literary works)

Orientalism (literature, art and cinema)

Representation of the experience of war (literature and film)

Francophone literature

French and European cinema

**Dr A. Leahy,** *MA, PhD*

German as a foreign language

Textbook analysis

Cultural minorities in Germany

Critical discourse analysis

Issues in multicultural societies

**Dr H. Lechleiter,** *MA, PhD*

Sociolinguistics: Language for specific purposes

Psycholinguistics and cognitive science

Language learning and critical thinking

Studies in inter-disciplinary exchange

**Dr A. Maillot,** *PhD*

Politics and conflict

The conflict in Northern Ireland

Contemporary French history, politics and society

Comparative politics

Colonial studies

**Dr C. Mangiron,** *MA, PhD*

Translation studies

Translation of cultural references

Videogame translation

**K. Matsuda,** *BA*

Food and culture

Japanese films

Media representation of images

**Dr Á. McGillicuddy,** *BA, MA, PhD*

Alsace – history, cultural identity

René Schickele: biography and work

Franco-German relations (late 19th/20th century)

German literature (late 19th/early 20th century)

Language teaching and learning (German/French)

**Dr S. O'Brien,** *BA, MA, PhD*

Translation technology

Machine translation

Controlled language

Localisation

Eye-Tracking

**Dr P. O'Byrne,** *BEd, MA, PhD*

Novels written by the Women's Section (Sección Femenina) of the Spanish Falange

Romance fiction in Spain in the post-war period

**Dr E. O'Connell,** *BA, MA, HDipEd, PhD*

Translation theory and practice

Dubbing and subtitling, especially in relation to Irish

Language planning and minority languages

Translation for children and literary translation

**Dr M. O'Hagan,** *MA, PhD*

Computer-aided translation

Teletranslation

Video games localisation

Screen translation for new media

E-learning

**C. O'Riordan,** *BA*

The discourse of advertising in German and English

Functional sentence perspective in German and English

**Dr A. Pearson-Evans,** *BA, MA, HDipEd, PhD*

Intercultural communication theory

Conflict resolution

Intercultural business management

East/West communication

Intercultural aspects of language learning

Multicultural education

Intercultural workplace

**J. Péchenart,** *Lès Lettres, LScEcon*

Tourism studies and languages

French for specific purposes (business, tourism, media studies)

Pedagogical issues in foreign-language teaching and learning/European Language Portfolio

**M. Phelan,** *BA, HDipEd*

Community and court interpreting

**Dr A. Simon,** *PhD*

Second language acquisition

Foreign language pedagogy

Inter-language development

Error analysis

Fossilisation

**Professor J. Williams,** *BA, PhD*

Translation studies: economic/ administrative translation

Literary translation

Translation theory

Hans Fallada: life and work

**Dr J. Wright,** *PhD*

18th and 19th century literature, especially the novel

Feminist criticism

Sexuality and gender in France, 1789-1870

# School of Communications

The School of Communications brings together researchers with expertise and experience in journalism, multimedia, sociology, history, literature, law and politics. The School's research interests are wide-ranging, but are concentrated in:

- Media texts and content analysis
- Media policy, regulation and history
- Audiences and user aspects of media and communication
- Digital media: authoring, design and social aspects
- Communication, technology and culture/society
- Cross-national and intercultural communication
- International communication and development issues
- News production, journalism studies and practice
- Innovation in the media/cultural industries – the knowledge society or 'smart economy' setting.

Several staff in the School have gained a high-profile and reputation in the areas of media analysis and media policy, and several staff have significant involvements in international research projects and networks. Recent books by staff members include: *Making the News: Journalism and News Culture in Contemporary Europe; Transforming Ireland: Challenges, Critiques and Resources; and Moral Reasoning for Journalists, 2nd Edition* a reader focused on key aspects of Irish media; global influences on RTÉ; utopian vision in Hollywood films; making and shaping the news; the history of Irish media since 1922; reshaping communication – the role of technology and social factors; public perceptions of Sellafield; the interactions of technological and social-cultural change; Irish television drama and works on social change in Ireland in the latter part of the 20th century.

School staff have been very successful in securing research grants and fellowships from national and international sources such as the European Commission, Irish Research Council for Humanities and Social Sciences, Department of Education and Science, National Centre for Technology in Education, IBM, Higher Education Authority, European Journalism Centre and from DCU's Research Advisory Panel and Teaching and Learning Committee.

The school currently has 25 researchers in a wide range of subject areas working towards PhD degrees.

## Research Centre based in the School of Communications

### SIM – Centre for Society, Information and Media

### Director – Dr Debbie Ging

The centre for Society Information and Media (SIM) was established in 2005 to coordinate, support and promote a wide range of research initiatives in all aspects of print, audiovisual and digital media.

SIM is situated in the School of Communications yet has a strongly interdisciplinary and international outlook. Its members are academic staff, research associates, practitioners and postgraduate researchers actively engaged in collaborative projects and/or with shared interests in developing further such projects. Dr Debbie Ging is the current Director of SIM.

SIM has built upon the successes of previous research initiatives in DCU such as STeM and COMTEC to become the national leader in communications and media research. Its researchers are concerned with all aspects – economic, social, cultural, political and technological – of mediated communication in a globalising world, and employ a wide range of approaches including those of policy studies, reception analysis, cultural studies, political economy, history and textual studies.

SIM also supports collaborative media production and practice projects, including the authoring/design of new media objects and digital media applications for teaching and learning. The SIM centre enables a number of dedicated research clusters to pool methodological expertise and resources with a view to growing larger interdisciplinary and transnational projects. SIM members have relations with CELSIUS, the Centre for International Studies (CIS), the Centre for Translation and Textual Studies (CTTS), the Centre for Consumption Studies (CCS) and the DCU Migration and Interculturalism Research Cluster (MIRC).

SIM's current research clusters are:

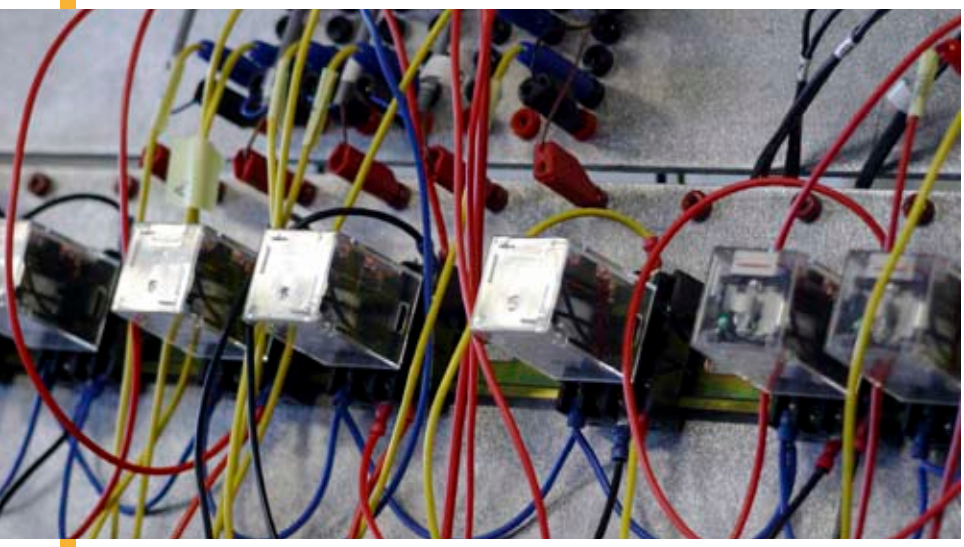
- International Media, Interculturalism and Migration
- Media [in] Education
- Science and Environmental Communication
- Media History

SIM's core objectives are:

- To support and produce high-impact, inter-disciplinary research with a strong international focus
- To attract and support top-quality doctoral and postdoctoral students
- To develop teams of expertise in cutting-edge areas with a view to participating in international networks
- To secure external funding for research projects which have a tangible impact on policy across a range of sectors (educational, broadcasting, intercultural, NGOs, etc.)
- To provide researchers with possibilities for international exchange and to facilitate research visits to Ireland

Current projects involving SIM members include:

- Representations of women in Irish political life
- EU study of media diversity and migrant integration (assessing media practices across the EU)
- PRTLI-4 funded projects focused on innovation in digital media
- Comparing Media Representations of the 'New' India and Ireland
- EU-funded projects on media coverage of European issues and on training of new media research students
- Cross-national studies of journalism and the public sphere
- Diasporic media
- Media in the developing world
- ICTs in Afghan Higher Education
- Design, production and piloting of a digital game for educating about development, migration and cultural integration
- Irish Media Ownership Monitor
- Analysis of media coverage of the General Elections 2011
- Young people's use of ICTs and social media



## SIM centre: Contact Details

**Dr Debbie Ging**
**Director**

Tel: +353 (0) 1 700 7729
email: *debbie.ging@dcu.ie*
SEE: *http://www.sim.dcu.ie*

## Research Interests within the School of Communications

**Dr P. Brereton,** *BA, MA, PhD*

Communications and media education

Film theory and practice

Photography

Scriptwriting and new media research

**Dr R. Flynn,** *PhD*

Audiovisual policy in Ireland, Europe and the US

Telecommunications policy

Broadcasting policy

Social history of communications

Political economy of the media

History of media technology

**Dr D. Ging,** *BA, MA, PhD*

Irish cinema (esp. masculinity in contemporary Irish cinema)

Gender in film and television

Multiculturalism and interculturalism in the media

Masculinity in the media

Media reception/audience research

Audience research

**K. Grimes,** *BSocSc, DipTP, MFA*

Visual representations of science, medicine and natural history

New media practice

Contemporary art practice

Death and pathology in contemporary visual culture

Public art and memorial

**E. Holt,** *BA, HDipEd, MS*

Relationship between media law and media ethics

US immigration history

Irish ethnic media

**Dr M. Judge,** *BA (Hons), HDipEd, MSc, PhD*

Multimedia

ICT in education

e-Learning

Digital video

Computer mediated communications

e-Commerce

Technology and enterprise development

**Professor C. Kenny,** *BCL, Barrister-at-Law, PhD*

Media policy and practice

Journalism

Intercultural studies

Ethical issues

History and society

Belief and communication

**P. Kinsella,** *BA, MA*

Media and conflict, war reporting, international journalism

Media regulation and standards

New technologies in broadcast news

Editorial decision-making

Government policy on broadcasting

**Professor S. Knowlton,** *BA, MA, PhD*

Journalism ethics

Comparative ethics

Journalism, democracy and the developing world

Photojournalism for the online digital age

**Dr T. Lawrence,** *BA, MA, PhD, LTCL*

History of music in Ireland

Film music theory and practice

Music composition

Music technology

Multimedia production

**S. McBride,** *BA, HDipEd, MA*

Media and film studies

Literature and film

Contemporary Irish photography

**Dr D. McGuinness,** *BA, PhD*

Cultural and social studies

Oral history

Image analysis

Audience research and Dublin working class culture

National democratic analysis: Ireland's long revolution?

**P. McNamara,** *BA, MPhil*

Journalism, national and international

News cycles, EU information and the European public sphere

Media systems in international systems

Sociology of journalism and news

Newsroom cultures and management

Newspaper design and form

**M. Molony,** *BA, MA*

Public relations, including corporate and non-profit communications

Privacy and other legal, social and ethical issues of the information age

The impact of ICTs on journalism and the media

The history and development of the puppet theatre

**Dr P. Murphy,** *BSc, MSc, PhD*

Science Communication

Science and Technology Studies

Science in the media – Public engagement with controversial technologies and risk discourses eg. biotech, nanotech, climate change

E-learning and Technology and Media in Education

Identity and Education

**Dr N. O'Boyle,** *BA, MSc, PhD*

Cultural Production and Creativity

The Internationalisation of Media

Immigration and Integration

Communication Theory

**Dr M. O'Brien,** *BA, PhD*

Media History

Newspapers

Journalism Studies

Irish Politics

Political Communication

Censorship

Modern Irish History

Crime and Media

**Dr B. O'Connor,** *BSocSc, MA, PhD*

Cultural studies

Qualitative research methods

Media audiences and consumption

Women and popular culture

Feminist theory

Tourism and cultural identity

Movement and dance in popular culture

**M-L O'Donnell,** *BA, HDipEd, MEd, MA, LGSMD*

Voice, orality and drama as communication

The Chorus in modern versions of Greek drama/modern drama

The radio voice

Writing for the ear

Creative radio

Radio drama

Children's theatre

**J. O'Sullivan,** *BComm, MA*

Evolution of news in new media

New media professional practice

Interactivity in news

Economics of online journalism

**Prof. Paschal Preston,** *BA, PhD*

Political economy of media and public communication

Communication and international relations

Innovation and digital media

Comparative studies of News cultures and journalism.

Information/knowledge society theories

**Dr K. Rafter,** *BA, MLitt, MA, PhD*

Media and the Political Process

Journalism and Media History

Public Service Broadcasting

Political Advertising Northern Ireland

Small Political Parties

**D. Tuite,** *BA, MSc*

Production methodologies for new media

Algorithmic composition

Creation of responsive media systems

**W. Tuke,** *BA, MA, MSc*

Digital video production

Digital video for webcasts, podcasts, IPTV, broadband and broadcast use

Motion graphics, visual effects and 3D animation

DVD authoring for educational use

The use of digital video in teaching and learning

**Dr Chi Sui Wang**

Digital imaging

Digital media design and practice

Visual cultures and new media

# FIONTAR

## Réamhrá

Léiríonn próifíl taighde FIONTAR comhdhéanamh idirdhisciplíneach na Scoile. Nascann taighde FIONTAR an Ghaeilge le saol nua-aoiseach an ghnó agus na teicneolaíochta agus cuireann sé le cáil na hOllscoile mar ionad ceannródaíoch san oideachas trí mheán na Gaeilge. Cuimsíonn taighde na mball foirne réimse leathan ábhar, ina measc an fhiontraíocht, airgeadas, téarmeolaíocht na Gaeilge, an t-ardoideachas agus straitéisí ríomhfhoghlama. Tá an taighde in FIONTAR dírithe go príomha ar an téama Teanga agus Sochaí. Tá sraith mórthionscadal taighde sna réimsí sin idir lámha faoi láthair. Ina measc tá:

- Pleanáil teanga agus polasaí teanga. Rinne Fiontar taighde thar ceann na Roinne Gnóthaí Pobail, Comhionannais agus Gaeltachta maidir leis an Straitéis 20 Bliain don Ghaeilge 2010-2030
- Forbairt téarmaí dlí agus reachtaíochta i nGaeilge i gcomhar le Foras na Gaeilge agus le Rannóg an Aistriúcháin, le foilsiú ar *www.focal.ie*
- Bainistíocht agus forbairt ar *www.focal.ie* maoinithe ag Foras na Gaeilge
- Taighde agus bunú Bhunachar Logainmneacha na hÉireann ar *www.logainm.ie*, i gcomhar leis an mBrainse Logainmneacha agus An Roinn Gnóthaí Pobail Tuaithe agus Gaeltachta
- Taighde téarmeolaíochta agus soláthar téarmaí Gaeilge d'institiúidí an Aontais Eorpaigh, a fhoilsítear ar *www.iate.europa.eu*
- Tionscadal beathaisnéisí Gaeilge, i gcomhar le Cló Iar-Chonnachta, chun naoi n-imleabhar beathaisnéisí Gaeilge (1986-2007) le Diarmuid Breathnach agus Máire Ní Mhurchú, a dhigitiú agus a fhoilsiú ar *www.ainm.ie*

## Foireann

**Ú. Bhreathnach,** *BA (Int), MA*

Eagarthóireacht agus bainistíocht na téarmaíochta

An fhealsúnacht teanga

**An Dr C. Mac an Bhaird,** *BComm, LLB, MBS, PhD*

Struchtúr caipitiúil maidir le fiontair bheaga agus mheánmhéide

Beartas um Fhorbairt Fiontraíochta

Gnólachtaí le rátaí fáis arda

**An Dr E. Ní Bhrádaigh,** *BA, MBS, Grad Dip Sta, PhD t*

Fiontraíocht sa Ghaeltacht

Fiontraíocht shóisialta

Oideachas na fiontraíochta

**M. Nic Ghiolla Mhichíl,** *MSc*

Ríomhfhoghlaim agus córais eolais

Straitéisí bainistíochta eolais

Teicneolaíocht na faisnéise agus an t-ardoideachas

**An Dr C. Nic Pháidín,** *MA, HDipEd, PhD*

Forbairt na meán clóite Gaeilge

Téarmaíocht agus pleanáil chorpas na Gaeilge

**An Dr Gearóid Ó Cleircín,** *PhD*

Téarmaíocht na Gaeilge

An tsochtheangeolaíocht

Dialanna na Gaeilge

**An Dr P. Ó Flatharta,**
*BA, MSc (Mmgt), ADipC, DBA*

Staidéar eagraíochtaí is institiúidí

Staidéar traschultúir

Teanga agus sochaí

Pleanáil Teanga

**An Dr B. Ó Raghallaigh,** *BA (Mod), PhD*

Foghraíocht & fóineolaíocht na Gaeilge

Teicneolaíocht urlabhra don Ghaeilge

Ríomhtheangeolaíocht

# FIONTAR

## Introduction

FIONTAR's research profile reflects the interdisciplinary nature of the School. Research in FIONTAR connects the Irish language with the modern world of business and technology and adds to the reputation of the University as a pioneering centre of Irish-medium education. Staff research covers a broad range of topics, including entrepreneurship, finance, Irish language terminology, higher education and e-learning strategies.

The primary focus of FIONTAR's research is Language and Society. A number of research projects are ongoing in these areas:

- Language planning and language policy. Fiontar carried out research on behalf of the Department of Community, Equality and Gaeltacht Affairs regarding the 20 Year Strategy for the Irish Language 2010-2030
- Research and development of legal and legislative terms for publication on *www.focal.ie* in conjunction with Foras na Gaeilge and the Translation Section
- Management and development of *www.focal.ie* funded by Foras na Gaeilge
- Research and development of the National Placenames Database, *www.logainm.ie* in conjunction with the Placenames Branch, the Department of Community, Rural and Gaeltacht Affairs
- Irish terminology research and development on behalf of European Union Institutions, published on *www.iate.europa.eu*
- An Irish-language biography project, in collaboration with Cló Iar-Chonnachta, to digitise and publish the nine volumes of Irish biographies (1986-2007), by Diarmuid Breathnach and Máire Ní Mhurchú on *www.ainm.ie*

## Staff

**Ú. Bhreathnach,** *BA (Int), MA*

Terminology management and editing

Philosophy of language

**An C. Mac an Bhaird,**
*BComm, LLB, MBS, PhD*

Capital structures of SMEs

Enterprise Development Policy

Fast Growth Firms

**An Dr E. Ní Bhrádaigh,**
*BA, MBS, Grad Dip Stat, PhD*

Entrepreneurship in the Gaeltacht

Social entrepreneurship

Entrepreneurship education

**M. Nic Ghiolla Mhichíl,** *MSc*

E-learning and information systems

Knowledge management strategies

Information technology and higher education

**An Dr C. Nic Pháidín,**
*MA, HDipEd, PhD*

The development of print media in Irish

Terminology and corpus planning in Irish

**An Dr Gearóid Ó Cleircín,** *PhD*

Sociolinguistics

Irish language diaries

Terminology

**An Dr P. Ó Flatharta,**
*BA, MSc (Mmgt), ADipC, DBA*

Organisational and institutional studies

Cross-cultural studies

Language and society

Language planning

**An Dr B. Ó Raghallaigh, *BA (Mod), PhD***

Irish phonetics & phonology

Speech technology for Irish

Computational linguistics

# School of Law and Government

## Introduction

The School of Law and Government is an interdisciplinary school whose staff are committed to excellence in teaching and research. The School of Law and Government offers three postgraduate research programmes: LLM by Research, MA by Research and PhD. All awards are made following the successful submission of a thesis.

The PhD programme in politics and international relations is a structured programme. There are required courses in research design, quantitative and qualitative methods and political and IR theory. In addition PhD researchers can choose (with their supervisors agreement) to take optional postgraduates modules in substantive areas of research (for example terrorism or democratisation or African politics) and in languages (French, Spanish, Japanese and Chinese). For full details see *www.dcu.ie/~cis*

The school's research interests are concentrated in two main areas: Law and Society and Governance and International Studies. Within Governance and International Studies the School and its related research centre have a focus on the broad themes of democratisation, international political economy, international development, gender, conflict resolution, international security and terrorism. Within Law and Society our interests include conflict resolution and mediation, equality and human rights law, including children's rights and employment law and the role of trade unions.

Specific areas of competence include:

- American politics
- Child law
- Collective and individual employment law
- Conflict studies
- Comparative politics
- Criminal law
- Development, including African politics
- European politics including Central and Eastern Europe
- Equality law, including disability
- Family law
- Gender
- Health care law
- International law
- International organisations
- International political economy
- International relations
- International security
- Irish politics
- Latin America
- Law and dispute resolution including mediation and arbitration
- Legislative studies
- Northern Ireland and political institutions
- International political economy
- Political Islam
- Politics of the Middle East and North Africa
- Gender
- US politics
- Latin America

## Centre for International Studies

### Director: Dr Shane Martin

The School of Law and Government is the home of the Centre for International Studies, which promotes interdisciplinary research across the following interrelated areas:

- The Politics of International Development
- Conflict Resolution and Security Studies
- Governance and international political economy
- Democratisation
- Gender and international relations

The Centre has a very active research agenda and has conducted externally funded research for the Irish Government, the Irish Research Council for Humanities and Social Sciences, the Irish Department of Foreign Affairs, Irish Aid, major NGOs, trade unions and the EU. For details see website. There is a thriving postgraduate research community in the area of International Studies and the Centre offers scholarships on an annual basis.

## Contact Details

**Dr Shane Martin, BA, MBS, PhD**
**Director, Centre for International Studies**

Dublin City University
Glasnevin, Dublin 9
Ireland

Tel: +353 (0) 1 700 6469
Fax: +353 (0) 1 700 7374
email: *shane.martin@dcu.ie*
*www.dcu.ie/~cis*

## Research Interests within the School of Law and Government

**Dr A Baturo,** *BA, PhD*

Politics and political economy of developing countries

Leaders and development

Comparative politics of transitions

**Dr M. Breen,** *BA, MA, PhD*

International political economy

The politics of global finance

The International Monetary Fund

**Dr F. Cavatorta,** *BA, MA, PhD*

International Relations

Democratisation

Politics of the Middle East

Politics of the Arab-Israeli Conflict

European Union policy-making

Italian political parties and institutions

**Dr E. Connolly,** *BA, MA, PhD*

gender and politics,

politics of social partnership,

politics of development,

civil society and development

**Dr M. Conway,** *BA, MA, PhD*

Terrorism, especially terrorism and the Internet

Politics, international relations and the Internet

Women and terrorism

**Dr B. Daly,** *BA, MA, PhD*

Conflict resolution and approaches to mediation

Healthcare law

Medical negligence

Accountability of the medical profession

Alternative dispute resolution

**Dr E. Daly,** *BCL (Law and French), PhD*

Religious Freedom

Constitutional Secularism

Jurisprudence

John Rawls

French Law

**Dr Y. Daly,** *BA, PhD*

Criminal Justice,

Pre-Trial Process,

Rights of the Accused,

Laws of Evidence

**Dr E. Dewhurst,** *BCL, PhD*

Migration Law

Human Rights

International Law

Legal Education

**Dr M. Doherty,**
*LLB, LLM, Barrister-at-law, PhD*

Employment and labour law

Industrial relations

The role of trade unions, in particular union-member relations

Social partnership

Social pacts and EU policy

Collective and individual employment law

**Dr D. Doyle,** *BBS, MA, PhD*

Comparative Politics

Latin America

Partisanship

Political Economy

**Dr J. Doyle,** *BA, MA, PhD*

Comparative nationalism and conflict

Comparative peace processes

International security and foreign policy

Security and development

**Professor R. Elgie,** *BA, PhD*

Political Leadership

Political economy

Comparative politics

French politics

**Dr N. Gaynor,** *BSc, MSc, PhD*

Politics of Development

Politics and Development in Africa

Network governance, especially the role of civil society

Political communication

**Dr N. Higgins,** *BA, HDipEd, MA, LLMPhD*

Human rights law

International law

Law of armed conflict

**Dr S. Martin,** *BA, PhD*

Legislative politics

Comparative politics

Irish politics

**Dr A. McAuley,** *BCL, LLM, BL, PhD*

Child law

Medical law

International human rights law

Company law

Employment law

**Dr E. McDonagh,** *BA, PhD*

Comparative Democratisation

Democracy Promotion

International Institutions

International Norm Development

Post-Soviet Politics

**Dr K. McDonagh,** *BA, PhD*

Security Governance and Counter-terrorism

International Relations theory

US Foreign Policy

EU Security and Defence Policy

Critical Security Studies

**Dr N. McGrath,** *BCL, PhD, Barrister-at-Law*

Credit and Security

Banking Law

Company Law

Financial Law

**Dr I. McMenamin,** *BA, MPhil, PhD*

Comparative politics

Business-government relations in Poland

Party-firm relations

Semi-presidentialism

**Professor G. Murphy,** *BA, MA, PhD*

Political corruption

Interest group politics

Irish politics

US politics, especially the Theodore Roosevelt Era

**Dr D. Ó Beacháin,** *BA, PhD*

Post-Soviet politics particularly the Caucasus and Central Asia

Political parties and elections

Colour revolutions

De Facto states

Irish politics and foreign policy

**Dr E. O'Malley,** *BA, PhD*

Irish politics

Prime ministerial power

Executive power in parliamentary democracies

Political elites

Southern European politics

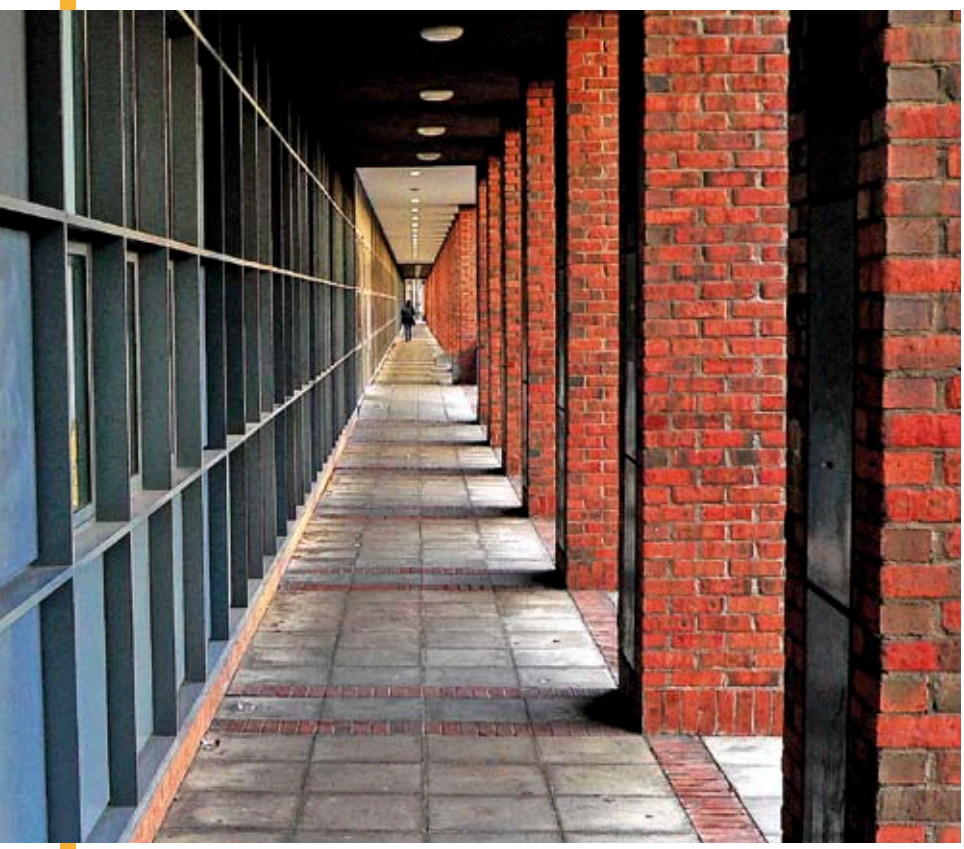
**Dr O. Smith,** *BCL, LLM (NUI), PhD*

Law, inequality and social exclusion

Gender equality

Comparative disability discrimination law

Employment rights



# School of Education Studies

## Introduction

The School of Education Studies is committed to research in the fields of education and training which supports quality teaching and learning of children, young people and adults, enabling them to reach their full potential. The School engages in teaching and research aimed at improving human life, promoting equity in society and the use of technologies to improve education and training settings. Based upon the theories and knowledge of a variety of disciplines, teaching and research within the School is focused on issues that effect how individuals participate in learning and society. The School is recognised as a leading centre for educational enquiry.

## Research Interests

The Schools research interests can be broadly categorised under 3 themes:

- Pluralism in education and training at Irish and European levels
- Evaluation of education and training
- Human Development and Society

Our strengths in these areas have been recognised in the amount of external funding we continue to receive. We currently have research projects funded under the EU Framework 6 and Framework 7, TEMPUS and Lifelong Learning Programmes as well as a range of nationally funded research initiatives.

Researchers in the School are also engaged in other funded research and development projects which focus on:

- Systematic design of training instruction
- Curriculum relevance, balance and transferability
- Information and communication technologies in education
- Cross-cultural transfer of management systems and processes
- Methodologies in the Human Sciences and in the field of e-learning
- Schooling and work placement action research
- Emerging systems of educational evaluation
- Educational Leadership
- Assessment in higher education
- Inclusive citizenship
- Workplace Learning
- The Education Employment Nexus
- Homophobic bullying
- Children's identity and citizenship in Europe
- Citizenship and Development Education
- Education for Sustainable Development
- Teaching and Learning Methodologies

The school is attached to several international networks and in recent years has attracted a growing number of research students who are aware of the innovative nature of the research work being conducted within the school.

## Research Interests within the School of Education

**T. Corrigan,** *BA, HDipEd, MSc*

Intergenerational Learning at third level

Researching the benefits of the use of social media and internet skills for older people

Inclusion of retired academics and professionals in third level learning

Life long learning.

Creating learning opportunities for older and younger people in third level

learning in the dual role of both as tutors and learners together.

Teaching and research in further education/higher education

Teacher and professional development skills in further education

Access and equity in higher education

Educational opportunities which promotes the well-being of adolescents and young students

Benefits of group-work/team based learning in education

Citizenship

E-Learning in higher education

Pluralism in education

**Y. Crotty,** *Bc REL SC.*

Creative and Innovative uses of Technology

Values and Methodology in relation to the use of Technology in Education

Educational Video Production and Impact

Social media

Creativity, Visual Literacy and New Media

**Dr M. Farren,** *HND, PGCE, MEd, PhD*

Methodologies in the human sciences and in the field of e-learning

Human capability to create, share and contribute to new knowledge and lifelong learning. Action Research and Reflective Practice.

Educational Enquiry

Living Theories

Leadership

eLearning

New Media in educational research.

**Dr C. Holland,** *BSc, HDipEd, MSc, PhD*

Education for sustainable development

Sustainable technologies/Sustainable online communities of learners

Values-based learning

Instructional Design/instructional technology

Web development/e-learning

Curriculum development

Science and citizenship education

Meta-cognition

**Dr A. Kamp,** *BA, BSocSc (Hons), MPET, PhD*

Worker-learner identities

Teenage parents as learners

Workplace learning

Networks and Collaboration

The Education-Employment Nexus

**P. King,** *BA, BD, HDipEd, MA, MSc (Guidance Counselling)*

Positive mental health and the wellbeing of adolescents

Academic resilience in lifelong learning

Mediation in learning environments

Guidance counselling: education, training and CPD

**J. Lalor,** *Grad Dip Ed & Training, MSc Ed & Training Management*

Action research approaches in non-formal sector

Assessment and qualification systems and trends in European contexts

Childhood identity and citizenship

Curriculum: design and implementation

Curriculum evaluation

Education in intercultural contexts

**F. Lorenzi,** *Laura in Filosofia M.Phil*

Assessment design

Assessment Feedback

Pedagogical Dialogue

Philosophy of Education

Moral and Values Education

Teaching of Ethics

Hermeneutics & sharing of meaning in Education

Adult and Distance Learning

E-Learning in Higher Education

**Dr J. Lovatt,** *BSc Ed, PhD*

Science Education

Initial Teacher Education

ICT in Teaching and Learning

Teaching and Learning Methodologies including Inquiry-Based-Science-Education (IBSE)

Student Transition into Higher Education

Assessment

**Professor G. McNamara,** *BA, MA, HDipEd, PhD*

Curriculum evaluation

Access and equity

Policy and practice in further and adult education

Innovative approaches to the use of new technologies in teaching and learning

**Dr M. McSharry,** *BATh., HDipEd, PhD*

Citizenship and Development Education

Social inclusion, participation and equality

Sociology of the body and sport

Human development – power and politics

Research design

**Dr C. Mulcahy,** *BA, HDipEd, MSc, PhD*

Education for Sustainable Development

Citizenship education for an enlarged Europe

Values and sustainable development

Values and how they are transmitted in an educational setting

Pluralism in education

Adult learning

Organisation of curriculum change

Managing diversity

Developing intercultural curricula on Education for Sustainable Development and Ethical Education

Curriculum design for Ethical Education

**Dr J. O'Higgins Norman,** *BD, HDipEd, MEd, EdD, FRSA*

Equality Law and Educational Provision

Relationships and Sexuality Education

Wellbeing and care in schools

Bullying in Second Level Schools

**Dr J. O'Hara,** *BRelSc, MSc, PhD*

Evaluation and self-evaluation in schools

Autonomy and accountability in education

The impact of ICTs on the development of professional competencies

Initial teacher education

Educational Leadership and Management

**J. Rami,** *Dip in Ed, HDip in Comm, MSc*

Organisational communications in community education

Policy and practice in further and adult education

Quality assurance in higher education

Childhood identity and citizenship

Access and inclusion in higher education

Assessment and qualification systems and trends

Teaching and learning methodologies

**Dr G. Scanlon,** *BA. Phd C.Psychol*

School Wide Positive Behaviour Support

Applied Behaviour Analysis in mainstream schools

Intervention programmes for teachers to include students with emotional and behavioural difficulties in mainstream education

Challenging behaviour in schools

Special Educational Needs in mainstream education

Special Education

Incorporating Appiled Behaviour Analysis and Acceptance and Commitment Therapy (ACT) therapies into intervention programmes for pupils, teachers and parents in mainstream education

Initial teacher education

Ethical issues in research

**C. Sullivan,** *BSc Ed., MSc*

Virtual learning environments and on-line interaction

Digital video including editing

Compression techniques and on-line streaming

Web design

Enhancing learning in the science class by making use of ICT

**P. Tiernan,** *BBS, MSc*

ICT in Education

E-Learning and collaboration

Entrepreneurship in Education

Digital Media and Learning

**Dr B. Walsh,** *BA, HDE, DipMont, MEd, PhD*

History of education

Education policy

Initial teacher education

Teacher induction

**I. White,** *BA, HDipEd, MA*

Drama and Theatre in Education

Application of drama-based techniques in non-theatre contexts

Community Engaged Theatre

Devising, scripting and performance skills

Active teaching and learning methodologies in second level education

Teaching of English at second level

Creative writing, creative nonfiction and memoir

Creative collective storytelling

Arts in Education

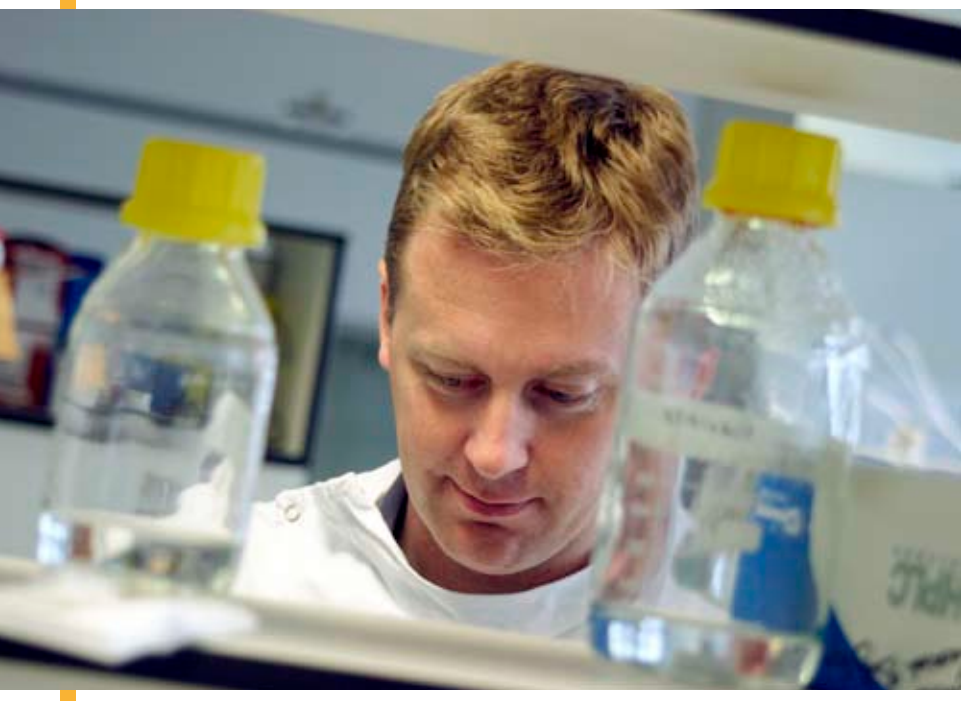
## Dublin City University

# Faculty of Science and Health

# Faculty of Science and Health

## Introduction

The Faculty of Science and Health at DCU comprises six schools, namely, the Schools of Biotechnology, Chemical Sciences, Health and Human Performance, Mathematical Sciences, Nursing and Physical Sciences, together with three National Research Centres – the National Centre for Sensor Research (NCSR), National Institute for Cellular Biology (NICB) and the National Centre for Plasma Science and Technology (NCPST). In addition, the Faculty is host to two Science Foundation Ireland (SFI) funded Centres for Science Engineering and Technology (CSET), the Biomedical Diagnostics Institute (BDI) and the CLARITY Centre for Sensor Web Technologies. It is also host to two externally funded large scale research programmes, namely, the International Centre for Neurotherapeutics (ICNT) and the Centre for Bioanalytical Sciences (CBAS), and to two University Designated Research Centres, the Centre for Advancement in Science Teaching and Learning (CASTeL) and the Centre for Preventive Medicine (CPM). The Faculty also plays a leading role in the National Institute for Bioprocessing Research and Training (NIBRT), the result of collaboration between the Faculty, other HEIs, the IDA and multinational companies based in Ireland. The Faculty's research portfolio is designed to motivate the building of strong communities of researchers around important societal goals and grand scientific challenges, aiming to eliminate disparate and fragmented efforts. This bold vision brings together biologists, chemists, physicists, mathematicians, engineers as well as sports scientists, nurses and health care professionals working right across the research continuum from fundamental exploration and discovery, through innovation and on to translation into health, industrial and community settings to tackle challenging problems in fresh, high impact ways.



The external funding environment nationally and at EU level points to a rapidly increasing emphasis on industry-oriented research and the likelihood of substantial academic-industry R&D being carried out in Ireland over the coming decades. The Faculty seeks to make its research teams the preferred partners for Irish and international industry in targeted areas of demonstrable strength and is already host to a large number of industry-sponsored research projects.

The ethos of the Faculty is, thus, strongly research driven and this underpins the strategic planning and positioning of the Faculty. Details of the research entities and activities within the Faculty are outlined below.

## PRTLI V Programme

### Translational Research Hub (TRH)

The TRH is a powerful and exciting new partnership between scientists and clinicians at Dublin City University, NUI Maynooth and the Royal College of Surgeons that will deliver critical solutions to target disease and harness the commercial potential of their combined expertise. The primary focus in this translational hub is human disease including cardiovascular disease, lung disease, cancer and neurology. As a key component of the TRH, DCU will begin construction of a new Nano-Bioanalytical Research facility (funded under the HEA PRTLI Cycle V programme) on its Glasnevin campus which will provide an additional 3,000m² of state-of-the art research infrastructure for the TRH consortium.

### Bio-analysis and Therapeutics (BioAT) Structured PhD Programme *(www.dcu.ie/bioat/)*

This collaborative inter-institutional 4-year structured PhD programme is funded by the HEA under Cycle 5 of the Programme for Research in Third-Level Institutions

(PRTLI). The programme brings together the complementary expertise of researchers from Dublin City University, the Royal College of Surgeons in Ireland, National University of Ireland, Maynooth and Institute of Technology, Tallaght. BioAT is an integrated, flexible and student-centric programme which will enable students to broaden their skills base and career opportunities through participation in high quality research, advanced training, personal and professional development, and exposure to an innovative, translational research environment. Research projects underpinning Bio-AT training will lead to developments in **bioanalytical methodology and technology** applied to disease diagnosis and treatment. Furthermore, they will have significant potential for commercialisation. The first intake of BioAT postgraduate students will start in September 2011.

# Research Centres

## The National Centre for Sensor Research

The National Centre for Sensor Research (NCSR) is a large-scale, multidisciplinary research centre focused on the science and applications of chemical sensors and biosensors. The research programme of the NCSR includes both fundamental and applied projects, ranging from basic studies of molecular interactions to prototype development for industrial partners. NCSR is focused on developing future sensing technologies for economic and societal benefit for application in personal health monitoring and diagnostics, environmental monitoring, (bio) process optimisation and nano/bio-medicine.

NCSR has prioritised research in the areas of:

- Fundamental Materials Science: Nano-Micro-Bio Materials Convergence
- Environment (Monitoring) Technologies
- Nanomedicine

In turn, these areas are underpinned by the core competencies of the Centre:

- Photonics
- Biomolecular Interactions
- Surface and Interface Science
- Separations Science
- Functional and Switchable Materials
- Biosensors
- Nanomaterials Science
- Electrochemical Sensors
- Microsystems Fabrication

The multidisciplinary composition of the research team, which includes physicists, chemists, biotechnologists and engineers, is a key feature of the NCSR. There are over 220 researchers at the centre, including 22 Principal Investigators from the Faculty of Science and Health at DCU. Located at the main entrance of Dublin City University, the NCSR is based in a ca. 3,200 sq meter custom-designed building with clean-rooms, synthetic and biohazard facilities, application-specific project laboratories and support units.

The NCSR is host to a number of large scale research initiatives including the Adaptive Information Cluster (AIC)/ CLARITY, the Biomedical Diagnostics Institute (BDI), the Centre for Bioanalytical Sciences (CBAS), the Irish Separation Science Cluster (ISSC) and the National Biophotonics and Imaging Platform Ireland (NBIPI). For more information please visit the Centre's website: *www.ncsr.ie*

### Contact Details

**The National Centre for Sensor Research**
Research and Engineering Building
Dublin City University
Dublin 9, Ireland

Tel: +353 (0) 1 700 8821
Fax: +353 (0) 1 700 8021
*www.ncsr.ie*

## CLARITY: Centre for Sensor Web Technologies

CLARITY: Centre for Sensor Web Technologies is a Science Foundation Ireland Centre for Science, Engineering and Technology (CSET), a partnership between University College Dublin, Dublin City University and Tyndall National Institute (TNI) in Cork. This ground-breaking research centre focuses on the so-called 'Sensor Web', which captures the intersection between two important research areas – Adaptive Sensing and Information Discovery. Within DCU, CLARITY brings together researchers from Materials Science and Chemistry, Computing, Electronic Engineering, Mechanical Engineering, Nursing, Ethics, Law and Government and Health and Human Performance.

CLARITY actively collaborates with leading multinationals and SMEs including: AMDOCS, Disney Research, EpiSensor, Heystaks, Alcatel Lucent (Bell Labs), and Critical Path, as well as national agencies, such as the Environmental Protection Agency, the Marine Institute and the National Museum of Ireland. Total investment in CLARITY from SFI, other Irish funding agencies, industry partners and from EU programmes amounts to €23.2 million over a 5-year period, of which Science Foundation Ireland through the CSET programme contributes €11.8 million.

CLARITY hosts approximately 120 research and support staff across the three institutions and builds on work undertaken by the SFI-funded Adaptive Information Cluster.

## Contact Details

**Professor Alan F. Smeaton**

**CLARITY: Centre for Sensor Web Technologies**
Dublin City University
Dublin 9, Ireland

Tel: +353 (0) 1 700 5262
Fax: +353 (0) 1 700 7995
email: *alan.smeaton@dcu.ie*
*www.clarity-centre.org/*

## Centre for Bioanalytical Sciences (CBAS)

The Centre for Bioanalytical Sciences (CBAS) project is currently active under the directorship of Professor Harry Holthofer (Director, Chair of Biological Sciences). Our key areas of interest are the biological pathways and mechanisms involved in the pathogenesis of diabetes and its kidney and cardiovascular complications. Of particular interest is the kidney glomerular filtration barrier and its key pathophysiological events in diabetes, with particular emphasis on visceral epithelial cells (podocytes). The CBAS research team has expertise in (1) analysis of the renal proteome; (2) glycomic analysis, specialising in synthetic carbohydrate chemistry, oligosaccharide determination and glycan profiling of renal biomarkers; (3) metabolomic profiling of urine from rat and mouse models as well as in human subjects with diabetes and (4) genomic and transcriptomic analysis of signalling pathways in kidneys. We are actively involved in a number of collaborations with leading European, US and Chinese research groups in the area of glomerular pathobiology, in addition to international biopharmaceutical companies. A prominent CBAS Phase 1 project included research collaboration between Bristol-Myers Squibb (BMS), Dublin City University and the National University of Ireland, Galway, which ran from September 2005 to August 2009.

## Contact Details

**Centre for Bioanalytical Sciences**
Dublin City University
Dublin 9, Ireland

Tel: +353 (0) 1 700 6442/6364
Fax: +353 (0) 1 700 5773
*www.cbas.ie*

## Biomedical Diagnostics Institute

The Biomedical Diagnostics Institute (BDI) is an Academic-Industrial-Clinical partnership that is focused on the development of next generation point-of-care biomedical diagnostic devices. These devices are targeted at point-of-care applications, including near-patient testing, self-testing in the home and diagnosis of disease in the low-resource environments of the developing world.

Established in 2005, the BDI is a Science Foundation Ireland (SFI) funded Centre for Science, Engineering and Technology (CSET).

The BDI has developed a cutting-edge, collaborative research programme involving leading researchers from academic institutions, companies and the clinical environment to form a complementary, integrated, cohesive partnership. The BDI's scientific challenge lies primarily in creating miniaturised systems in which the presence of low concentrations of target biomarkers can be detected reliably in small volumes of biological samples.

The development of these diagnostic devices requires the integration of a range of scientific and engineering disciplines and the structure and culture of the BDI has been designed to optimise such integration and convergence.

At the BDI, our people are our strength. We actively recruit, retain and develop a diverse and dynamic team that assists in delivering our mission and research agenda. Our postgraduate students participate in a wide variety of training programmes which enhance their research and career opportunities. The BDI's education programme focuses on developing a lifelong interest in Biomedical science for students of all ages. The programme provides upskilling and training for its researchers and postgraduate students through the BioInnovate programme and MSc in Biomedical Diagnostics.

Current research posts are advertised on our website *www.bdi.ie*

## Contact Details

**Professor Michael Berndt**
**Director, Biomedical Diagnostics Institute**

**National Centre for Sensor Research**
Dublin City University
Dublin 9, Ireland

Tel: +353 (0) 1 700 7658
Fax: +353 (0) 1 700 6558
*www.bdi.ie*

## The National Institute for Cellular Biotechnology (incorporating the National Cell and Tissue Culture Centre)

The National Institute for Cellular Biotechnology (NICB) is a multidisciplinary research institute based at Dublin City University, NUI Maynooth and IT Tallaght. The NICB research teams investigate the molecular functions of human and animal cells in order to discover and develop new treatments and diagnostics for a variety of human diseases with particular emphasis on cancer, diabetes, infectious diseases and developmental biology. In particular, the Institute is involved in translational research programs in collaboration with

a number of Dublin hospitals, in order to bring the output from basic research to application in disease diagnosis and treatment of patients. There is also close collaboration with industries in Ireland and abroad.

The National Cell and Tissue Culture Centre's spin-off company Bioutekon (formally Archport Ltd.) operates fermentation and downstream processing facilities to cGMP standards and is approved as a site for pharmaceutical manufacture by the Irish Medicines Board (IMB).

Graduates of the NICB have a national and international standing within the academic and industrial sectors. They have successfully taken up positions as researchers, production team leaders, university professors, lecturers and senior managers.

The NICB's core facilities and equipment are leading edge, state-of-the-art amenities which are available to all our postgraduate students. Our new research facility integrates general laboratories, large clean rooms and writes up areas in an efficient yet comfortable working environment.

If you are interested in studying at the NICB, please go to our website for a list of research projects and contact the appropriate senior researcher with a view to preparing an application to the IRCSET postgraduate programme *www.ircset.ie/grant_schemes/postdoctoral.html*

## Contact Details

**Professor Martin Clynes**
**Director of NICB/NCTCC**

Dublin City University
Dublin 9, Ireland

Tel: +353 (0) 1 700 5720
email: *martin.clynes@dcu.ie*
*www.nicb.ie*

## Centre for Preventive Medicine

Centre for Preventive Medicine

The Centre for Preventive Medicine at Dublin City University is the first research centre of its kind in Ireland. It is composed of a multi-disciplinary team of scientists and clinicians who focus on preventing or delaying the progress of common clinical conditions. The aim of the Centre is to develop new knowledge and innovative approaches to improve the health and quality of life of the Irish population by (i) preventing the onset of common clinical diseases and (ii) slowing or preventing the progression of these conditions in diagnosed patients.

Although chronic diseases are among the most common and costly of all health problems, they are also the most preventable. The Centre for Preventive Medicine integrates basic, translational and applied research to reduce the development and progression of common clinical conditions. The three main strands within the Centre are:

**(i)** **Translational Medicine** to develop and optimise physiological, behavioural and pharmacological preventive strategies in high risk populations,

**(ii)** **Cell and Molecular Physiology** to provide a basic science approach to understanding the early modifications that contribute to the development or progression of disease and identify biological makers of disease risk,

**(iii)** **Population Programmes** to develop, modify and implement effective hospital and community based preventive programmes.

## Contact Details

**Dr Donal O'Gorman**
**Director, Centre for Preventive Medicine**

Dublin City University
Dublin 9, Ireland
Tel: +353 (0) 1 700 8060
email: *donal.ogorman@dcu.ie*

## National Centre for Plasma Science and Technology

National Centre for Plasma Science & Technology

The National Centre for Plasma Science and Technology (NCPST) is the Irish national research centre for plasma related research. It is a multidisciplinary centre bringing together scientists and engineers to address both fundamental and applied questions relating to the advancement and development of plasma related research for the benefit of both industry and society, locally and internationally.

The Centre, in collaboration with many national and international partners, focuses on:

- Sustainable Energies from Plasmas
- Nanoscience, Photonics and Materials
- Mathematical and Computational Modelling
- Sources, Diagnostics and Measurement
- Astrophysics

The Centre has approximately 70 members, excellent facilities and well-funded programmes in basic scientific research, technological applications and industrial collaborations.

The NCPST is also active in education and is supporting the development of new courses in plasma technology at levels ranging from pre-undergraduate to masters degree.

The NCPST is committed to strong interactions with industrial partners supporting indigenous enterprise. We have a vibrant entrepreneurial and commercialisation culture and have successfully spun-out several ventures.

The NCPST is host to a number of research initiatives including the SFI funded Precision Strategic Research Cluster and "INSPIRE" which is a PRTLI IV funded program.

The Centre has been successful in securing EU funding under the COST (European Cooperation in Science & Technology) Scheme for its research network – Bio-Plasma & Biomedical Applications of Atmospheric Pressure Plasma Technology. The Bio-Plasma COST Action is an interdisciplinary research initiative involving clinicians, biologists, chemists, physicists and industrialists, who will now work together to develop plasma technologies which can be used to offer enhanced quality of care at a reduced cost.

Funding has also been secured by the NCPST through the Health Research Board and SFI funded translational Research Awards for a project entitled "Improved Methods to Detect and Decontaminate Environmental Sources of Healthcare Associated Infections". This is a collaborative project with RCSI/Beaumont Hospital.

## Contact Details

**Professor Miles Turner**
**Director, National Centre for Plasma Science and Technology (NCPST)**
Dublin City University
Dublin 9, Ireland

Tel: +353 (0) 1 700 5382
Fax: +353 (0) 1 700 8484
email: *ncpst@dcu.ie*
*www.ncpst.ie*

## Precision – Plasma Technology for Nano Manufacturing

Precision is a Strategic Research Cluster supported by Science Foundation Ireland and industrial partners. The Cluster is hosted by the National Centre for Plasma Science & Technology (NCPST), the Research Institute for Networks and Communications Engineering (RINCE) at Dublin City University and the Surface Engineering Group at University College Dublin. The Cluster aims to develop the scientific and technological knowledge needed for present and future manufacturing applications using plasmas, with a specific emphasis on nano-scale products, process reliability, manufacturing costs and advanced materials processing.

## Contact Details

**Professor Miles Turner**
**Precision – Plasma Technology for Nano Manufacturing**
**National Centre for Plasma Science and Technology (NCPST)**
Dublin City University
Dublin 9, Ireland

Tel: +353 (0) 1 700 5298
Fax: +353 (0) 1 700 5951
email: *precisiont@dcu.ie*
*www.ncpst.ie/precision/*

## EXTATIC Erasmus Mundus Joint Doctoral (EMJD) Programme

'EXTATIC' or Extreme-ultraviolet and X-ray Technology and Training for Interdisciplinary Cooperation will establish a joint European PhD programme in EUV and X-ray Science and Technology. It is the first EMJD to be led by an Irish university. The partners include University College Dublin, Kings College London, The University of Southampton, Czech Technical University-Prague, The University of Padua, The Military University of Warsaw and RWTH-Aachen University. The Associated university partners include Colorado State University (USA), Purdue University (USA), Tongji University (China). Current associated industry partners include Silson (UK), Prevac (Warsaw), XENOCS France), EPPRA (France), Rigaku Innovative Technologies (Prague) and Bruker (Germany).

EMJD programs are designed to "foster cooperation between higher education institutions and academic staff in Europe and Third Countries with a view to creating poles of excellence and providing highly trained human resources. EXTATIC will recruit 10 PhD students per year building up to 40 students over 4 years who will travel between the University and Industry sites during their PhD studies. It is a structured PhD programme with research lecture and laboratory elements as well as independent research.

The overarching objective of this EMJD is to provide high-level training in Extreme UV (EUV) and X-ray science to a new generation of high achieving graduate students to provide them with the transferable skills necessary for thriving careers in a burgeoning area that underpins innovative technological development across a range of diverse disciplines. This goal will be achieved by a unique combination of 'hands-on' research training, industrial placements and courses and workshops on scientific and complementary so-called 'soft' skills facilitated by the academic-industrial composition of our network.

## Contact Details

**Dr Paul van Kampen or Professor John T. Costello**
**School of Physical Sciences/National Centre for Plasma Science and Technology**
Dublin City University
Dublin 9, Ireland

email: *paul.van.kampen@dcu.ie* or *john.costello@dcu.ie*

## INSPIRE Programme

INSPIRE – Integrated NanoScience Platform for Ireland – is a national collaborative research project involving six Irish universities, and the Dublin and Cork Institutes of Technology.

Control of matter at the nanoscale (dimensions sub-100nm) is fundamental to electronics, photonics, "bio-pharma", structural materials and environmental health and safety. As such, it impacts on a myriad of technologies that are key current and future wealth generators in the Irish economy.

Ireland has had considerable investment in nanoscience in the past few years. This investment has led to nanoscience research in Ireland making significant international impact. Critical to the evolution of the capabilities is a cohesive approach to access to large scale facilities nationally and education and training. The INSPIRE initiative creates a national integrated nanoscience and nanotechnology activity which will result in building collaborations across the nanoscience community nationally, leveraging existing capabilities and elevating the national activity to be internationally leading.

Key programme aims include:

- Development of shared national nanoscience graduate programmes
- Creation of a shared infrastructural capability
- Development of existing linkages to enable new collaborations; locally, regionally and nationally across institutions and across disciplines.

## Contact Details

**Prof. Liam Barry**

**The RINCE Research Institute**
Dublin City University
Dublin 9, Ireland

Ph: +353 (0) 1 700 5431
Fax: +353 (0) 1 700 5508
email: *liam.barry@dcu.ie*
*www.inspirenano.com*

**Prof. John Costello**

**National Centre for Plasma Science and Technology (NCPST)**
Dublin City University
Dublin 9, Ireland

Ph: +353 (0) 1 700 5304
Fax: +353 (0) 1 700 8484
email: *john.costello@dcu.ie*
*www.inspirenano.com*

## National Biophotonics and Imaging Platform Ireland

The National Biophotonics and Imaging Platform Ireland (NBIPI) is a cross-institutional scientific research and educational platform focused on Biophotonics and Imaging. Each of the institutional partners in the NBIPI provides individual core facilities and research expertise, which in turn are integrated into the complete NBIPI. The NBIPI at DCU is a joint initiative between the Faculty of Science and Health and the Faculty of Engineering and Computing, across two research centres – the National Centre for Sensor Research (NCSR) and the Centre for Image Processing and Analysis (CIPA).

DCU's expertise within the Platform lies in nanobiophotonics, sensor development, image processing and analysis, and spectral imaging.

Academic Partners:

- Dublin City University
- National University of Ireland, Galway
- National University of Ireland, Maynooth
- University of Limerick
- Royal College of Surgeons in Ireland
- Dublin Institute of Technology
- University College Cork
- CNRS, Montpellier
- CNR Institute of Biostructure and Bioimaging, Naples
- The Nordic Imaging Network

NBIP Ireland aims to:

- Provide a structured research and training framework for Ireland's investment in advanced imaging applied to the Life Sciences
- Establish Graduate Training Programmes in Biophotonics and Imaging
- Bridge the Physical and Life Sciences interface and through partnership with Industry, to enhance technology developments in Biophotonics and Imaging
- Provide national access to Core Facilities in Molecular, Cellular, Small Animal and Human Research Imaging
- Provide the infrastructure for Ireland's participation in large-scale international research programmes underpinned by Biophotonics and Imaging

The NBIPI offers a comprehensive education and training programme to postgraduate and postdoctoral researchers within the Platform. Education and training encompasses three levels from fundamental modules in photophysics to confocal microscopy to image analysis. Research programmes at DCU focus on development of novel imaging probes and modalities, and image analysis.

## Contact Details

**Professor Tia Keyes**
**Coordinator, NBIPI, DCU**

**School of Chemical Sciences**
Dublin City University
Dublin 9, ireland

Tel: +353 (0) 1 700 8185
email: *tia.keyes@dcu.ie*
*www.nbip.dcu.ie*

## The International Centre for Neurotherapeutics

In the International Centre for Neurotherapeutics (ICNT) multi-disciplinary investigations are undertaken on the molecular basis of communication in the nervous system, especially to identify and structurally characterise the proteins responsible for the fundamental process of quantal release of neurotransmitters, and its indirect regulation by voltage-sensitive K+ channels. Our basic research on the selective and potent inhibition of transmitter release by botulinum neurotoxins has underpinned their successful and worldwide clinical use in treating human dystonias, spasticity and other movement disorders, as well as autonomic neuronal abnormalities of secretory glands (e.g. hyper-hydrosis, hyper-salivation and lacrimation etc.), over-active bladder (e.g. in spina bifida, spinal cord injuries and multiple sclerosis) and gastrointestinal tract (e.g. pyloric sphincter). Current efforts are devoted to developing second generation homologues and tailoring their functional properties for novel therapies. Several years of research on neuronal K+ channels has led to the elucidation of their oligomeric/primary structures and deciphering the genetic defects in these proteins in certain human channelopathies. Such molecular definition of heteromeric subtypes in normal and diseased states, coupled with their reconstruction by recombinant means, are providing authentic targets for drug refinement/development.
Our work also involves testing existing K+ channel drugs for their ability to act discriminatively on one of the normal or abnormal K+ channel subtypes with the eventual goal of being able to modify neuronal excitability.

## Contact Details

**Professor Oliver Dolly**
**Director, International Centre for Neurotherapeutics**

Research and Engineering Building
Dublin City University
Dublin 9, Ireland

Tel: +353 (0) 1 700 7757
Fax: +353 (0) 1 700 7758
email: *oliver.dolly@dcu.ie*
*www.dcu.ie/icnt/*

## Centre for the Advancement of Science Teaching and Learning

The Centre for the Advancement of Science Teaching and Learning (CASTeL) comprises a multidisciplinary research team involving scientists, mathematicians and educationalists from DCU and St. Patrick's College, Drumcondra. The focus of CASTeL's research is on improving the teaching and learning of science and mathematics at all levels of the educational system and encompasses teachers and students, curricula and assessment, the education and examination systems. CASTeL draws on research world-wide in educational and cognitive sciences to inform the development and implementation of its research projects. In addition, CASTeL supports science and mathematics education and outreach activities in partnership with many local, national and international organisations. Currently CASTeL is coordinating the FP7 ESTABLISH project and is partner on the FP7 Fibonacci project, which aims to support teachers in adopting inquiry based approaches for the teaching and learning of science and mathematics, at primary and second level, on a wide scale across Europe.

Following on from the successful funding of the FP7 ESTABLISH project (2010-2013), CASTeL members Dr Paul van Kampen, Dr Sarah Brady and Dr Deirdre McCabe (under the coordination of Dr Odilla Finlayson and Dr Eilish McLoughlin) have been invited to proceed to negotiations on a Grant Agreement for €3.75m for their proposal 'SAILS' – Strategies for Assessment of Inquiry Learning in Science. This proposal was submitted under the FP7 Science in Society call for "Supporting and coordinating actions on innovative methods in science education: teacher training on inquiry based teaching methods on a large scale in Europe".
The consortium is made up of participants from universities, research centres, SMEs and multinational organisations from across 12 countries. Partners include: Dublin City University, Intel PLS Limited, Univerzita Pavla Jozefa Safárika v Kosiciach Slovakia, Jagiellonian University Poland, Malmö Universityin Sweden, University of South Denmark, Instituto de Educação da Universidade de Lisboa Portugal, King's College London UK, University of Szeged Hungary, ATiT Belgium, University of Piraeus Research Centre Greece, Hacettepe University Turkey and Gottfried Wilhelm Leibniz Universität Hannover Germany.

## Contact Details

**Dr Eilish McLoughlin**

**Centre for the Advancement of Science Teaching and Learning**
Faculty of Science and Health
Dublin City University
Dublin 9

Tel: +353 (0) 1 700 6343
email: *castel@dcu.ie*
*www.castel.ie*

## The National Institute for Bioprocessing Research and Training (NIBRT)

NIBRT is an innovative IDA (Ireland)-funded partnership between DCU, TCD, UCD and IT Sligo, and is located in a new purpose-built facility sited in Fosters Ave, Dublin 4. The mandate of NIBRT is to support the development of the existing bioprocess industry in Ireland and to attract additional iopharmaceutical companies to Ireland through a combination of (1) training of highly skilled personnel for the bioprocessing industry; (2) conducting world-class research in key areas of bioprocessing and (3) to provide a critical mass of multi-purpose bioprocessing facilities.

The NIBRT facility provides laboratory scale bioreactors for intensive training and research in animal cell culture, the ability to scale-up cell culture to 150-300 litre under 'GMP-simulated' conditions, to provide laboratory-scale and pilot-scale downstream processing (separation processes and purification) to provide pilot scale recombinant protein production and purification under 'GMP-simulated' conditions. In addition there are extensive analytical technologies particularly in the field of protein glycosylation, to enable extensive process analytical technologies and analysis of the quality of the proteins produced.

Presently NIBRT is extensively involved in providing training programmes, both theoretical and practical, through the partner institutions and specialist commercial organisations. These include supporting and participating in the Joint Masters in Bioprocess Engineering, Graduate Training Certificates and tailor-made training programmes for industry.

## Contact Details

**Professor Ian W. Marison, BSc, PhD**
**Interim Director, National Institute for Bioprocessing Research and Training**

Engineering Building
Fosters Ave
Mount Merrion
Blackrock
Co. Dublin

Tel: +353 (0) 1 700 8393/215 8100
email: *ian.marison@dcu.ie/ ian.marison@nibrt.ie*
www.nibrt.ie

## The Edgeworth Centre for Financial Mathematics (ECFM)

The Edgeworth Centre for Financial Mathematics (ECFM) involves research from the Schools of Mathematical Sciences in DCU and UCC, as well as researchers from the DCU Business School and the University of Limerick. Funded by the SFI, the ECFM is the first national research centre in Financial Mathematics. The directors of the Centre are Professor Paolo Guasoni (DCU) and Professor Bernard Hanzon (UCC). Research carried out by the Centre includes modes of inefficient financial markets, economic testing, liquidity risk, filtering and pricing in stochastic volatility models.

## Contact Details

**Professor Paolo Guasoni**
**School of Mathematical Sciences**

Faculty of Science and Health
Dublin City University
Dublin 9

Tel: +353 (0) 1 700 8921
email: *paolo.guasoni@dcu.ie*

## The Irish Separation Science Cluster (ISSC)

The impact of analytical science on the ability of industry to deliver on almost all aspects of their activities is one which has for a long period of time been underestimated. From evaluating the quality of the air we breathe and the water we drink, to the quality testing of the tablets we prescribe, analytical science, and its major constituent, namely separation science, plays a vital and often unappreciated role. The significance of separation science to the pharmaceutical, personal care products and growing bio-pharmaceutical industries is not a matter of debate for them. From testing of raw product quality, to process analysis, to bulk product production, purification and isolation, to the final quality control tests carried out upon the boxed tablet/solution prior to shipping, separation science is essential, integral and without alternative.

Arising from the Science Foundation Ireland Cluster award for the establishment of the 'Irish Separation Science Cluster', Dublin City University and University College Cork are collaborating on an exciting multi-disciplinary and multi-partner research effort focused on the development of new materials, methods and technologies toward the advancement of the separation sciences and the provision of separation science based solutions to the characterisation of complex biological systems. The award established a network of leading researchers within Ireland and abroad with interests and expertise in the areas of new advanced materials and material surface chemical modification, bio-ligand characterisation and immobilisation, chromatographic interactions and novel phase selectivity, advanced chromatographic systems and complex systems analysis.

The programme will focus on the development of new bio-selective and advanced particle and monolithic materials for application within multi-modal and multi-dimensional systems, both conventional chromatographic and miniaturised chip based devices, to expand the current separation science boundaries of speed, efficiency, resolution and identification capabilities, in relation to the qualitative and quantitative analysis of target bio-molecules and marker species within complex dynamic biological matrices. Three strands focusing on new materials, advanced methods and new technologies, will stream together over the initial three year period of the project, each supporting the other, and converging together with industrial support to deliver output projects in the two areas of chromatographic process control and marker identification (bio-pharma) and miniaturised chromatographic/electrophoretic based platforms for diagnostic application in biological samples.

### Programmes

- Micro-Fluidic Chip Based Multi-Modal Separations
- Orthogonal and Comprehensive Two-Dimensional Liquid Chromatography (2D-LC) for Complex System Analysis
- Molecular Biology/Protein Chemistry
- New Bio-Affinity Phases for Separation Science
- Integration of on-chip miniaturised separation channels and bio-electrochemical detection using nano-particle and nano-structured surfaces
- Hyphenated techniques; CE-MS for study of dynamic biological systems and diagnostics
- Supercritical fluid generation of fluorinated chromatographic materials, including nano-materials and nano-structured surfaces

## Contact Details

**The Irish Separation Science Cluster**

Research and Engineering Building
Dublin City University
Dublin 9, Ireland

Tel: +353 (0) 1 700 5729
Fax: +353 (0) 1 700 8021
*www.separationscience.ie*

## Molecular Therapeutics for Cancer, Ireland (MTCI)

Molecular Therapeutics for Cancer, Ireland (MTCI) is a Science Foundation Ireland-funded Strategic Research Cluster (SRC) which aims to discover and develop new anti-cancer drugs.

Under the leadership of Consultant Medical Oncologist, Professor John Crown, with Dublin City University as lead academic institution, the SRC in Molecular Therapeutics for Cancer will assemble and build a fully-integrated national translational cancer drug discovery and development programme that will significantly benefit cancer patients in Ireland.

MTCI is a collaboration of researchers from Dublin City University, University College Dublin/St Vincent's University Hospital, Trinity College Dublin/St. James' Hospital and the Royal College of Surgeons in Ireland, with the Irish Cooperative Oncology Research Group as clinical trial partners.

MTCI's industry partners are GlaxoSmithKline, Pfizer, Merck Sharpe & Dohme, Novartis, Roche, Amgen, Erigal, Caliper Life Science and AntiCancer Inc.

There is an urgent need for improved drug treatments for cancer, which is emerging as the leading cause of mortality in Ireland and other western countries. Traditional cancer chemotherapy has resulted in improved outcomes for some types of cancer, but remains a generally unsatisfactory form of treatment, with low rates of cure, and prominent side-effects.

There is now a much greater understanding of the molecular basis of malignancy, and multiple potential molecular targets for new drugs have been identified. The introduction of novel rationally designed molecularly targeted treatments has revolutionised the treatment of some types of cancer.

Another critical difference is that the new approach is "translational", i.e. it involves intense interaction between laboratory and clinical investigators. Thus, modern cancer drug development begins with recognition of clinical need, and progresses through molecular target identification, drug synthesis, pre-clinical testing, clinical trials and molecular analysis of tissue samples from treated patients

Many critical components of the development process for molecular cancer therapeutics exist in Ireland, but are dispersed across multiple institutions. MTCI represents an attempt to capitalise on potential synergies between these resources, in order to develop "Ireland Inc." as a site for cancer drug development.

## Contact Details

email: *researchmanager@mtci.ie*
Website: *http://www.mtci.ie*

# School of Biotechnology

## Introduction

The School of Biotechnology is a strategic unit in the Faculty of Science and Health at Dublin City University. It is located in the Science building, which incorporates both teaching and research facilities together with a pilot plant. The School is unique in having Bioprocess Engineers, Environmental Engineers, Biochemists, Microbiologists, Geneticists, Immunologists, Bioinformaticians and Pharmacologists within a single departmental unit, thus encouraging inter-disciplinary approaches to teaching and research. The School is an active centre of basic and applied research. Members of staff have collaborative links with national and international research laboratories and attract funding from many sources including the Health Research Board, the European Union, the Welcome Trust, Science Foundation Ireland, the HEA, the World Health Organisation, Enterprise Ireland, the Irish Cancer Society, the Department of Agriculture, Teagasc, the Environmental Protection Agency and industry. Researchers in the School also work in close collaboration with national centres of excellence based at DCU, in particular the National Institute for Cellular Biotechnology (NICB), the National Centre for Sensor Research (NCSR), the Centre for BioAnalytical Sciences (CBAS), the Biomedical Diagnostics Institute (BDI) and the International Centre for Neurotherapeutics (ICNT) **NICB**, directed by Professor Martin Clynes, is a multidisciplinary centre of research excellence in fundamental and applied cellular biotechnology, molecular cell biology and biological chemistry drawn from biologists, biotechnologists, chemists, computer scientists and experts In bioscience communication. **CBAS**, directed by Professor Harry Holthofer, focuses on the development of new online/off-line and at line technologies and methods for biopharmaceutical products and processes that will lead to efficiencies in the biopharma production line. The particular focus for this research is on analytical methods for rapid screening of a wide variety of biomaterials associated with bioproduction processes, ranging through amino acids, peptides, carbohydrates and cellular matter with particular emphasis on large molecules, such as glycoproteins. Fast separation techniques coupled with information rich detection schemes (e.g. FT-MS, tandem MS-MS, Q-TOF and optical spectroscopic methods) and new biosensors are being applied to the analysis of macro-biomolecules of pharmaceutical interest. The **BDI**, directed by Professor Michael Berndt, is a multidisciplinary research institute focused on the development of next generation point-of-care biomedical diagnostic devices. The **NCSR**, directed by Professor Dermot Diamond, is a multidisciplinary research facility focused on the development of chemical and biological sensors for medical diagnostics, food quality assurance and environmental monitoring. The **ICNT**, directed by Professor Oliver J. Dolly, is a multidisciplinary and well funded Centre undertaking research into the fundamental mechanisms of neurotransmitter release and its control by voltage-activated K+ channels. Such a major Initiative was launched to develop novel treatments for certain neuronal disorders, based on deciphering the molecular basis of abnormalities in synaptic transmission.

In addition the School has a strong Environmental Biotechnology and Engineering cluster comprising multidisciplinary researchers Involved in a wide range of waste removal and degradation research projects.

The Centre for Bioanalytical Sciences (**CBAS** – *www.dcu.ie/cbas*)

The National Institute for Cellular Biotechnology (**NICB** – *www.nicb.ie*)

The National Centre for Sensor Research (**NCSR** – *www.ncsr.ie*)

The Biomedical Diagnostic Institute (**BDI** – *www.bdi.ie*)

The International Centre for Neurotherapeutics (**ICNT** – *www.dcu.ie.icnt*)

## Contact Details

**Dr Ciaran Fagan**
**Head of School of Biotechnology**

Tel: +353 (0) 1 700 5284
email: *ciaran.fagan@dcu.ie*

## Research Interests within the School of Biotechnology

**Professor M. Clynes,** *BSc, PhD*

Chemotherapeutic drug-resistance in cancer (with Dr R. O'Connor, Dr N. O'Donovan, Dr V. Murphy, and Dr L. O'Driscoll)

Functional genomics/ribozyme and siRNA technology

DNA microarrays/gene knockout technology applied to cancer and diabetes (with Dr N. Barron, Dr P. Gammell, Dr P. Doolan, Dr L. O'Driscoll)

Tissue engineering for type I diabetes (with Dr L O'Driscoll and Dr N. Barron)

Proteomics applied to multidrug resistance and lung cell differentiation (with Dr P. Meleady, Dr J. Keenan, Dr A. Dowd and Dr P. Dowling)

Transcriptional, epigenetic and translational control of mammalian gene expression and DNA microarray technology (with Dr F. O'Sullivan and Dr P. Meleady)

**Professor Ian W. Marison,** *BSc, PhD*

Bioprocess Engineering – Encapsulation

Monitoring and control of microbial and animal cell processes (PAT; process analytical technologies)

Integrated bioprocessing with in-situ product recovery

Microencapsulation of animal and microbial cells, drug delivery, implants

Microencapsulation for in-situ product recovery and enzyme bioconversions

Bioflocculents for water treatment

Biofilters for organics and metals recovery

Bioethanol production as renewable energy resources

High density animal cell culture

**Professor R. O'Kennedy,**
*BSc, PhD, CBiol, FIBiol, FIBioII*

Genetic, robotic and associated systems for antibody production

Development of novel antibody and cell-based sensor systems

Drug metabolism and mode of action (coumarins and warfarins)

Antibody-based assay development

Environmental and food analysis (e.g. antibiotics, micro-organisms, mycotoxins, anti-helminthics, antiprotozoans and pesticides)

Development and use of biochips and arrays

Rapid methods for the detection of disease-related markers, e.g. cardiovascular; cancers (prostate and leukaemia)

Forensic analysis, including the detection of drugs of abuse

Tumour imaging/targeting using liposomes

**Dr P. Cummins,** *BSc, PhD*

Cardiovascular diseases (atherosclerosis, stroke)

Vascular endothelial cell signaling and dysfunction

Hemodynamic regulation (shear stress, cyclic strain) of vascular cell physiology

Zinc metallopeptidases and MMPs

Intercellular junctions (adherens and tight junctions)

Blood-brain barrier physiology

**Dr R. Devery,** *BA (Mod), PhD, FIFSTI*

Health benefits of buttermilk fat globule membrane lipid components

Conjugated linoleic acid isomers and cancer

Functional foods

**Dr C. Fagan,** *BA (Mod), PhD*

Protein stability and stabilisation

Protein engineering of horseradish peroxidase

Application of peroxidases (chemically-modified and recombinant) in biosensors

Chemical modification of proteins

Use of proteinases in peptide synthesis, especially chemically-modified trypsins

**Dr G. Foley,** *BE, MS, PhD, MIEI Membrane Separation Technology*

Applications of artificial neural networks

Mathematical modelling of bioprocesses

**Dr P. Johnson,** *BSc (Hons), PhD (QUB)*

Viral modulation of both adaptive and innate responses in an established ex vivo human immune model

Identification of the intracellular components targeted by viral proteins to antagonise/evade important host defences

Development of key viral molecules which may modulate immune responses in immune mediated diseases such as chronic inflammation

**Dr P. Leonard,** *BSc, PhD*

Point of care biochip chips for cardiovascular disease

High throughput screening and selection technologies

Genetic engineering and antibodies

Antibody-based immunoassay development and validation for clinical, environmental and food analysis

Study of biosensor sensor methodologies for biomolecular interaction analysis

**Dr C. Loscher,** *GIBiol, PhD*

Immunomodulation/modulation of the immune system

Autoimmune disease

The anti-inflammatory mechanisms of dietary fatty acids

Role of inflammation in development of diabetes and atherosclerosis

Activation of immune clearance mechanisms by Clostridium difficile

Virulence factors for Clostridium difficile infection

**Dr E. Marsili,** *MSc, PhD*

Whole cells biosensors

Microelectrodes for bacterial biofilms

Electrochemical methods for characterisation of electron transfer in biofilms

Microbial fuel cells

Biofilm microscopy and image analysis

Heavy metal bioremediation

Life Cycle Engineering

**Dr J. Ní Mhurchú,** *BE, PhD*

Applications of artificial neural networks

Mathematical modelling of bioprocesses

Advances in Teaching and Learning

**Dr Mary J. O'Connell,** *BSc, PhD*

Molecular Evolution

Mammalian and animal evolution

Comparative and Functional Genomics

Phylogenomics

Paleobiochemistry

**Dr Michael O'Connell,** *BA (Mod), PhD*

Genetic methods for the detection of protein/protein and protein/DNA interactions in bacteria

One and two hybrid systems

The genetic regulation of iron uptake in bacteria

Bacterial lectins and their applications in bioprocessing

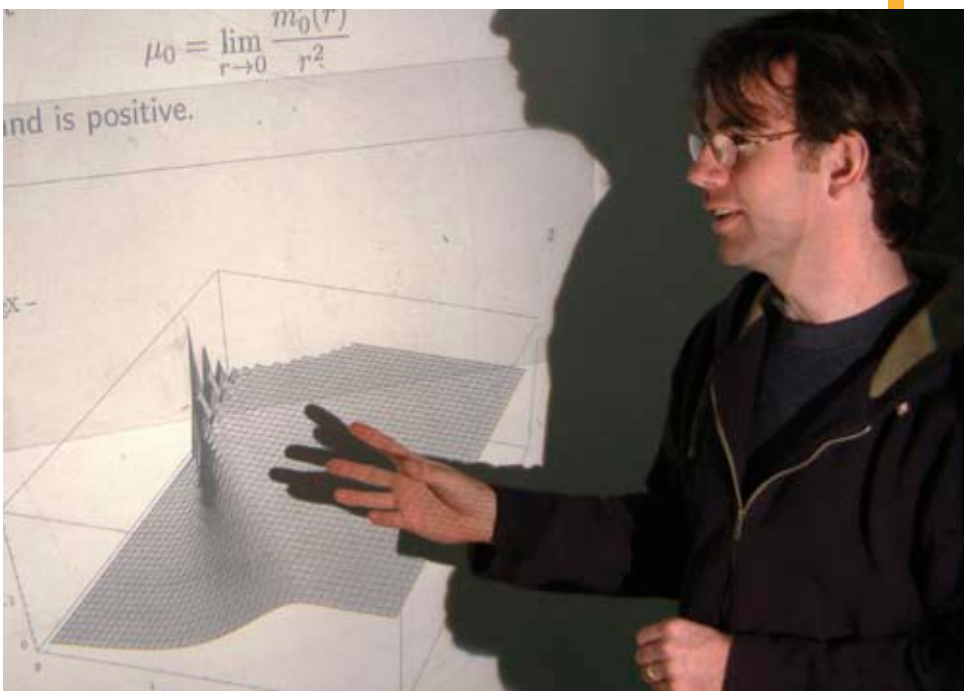
**Dr B. O'Connor,** *BSc, PhD*

Purification and characterisation of neuropeptide inactivating enzymes

Synthesis of neuropeptides and neuropeptide analogues

Synthesis of neuropeptidase inhibitors

Regulation of neurotransmitter activity in brain



**Dr M. Parkinson,** *BSc, PhD*

Transformation of oak, larch and sitka spruce somatic embryos

Rejuvenation of oak through grafting in vitro

Characterisation of physiological and molecular markers for juvenility in woody plants

Micropropagation of woody plants through embryo fermentations

Generation of Chimeras for improved disease resistance

**Dr A. Parle-McDermott,** *BA (Mod), PhD*

Nutritional genomics: the interplay between diet, genomics and disease

Molecular characterisation of folate-related genes and their polymorphisms

Transcriptome analysis of nutrient deficiencies

Nutrient effects on epigenetic regulation

**Dr B. Quilty,** *BSc, PhD, FIFSTI, MIBioII*

The aerobic biological treatment of waste streams in particular wastewater – activated sludge, aerobic granules, microbial mats

Bioaugmentation of mixed microbial populations

Factors governing bacterial aggregation

Detection and identification of bacteria in the environment

Evaluation of novel chemicals for antimicrobial activity

Investigations of antibiotic defence mechanisms in Pseudomonas aeruginosa

**Dr J. Tobin,** *BE, MSc, PhD, CEng, MIChemE*

Biosorption for removal of metal ions and dyes in batch and continuous flow systems

Microbial uptake and volatilisation of metals and metalloids

Organotin interactions with microbial cells and speciation/toxicity modelling

Study of the effects of immobilisation on cell growth morphology and resistance to toxins

Metal monitoring in river and estuarine systems

Investigation of occurrence and fate of trace pharmaceuticals in the environment

**Dr D. Walls,** *BSc, PhD*

Biology of Epstein-Barr virus (EBV) and associated cancers

Virus-associated subversion of cell pathways including Notch signalling

Apoptosis, transcriptomics and gene regulation in B lymphocytes

Cloning and expression of recombinant proteins and the design of expression vectors

Development and commercialisation of diagnostic kits for the agri-food industry and veterinary medicine

Novel technologies for nucleic acid detection

# School of Physical Sciences

## Introduction

The School has a complement of 18 academic staff, 70 researchers (comprising MSc/PhD students, postdoctoral fellows and research officers) and a team of six technical, IT and administration staff.

Major areas of activity include:

- Astronomy
- Laser Plasma Research
- Optical Sensors (Chemical and Biomedical)
- Microfluidics
- Plasma Physics/Plasma Materials Processing and Diagnostics
- Physics Education
- Semiconductors and Semiconductor Nanostructures
- Surface Science
- Theoretical and experimental atomic, molecular and optical physics

Funding has been provided by industry, Irish Government agencies (including SFI, IRCSET and Enterprise Ireland) and also the European Union. The research is carried out in purpose built laboratories.

## Contact Details

**Professor Greg Hughes**
**Head of School of Physical Sciences**

Dublin City University
Dublin 9, Ireland

Tel: +353 (0) 1 700 5390
email: *greg.hughes@dcu.ie*
*www.dcu.ie/physics*

# Research Specialities

## The Plasma Research Laboratory (PRL)

**Professor M.M. Turner,**
**Dr P. Swift,**
**Dr B. Ellingboe**

The Plasma Research Laboratory (PRL) focuses on radio frequency plasmas, which are used as ion sources in fusion research, and for plasma processing in many industrial applications. RF plasma sources are developed and optimised and the fundamental physics of plasma generation and stability are investigated. Electrical and laser diagnostics are also developed and sophisticated computer simulations are used to compare the experimental data to theory. The laboratory leads the Irish Association in the European fusion development programme. PRL fusion research is concerned with negative ion sources for neutral beam injection heating of magnetically confined fusion experiments. The laboratory is an important part of the National Centre for Plasma Science and Technology.

## The Centre for Laser Plasma Research (CLPR)

**Professor J.T. Costello, Emeritus Professor E.T. Kennedy, Dr J.P. Mosnier, Dr L. A.A. Nikolopoulos, Dr P. van Kampen**

The CLPR laboratory has attained a position of international leadership through its fundamental and applied research on the interaction of intense laser beams with materials. In these interactions hot and dense plasmas are formed which can be used as sources of light from the IR to X-ray region for both spectroscopy and imaging. These 'plasma plumes' are also used for materials deposition, photon based plasma diagnostics and analytical science, not just in the usual visible-infrared region but also in the extreme ultraviolet and X-ray special ranges. The group has played important and often leading roles in many national and international research collaborations. The CLPR is a key part of the National Centre for Plasma Science and Technology where it has access to many facilities such as XRD, STM, XRD, SEM etc. Most recently the group has joined new international research collaboration on femtosecond 'pump-probe' experiments involving the extreme UV (XUV) Free Electron Laser at DESY in Hamburg and the LCLS X-ray FEL at Stanford. It has also established related theoretical research in strong field processes in atomic and molecular systems led by LAAN.

The CLPR node of the NCPST is divided into a suite of extremely well equipped laboratories (six experimental and one theoretical) working on:

- Pulsed laser deposition of materials (PLDM)
- Materials characterisation using laser induced plasma spectroscopy (LIPS)
- Precision optical and particle diagnostics of laser produced plasmas
- Development of laser plasmas as XUV and X-ray light sources
- Multicolour femtosecond time resolved spectroscopy
- *Ab-initio* theory of dynamics in strong field-atomic/molecular interactions
- Experiments in atomic/molecular interactions with strong field femtosecond lasers

## The Optical Sensors Laboratory (OSL)

**Professor C. McDonagh**

Researchers in the Optical Sensors Laboratory work on the development of optical solutions to real-world measurement problems in application areas such as biomedical sensing and environmental monitoring. Advances in optoelectronics are combined with new materials to produce novel devices which undergo rigorous testing and characterisation. Projects are varied and are often very multidisciplinary in nature, ranging, for example, from software modelling of optical waveguide structures to the development of optical biochips for point-of-care biomedical applications. Research activity is concentrated mainly on the use of novel optical fluorescence-based sensor platforms for bosensing and the development of novel nanomaterials for enhanced biosensor performance.

- Optical biochips for biomedical applications
- Fluorescence-based assays for blood platelet function
- Sol-gel based nanosensors for inter and intra-cellular sensing
- Development and characterisation of reagent-doped sol-gel derived sensor coatings for environmental and bioprocessing monitoring
- Multi-analyte sensors based on patterned waveguides
- Planar lightwave circuits
- Evanescent-wave interactions

The laboratory has attained international prominence in the field of optical chemical sensors and biosensors. OSL researchers are currently developing optical biochips for use in medical diagnostics as well as working closely with industry towards the development of advanced sensors for commercialisation in the near future. The laboratory plays an important role in the National Centre for Sensor Research (NCSR), which is a world renowned, large-scale, multidisciplinary research centre focused on the fundamental science and applications of chemical sensors and biosensors. Its state-of-the-art facilities comprise custom-designed laboratories, clean-rooms, a polymer micro fabrication suite, a biohazard facility and a range of other support laboratories. OSL also plays a key role in the Biomedical Diagnostics Institute (BDI) which was established in 2005 with SFI funding and focuses on the development of next generation biomedical diagnostic devices.

## The Semiconductor Spectroscopy Laboratory (SSL)

**Professor M.O. Henry, Dr E. McGlynn**

Semiconductors lie at the core of information and communications technology. For example, the miniature lasers used for reading the coded information stored on compact disks are manufactured from semiconductor materials using advanced processing technologies.

Researchers in the Semiconductor Spectroscopy Laboratory contribute to research in these areas by (a) studying the growth of novel semiconductor nanostructures and thin films and (b) using optical and electronic spectroscopic methods to study the properties of these semiconductor materials. Much of our characterisation work is carried out at very low temperatures where the material properties of the semiconductor are most clearly revealed. Temperatures as low as 2K (-271°C) are routinely achieved.

Facilities in the group include vapour phase transport and chemical solution growth apparatus, high performance spectrometers, a high field superconducting magnet and an excellent range of cryogenic equipment. We also collaborate closely with the PLD thin film growth laboratory in DCU.

The topics studied include the synthesis and analysis of wide bandgap semiconductors such as ZnO nanostructures and thin films grown using vapour phase transport, chemical solutions methods and pulsed laser deposition. In addition our group is interested in impurity and defect analysis in a variety of semiconductors. The laboratory, which is funded by various grant agencies including Science Foundation Ireland (SFI), plays an important role in the National Centre for Plasma Science and Technology at DCU and is a participant in international experiments at CERN, where radioactive isotopes are used for the exploration of impurity characteristics in semiconductors.

## The Surface and Interface Research Laboratory (SIRL)

### Professor G. Hughes, Dr A. Cafolla, Dr E. McLoughlin

Fundamental studies of surfaces have led to important developments in related areas of applied science such as semiconductor microelectronics, thin film technology and corrosion science. Surface and interface research at DCU has been generally oriented towards semiconductor and dielectric materials, although recently interests have expanded to investigate the interaction of organic molecules with both semiconductor and metal surfaces. In the latter work, the experimental approach taken involves the deposition of organic molecules on clean semiconductor and metal surfaces with the aim of developing methods of controlling the growth of ordered organic thin films for microelectronic and sensor applications. There has been ongoing research programmes in the characterisation of new materials for both low-k and high-k dielectric layers used in microelectronic devices. The Surface Science Research Laboratory (SSRL) uses a range of spectroscopic techniques to investigate the structural, electronic and chemical properties of material surfaces. These include Scanning Tunnelling Microscopy (STM), Auger Electron Spectroscopy (AES), X-ray photoelectron spectroscopy (XPS), ultraviolet photoelectron spectroscopy (UPS), reflectance anisotropy spectroscopy (RAS), secondary ion mass spectroscopy (SIMS), atomic force microscopy (AFM), low energy electron diffraction (LEED) and temperature programmed desorption (TPD).

The Surface Physics group has been involved in using synchrotron radiation investigative techniques for many years. Its participation involves travelling to large-scale facilities such as those at the Astrid Synchrotron In Aarhus, Denmark, the Max-Lab In Lund, Sweden and the National Synchrotron Light Source (NSLS) in Brookhaven, New York. The experiments performed are either enhancements of laboratory techniques, for example Angle Resolved Ultraviolet Photoelectron Spectroscopy (ARUPS) and high resolution core level X-ray Photoelectron Spectroscopy (XPS), or techniques which are only possible with a tunable photon source, for example, Normal Incidence X-ray Standing Waves (NIXSW), High Energy XPS (HEXPES) and X-ray Absorption and Emission Spectroscopies.

## Astronomy

### Professor E.J.A. Meurs (DIAS; Adjunct Professor at DCU)

Research interests include several aspects of the evolution of massive stars and their role in stellar clusters. Optical spectroscopy is employed to investigate the late stages of massive star evolution which are as yet not very well known. Stars in various stages of this late evolution are studied such as Luminous Blue Variables (LBVs), B{e} stars, Wolf-Rayet stars and Of stars, all presenting various phenomena connected with mass ejection. The role of massive stars in binary systems is also investigated by analysing the production of runaway stars, massive stars which are observed travelling at abnormally high speeds outside the galactic plane. Competing models envisage either the explosion of a supernova in a binary system or dynamical ejection from the parent cluster for the production of runaway stars. X-ray emission from stellar clusters is studied with the Chandra and XMM X-ray space observatories in order to investigate the evolution of their stellar population. Some massive stars may also be the progenitors of the most powerful phenomena in the Universe, the still puzzling Gamma Ray Bursts. We are involved in high resolution optical spectroscopy and X-ray observations of Gamma Ray Bursts. Further extragalactic studies focus on X-ray source populations in galaxies, Active Galactic Nuclei and multiwavelength characteristics of Wolf-Rayet galaxies.

### Dr Masha Chernyakova

The current generation of high-energy gamma-ray telescopes, have revealed new aspects of the universe in its most extreme and non-thermal form. In particular it is now clear, that in a number of astronomical systems the acceleration of charged particles to very high energies is extremely efficient. This is the case in the cold ultra-relativistic winds from pulsars, in the relativistic outflows associated with micro-quasars, active galactic nuclei and gamma-ray bursts. An understanding of these extreme accelerators requires: (i) a synoptic view of all available multi-wavelength observations of the Extreme Accelerators together with a good astrophysical understanding of their environments and genesis; (ii) detailed plasma and magnetohydrodynamic models of their dynamics, both analytic and numerical and (iii) observational tests of the models using these predictions. Remarkably, we find extreme accelerators related to different types of astrophysical

objects, operating under different conditions and on different space and time scales. This suggests that despite the variety of conditions and systems, there may be a small set of common (self-regulated) processes, most likely of nonlinear origin, which create (e.g. through amplification of magnetic fields and excitation of plasma turbulence) almost ideal conditions for particle acceleration. Research students and postdoctoral researchers in this field of high energy astrophysics in DCU will work towards gaining a more detailed insight into the key non-thermal processes leading to the highly effective particle acceleration. Theoretical research will be combined with modelling and interpretation of high quality multi-wavelength data. Research will be carried out in close collaboration with the Centre for Astro-Particle Physics and Astrophysics (CAPPA), led by Prof. Felix Aharonian in the Dublin Institute for Advanced Studies (DIAS).

## Physics Education Group

**Dr P. van Kampen,**
**Dr E. McLoughlin,**
**Professor M.O. Henry**

The Physics Education Group conducts a coordinated programme of research, curriculum development and instruction to improve student learning in physics. The basis of work is activity-based learning in which the students play a central role in the teaching and learning process. The work of the group is guided by research through in-depth studies of student understanding where common conceptual and reasoning difficulties are identified and addressed and student attitudes towards physics are monitored. Currently our primary emphasis is on the teaching and learning of basic concepts and understanding of future secondary school science teachers. Teaching methodologies, such as, problem based learning, guided discovery learning, computer based learning and action research are implemented and evaluated.

## Microsystems

**Professor J. Ducrée**

This still very young and fast growing group investigates the fascinating science occurring when we scale down physics to micro- and nanodimensions. The main emphasis of the research takes place in the field of "microfluidics" which is the dynamics of liquids and gases in confined microenvironments. Nature is by far the most skilful artist in microfluidics, orchestrating breathtaking phenomena as diverse as living cells, the self-cleaning "Lotus" effect, water supply in trees, and the cardio-vascular system in the human body, to name only a few. Professor Ducrée's group specifically develops microfabricated lab-on-a-chip devices for bioanalytical applications in the life sciences. Important fields of application are point-of-care technologies for early diagnostics in the fields of cancer research, cardio-vascular and infectious diseases, bioprocess monitoring and systems biology. Major parts of this multi-facetted research are carried out in collaboration with a strong cohort of academic, clinical and industrial partners in the framework of the Biomedical Diagnostics Institute (BDI) and the National Centre for Sensor Research (NCSR) at DCU.

# School of Chemical Sciences

## Introduction

With areas of research and professional interest spanning the four main branches of chemistry, the School currently has 20 academic staff and over 85 postgraduate research students registered for MSc or PhD degrees.

The research in the School is wide-ranging, including environmental and analytical chemistry, combinatorial synthesis, nanotechnology, photochemistry and spectroscopy. Funding for these developments has been provided by industry, by Irish Government agencies, and by the European Community. This

work is undertaken in modern laboratories using a collection of state-of-the-art instruments. Facilities available include (i) spectroscopy (infrared, ultraviolet, nuclear magnetic resonance, ns time-resolved and luminescence, atomic absorption and emission), (ii) chromatography (high performance liquid, ion and radial centrifugal chromatography), (iii) mass spectrometry and (iv) microscopy (high-resolution scanning electron, fluorescence lifetime imaging, confocal laser scanning, confocal raman and scanning tunnelling).

## Research Interests within the School of Chemical Sciences

**Professor C. Long, BA, PhD, FICI, CChem, MRSC**
**Head of School of Chemical Sciences**

Tel: +353 (0) 1 700 8001
email: *conor.long@dcu.ie*
*www.dcu.ie/chemistry*

Transition metal organometallic chemistry: thermal and photochemical properties of such complexes with a view to studying the reactivity of coordinatively unsaturated species

Time resolved spectroscopy, matrix isolation and quantum chemistry

**Dr D.F. Brougham,** *BSc, PhD*

NMR spectroscopy applied to materials science

Our research is mainly based on the applications of NMR spectroscopy to the study and development of new materials. Specifically we perform temperature- and magnetic field-dependent NMR measurements to study exchange and dynamic processes in interesting material and biological systems. Current research projects include:

- Proton transport in new materials for fuel cells
- New contrast agents for medical imaging
- Membrane dynamics
- Metabonomics of cancer by NMR spectroscopy

**Professor D. Diamond,**
*DSc, PhD, MSc, BSc, MICI, FRSC, CChem*

Analytical chemistry and host-guest chemistry

Optical and Electrochemical sensors

Wireless Sensor Networks and their applications

Sensor Platform development including Lab-on-a-chip devices

Design, synthesis and characterisation of molecular receptors, particularly calixarenes

Smart (switchable) materials and surfaces based on conducting polymers and molecular photoswitches

Further information is available at the group website: *www.dcu.ie/chemistry/asg/*

Professor Diamond is currently leading a major Science Foundation Ireland initiative involving researchers from DCU and UCD. Further information can be obtained from *www.adaptiveinformation.ie*

**Dr O. Finlayson,**
*BSc, PhD, FICI, CChem, MRSC*

Science Education, particularly Chemistry Education

Research area focuses on development of student centred approaches to teaching science, particularly chemistry at all educational levels, and in particular, the education of pre-service and in-service teachers. Projects include appropriate use of assessment and technology in the teaching of science (particularly chemistry), in facilitating an investigative approach to the teaching of science, the effects of technology on science teaching at second and tertiary level, and the impacts of these developments on science curricula. Study of students' approaches to learning in science at all education levels inform the development of suitable methodologies and pedagogies, e.g. context and inquiry-based learning and student engagement in science. Sustaining science across the transitions is also a key research area (e.g. primary level to secondary, secondary to tertiary).

**Professor R.J. Forster,**
*BSc, PhD, MRSC, CChem*

Creation of novel materials that have useful electronic or photonic properties because they are highly ordered on the molecular length scale. These materials are rationally designed for applications in molecule-based electronics, display devices and sensors.

New experimental techniques to probe chemical reactivity under extreme conditions, e.g. in solids and at cryogenic temperatures and at very short timescales

New theoretical insights – factors that influence electron transfer

This fundamental work impacts our understanding of a wide variety of areas including biological membranes, corrosion, heterogenous catalysis and the emerging area of molecule-based electronics

**Dr J.F. Gallagher,** *BSc, PhD, MRSC, CChem*

Synthesis and structure in Chemistry (chemical crystallography)

Synthesis and structural studies of neuropeptides of interest, e.g. as K+ channel blockers

Structural systematics of organic pharmaceuticals: structural informatics (database studies)

Crystal engineering (use of hydrogen bonding) in the solid-state design of new materials

Metallocene derivatives (ferrocenes) for novel materials

Electronic publishing: *http://www.iucr.org* (Co-editor of the International Union of Crystallography journal Acta Crystallographica Section C (Guest co-editor of Acta E in 2006/2007) and member of the IUCr Journals Commission body since 2000)

**Dr N. Gathergood,**
*BSc, PhD, FICI, MRSC, MRACI, CChem*

Our research investigates the advantages of asymmetric catalysis as part of the drug development process. The core of this project is the creation of a product library selected for its expected medicinal chemistry profile. Key aspects are the design of improved catalysts, novel reactions and optimised methods. Many structures of pharmaceuticals and their drug interactions are a source of inspiration for the catalysis field. The overlap of asymmetric catalysis and medicinal chemistry is further extended if the chiral ligand is also a target for a drug development project. The group is also committed to more environmentally friendly chemistry for the preparation of drugs. Biodegradable solvents, especially ionic liquids, can be prepared which are tailored to specific reactions.

Areas of research include:

- Asymmetric Catalysis
- Macrocyclic Antibiotics
- Excitory Amino-acids
- Chiral macrocycles
- Metal based therapeutics
- Green Chemistry – 100% atom efficient reactions
- Green Chemistry – biodegradable solvents & biodegradable catalysts
- Synthetic Medicinal Chemistry (Cancer, Parkinson's, and Asthma)

**Dr A. Heise,** *BSc, PhD*

Our research interest is in the rational design of functional polymeric materials for advanced applications. A strong emphasis is on the development of new synthetic routes towards well-defined funcional materials, which includes controlled polymerisation and functionalisation techniques as well as biotechnological methods. Target application areas are sensor and biomedical technology and nanoscience. In a highly interdisciplinary approach synthetic and application driven research is conducted in collaboration with several academic and industrial partners.

Research areas include:

- Polymer synthesis and characterisation
- Synthetic polypeptides
- Bioconjugated nanoparticles
- Smart responsive polymers
- Biocatalysis
- Degradable polymers from renewable resources

**Dr P. James,** *BSc, PhD, MICI, CChem, MRSC*

Organic chemistry with particular emphasis on the synthesis of nitrogen heterocycles from acyclic precursors by oxidative methods

Rearrangement and cycloadditions in organic nitrogen chemistry

Synthesis of modified penicillins

**Dr B. Kelleher,** *BSc, PhD*

Molecular characterisation of Natural Organic Matter and influence on carbon/nitrogen cycling

Soil and marine microbial uptake of $CO_2$

Characteristics and dynamics of marine pockmark sediments and seepage areas

Structural composition of marine and freshwater dissolved organic matter

Degradation of pollutants from the oil industry in soil

Growth mechanisms of marine gas hydrates

Biodiesel from marine microbes

**Dr P. Kenny,** *MSc, PhD, FICI*

Organic chemistry

Synthesis and structural characterisation of novel cathepsin protease inhibitors based on the N-benzoyl-L-leucine glycine nitrile scaffold

Synthesis of analogues of resveratrol. Fluorinated resveratrol analogues are potential anti-cancer agents.

Synthesis of ferrocenoyl and ferrocenyl peptide derivatives, potential anti-cancer and anion sensing agents. We have incorporated three key moieties in the synthesis of these unusual biological materials, namely, (i) an electroactive core, (ii) a conjugated linker that can act as a chromophore and (iii) an amino acid or peptide derivative that can interact with other molecules via hydrogen bonding.

**Professor T.E. Keyes,**
*GRSC, PhD, CSci, MRSC, CChem*

Photochemistry and spectroscopy, in particular, electronic, Raman, and time-resolved spectroscopies applied to the study of Electron and Energy Transfers in supramolecular and heterogeneous assemblies

Supramolecular interfacial chemistry, particularly the development of photoactive arrays which incorporate controlled degrees of inter-component, and interfacial communication for solar energy conversion and nanoelectronic devices

Luminescent polymers and wires for sensing, electrochromics and display

Nanoscale Interfacial platforms for surface enhanced bio-Raman spectroscopy

Luminescent probes for heterogeneous microenvironments and biomaterials

**Dr A. Morrin,** *BSc, PhD MRSC*

Analytical Chemistry including electrochemical sensors and chromatographic separations

Processable functional (nano)materials including conducting polymers and hybrids thereof

Printed sensors for environmental and biomedical applications

Electro-active monolithic µchip(EMU) technology – exploiting conducting polymer as a stationery phase in microfluidic chips for electrophoretic and chromatographic separations

Engineering nanostructures functional materials via templating approaches

**Dr K. Nolan,** *BSc, PhD (York University Canada)*

Our group is primarily interested in the design and synthesis of new macrocyclic materials that target the following applications:

The development of new nano-medicines targeting HIV in the early viral life cycle

The development of new porassium channel Inhibitors

The development of new chemoreceptors for application in environmental technologies

The development of new platforms of application in microflow synthesis

The development of new photocatalysts to be used in the removal of organic pollutants from industrial waste water

**Dr Christopher J. O'Brien,** *BSc, PhD*

Development of robust selective catalytic synthetic methodology via the synergistic utilisation of computation and experiment. The employment of target oriented synthesis aimed at the combat of significant biological problems.

**Dr M. Pryce,** *BSc, PhD, MBA*

Design, synthesis, medicinal applications and photochemistry of novel porphyrin systems

Organometallic systems that release NO and CO photochemically

Organometallic compounds as model compounds for the hydrodesulphurisation process

Novel materials with non-linear optical (NLO) properties

Photoisomerisation in organometallic systems

**Professor F. Regan,** *BSc, PhD MRSC*

Material design and method development for separations and sensors

Development of new materials for optical sensors for metal ion determinations. Smart materials for use in optical sensing, environmental monitoring and anti-fouling.

Marine water monitoring using sensor systems and investigation of anti-fouling methods for sensors

Molecularly imprinted polymer (MIPs) design for analyte enrichment and extraction

Development of extraction/enrichment/ separation methods (HPLC/GC-MS/CE) for the determination of endocrine disrupting chemicals and other compounds

Development of capillary electrophoretic methods for a variety of applications, including novel separations for chemotherapeutic drug mixtures

Environmental monitoring – biological monitoring

**Professor M.R. Smyth,** *BSc, PhD, DSc, FICI, CChem, FRSC, MRIA*

Analytical chemistry, particularly applications of voltammetry in biological and environmental chemistry

Modified electrodes, microelectrodes

Electrochemical immunoassay

Enzyme electrodes

Biosensors

Application of HPLC in drug analysis

Capillary zone electrophoresis

**Emeritas Professor H. Vos,** *BSc, PhD, FICI, CChem, MRSC, MRIA*

Supramolecular chemistry:

Coordination chemistry of polynuclear ruthenium and osmium compounds with emphasis on synthesis, photochemistry, electrochemistry, intramolecular energy- and electron-transfer processes and on their application in molecular computing, energy conversion and artificial photosynthesis.

Electrochemical studies of metal-containing polymers; their use for the modification of carbon nanotubes and their application in thin film sensing devices

**Dr B. White,** *BSc, PhD*

Development and application of analytical separation and detection techniques for the investigation of biochemical processes. I am particularly interested in the role of metals such as iron and copper in the initiation and propagation of oxidative stress leading to diseases and aging.

Analytical techniques include HPLC with UV, EC and MS detection, CE with UV and EC detection, Commet assay, FLow cytometry, applied for the detection of biomarkers of oxidative DNA damage, especially guanine derivatives.

Elucidation of the role of reactive oxygen species in the initiation and propagation of the oxidation of DNA, particularly metal mediated oxidation, and investigation of the effect of antioxidants on oxidative damage to DNA.

Participation in the European standards committee on urinary lesion analysis, for more information see *www.escula.org*

Development of novel electroacitve monolithic stationary phases for chromatography, particularly for microfluidic devices. (In collaboration with Dr Aoife Morrin).

# School of Nursing

## Introduction

A dynamic and rapidly growing University based School, the School of Nursing at DCU is recognised as a leader in its field and has a well established track record and expertise in the provision of innovative nursing and multidisciplinary educational, practice and research programmes at national and international level in partnership with the Health Service Executive and other health care systems, as well as voluntary and private sector organisations. The School of Nursing boasts state-of-the-art facilities and a dynamic, innovative staff who are actively involved in health service reform at a national and international level. Health4Life represents the evolving and vibrant inter-professional research portfolio of the School of Nursing at Dublin City University. It incorporates an exciting range of over-arching research topic clusters, each with a number of research programmes and embedded projects as follows:

- Understanding and transforming practice
- Psychological wellbeing
- Population and global health
- Health systems and processes

A number of cross-cutting strands are integral to all research activities within Health4Health. These include:

- Academic Practice
- A critical perspective on evidence, practice and education
- Service user participation at all levels of inquiry
- Technological innovation and informatics

The mission of Health4Life is to:

- Conduct high quality, relevant and innovative research with clearly defined outputs
- Promote inter-professional and inter-organisational research
- Push the boundaries in research innovation
- Enhance meaningful links between research, theory and practice
- Promote quality training and support for researchers
- Inform policy development

## Contact Details

**Dr Anne Matthews**
**Director of Research**

School of Nursing
Dublin City University
Dublin 9, Ireland

Tel: +353 (0) 1 700 8957
email: *anne.matthews@dcu.ie*

## Research Interests within the School of Nursing

**Head of School**
**C. McGonagle, *RNMH, RPM, RGN, Registered Nurse Tutor, DipN, BNS, MBS Health Care Management, PG Dip in Ed for Nurses & Midwives***

Community living for people with Intellectual Disability Challenging Behaviour

Non-national recruitment to intellectual disability In Ireland

Management in Nursing

Nursing Education

**C. Barron,** *MSc (Anthropology) BA (Hons), Dip Pharm RSCN, RGN, RNT*

Gender and play in children

Physical activity in primary school aged children and childhood obesity

Anthropology of children's play and games

The use of innovative and appropriate data collection methodologies in child research such as children's drawings, use of photography, interviewing children, children as co-researchers

**Dr Lorraine Boran,** *BA Hons Psychology, PG Dip Stat, Dip Legal Studies, PhD, LLB candidate*

Innovative cognitive fitness (Executive Function) assessment and intervention technology in senior adults; Cognitive reserve assessment; Cognitive decline intervention

Executive Function, Creativity and Aspergers Syndrome

Executive Function, Self-control, self-regulation, and resilience

Executive Function and Giftedness

Attentional control and addiction behaviour

Cognitive Psychology applied to intelligent information analysis and concept mapping

Law and Psychology

**Dr B. Casey,** *RGN, RMN, BA (Hons), PGDFHE, RNT, MSc Advanced Nursing, EdD*

Narrative and arts based approaches in health care practice, research and teaching

The experience of mental pain and healing

Achieving meaningful relationships – communication and interpersonal skills

**Dr J. Clarke,** *PhD, MSc, Diploma in Addiction Studies, RGN, RCN, RM, RPHN*

Advancement of understanding of what it means to give quality nursing/patient/client care

Public health/Community nursing

Paediatric palliative care

Primary health care

Work-based learning

Ethnographic methodological development

**J. Cleary-Holdforth,** *BSc (Hons), MSc (Hons), PG Certificate in Third Level Teaching and Learning, RGN, RM, Certificate in Renal Nursing*

Evidence-Based Practice – strategies to integrate EBP into education and clinical practice

Innovation teaching and learning strategies to enhance the learning experience for students and educators

Nephrology, dialysis, transplantation and quality of life

**Dr G. Clinton,** *RPN, RNT, BSc, MSc, PhD, DipStat*

Language use in healthcare

Clinical judgement and decision-making

**M. Clynes,** *RGN, RCN, RNT, BA (Hons), MSc.*

Clinical Learning Environment

Nurse Management

Perioperative Nursing

Problem Based Learning

**A. Cocoman,** *BSc (Hons), MSc (Hons), PG Certificate in Third Level Teaching and Learning*

Evidence based Practice Development – integrating practice evidence on injections into education and clinical practice and investigating "Living with a Long Acting Injection".

The integration of Clinical Governance into contemporary healthcare by auditing of the clinical learning environment of student nurses. Ensuring that quality is placed at the heart of the health care we provide and ensuring that we achieve the highest standards of care possible.

**J. Conlon,** *RGN, RCN, RNT, BSc, MSc, PostGrad Dip Ed, DipStatistics*

Paediatric Pain Management

Family Centred Care

Advanced Nursing Practice

Research Methods

**Dr M. Corbally,** *RGN, BNS (Hons), MSc*

Intimate partner abuse

Biographic Narrative Interpretive Method

Nurse telephone consultation

Nurse empowerment

**D. Corby,** *RNID, Grad Dip, MSc*

Manual handling

Assistive technologies

Intellectual disabilities

Education

Management

Training for managers

**E. Courtney,** *MSc, BNS (Hons), RNT, RPHN, RM, RPN, RGN*

Palliative Care

The needs and experiences of informal carers

Community nursing

**T. Danaher,** *RNID, RCNT, RNT, Cert Ed, MSc in Ed and Training Management, Dip in Counselling, Dip in Sociology and Nursing Care, Cert in Reflexology*

The care of people with Intellectual Disabilities and Epilepsy

The Registered Intellectual Disabilities Nurse's skills with people with Intellectual Disabilities and Epilepsy

Student nurses' experiences of the third year rostered practical experience

The evaluation of the clinical documentation assessment

Play activities and children with Intellectual Disabilities

**Dr M. Duffy,** *BA (Hons), MA, PhD*

Lesbian Health – experiences of health care

Lesbian Nurses – experiences of working in health care

The relationship between sexuality and health

Gender issues

Inequalities in health

**S. Duffy,** *RGN, DipN, HDip B-Studies, BSc, MSc*

Cardiology

Bioscience

Sociology

Legal issues

Management

**Dr P. Gallagher,** *BA Mod (Psychology), Dip Stat, PhD, PGCE, PGDipE*

Psychosocial impacts of illness, disability and loss (e.g. amputation)

Ability and participation of people with physical/sensory disability

Enabling technology, its integration into the self and its impact on body image and rehabilitation

**R. Glover,** *MEd, Postgrad Dip Counselling & Guidance, Postgrad Dip Psycho Sexual Therapy, Registered UKCP, Accredited BASRT, Member BACP*

Intimate relationships

Domestic violence

Alternative dispute resolution

Sexual functioning

Counselling and psychotherapy

Psychosexual therapy supervision

**Dr E. Gordon,** *RMN, Dip Child & Adolescent Psychiatry, Registered Family Therapist & Supervisor, MSc Psychotherapy, MSc Organisational Consultation & Management, PhD*

Suicide and suicidology

Working with trauma

Psychotherapy training, practice and supervision

**Dr T. Harrington,**
*PhD, RNT, RGN, BNS (Hons)*

Infant health and nutrition

Obesity and related disorders

Alternate methods of education such as enquiry based education

**L. Hartnett,** *MSc, Dip Soc/Voc Rehab, Dip Stats, BBS, RNID, RGN*

Social model of disability

Quality of life and intellectual disability

Work/employment and intellectual disability

**Dr P. Hussey,** *SRCN, SRN, Med & Training Management, PhD, MSc in Health Informatics*

Health Informatics

The adoption of CEN TC251 and ISO TC215 standards in health informatics within nursing documentation and the electronic health care record

Health
concept representation – terminology

Semantic interoperability

The adoption of Learning Technologies within education and training

**S. Hourican,** *MSc, BSc, RGN*

The role of lecturers in clinical practice

The clinical learning environment for students

Preceptorship and clinical practice

Utilising simulation to promote student learning

Integrating e-learning technologies to promote student learning

Health care assistance and nursing

**Dr K. Irving,** *PhD, BSc (Hons) Nursing, RGN*

Research into mental health and older people such as dementia, delirium, loneliness and other phenomena. PhD investigated the use of physical and chemical restraints with older people on acute medical wards, using qualitative methodologies influenced by the theories of Michel Foucault combined with a case study approach. Also involved in nursing decision-making.

**R. Jackson,** *RNT, BSc, RMHN, Cert. RT, Tt2*

Intrinsic motivation and practice development

How does a person resource their intrinsic motivation

Researching the effect of giving music therapy supervision to staff that initiate music programmes for people with intellectual disability

Researching the effect of introducing musical training CD's to address a specific training need for a person with intellectual disability

**R. Kane,** *RGN, DipN(Lond), BSc(Hons), MSc*

A&E nursing, healthcare

Psycho-social issues in A&E, self-harm

Case study methodology

Academic practice

**E. Kelleher,** *RGN, BSc (Hons), RNT, MSc*

Clinical skills teaching

Mature students and further education

Critical care nursing

Nursing activities and decision-making in the acute health care setting

Preceptorship in nursing

**M. Kelly,** *BNS (Hons), MSc, RGN, RM, RNT*

Assessing clinical nursing skills in undergraduate nursing

The development of professional identity in the student nurse

Student managed learning in undergraduate nursing education

E-learning in nursing education

The experience of critical illness for patients and their families

**Dr G. Kiernan,** *BA Mod (Psychology), PhD, Postgrad Dip Counselling and Psychotherapy*

Individual and family adjustment to childhood illness, disability and loss

Evaluation of psychological based interventions to help promote adjustment to childhood illness, disability and loss

Early childhood care and education including child development from birth to 6 years, and school readiness

**N. Kilcullen,** *BNS (Hons), MSc, RGN, RM*

Clinical learning environment

Development of critical and analytic skills for student nurses

Clinical supervision in practice and renal nursing

**M. Kirwan,** *RGN, Dip Pharmacology, Dip Physics & Chemistry, Dip Child Psychology, Dip Man, RNT, BNS, MSc*

The role of the nurse in the care of the older person

Health issues and the older person

Primary Health Care

Clinical support for student nurses (preceptorship, mentorship, supervision)

**Dr V. Lambert,** *PhD, BNS (Hons), RCN, RGN*

Researching children and young people's perspectives (new sociology of childhood)

Ethnography and participatory research methodologies to engage in research with children/young people

Communication between health professionals, children, young people and their families about health care

Physical places and social spaces for young children in hospital

Enhancing children and young people's health care through technology

Use of arts in research and health care

Transitional care needs of young people

Innovative teaching and learning strategies (e.g. PBL, audio-visual resources, simulation)

**D. Lehwaldt,** *RGN, RNT, MSc Nursing, Postgrad Dip CHSE, BNS (Hons), Cert ICU & Anaesthetic Nursing*

Workforce planning in Nursing: staffing levels, nurse-patient ratio

Multiple Case Study Research

Teaching and Learning in Clinical Practice

Cardio-thoracic Surgical Nursing

Intuition in Nursing

**T. Leufer,** *BSc (Hons), PG Dip, HEd, MA, HEd, ILTM, RNT, RGN*

Student experience of teaching and learning in higher education

Predictors of learning/course perceptions and student approaches to learning

Prior academic achievement and current attainment levels

Factors influencing levels of participation in class

Psychological aspects of learning/ classroom dynamics/large group learning

Embedding a culture of Evidence-Based Practice in teaching, learning and assessment in higher education and beyond

**C. Lyng,** *DipN, BSc, MSc*

Teaching/working in the clinical environment

Applying theory to practice

Use of simulation, video and other multimedia to teach nursing skills

Complementary therapies

**S. MacDermott,** *RGN, RSCN, ENB Intensive Care, DipPN, MSc Ed*

Communication skills training

Suicidology in children and young people

Paediatric critical care

**Dr L. Mac Gabhann,** *BSc (Hons), MSc, DNSc, RPN*

Mental health practice and sociological inquiry

Interface of user and health care providers' perceptions of user needs

Empowerment in nursing – the evolving role of nursing in a post-modern society, developing and implementing policy into practice and demonstrating the effectiveness of nursing care in practice

Improving integration of nursing theory and practice, exploring what it is that nurses do

Present research activity includes action research in practice working with clients and nurses in developing a mental health nursing assessment and care framework; national study on the management of dual diagnosis in addiction and mental health services; and the development of mixed mode postgraduate nursing modules

**Dr A. Matthews,** *BSocSc, MSc (Econ), RGN, RM, PhD*

Power and Empowerment in maternity care

Systematic reviews of effectiveness of interventions in pregnancy and childbirth

Nursing workforce planning and forecasting

Traditional medicine and maternal health in developing countries

**M. McGrath,** *RGN, RM, RCT, RNT, BNS, MSc*

Discharge planning from the acute hospital setting

The value of E-Learning in the development of clinical skills

The role of simulation in the development of nursing practice

**M. McKeon,** *MEd, BNS, RMHN, Dip in Business Management*

Intellectual disability nursing

Physical activity and men with intellectual disability

Nature of advocacy and self-advocacy for people with an intellectual disability

Nature of nursing skills used in intellectual disability nursing

Editorial of the "Frontline" a journal for intellectual disability in Ireland

**Dr Elizabeth Mc Loughlin,** *BSc, Ph.D*

Youthful Offending and Associated Vulnerability and Protective Factors

Crime and psychology

Systemic Practice – Impact on the Child and Family

Psychological determinants of a strengths based approach with challenging behaviours

Parental Mental Health and the Impact on the Child

Positive Psychology

**G. Moore,** *BA (Hons), MSc (Psychotherapy), RPN, RGN*

Harm Reduction approaches in relation to injecting drug use

Dual Diagnosis in addiction and mental health

Counselling needs of prisoners with a history of addiction

Self-harm and its management in the mental health services

The impact of the unconscious in the organisation of mental health care

The enactment of transference in relationships in the mental health services

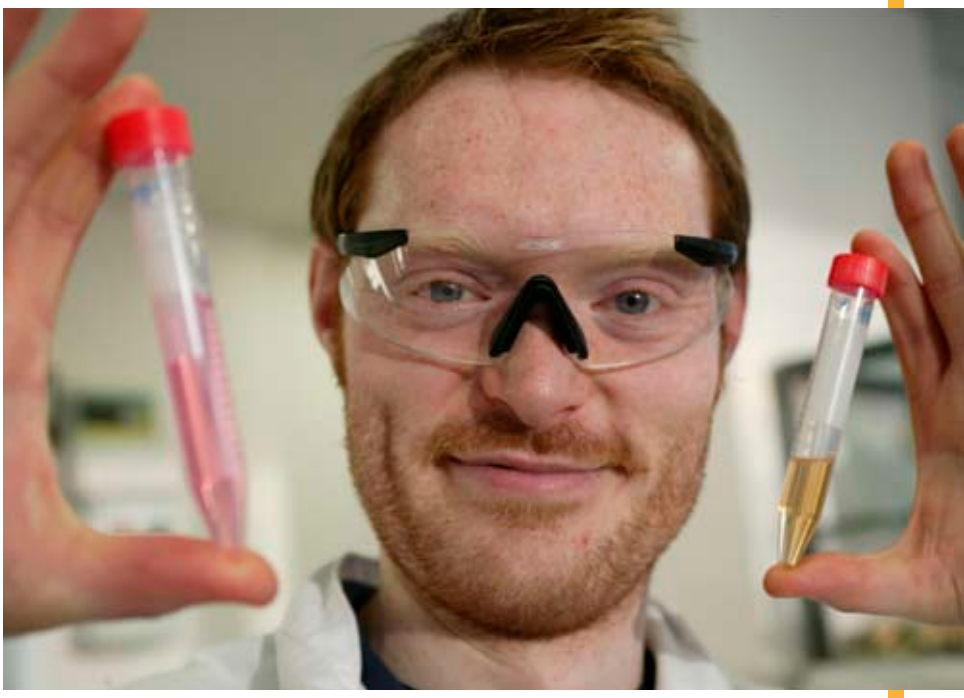
**C. Murphy,** *RGN, RM, Dip Tropical Nursing, RPHN, BSc, MSc*

Public health nursing

Health promotion

Breastfeeding

Communication between primary and secondary care services



**Dr R. O'Connor,** *B.Sc. (Hons), Ph.D*

Translational Cancer Research

Early Phase Clinical Trials

Analytical Pharmacology

Cancer Drug Resistance

Cellular Pharmacokinetics

**Dr D. O'Mathúna,** *BSc (Pharm), MA, PhD*

Ethics in health care, especially related to patients' rights, informed consent, information provision and publication

Bioethical issues involving personhood and human dignity, especially regarding nanotechnology, biomedical diagnostics and stem cell research

Moral reasoning and the role of emotions in ethical decision-making

Conducting systematic reviews within the Cochrane Collaboration

Evidence-based evaluations of complementary therapies and remedies, and the role of spirituality in health and healing

Disaster bioethics: ethical issues providing healthcare and conducting research during disasters

**C. O'Neill,** *RGN, RCN, BNS (Hons), MSc in Nursing*

Family Centred Care: A national survey of registered nurses' practice and perceptions of family-centered care practices in children's units In Ireland

Preparing children for hospitalisation: Children's experience of attending a pre-admission programme/preparing children for hospital: what does the evidence say?

MRSA: Tackling healthcare associated Infections: an exploratory study of cleaners' perception of their role

**Dr S. O'Neill,** *BSc, PhD, RGN*

Advancing our understanding of immune mechanism important in directing Th2-mediated diseases

Specifically, the isolation and characterisation of parasite molecules, with the view to understanding their interaction with host cells and in developing immunotherapies

**O. O'Reilly,** *RNID, RGN, DNS, BNS, RNT, MA Adult and Community Education*

Intellectual Disability Nursing in the Republic of Ireland

Adult education

Nursing Education

**D. Proudfoot,** *RPN, RGN, RNT, MSc*

Mental Health Nursing

Health promotion

HIV/AIDS

Sexual health promotion and Nursing

**Dr M. Philbin,** *RPN, RNT, Dip N (Lond), BSc (Hons), MA, PhD*

Identity and psychosis

Psychotropic medication and the body

Commitment, resistance, entrapment and acceptance in illness and disability

Health technologies and self

**Professor P.A. Scott,** *BA (Hons), MSc, PhD, RGN*

Philosophical and ethical issues in health care: virtue theory and nursing, the elucidation of the moral domain of clinical practice and philosophical issues in clinical practice

Nature of clinical judgement

Nature of evidence in clinical practice

Links between the arts and clinical practice

Currently involved in an EU-funded collaborative research project, coordinated by the University of Turku, Finland, investigating issues of consent, privacy and autonomy in nursing interventions

**Professor A. Staines,** *PhD, MSc, MB, BCh, BAO, BA, GDip (UTL), DCH, FFPHMI, MFPHM, MRCPI (Paediatrics)*

Health system financing and delivery

Use of health information systems and GIS in service planning and monitoring

Costs of illness

Cancer epidemiology, especially haematological cancer and colo-rectal cancerRisk assessment, impact assessment

**Dr S. Stan,** *MA, PhD*

Transnational migration, post-socialism, decollectivisation, market, work, memory, alternative health care, managerialism in health care, economic and political anthropology and sociology, Romania and Ireland.

Member of the Migration and Interculturalism Initiative, DCU:

*http://www.dcu.ie/themes/migration.shtml*

**Dr M. R. Sweeney,** *PhD, BSc (Hons) Human Nutrition, RGN*

Health services research

Public health nutrition

Autism

Traveller's health

Infant weaning

Folic acid fortification

Student health

**E. Ward,** *MSc, RGN, RCN*

E-Learning

Therapeutic Communication

Reflective Practice in Nursing

**Dr S. Wickham,** *RGN, RM, RNT, FFN, MRCSI, MSc, DNSc*

Role of the clinical nurse specialist and advanced nurse practitioner in Ireland

Diabetes Mellitus

Education including life long learning and flexibility

Mixed method research

**Dr S.Wright,** *PhD (Psycho-oncology; NUI-Galway) MA Healthcare Mgtmt (UCD/IPA), BA (MOD) (Psychology; TCD) RN, RM, Cert. Autogenic Training*

Facilitating the development of the MDT in psychosocial oncology service development and delivery – the role of education in attitude change in psychosocial care delivery; implementation of and influencing policy and best practice in psychosocial oncology service delivery across the cancer trajectory

Multidisciplinary, systems approach to pain management in clinical practice, with a special interest in older persons

CBT, Autogenic training and 'mind-body' complementary therapies for pain management, stress/distress and coping

# School of Health and Human Performance

## Introduction

The School of Health and Human Performance was established as a result of a combination of Dublin City University's strong tradition in science and the growing employment opportunities in sport science and the health-related environments in Ireland. The School is committed to research for the development of human understanding and knowledge, and the provision of an advanced educational experience for its graduate students. Faculty and graduate students in the School of Health and Human Performance investigate a wide range of topics concerning human movement from the prospective of health and human performance. These include the study of age cohorts, levels of health and fitness, types of training, physical and emotional stresses, and genetic backgrounds. The School maintains numerous interdisciplinary connections with faculty members in other DCU schools and National Research Centres, and with a number of clinical and research institutions throughout Ireland and abroad. High quality specialised research laboratories are located within the School to cater for specialisations in adapted physical activity, biomechanics, sport, exercise and health psychology, performance physiology, exercise with respect to diabetes and cardiovascular health, genomics and cell and molecular physiology.

## Contact Details

**Dr Ronan Murphy**
**Research Convenor**

School of Health and Human Performance
Dublin City University
Dublin 9, Ireland

Tel: +353 (0) 1 700 7357
email: *ronan.murphy@dcu.ie*
*www.dcu.ie/shhp*

## Research Interests within the School of Health and Human Performance

**Head of School**
**Dr C. Woods, BA (Physical Education), PhD**

Tel: +353 (0) 1 700 8881
email: *catherine.woods@dcu.ie*

Public health impact of physical activity in 15-17 year olds, 'Take PART' project

An evaluation of the efficacy of a street management programme on improving psychological well-being and work place quality of life in health care workers

Promotion of physical activity and adherence to active lifestyles across the lifespan

Physical activity and its relationship to clinically defined areas such as stress or depression, and to health behaviours such as cessation of smoking or drug abuse

The psychology of physical education

**Dr S. Belton,** *BSc, PhD*

Measurement of physical activity levels in children

Development and evaluation of physical activity interventions in youth

Maximising physical education student teachers learning experiences on teaching practice placement

Identifying the role of the cooperating physical education teacher on teaching practice

**E. Holland,** *BSc, PGCE, MSc*

Sport Education: the impact of the implementation of the model upon engagement, behaviour and attainment of disaffected and underachieving pupils

Evaluating the impact of trainees' engagement in the early development of a 'Professional Learning Community' upon perceptions of their own subject knowledge and support structures and their appreciation of their own and others' professional knowledge

Ipsative versus norm-referenced assessment: the impact of contrasting assessment approaches upon pupils' motivation in PE

**Dr J. Issartel,** *BSc, MSc, PhD*

Perception and action field, investigating how controlled movements may be coupled with sensory information

Nature of interpersonal motor coordination

Weight of each sense (hearing, touvh and/or sight) in the emergence of motor coordination

**J. Kerrane,** *BSc, MSc*

Sports policy and planning

Sport and politics

The role of sport in the creation and expression of national identity

The growth of commercialism and professionalism in sport

**Dr S. McArdle,** *BA, MSc, PhD*

Psychology of injury

The etiology and consequences of perfectionism

The role of sport and exercise in psychological well-being

The development of motivational processes, psychosocial skills and competencies in youth sport

Psychology of recovery

**Dr N. McCaffrey,**
*MB, BSc, MSc, HDipOccH, FFSEM*

Adductor enthesopathy in athletes

Osteitis Pubis

The role of exercise/physical activity in managing disease states

Exercise in pregnancy

**Dr S. Meegan,** *BSc, MSc, PhD*

Physical educator attitudes toward teaching students with disabilities

Children's attitudes toward inclusive physical education

Physical activity provision for people with disabilities

Factors affecting physical activity participation among people with disabilities

**Dr K. Moran,** *DIS, BA (Hons), PhD*

The use of biomechanics as a diagnostic tool in improving technique and neuromuscular capacity in elite athletes

The design and fitting of orthotics in injury prevention

The effectiveness of vibration training

Exercise and device interventions in functional rehabilitation from neuromuscular diseases

**Professor N. M. Moyna,** *BA, MSc, PhD, FACSM*

Role of genetic polymorphisms

How polymorphic variations in genes that code for specific proteins contribute to intraindividual differences in response to exercise training

Endothelial function and cardiovascular disease

Therapeutic application of physical activity in disease states where endothelial function is impaired

Response of the thrombotic, fibrinolytic and inflammatory systems to exercise training

Interaction between physical activity, neural, endocrine and immune processes

The role of perceptual preference in regulating exercise intensity and promoting adherence

Exercise and childhood obesity

Physiological factors affecting performance in Gaelic football and middle/long distance running

**Dr R. P. Murphy,** *PhD, FCATH*

Cardiovascular genomics

Elucidating the role of exercise and diet on vascular competence and health

Regulation of the cell cytoskeleton – the role of scaffold and adaptor proteins

Biomechano-transduction and regulation of vascular endothelial and smooth muscle cell function Integrin activation and dynamics

The investigation of uPAR-integrin interactions on integrin state (affinity, avidity) and integrin-dependent signalling pathways

MicroRNAs – 'micromanagers' of the vascular transcriptome and their role as signalling hubs

Megakaryocyte and platelet biology

**Dr D. O'Gorman,** *BA, MSc, PhD*

Exercise and type 2 diabetes

Regulation of gene expression by skeletal muscle contraction

Molecular mechanisms of glucose transport and insulin resistance

Mitochondrial regulation of substrate utilisation

**Dr D. Susta,** *MD*

Evidence based sports injury prevention

Eccentric muscular actions

Human locomotion and cardiopulmonary performance

Athletes' medical management and disease prevention

Cardiometabolic effects of exercise in humans

Innovative learning and assessment tools development

**Dr G.D. Warrington,** *BSc, PhD*

Physiological evaluation of the elite performer

Factors effecting performance in weight category sports (horse racing, rowing and boxing)

How different environments (altitude and heat) affect athletic performance

Physical fitness and exercise prescription

Functional analysis in the workplace

Lifelong involvement in physical activity and sport (LISPA)/Long term Player/Athlete development (LTPAD)

**E. Whyte,** *Bachelor of Physiotherapy, BSc*

Patellofemoral joint stresses during activities of daily living

The role of hamstrings in lower limb kinetics

Fitness levels and injury incidence in elite and non elite underage soccer players

Early degenerative joint changes in elite athletes

# School of Mathematical Sciences

## Introduction

The School has a high research profile and a strong record in publication, conference presentation and interdisciplinary research. As in its teaching activities, emphasis in the School's research is laid on the mathematical modelling of real world situations. The main interests are in various aspects of differential equations, financial mathematics and computational mathematics. Individual staff members also have interests in other specialised areas. Further details can be found at *www.maths.dcu.ie*

## Differential Equations

Differential Equations have played a central role in Applied Mathematics for more than a century. With the advent of the computer their importance has increased rather than diminished. Throughout science, engineering and far beyond, scientific computation is taking place in efforts to understand and control our natural environment and to develop new technological processes. At the heart of this modeling lie differential equations. The investigation of differential equations arising in applications has led to many deep mathematical problems. These are often pursued without any applications in mind but sometimes turn out to be of great importance to new applications. Within the School there is particular interest in Functional Differential Equations, Singularly Perturbed Differential Equations, Nonlinear Partial Differential Equations and Stochastic Differential Equations

## Mathematical Finance

Finance is probably the most striking instance where mathematics has had a major impact in the real world. It can be argued that the flourishing market in derivative securities (in which trillions

worth of euros are traded annually) owes its very existence to the success of the mathematical theory of contingent claims. Before pricing formulae existed for these contracts, financial institutions lacked the confidence to trade them. The main tools used in Financial Mathematics are Stochastic Analysis and Monte-Carlo simulation. The field offers excellent opportunities for researchers who are anxious to learn advanced mathematical techniques and to use them to solve practical problems. The School is involved in the Edgeworth Centre for Financial Mathematics, which is an interdisciplinary project which brings together researchers in mathematics and financial economics. The School is also part of the Financial Mathematics Computation Cluster ($FMC^2$), which involves collaboration between Industry, University College Dublin and NUI Maynooth.

## Mathematical Education

Mathematics education research comprises a broad spectrum of activities which have the aim of better understanding how students successfully learn mathematics. This spectrum spans from research in cognitive science and psychology to teaching experiments on how to improve classroom practice. Research deals not only with teachers and students, but also with curriculum and assessment and with educational systems. The ultimate aim is to raise levels of participation and achievement in mathematics. Research in this area in the School of Mathematical Sciences is carried out under the auspices of the Centre for the Advancement of Science and Mathematics Teaching and Learning (CASTeL), a University Designated Research Centre with members in both DCU and St. Patrick's College, Drumcondra. The focus in CASTeL is on enhancing the impact of the full spectrum of teaching, learning and assessment activities in the laboratory and in the classroom. Research is carried out in relation to all levels (1st-4th) of the Irish education system. There is an important relationship with teacher education degrees within the university: the BSc in Science Education in DCU and the BEd in St. Patrick's College. Also, research is frequently carried out in relation to the core and support mathematics and science teaching activities within the university.

## Contact Details

**Professor Eugene O'Riordan**
**Head of School**

Tel: +353 (0) 1 700 5386
email: *eugene.oriordan@dcu.ie*
*www.maths.dcu.ie*

## Research Interests within the School of Mathematical Sciences

**Dr J. Appleby,** *BSc, PhD*

Deterministic and stochastic functional differential equations, Stochastic Analysis, Mathematical Finance

**Dr T. Brady,** *PhD*

Geometric group theory, Topology, Combinatorics

**Professor E. Buffet,** *PhD*

Financial Mathematics. Martingales, resulting in the Buffet-Duffield bound

**Professor J. Burzlaff,** *PhD*

Differential Equations, Modelling, Solitons, Extended Objects in Field Theory

**Professor J. Carroll,** *BSc MSc, PhD*

Mathematics, Numerical Analysis, Ordinary differential equations, Partial differential equations, Finite difference methods, Adaptive schemes

**Dr M. Clancy,** *BSc, MSc, PhD*

Differential Geometry

**Dr T. Downes,** *BA, PhD*

Astrophysics: Star formation, High energy astrophysics, Computational fluid dynamics

**Mr C. Fitzgerald,** *BFAS, MA, FIA, FSAI*

Actuarial Economic Forecasting, Enterprise Risk Management, Risk Intelligence, Non-Axiomatic Mathematical Modelling, Quantitative Trading Systems

**Professor P. Guasoni,** *PhD*

Mathematical Finance

**Dr D. Henry,** *BA, PhD*

Nonlinear partial differential equations, fluid dynamics

**Dr O. Menkens,** *BSc, MSc, PhD*

Mathematical finance, more specific: Crash hedging strategies and optimal portfolios under the treat of a crash – Value at Risk and self-similarity – Insider trading – Liquidity risk

**Dr A. Murphy,** *BSc, MSc, PhD*

Public-Key Cryptography/Elliptic Curve Cryptography

**Dr E. NiFhloinn,** *BA, PhD*

Mathematical education

**Dr B. Nolan,** *BSc, MSc, PhD*

General relativity and gravitation; Mathematics education

**Professor E. O'Riordan,** *BSc, MSc, PhD*

Singularly perturbed differential equations

Numerical analysis

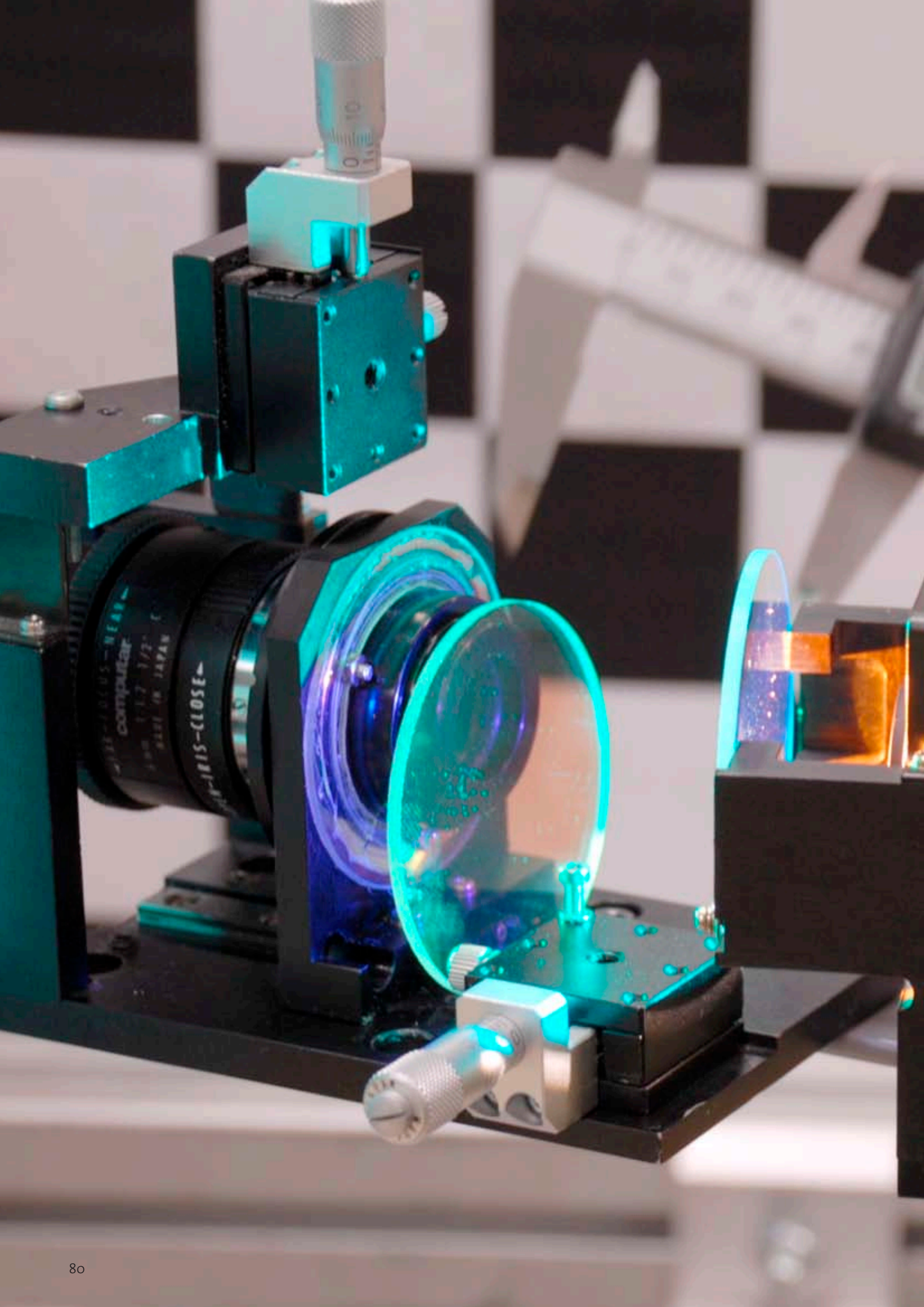
Shishkin meshes

**Dr N. O'Sullivan,** *BA, PhD*

Localisations of soluble groups. Finiteness conditions in soluble groups

**Dr D. Reynolds,** *MA, MS, PhD*

Dynamical Systems with Memory, Volterra Integral and Functional Differential Equations, Applications to Inefficient Markets, Continuum Mechanics, Difference Equations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# Dublin City University
# Faculty of Engineering and Computing

# Faculty of Engineering and Computing

## Introduction

The Faculty of Engineering and Computing comprises the School of Electronic Engineering and the School of Mechanical and Manufacturing Engineering and the School of Computing. There are also a number of interdisciplinary research centres which span various schools and faculties.

A list of Faculty-based research centres is shown in Table 1. The three largest research centres are the Research Institute for Networks and Communications Engineering (RINCE); the Centre for Sensor Web Technologies (CLARITY); and the Centre for Next Generation Localisation (CNGL). The University Designated Research Centres (UDRCs) are respectively, Centre for Digital Video Processing (CDVP), Centre for Scientific Computing & Complex Systems Modelling (SCI-SYM) and Materials Processing Research Centre (MPRC).

**Table 1: Details about the centres in this list can be found at the following link:** *http://www.dcu.ie/research/centres.shtml*

| Centre | Director | Main Funding | University Designation* |
|---|---|---|---|
| Research Institute for Networks and Communications Engineering (RINCE) | Prof. Barry McMullin | PRTLI | Large scale |
| Centre for Sensor Web Technologies (CLARITY) | Prof. Alan Smeaton | SFI CSET | Large scale |
| Centre for Next Generation Localisation (CNGL) | Prof. Josef van Genabith | SFI CSET | Large scale |
| Centre for Digital Video Processing (CDVP) | Prof. Alan Smeaton | Various | UDRC |
| Centre for Scientific Computing & Complex Systems Modelling (SCI-SYM) | Prof. Heather Ruskin | Various | UDRC |
| Materials Processing Research Centre (MPRC) | Dr Lisa Looney | Various | UDRC |

Apart from the larger scale and UDRC, there are school based research centres. School based research centres will be introduces under each school. Here, three Schools in the Faculty will be discussed first and then large scale research centres and UDRC.

The Faculty is dedicated to the promotion of research and scholarship to the highest international levels in strategic areas within the Schools of Electronic Engineering, Mechanical & Manufacturing Engineering and Computing. Faculty policy on research is summarised here. The Faculty has a strong research focus and aims to produce internationally leading and socially important state of the art research at the highest levels of quality.

Training of the next generation of researchers is a major priority for this Faculty, and for DCU as a whole. A number of Early Stage Training Programmes are run within the Faculty. Our postgraduates have the opportunity to undertake formalised graduate training whereby taught modules relevant to their research work are available under a University certified Graduate Programme training scheme. We are also strongly aware of our post-doctoral researchers' need for options in career progression. To this end we have developed a Professional Development Programme to promote and advise on commercialisation of research and career paths for young researchers.

Each year approximately 200 research postgraduates are registered within the Faculty, 500 publications are produced from within the Faculty, and Faculty staff have been successful in attracting €61 million research income over the last five years to sustain the delivery of this research agenda. Research in the Faculty is funded from many sources, including Enterprise Ireland (EI), Higher Education Authority (HEA), Irish Research Council for Science, Engineering & Technology (IRCSET), Science Foundation Ireland (SFI) and the EU Framework Programme. Collaborations with industrial partners, such as Samsung, Microsoft, IBM and Medtronic AVE, also attract funding, demonstrating confidence in the commercialisation potential of the research projects. Inter-disciplinarity is a realised aim in much of the research undertaken and is reflected in our core strengths.

There is a strong multi-disciplinary aspect of research within the Faculty. This is evidenced through current research projects on Sustainable Energy and Bioengineering & Computing where research partners from other Faculties, research institution, and companies are a common theme. Research in the Faculty has a long track record of involvement with National and International industries. This is demonstrated by a number of long-term industrial partnerships and sponsored awards, a considerable IP track record, and significant successes in commercialisation and research innovation programmes.

### Contact Details

**Dr Dermot Brabazon**
**Associate Dean for Research**

Dublin City University, Dublin 9, Ireland

Tel: +353 (0) 1 700 8213
email: *dermot.brabazon@dcu.ie*
*http://webpages.dcu.ie/~brabazod/*

## School of Electronic Engineering

The School of Electronic Engineering provides a dynamic and friendly research environment in both established and groundbreaking areas of electronic, information and communications technology research. The School currently has over 70 research postgraduate students working in modern well-equipped key technology laboratories. Much of the research involves wide ranging national and international collaboration. Since its foundation in 1980 the School has been successful in attracting national and international funding for its work. Typically such funding has come, or comes, from: private industry; Programmes of Advanced Technology (PAT); Enterprise Ireland (EI); Science Foundation Ireland (SFI); Irish Research Council for Science, Engineering and Technology (IRCSET); Health Research Board (HRB); National Rehabilitation Board (NRB); charitable foundations; Higher Education Authority's Programme for Research in Third Level Institutions (PRTLI), and EU Framework programmes.

In the school of Electronic Engineering, school based research centres are Nanoelectronics and Nanomaterials, Signal and Image Processing, Digital Media, Speech Laboratory, Systems and Control, Telecommunications, Performance Engineering Laboratory, Radio and Optical Communications Group, RF Modelling and Simulation Group, Switching and Systems Laboratory and Network Processing Group.

### Contact Details

**Professor Liam Barry**
**Research Convenor**

School of Electronic Engineering
Dublin City University
Dublin 9, Ireland

Tel: +353 (0) 1 700 5131
Fax: +353 (0) 1 700 5508
email: *ee_research@eeng.dcu.ie*
*http://www.dcu.ie/electronics/research.shtml*

## Nanoelectronics and Nanomaterials

The Nanomaterials Processing Laboratory (NPL) covers a number of Research Themes including: (i) novel materials for blue-ultraviolet electroluminescence on Si, (ii) advanced non-destructive electronic nanomaterials characterisation, (iii) advanced plasma process control and diagnostics and (iv) ultrafast spectroscopy. The group is equipped with facilities for material growth and processing using a number of techniques including liquid phase epitaxy, physical vapour deposition, magnetron sputtering, plasma etching and sol-gel deposition. It has class 100 clean room and facilities for fabrication of semiconductor devices. There is a heavy emphasis on nanomaterials characterisation especially photoacoustic spectroscopy, micro-Raman spectroscopy, deep level transient spectroscopy, atomic force microscopy, FTIR spectroscopy and x-ray diffraction. In addition NPL works in conjunction with HASYLAB in Hamburg and ANKA in Karlsruhe on synchrotron X-ray topography (*www.eeng.dcu.ie/~npl/*).

## Research areas

- Strained silicon materials and device analysis
- Development of thin film materials, material deposition techniques and plasma process control
- Biomedical Surface Engineering
- Growth and development of novel photonic structures for Si technology platforms
- Advanced nanocharacterisation technology: micro-Raman spectroscopy, deep level transient spectroscopy, x-ray topography
- Photoacoustic spectroscopy
- High-Level Synthesis, Hardware Description Languages

## Research Interests within Nanoelectronics and Materials

**Professor P.J. McNally,** *BE, ScM, PhD, CEng, FIEI, CPhys, FinstP, SMIEEE*

Nanomaterials and electronic device process characterisation

X-ray diffraction imaging

Semiconductor dislocation studies

Wide-bandgap semiconductors

Photoacoustic spectroscopy of semiconductors

**Dr X. Wang,** *BEng, MEng, PhD, CEng, MIET*

High-level logic synthesis

Rapid system prototyping

**Dr S. Daniels,** *BEng, PhD*

Micro/nano-electronic device manufacture

Thin film deposition and characterisation

Plasma Process diagnostics and modelling

## Contact Details

**Professor Patrick McNally**

School of Electronic Engineering
Dublin City University
Dublin 9, Ireland

Tel: +353 (0) 1 700 5119
Fax: +353 (0) 1 700 5508
email: *patrick.mcnally@dcu.ie*

# Signal and Image Processing

Research in Signal and Image Processing is focused on three main research streams: Image Processing and Analysis (including computer vision and medical imaging) will be discussed under RINCE Institute, Digital Media (including multi-modal digital media analysis and processing) and Speech (including speech acoustics, synthesis, recognition, speaker transformation and signal processing).

## Research areas

- Computer Vision and Medical Imaging: Image processing and analysis for industrial, robotic, computer aided detection and diagnostic biomedical applications. Visual biometrics, virtual reality and image visualisation
- Multi-modal digital media analysis and processing for applications in ambient intelligence, personal health and social media. This targets analysis and indexing of audiovisual data and complementary information sources
- Speech synthesis and speech recognition

# Digital Media

Over the last decade, research activities within the field of digital media have grown out of the School's background in speech coding, audio analysis, computer vision, image and video compression and audiovisual content analysis. In the past, School activities in this area have contributed to the definition of world-wide standards such as ITU-T H.263, ISO MPEG-4 and MPEG-7. Currently, research is focused on mining context and semantic information from digital media by considering capture mechanisms augmented with multiple complementary sensing modalities. Objectives include developing fusion frameworks that handle multiple potentially conflicting data sources and extending the use of pattern recognition techniques to model content semantics using different sensor inputs. Applications targeted are in areas as diverse as sports and personal health, ambient assisted living, social media and energy monitoring.

## Research Interests within Digital Media

**Professor N.E. O'Connor,** *BEng, PhD, MIET, MIEEE (see also Centre for Digital Video Processing)*

Audiovisual content understanding for extracting context and semantics

Content processing and indexing for browsing, searching, alerting, filtering and summarisation

Multi-modal sensor data analysis for object, event and activity analysis and modelling

# Speech Laboratory

The Speech Laboratory (founded in 2004) is an inter-disciplinary team based in the Schools of Electronic Engineering and Computing, bringing together expertise in speech acoustics, synthesis, recognition, speaker transformation and signal processing. Our current work in synthesis covers concatenative and statistical parametric synthesis, with a specific interest in new models of perception of discontinuity and perceptual experiments to validate these models. Our work on speaker transformation ranges over non-linear estimation of speech production models and dimensionality reduction for voice modification. The Lab has two current PhD students and several Masters students.

## Research Interests in Speech Laboratory

**Dr R. Scaife,** *BA, BAI, PhD, MISCA, MASA*

Speech acoustics

Perception of speech discontinuities

HMM speech synthesis

Virtual-physical musical instruments

**Dr S. Marlow, BSc, PhD**

Audio and video coding and analysis

Audiovisual indexing and retrieval

Digital signal processing

# Systems and Control

This research theme is sub-divided into two research groups: Artificial Life and Control Systems.

## Research areas

- Realise "lifelike" phenomena in artificial media (especially computers) to improve our understanding of natural living systems and to open new technological opportunities for engineering artificial "living" systems
- Instrumentation, H infinity control system design, time series modelling, intelligent systems and control of electrical machines
- Virtual Community Projects, eAccessibility

## Artificial Life

The guiding inspiration of Artificial Life (or ALife) is to realise "lifelike" phenomena in artificial media (especially computers) and thus both to improve our understanding of natural living systems and to open new technological opportunities for engineering artificial "living" systems. The primary focus of the ALife Group in DCU is the modelling and understanding of "materially open" systems – machines that can preserve their organisation and functionality in the face of turnover (including failure and replacement) of their components. This is a basic characteristic of living systems, and underlies their capabilities for self-repair, reproduction and evolution. It is also a characteristic that is absent from even the most sophisticated products we currently understand how to engineer. While the field is still in its infancy, it seems likely that technologies such as machines, which are capable of effective and on going self-repair, will dramatically affect engineering design in the future.

## Research Interests within Artificial Life

**Professor B. McMullin,** *BE, MEngSc, PhD, AMIET, MIEI*

Artificial life

Evolutionary growth of complexity

## e-Accessibility

The field of e-Accessibility is concerned with applying technology to enhance access to information and services for people with a wide variety of disabilities. The DCU/RINCE e-Access lab focuses particularly access to web-based sites and services. It has carried out large scale evaluations of website accessibility both nationally and at an EU level.

## Research Interests within e-Accessibiity

**Professor B. McMullin,** *BE, MEngSc, PhD, AMIET, MIEI*

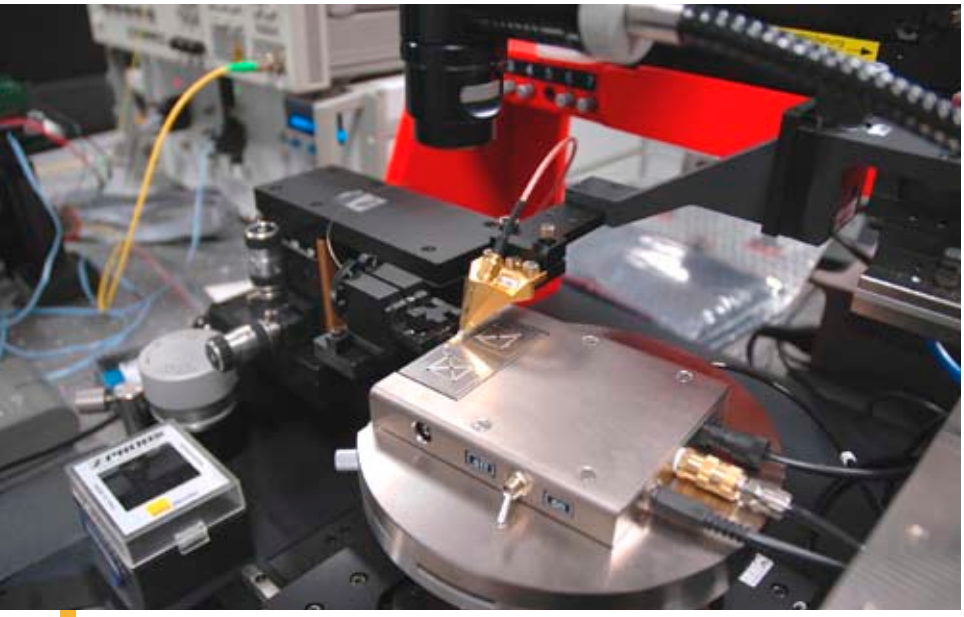
Web accessibility evaluation

Guidelines

Technologies

## Control Systems

The Control Systems Group was formed in 1987 from a core set of academic staff with interests in control theory and applications. Current activities of the group include instrumentation, robust controller design, intelligent systems, and optimisation by vector space methods, evolution-based methods and semi-infinite linear programming.



## Research Interests within Control Systems

**Ms. J. Bruton,** *BEng, AMIEE, MIEEE*

Control system design

Fuzzy logic control and identification

Neural network control and identification

Evolutionary approaches to optimisation

**Mr J. Dowling,** *BE, CEng, MIEE, MIEEE*

Energy

Power Electronics

**Dr A.M. Holohan,** *BE, MEngSc, MPhil, PhD, MIEI*

Robust control theory

Mathematical optimisation

Computer-aided design

Functional analysis

# Telecommunications

The focus of researchers involved in telecommunications is in the areas of telecommunications and data communications. Particular interests include systems and software issues, communications protocols and their performance, switching and transmission over copper, optical and wireless links.

## Research areas

- Systems and software issues, communications protocols and their performance, switching and transmission over copper, optical and wireless links
- Modelling of high speed electronic circuits, modelling of electromagnetic wave scattering and propagation
- Wireless sensor networks

## Research Interests within Telecommunications

**Professor T. Curran,** *BE, PhD, MIEEE*

Optical Burst Switching and Circuit Switched Networks

# Performance Engineering Laboratory

The Performance Engineering Laboratory (PEL) is concerned with any system where performance issues arise and where the application of theoretical analysis can support the understanding or the design of the system. Results from Queueing Theory are often applied, including statistical formulations, priority schemes, dynamic systems, parallel processing and discrete event modelling and simulation. (*www.perfenglab.com*)

## Research Interests within Performance Engineering

**Dr J. McManis,** *BEE, MS, PhD*

Real-time and hybrid systems

**Dr G.M. Muntean,** *BE, MSc, PhD, MIEEE*

User perceived quality-oriented multimedia delivery

Performance-aware adaptive multimedia systems

Quality of service and quality of experience provisioning

Mobile and wireless communications

Adaptive hypermedia systems

## Contact Details

**Dr Gabriel-Miro Muntean**

Tel: +353 (0) 1 700 7648
email: *munteang@eeng.dcu.ie*
*www.eeng.dcu.ie/~munteang*

# Radio and Optical Communications Group

The Optical Communications Lab in Dublin City University was established in 1998. Upon the formation of the Research Institute for Networks and Communications Engineering (RINCE) in 1999, the Optical Communications Lab and the Radio Lab merged to form the Radio and Optical Communications Group. This group now forms one of the main research laboratories within RINCE. The main goal of the Radio and Optical Communications Group is to focus on the design, simulation and demonstration of new technologies for future broadband photonic communication systems: *www.eeng.dcu.ie/~opticlab*

## Research Interests within Radio and Optical Communications

**Professor L. Barry,** *BE, MEngSc, PhD, MIEEE*

Fibre optics

Optical communications

High speed devices

**Dr P. Landais,** *MS, PhD, MIEEE*

Semiconductor lasers

Semiconductor optical amplifiers

Optical fibre networks

All-optical functions

# RF Modelling and Simulation Group

The RF Modelling and Simulation Group was formed in 2003. The main areas of interest and expertise of the RF modelling and simulation group lie in the area of wave scattering computation, wireless communications and circuit modelling. At present the group is composed of two academic staff, seven postgraduate students and one postdoctoral researcher. We have links with several third-level institutions, both national and international, working in this area. For additional information please visit our website at *www.eeng.dcu.ie/~rfmodsim*

## Research Interests within RF Modelling and Simulation

**Dr M. Condon,** *BE, PhD, MIEEE, AMIEE*

RF systems

Computational electromagnetics

Circuits and systems

Numerical Analysis

**Dr C. Brennan,** *BA (Mod), PhD, MIEEE, MIEE*

Computational electromagnetics

Integral equation, differential equation, asymptotic and hybrid methods for electromagnetic wave scattering modelling

Wireless sensor networks

Wireless communications: propagation modelling

Wireless resource optimisation

# Switching and Systems Laboratory

The laboratory mission is twofold: To develop a theoretical understanding of broadband switched networks and their performance, and to convert this theory into practice by designing broadband systems: *www.eeng.dcu.ie/~bssl*

## Research interests within Switching and Systems

**Dr M. Collier,** *BEng, MEng, PhD, MIEEE*

Network protocols

High-speed switching and routing

Switching theory

QoS routing

# Network Processing Group

The Network Processing Group is part of the Network Innovations Centre. The main areas of interest and expertises of this group is in energy-efficient network processing and high level logic synthesis. For additional information please visit website at *www.eeng.dcu.ie/nic/g1/471-EE.html*

## Research Interests within Network Processing Group

**Dr X. Wang,** *BEng, MEng, PhD, CEng, MIEE*

Energy-efficient Network Processing

High-level logic synthesis for power efficiency and testability

HDL Modelling for rapid system prototyping

# School of Mechanical and Manufacturing Engineering

The school has approximately 70 postgraduate researchers who, together with academic staff, research a wide range of mechanical and manufacturing engineering topics. Graduates with diverse backgrounds, including mechanical engineering, manufacturing, bioengineering, materials science, computation and management, have undertaken projects within the school. A strong reputation for carrying out quality research has helped secure external funding directly from industry, state and European sources. We attract students from abroad international base. Projects in the school benefit from state-of-the-art equipment and specialised software tools. Some school researchers collaborate within formalised research centres, while smaller clusters and individual academics are also important

contributors to research output. The Materials Processing Research Centre, based in the school, was formed in 1990. Additionally some members of staff are involved in the National Centre for Plasma Science and Technology or the National Centre for Sensors Research.

The school's research profile reflects the research interests of individual staff members, but a number of strategic research topics can be identified and are detailed below. These topics all feed into the school's research themes: Bio Medical Engineering; Innovative Manufacturing, and Sustainable Technologies.

## Contact Details

**Dr Garrett McGuinness**
**Research Convenor**

Dublin City University
Dublin 9, Ireland

Tel: +353 (0) 1 700 5423
email: *Garrett.mcguinness@dcu.ie*
*http://www.dcu.ie/info/staff_member.php?id_no=1241*

# Biomedical Engineering

Biomedical Engineering is an exciting multidisciplinary field which integrates the rapidly advancing fields of medical and engineering science for the benefit of society. Ireland is at the forefront of the medical device industry attracting global leaders in the cardiovascular, orthopaedic, diagnostic and general medical sectors. The school conducts nationally and internationally funded research in Biomedical Engineering focused on the following themes:

- Cardiovascular Biomechanics And Intravascular Medical Device Design
- Biomaterials (Vascular & Bone Tissue Engineering)
- Biomechanics Of Orthopaedic Implants And Musculoskeletal Surgical Interventions
- Therapeutic Ultrasound Surgical Device Technology
- Implant Coating Technologies

Research partners include; Cappagh National Orthopaedic Hospital, St. James's Hospital Dublin, Western Vascular Institute, Medtronic Vascular, Stryker Osteonics

For more information visit: *http://www.dcu.ie/mechanical_engineering/biomedical.shtml*

# Innovative Manufacturing

Manufacturing is one of the key driving forces for economic development. Innovation in manufacturing is required to:

- Advanced laser processing of materials
- Develop new methods to manufacture advanced components
- Thermal Spraying, Thin Film Vapour Deposition
- Develop more efficient processes for cheaper manufacture
- Rapid Prototyping, Process modelling, Reducing energy demands in HVM
- Develop more efficient manufacturing systems to improve productivity
- Simulation and Optimisation of Complex Manufacturing and Supply Chain Networks

Research partners include; Enterprise Ireland, INTEL Ireland, University of Limerick

For more information visit: *http://www.dcu.ie/mechanical_engineering/innovative.shtml*

# Sustainable Technologies

The research in this area is focussed on both development of new and the improved use of existing energy sources. Some example areas include:

- Sustainable Power Generation including photovoltaics
- Computational modelling of wave energy converters, solar thermal collectors and passive solar heating
- Efficient Fuel Usage
- Developments of an innovative injector and fuel systems for CNG and LPG.
- Design and Optimisation of Hydrogen fuel cells (SOFC and PEM).
- Novel Pre-Treatment of Biomass to Advance Irish Indigenous Biofuel Generation

Research Partners include SKF, Enterprise Ireland and FIAT.

For more information visit: *http://www.dcu.ie/mechanical_engineering/sustainable.shtml*

From these three research themes, exist two focused groups: Materials Processing Research Centre (page 76), and the Enterprise Process Research Centre and two research clusters: Complex Analytical and Numerical Modelling, Computational Fluid Dynamics and Heat Transfer.

In all areas, projects to masters or doctorate level can be undertaken. Further information is available on the school's web page:

*www.dcu.ie/mechanical_engineering/research.shtml*

## Research Interests within the School of Mechanical and Manufacturing Engineering

**Dr D. Brabazon,** *CEng, PhD, BEng, MIEI, MIMechE*

Advanced laser processing

Semi-solid metal processing

Rapid prototyping

Bioengineering

Innovative design and control solutions

**Dr B. Corcoran,** *MSc, PhD, DipEng, CEng, MIMechE, MIEI*

Computational fluid dynamics

Heat transfer and fouling of plate heat exchangers

Pharmaceutical and semiconductor purified water systems

Validation in the pharmaceutical industry

Microfluidics and wireless sensor networks

**Dr Y. Delauré,** *Diplome d'Ingenieur, MSc, PhD*

Computational fluid and heat dynamics

Convective heat transfer in multi-phase flow

Solar and ocean energies

Energy efficiency in architectural design

**Dr H. Esmonde,** *BA, BAI, PhD*

Modelling and control of smart fluids

Control and automation

Fluid dynamics and computational fluid dynamics

Squeeze films, Rheology, Fluid Mechanics, Smart Fluids

Robotics, Control, Automation

**Dr J. Geraghty,** *BEng, MEng, PhD, MIEI*

Manufacturing systems analysis

Discrete event simulation

Production/inventory control

Lean manufacturing

**Professor M.S.J. Hashmi,** *BSc, MSc, PhD, DSc, CEng, FIMechE, FIEI, MASME*

Manufacturing materials and processes

Impact mechanics

Structural mechanics and design analysis

Surface engineering

Technology implementation and management

**Dr A. Kennedy,** *BE, MEngSc, PhD*

Transmission line modelling (TLM) for Nonlinear waves

Diffusion

Convection-diffusion

Reaction-diffusion

**Dr C. Lally,** *BEng, MEng, PhD, MIEI*

Cardiovascular biomechanics

Biofluids

Non-linear elasticity

Medical device design

Cardiovascular Tissue Engineering

**Dr L. Looney,** *BA, BAI, PhD, CEng, MIEI*

Powder based processing

Surface engineering

Metal-based composites

Fatigue

**Dr B. MacDonald,** *BEng, MSc, PhD, CEng, MIEI*

Non-linear finite element analysis

Aircraft engineering

Development of innovative metal forming processes

Design of medical devices

Use of magnesium alloys for automotive and bioengineering applications

Artificial intelligence in design and manufacture

**Dr G. McGuinness,** *BE, PhD, CEng, MIEI*

Cardiovascular and orthopaedic biomechanics

Biomaterials for cardiovascular tissue engineering

Medical devices based on therapeutic ultrasound

Polymer composites and fibre science

**Dr J. Murphy,** *MSc, MS, PhD*

Continuum mechanics

Non-linear elasticity

Mathematical modelling

**Dr A.G. Olabi,** *BEng, MEng, PhD, MENGVA*

Sustainable Energy and Alternative Fuel Systems.

Smart (MS and MRF) and Magnetic Materials.

Energy Absorbing Systems, Modelling

Laser Welding, Cutting and Surface Hardening.

**Dr J. Stokes,** *BA, BAI, PhD*

Surface engineering and tribology

Thermal spraying and vapour deposition

Power processing and characterisation

Manufacturing processes

Computer aided design

**Dr T. Szecsi,** *MSc, PhD*

Condition monitoring

Manufacturing processes

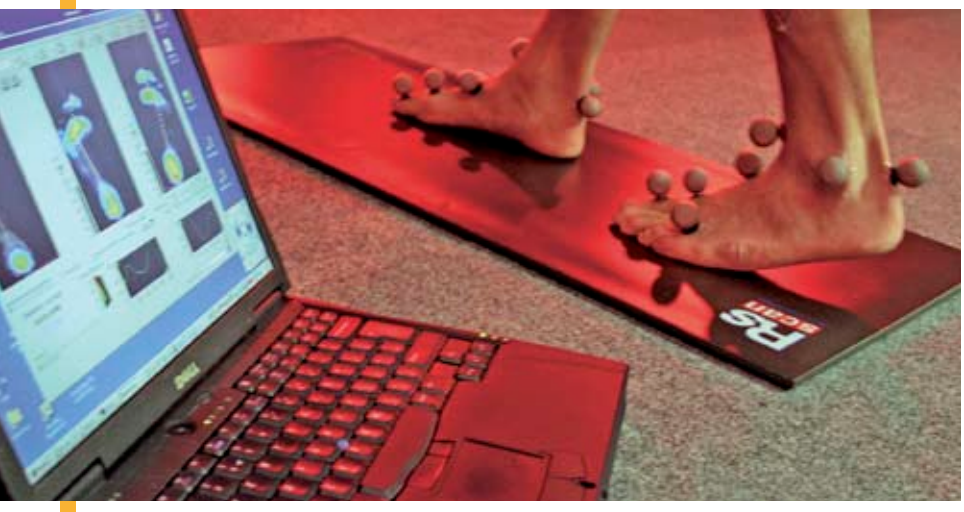
AI in manufacture

**Dr P. Young,** *BA, BAI, PhD, MASME*

Sound and vibration (FE modelling, test measurements and signal processing)

Control and robotics

Engineering logistics



# School of Computing

The DCU School of Computing provides a lively, supportive environment for research in many areas of computing. It houses the National Centre for Language Technology, the brand new CSET in Next generation Localisation, part of the Centre for Digital Video Processing, the Biocomputation arm of the National Centre for Cellular Biotechnology, and the recently awarded UDRC in Scientific Systems. The School currently has over 80 postgraduate research students, and a wide range of funded projects at national and international level. Funding agencies include Science Foundation Ireland; Enterprise Ireland; the Higher Education Authority; the Irish Research Council for Science, Engineering and Technology; Teagasc; Bord Iascaigh Mhara; the Department of Education and Science; and the EU. Sixth and Seventh Framework Programmes. The School is also a significant contributor to the new Adaptive Information Systems Cluster funded by SFI to the value of €5.6 million. It enjoys close links with industry and this is evident in the significant number of research collaborations it has forged with companies such as IBM, Sun Microsystems, Xerox, Mitsubishi Electric Research Labs, and Ericsson. Research within the School of Computing is divided into four main research groupings: Dependable Systems; Information Management; Language and Intelligence; and Modelling and Scientific Computing.

## Contact Details

**Dr Stephen Blott**
**Senior Lecturer**

School of Computing
Dublin City University
Dublin 9, Ireland

Tel: +353 (0) 1 700 5984
email: *stephen.blott@computing.dcu.ie*
*http://www.dcu.ie/computing/research.shtml*

# National Centre for Language Technology (NCLT)

The National Centre for Language Technology conducts basic research into the processing of human language by computers, including machine translation, treebank-based wide-coverage deep grammar induction, speech recognition and synthesis, information retrieval and extraction and the teaching and learning of languages using computers. The NCLT also develops applications: research conducted at the NCLT has produced ground-breaking technologies in Example-Based Machine Translation and the acquisition of wide-coverage grammatical resources.

The NCLT is a cross-faculty, multidisciplinary Research Centre which hosts an international research team including 23 Ph.D. students, six postdoctoral researchers and seven affiliated staff. Since 2002 the NCLT has been awarded two SFI-funded Principal Investigator grants, five Basic Research projects (funded by SFI, IRCSET and Enterprise Ireland) and two China-Ireland Partnerships. The NCLT works in close partnership with IRCSET, ICHEC and industrial (including IBM, Microsoft, Xerox PARC, Toshiba China) and academic

partners world-wide. NCLT recently received funding from Enterprise Ireland's Technology Development programme to develop Language Technology for Next-Generation Search and now also hosts the Centre for Next Generation Localisation (CNGL), a €30m Centre for Science Engineering and Technology (CSET).

For further details, visit: *www.computing.dcu.ie/research/nclt/*

## Contact Details

**Dr Jennifer Foster**
**Director**

National Centre for Language Technology (NCLT)
School of Computing
DCU, Dublin 9, Ireland

Tel: +353 (0) 1 700 5263
Fax: +353 (0) 1 700 5442
email: *nclt@computing.dcu.ie*

# Lero – the Irish Centre for Software Engineering

Lero is the Irish Centre for Software Engineering. It is a partnership between the University of Limerick, Dublin City University, University College Dublin, and Trinity College Dublin, and includes researchers in other universities and in industry. It is a Science Foundation Ireland (SFI) Centre for Science, Engineering and Technology (CSET), with total investment from SFI, other funding agencies, and industry partners amounting to about €20 million over a 5-year period. Lero's research focus is on evolving critical systems – complex, high-value and long-lived software which must be capable of change over time without any loss of quality, reliability, safety or predictability. The research addresses the knowledge, tools, techniques and protocols required to design, create and maintain evolving critical systems. Lero's research is strongly industry-focussed and has included collaborations with, among others, IBM, Intel, Oracle, and Bosch. In addition to its research projects, the collaboration includes the Lero Graduate School in Software Engineering which runs cross-university structured 4-year PhD programmes and is the first of its kind in Ireland. For more info see *www.lero.ie*.

## Contact Details

**Professor Joseph Morris**

School of Computing
DCU, Dublin 9, Ireland

Tel: +353 (0) 1 700 8419
Fax: +353 (0) 1 700 5442
email: *joseph.morris@computing.dcu.ie*

# Dependable Systems

The focus of the Dependable Systems Group is the development of reliable and secure software. This encompasses a number of different approaches to ensuring dependability of software, from the softer approaches through software development methods and software project management, to more formal approaches through refinement, verification and automatic programme construction. For further details, visit *www.computing.dcu.ie/research/dependable.html*

## Research Interests within the Dependable Systems Research Group

**Dr D. Gray,** *BSc, PhD*

Cryptographic protocols

Formal methods

**Dr G. Hamilton,** *BSc, PhD*

Programming language design and transformations

Formal methods

**Professor J. Morris,** *BA, BAI, MSc, PhD*

Formal specification and verification

Logic for programming

Concurrency

Software engineering

**Dr R. O'Connor,** *BSc, MSc, PhD, MICS*

Software engineering

Software project management

Software process improvement

Agile methods

Human computer interaction

**Dr C. Pahl,** *PhD*

Component-based software development

Service-oriented architectures

Educational software systems and technologies

Professor M. Scott, MSc, PhD

Cryptography and security

**Dr D. Sinclair,** *BE, MSc, PhD*

Distributed systems

Formal specification and verification

Artificial intelligence and strategic games

**Mr B. Stone,** *DipSurv, MSc*

Data communications and computer networks

Mobile and ad-hoc computer networks

Ubiquitous computing

Formal methods for communications protocols

**Mr R. Verbruggen,** *MMgtSc, MMI*

Software engineering

Object-oriented programming

# Information Management

The Information Management Group has four major themes: Database Engineering and Interoperable Systems, Business Informatics, Educational Technologies, and Digital Multimedia (incorporating the Centre for Digital Video Processing).

The Database Engineering and Interoperable Systems researchers develop formal and informal models for constructing database systems, and construct interoperable layers between heterogeneous information systems.

Business Informatics research focuses on models and methodologies for increasing the value of data in information-intensive and networked economies. Educational Technology research is focused on the development and evaluation of on-line learning material and supporting architectural infrastructures. In the area of Digital Multimedia, the Centre for Digital Video Processing (CDVP) part of the Adaptive Information Cluster, researches and develops techniques and tools to automatically analyse and index digital video information, and allow content-based operations such as browsing, searching, and summarisation, as well as researching aspects of sensor networks and wearable computing.

For further details, visit: *www.computing.dcu.ie/research/information.html*

## Research Interests within the Information Management Research Group

**Dr S. Blott,** *PhD*

Database systems

Network data management

**Mr C. Daly,** *MSc*

Educational technologies

Embedded systems

**Dr C. Gurrin, PhD** *(see also Centre for Digital Video Processing)*

WWW search engine design

Information access to multimedia digital libraries (especially images and video)

Evaluation on information retrieval systems

**Dr M. Helfert,** *BSc, MSc, PhD*

Business informatics

Information system engineering

Business process management and reference modelling

Healthcare information systems

Supply chain management

**Dr G. Jones, BEng, PhD, MIEE** *(see also Centre for Digital Video Processing)*

Natural language engineering (especially information retrieval)

Multimedia systems

Affective computing

**Ms. J. Kernan,** *MSc*

Human-computer interaction

**Dr H. Lee, MSc, PhD** *(see also Centre for Digital Video Processing)*

Multimedia information retrieval

Human-Computer Interaction

Interaction design for Multimedia

**Dr M. Roantree,** *BSc, MSc, PhD*

Interoperable database systems

Peer to peer database systems

XML query processing

**Professor A. Smeaton,** *MSc, PhD, FICS (see also Centre for Digital Video Processing)*

Multimedia information retrieval

Digital video indexing, retrieval and summarisation

# Language and Intelligence

The Language and Intelligence Group, with currently over 20 research students, is primarily involved in research into and development of applications in two main areas:

- Speech and Language Processing, including Machine Translation, Speech Processing, Computational Models of Semantics, Treebanks, Formal Syntax, Digital Signal Processing, Computer-Assisted Language Learning, Probabilistic Natural Language Processing and Parsing.
- Artificial Intelligence, including Artificial Minds, Computational Models of Cognition, Knowledge Representation, Human-Computer Interaction, Cognitive Science, The Origins of Intelligence, Neural Networks and Autonomous Agents.

## Research Interests within the Language and Intelligence Research Group

**Dr D. Fitzpatrick, BSc, PhD**

Haptics and haptic devices

Braille music

Speech and mathematics

Text to speech synthesis

**Dr M. Humphrys,** *BSc, PhD*

Non-symbolic artificial intelligence

Machine learning

Artificial evolution

**Dr J. McKenna,** *BEng, MSc, PhD*

Speech processing

Speaker characterisation

**Dr D. O'Brien,** *BSc, PhD*

Speech modification and synthesis

**Professor J. van Genabith,** *MSc, PhD*

Computational linguistics

Machine translation

**Mr R. Walshe,** *BEng*

Cloud Computing

HPC

Agent Based Systems

Autonomics

Artificial intelligence

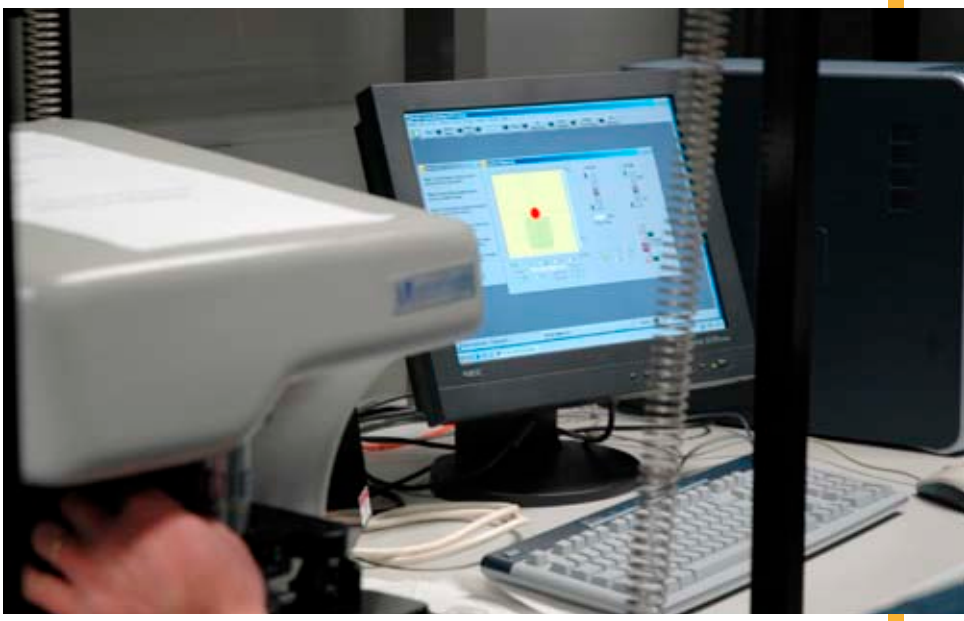
Bio-systems modelling

**Dr M. Ward,** *BSc, PhD*

Computational linguistics

Computer-Assisted language Learning

# Modelling and Scientific Computing



Modelling and Scientific Computing is a highly-active interdisciplinary research group with wide-ranging mathematical, statistical and computational modelling expertise. The over-arching focus of the group is on computational models and methods in exploring the natural and artificial world through solutions to problems, which, because of their complexity, are intractable by conventional methods. Complex systems arise in many fields, e.g. physics, biology, chemistry, finance, socio-economic phenomena, eco-and other hybrid sciences, to name just a few. Major sub-groups in Modelling and Scientific Computing at the current time include:

- Biocomputation Research Laboratory (with research on Bio-systems modelling, Bioinformatics, Biometrics and Pattern Recognition);
- Financial and Socioeconomic Modelling, (including projects in Econophysics, statistics of Accounting, and multivariate techniques in Finance);
- A sub-group in Intelligence and Complexity, (Models of disease, Bio-diversity and AI for bio and artificial systems). The Intelligence and Complexity sub-group also links to the Language and Intelligence Group in the School.

Modelling and Scientific Computing Group members, together with AI colleagues, were recently the major contributors in establishing a taught Masters in Bioinformatics in DCU, which has led to a number of seed research projects being generated on this aspect of Biocomputation.

In addition to their principal research areas, the interdisciplinary skills of group members mean that they are frequent contributors to a number of projects, which span interests in other areas of the School, Faculty and University as a whole.

Currently, the group is extending its Socioeconomic Modelling remit to include aspects of the built/natural environment and sustainable energy systems.

- Affiliations of Modelling and Scientific Computing include the National Institute for Cellular Biotechnology (a HEA PRTLI-funded National Centre), for which members of the group comprise the Biocomputation section. Additionally, group members are active on management and steering committees in several European consortia.
- The group currently consists of 26 researchers, with a number of external associates and collaborators both nationally and internationally.
- The group's work has been/is currently funded variously through EC, ESF COST, HEA PRTLI (through NICB), IRCSET, Enterprise Ireland, An Teagasc, DCU and others.

The web pages of the Modelling and Scientific Computing research group are accessible at: *www.computing.dcu.ie/research/modelling.html*. Included is an extended recent publications and conference presentations list and examples from recent Modelling and Scientific Computing talks. Research projects on the School Web pages form an indicative list only.

## Research Interests within the Modelling and Scientific Computing Research Group

**Dr M. Crane,** *BA, BAI, PhD*

Scientific computing

Computational methods

**Dr J. Horgan,** *MA, MSc, PhD, FIS*

Survey sampling and estimation

Mr G. Keogh, BA (Mod), MSc

Statistical analysis

Statistical approaches to machine translation

**Professor H. Ruskin,** *BSc, MSc, PhD, CStat (FRSS), CPhys FIoP*

Scientific computing

Quantitative methods

Complex systems

**Dr A. Sutherland,** *BA, PhD*

Statistical pattern recognition

**Dr L. Tuohey,** *PhD*

Software engineering, processes and methods

Math modelling

Scientific computing

**Mr R. Walshe,** *BEng*

Cloud Computing

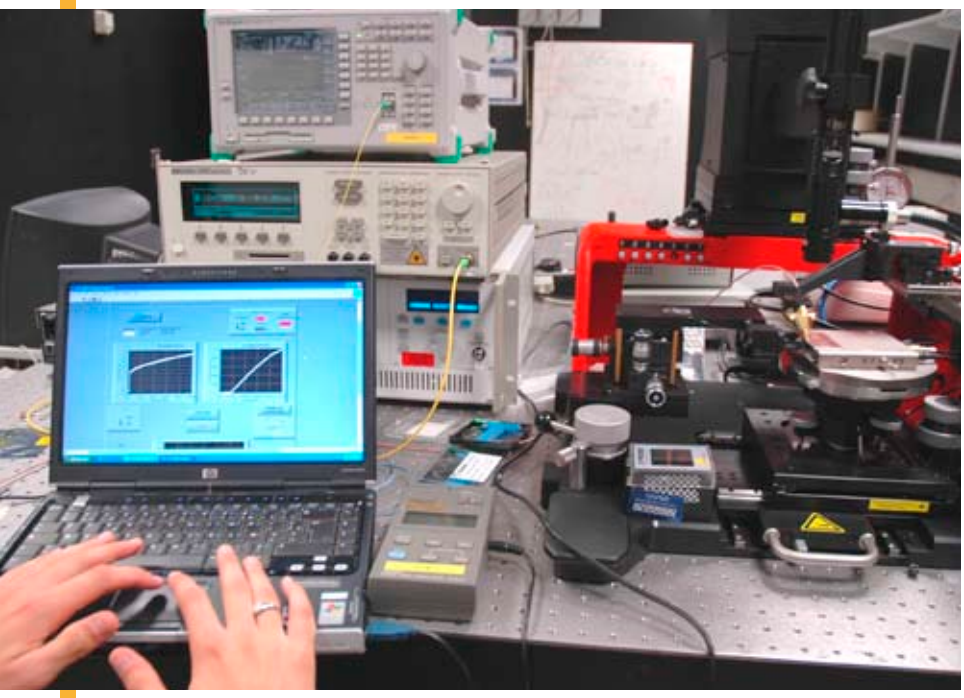
HPC

Agent Based Systems

Autonomics

Artificial intelligence

Bio-systems modelling



## Research Facilities in the School of Computing

DCU School of Computing enjoys a first-rate research environment. Each research student is provided with his/her own desk and computer with access to a superb network infrastructure. Allied with these leading-edge facilities is a highly supportive environment in which students receive constant encouragement and advice from supervisors, staff members and like-minded peers. The School's purpose-built research bays have been specially designed to suit the needs of research students. They are consequently highly conducive to learning and the transfer of ideas.

# Funding and Scholarships

A number of scholarship and studentship opportunities are available each year for students wishing to undertake full-time postgraduate research in the School of Computing. These typically cover tuition fees, along with an allowance for living expenses. Funding sources include the Irish Research Council for Science, Engineering and Technology (IRCSET) scheme, research funds obtained by the school for specific current or planned projects, and the school's own annual research scholarship scheme. Prospective students are advised to visit our website at *www.computing.dcu.ie/research/vacancies.html* for details.

# Application Procedures

Prospective students are advised to first contact a relevant member of staff to discuss potential topics and projects, starting dates and studentships. Details of staff interest areas and current and proposed projects are listed on the school's website at *www.dcu.ie/computing*. Alternatively, the School's Research in the School of Computing booklet gives full details of current and planned projects and of research interests of staff.

## Contact Details

**School of Computing**

DCU, Dublin 9, Ireland

Tel: +353 (0) 1 700 8980
Fax: +353 (0) 1 700 5442
email: *research@computing.dcu.ie*
*www.dcu.ie/computing/people.shtml*

# Research Institute for Networks and Communications Engineering (RINCE)

The Research Institute for Networks and Communications Engineering (RINCE) is a national centre for excellence in Information and Communications Technology (ICT) within the Faculty of Engineering and Computing at Dublin City University. RINCE was established in 1999 through competitive funding obtained from cycle I of the Programme for Research in Third Level Institutes (PRTLI). RINCE researchers are affiliated with two schools in DCU, the School of Electronic Engineering and the School of Computing. The institute currently has 20 academic staff members, 16 research fellows, and approximately 40 research postgraduate students collaborating on a wide variety of research projects.

Since its foundation in 1999, RINCE has been successful in attracting both national and international funding. In addition to funding from private industry, RINCE has obtained funding from Enterprise Ireland, Science Foundation Ireland, Irish Research Council for Science, Engineering and Technology (IRCSET), EU Framework Programmes, Higher Education Authority PRTLI, and Health Research Board. Over the last five years RINCE members have earned an average of €2.4 million in external funding per year, and a measure of the success of RINCE members in achieving funding for its research programmes is that five SFI Investigator Grants have been awarded to RINCE members over the past five years. This large amount of research funding has driven the expansion of PhD supervision within the institute, with 2006 seeing the largest number of PhD completions (18) in a single year for the institute. The increased level of research activity within RINCE has also resulted in a major increase in the number of research papers published by RINCE members in international peer reviewed conferences and journals, with over 100 such publications in 2006.

RINCE has recently been reorganised to build upon the successes it has achieved since its establishment by supporting and developing a number of key strongly focused research areas, intent on making a significant and recognised contribution on the research landscape, while also providing an environment where new and less mature research groups can reach their full potential. The key areas of focus identified by RINCE for development over the next five year cycle are:

# Centre for Image Processing and Image Analysis [CIPA] (incorporating the Vision Systems Group)

The Centre for Image Processing and Analysis (CIPA) is comprised of researchers in DCU (primarily the Vision Systems Group (VSG), a key university recognised research group) along with a wide range of Industrial and Biomedical partners. CIPA acts as the focus for Image Processing & Quantitative Image Analysis research in DCU. CIPA is one of three research centres within the RINCE Institute (an Irish national research institute focussed on innovation in engineering technologies).

Our digital and non-digital IPA research programmes relate to issues involved in the acquisition (custom sensor design), processing, quantitative analysis, classification, visualisation and systems engineering (integration) for a wide range of computer vision applications. Specifically the centre focuses on the issues involved in the automation or semi automation of image feature segmentation, and its associated quantitative analysis at both a micro and macro level.

At the core of CIPA is the Vision Systems Group (VSG). The VSG was formed in 1990 by Prof. Paul Whelan, as a forum to coordinate and support the promotion of computer and machine vision research in DCU. In 1999 Prof. Whelan formed the Medical Imaging and Visualisation Laboratory as a focus for medical imaging research within DCU. The Vision Systems Group currently consists of a core team working on computer vision (specifically image segmentation), medical imaging (specifically computer aided detection/ diagnosis) and their associated visualisation projects. In addition to the VSG team we have 4 adjunct faculty members based in the Mater hospital, DIT and RCSI.

The core expertise provided by the CIPA is in its ability to develop and design novel computer based solutions that will allow the automatic extraction of key image features [specifically from 2D, video, 3D and 4D data sources] with a view to a robust and reliable quantitative analysis, classification or tracking of key information/ data within the scene.

CIPA is a part of the National Biophotonics and Imaging Platform Ireland [NBIP] (HEA-PRTLI IV) and the RINCE Institute (HEA-PRTLI I). CIPA is also part of the recently funded Nano-Bioanalytical Research Facility (HEA-PRTLI V).

CIPA also runs a wide ranging Education & Outreach programmes covering undergraduate & graduate education along with undergraduate internships and outreach into second level education. For additional information please refer to the centres web site at *http://www.cipa.dcu.ie/*.

## Contact Details

**Professor Paul F. Whelan**
**Director**
**Professor of Computer Vision**

School of Electronic Engineering
Dublin City University
Dublin 9, Ireland

Tel: +353 (0) 1 700 5489
Fax: +353 (0) 1 700 5508
email: *paul.whelan@dcu.ie*

## Research Interests within Image Processing and Analysis/Computer Vision

**Professor P.F. Whelan,** *BEng, MEng, PhD, CEng, MIAPR, SMIEEE, FIET*

Image processing and quantitative image analysis

Computer and machine vision

Medical image analysis

Computer assisted detection and diagnosis

3D Imaging of biological surfaces

**Dr D. Molloy,** *BEng, PhD*

Computer and machine vision

3D computer graphics and Visualisation

E-learning and server-side systems

Software development for sensor networks

**Dr R. Sadleir,** *BEng, PhD, MIEI, MIEEE*

Computer and machine vision

Medical image analysis

3D computer graphics

## Energy and Design Laboratory

The Energy and Design laboratory in DCU was established to facilitate fundamental and applied research in energy engineering, with a particular emphasis on the design, modelling, and analysis of sustainable energy systems and installations, and the design of energy efficient devices.

The laboratory is keen to foster relationships with industrial collaborators and other institutions with aligned interests. Our research facilities are augmented by a prototyping facility for rapid development and realisation of prototype designs and systems.

## Contact Details

**Dr Stephen Daniels**
**Director**

Dublin City University
Dublin 9, Ireland

Tel: +353 (0) 1 700 7639
email: *stephen.daniels@eeng.dcu.ie*
*http://energylab.eeng.dcu.ie/energylab/*

## Research Interests in the Energy and Design Laboratory

**Dr Stephen Daniels,** *B. Eng, PhD, MIEEE*

Monitoring and Modelling of Renewable Energy Systems; Energy System Design; Solar Photovoltaics

**Mr Jim Dowling**

Power Electronics

**Dr Conor McArdle**

Energy efficient networks

**Dr Sean Marlow**

Wind energy systems

**Dr Shane Linnane**

Energy System Design

**Prof. Patrick McNally**

Nanomaterials for energy efficient lighting

Research Interests within Image Processing and Analysis/Computer Vision

**Professor P.F. Whelan,** *BEng, MEng, PhD, CEng, MIEE, SMIEEE*

Image processing and quantitative image analysis

Computer and machine vision

Medical image analysis

Computer assisted detection and diagnosis

3D Imaging of biological surfaces

**Dr D. Molloy,** *BEng, PhD, MIEI, AMIEE*

Machine vision (motion analysis)

Virtual reality applications

Web-based teaching

Software engineering

**Dr R. Sadleir,** *BEng, PhD, MIEI, MIEEE*

Computer and machine vision

Medical image analysis

3D computer graphics

## High Speed Devices and Systems (HSDS)

This has grown from the existing strengths in photonics and nanomaterials and will in particular develop the work of the Radio and Optical Communications Group and the Nanomaterials Processing Laboratory. The key expertise within this group comprises the ability to model, design, and test high speed electronic and photonic devices that will be vital for the development of next generation Terabit/s optical communications systems.

## Network Innovations Centre

This has grown from the existing strengths in Performance Engineering, Switching and Systems, RF modelling and simulation and network processor design. The key competencies in this group involve the development of heterogeneous network environments in which wireless, wired and optical networks will coexist. The research spans network modelling from the physical level through to the Application layer.

The Institute occupies a recently constructed, state of the art building, containing all the laboratories and facilities required to carry out leading edge research projects. It also has accommodation and facilities for up to 10 visiting researchers. Visit *www.rince.ie* for additional details.

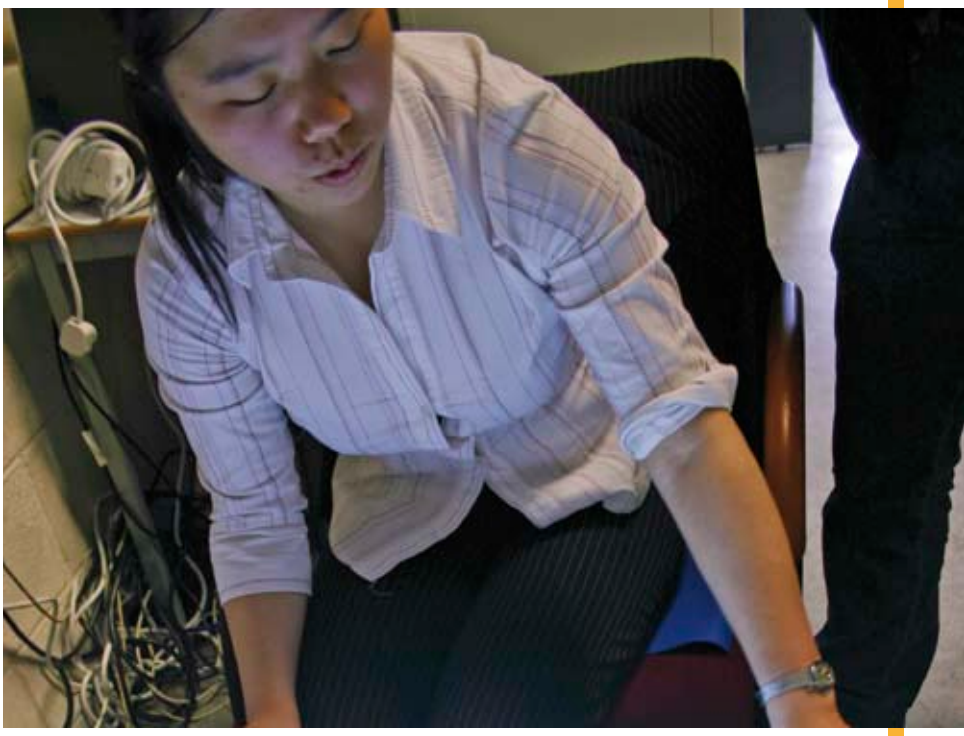
## Contact Details

**Ger Lardner**
**Administrator**

RINCE
Dublin City University
Glasnevin, Dublin 9

Tel: +353 (0) 1 700 5604
Fax: +353 (0) 1 700 7767
email: *ger.lardner@rince.ie*

# CLARITY: Centre for Sensor Web Technologies



CLARITY: Centre for Sensor Web Technologies is a Science Foundation Ireland Centre for Science, Engineering and Technology (CSET), a partnership between University College Dublin, Dublin City University and Tyndall National Institute (TNI) in Cork. This ground-breaking research centre focuses on the so-called 'Sensor Web', which captures the intersection between two important research areas – Adaptive Sensing and Information Discovery. Within DCU, CLARITY brings together researchers from Materials Science and Chemistry, Computing, Electronic Engineering, Mechanical Engineering, Nursing, Ethics, Law and Government and Health and Human Performance.

CLARITY actively collaborates with leading multinationals and SMEs including: AMDOCS, Disney Research, EpiSensor, Heystaks, Alcatel Lucent (Bell Labs), and Critical Path, as well as national agencies, such as the Environmental Protection Agency, the Marine Institute and the National Museum of Ireland. Total investment in CLARITY from SFI, other Irish funding agencies, industry partners and from EU programmes amounts to €23.2 million over a 5-year period, of which Science Foundation Ireland through the CSET programme contributes €11.8 million.

CLARITY hosts approximately 120 research and support staff across the three institutions and builds on work undertaken by the SFI-funded Adaptive Information Cluster.

## Contact Details

**Professor Alan F. Smeaton**

CLARITY: Centre for Sensor Web Technologies
Dublin City University
Dublin 9, Ireland

Tel: +353 (0) 1 700 5262
Fax: +353 (0) 1 700 7995
email: *alan.smeaton@dcu.ie*
*www.clarity-centre.org/*

# Centre for Next Generation Localisation (CNGL)

CNGL is a DCU-led Science Foundation Ireland (SFI) Centre for Science Engineering and Technology. CNGL conducts research on language technologies (machine translation, speech recognition/synthesis), digital content management technologies (adaptive hypermedia, IE/IR), their application in localisation workflows, and language technology-focused software engineering. CNGL is a €30m collaborative research centre that involves collaboration between DCU, TCD, UCD, UL and industrial partners who include world leaders in their respective fields (Alchemy Software, Dai Nippon Printing, IBM, Idiom, Microsoft, SpeechStorm, Symantec, Traslán, VistaTec).

'Localisation' refers to the process of adapting digital content to culture, locale and linguistic environments at high quality and speed. Localisation is a key enabling, value-adding, multiplier component of the global software and content distribution industry. Localisation seeks to overcome language barriers, which constitute a formidable obstacle to the free flow of information, products and services in an increasingly globalised economy and information society.

The Centre's work is guided by the vision of enabling people to interact with content, products and services in their own language, according to their own culture, and according to their own personal needs.

For further details, visit: *www.cngl.ie*

## Contact Details

**Professor Josef van Genabith**
**Director**

Centre for Next Generation Localisation (CNGL)
School of Computing
DCU
Dublin 9, Ireland

Tel: +353 (0) 1 700 6700
Fax: +353 (0) 1 700 5442
email: *info@cngl.ie*

## Centre for Digital Video Processing (CDVP)

The Centre for Digital Video Processing is a cross-disciplinary research centre based at DCU and part of the CLARITY Centre for Sensor Web Technologies CSET based in DCU and at UCD. Comprising 40 researchers, the work of the Centre for Digital Video Processing covers the automatic analysis of video, audio and other sensed information on a large scale in order to allow content-based operations such as browsing, searching, alerting, filtering, and summarisation, dealing with archives of the order of hundreds of thousands of hours of content. The group tests its research work in the field where possible and applications developed to evaluate its research include the family of Físchlár systems which allow digital recording of video programmes, which are then analysed to support browsing, search and playback.

The Centre's research is particularly challenged by the aim of supporting navigation of video archives, allowing users to navigate video archives based on selection of objects present in the video. In addition to the above, the Centre also researches and develops systems for automatic summarisation of field sports such as soccer and Gaelic football as well as conventional movies. The Centre is also active in MPEG-4 hardware design to support MPEG-4 video processing, and in video access from mobile platforms. The Centre's work is funded by Science Foundation Ireland, Enterprise Ireland, the Irish Research Council for Science Engineering and Technology, EU FP6 and FP7 projects, Microsoft Research (Cambridge, UK), Samsung (Korea), and by others.

### Contact Details

**Professor Alan F. Smeaton**

CDVP
Dublin City University
Dublin 9, Ireland

Tel: +353 (0) 1 700 5262
Fax: +353 (0) 1 700 7995
email: *alan.smeaton@dcu.ie*
*www.cdvp.dcu.ie*

## Centre for Scientific Computing and Complex System Modelling (SCI-SYM)

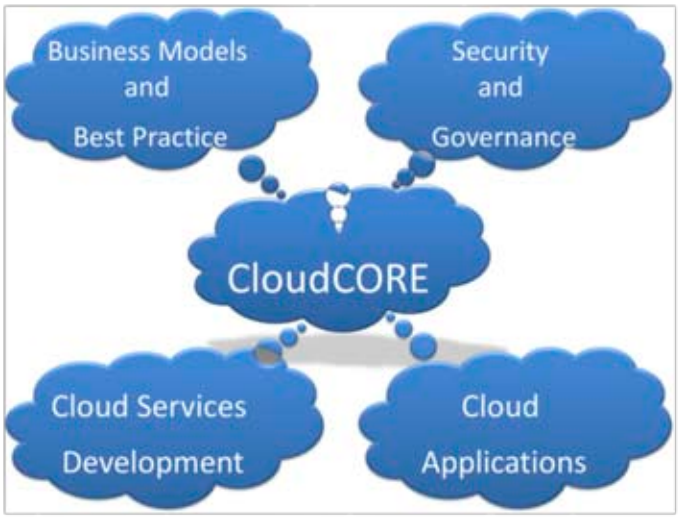
SCI-SYM, founded in 2007, is a centre of excellence for researchers working in high performance computing (HPC) applied to computational and mathematical models for complex systems in engineering, natural sciences and applied sciences. SCI-SYM explores models of the natural and artificial world through high performance computer solutions of problems, which, due to their complexity, are intractable by conventional methods such as experimental, mathematical or semi-analytical methods alone.

## The Cloud Computing Research Centre (CloudCORE)

CloudCORE was founded in 2011, as a centre of excellence for researchers working in Cloud Computing and related disciplines. The Cloud Computing Research Centre is active in research and development projects in key areas of Cloud Computing and has funded positions available for Research Interns and PhD students interested in the area.

CloudCORE consists of 4 main research groups which are:

- Business Models and Best Practice
- Security and Governance
- Cloud Services and Autonomic Computing
- Cloud Applications




The group takes active part in the weekly seminar series in DCU, and co-hosts the European Industry University Cloud Forum in September 2011.

Key Strengths: BPM for Cloud Services, Cloud Models of Best Practice, Content Centric Networks, Maturity Models, IT Transformation, Cloud Security, Cloud Standards, Data Protection, Legislation and Jurisdiction, Ownership Issues, Geographically Distributed Storage, Open Source, Virtualisation, Service Oriented Architectures, Dynamic Migration of Services, Virtual Machines, Cloud University, High Performance Computing, CPU/GPU Hybrid Systems, Models for Optimum Parallelisation, Biodiversity, System Biology Models, Distributed Sensing for Cloud.

## Contact Details

**Ray Walshe**
**Director**

School of Computing
Dublin City University
Dublin 9, Ireland

Tel: +353 (0) 1 700 5597
Fax: +353 (0) 1 700 5442
email: *ray.walshe@dcu.ie*

# Materials Processing Research Centre (MPRC)

The MPRC was founded in 1990 and is comprised of members of staff from the School of Mechanical and Manufacturing Engineering and Enterprise Ireland. It is a formally designated research centre of DCU, which means that it has been favourably evaluated in terms of its management, planning, research activity and quality. The centre offers fundamental strategic and applied research of the highest quality in the areas of material science and material processing techniques. Over the last ten years there has been significant investment in this area, and MPRC members and students have access to high quality processing and characterisation equipment. Part of the MPRC research activity, where the value of collaborative research and pooling of resources was recognised, constitutes a node of the National Centre for Plasma Science and Technology (NCPST). MPRC members have interests in a broad area of materials based research including:

- Surface engineering
- Thin film coating
- Casting and semi-solid processing
- Power based processing
- Ceramic based processing
- Rapid prototyping
- Material mechanical performance and evaluation
- Polymers and biomedical devices
- Machining and forming processes

For additional details visit *www.mecheng.dcu.ie/MPRC/introduction.htm* or contact:

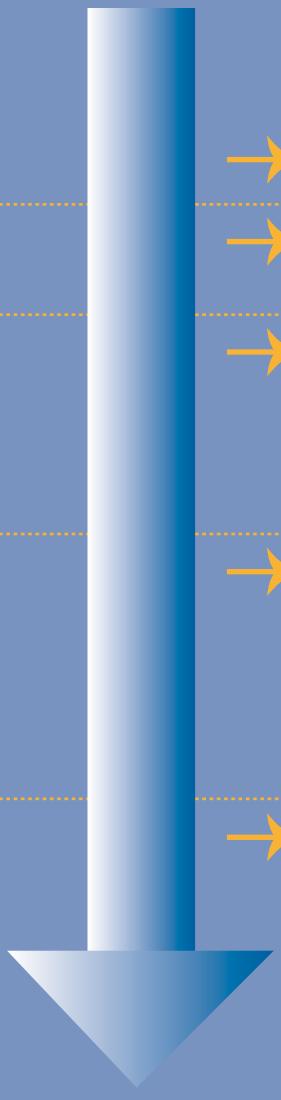
**Dr Lisa Looney/Dr Joseph Stokes**
**Director, Materials Processing Research Centre**

R&D Building
Dublin City University
Dublin 9, Ireland

Tel: +353 (0) 1 700 5403
email: *lisa.looney@dcu.ie*

# Collaborative Options

*There are a variety of options for collaborating with DCU Research, ranging from undergraduate and postgraduate internships, access to specific research equipment and/or facilities, small scale contract research to large-scale research programmes, depending on the research area and the exact needs of the partner. In many cases grant-aid support from national and international research funding may be available to help support the collaborative activities. Please contact Research Support Services at the Office of the Vice-President for Research* ***(http://www.dcu.ie/research/contact.shtml)*** *for informal discussions on options to suit your needs.*



| ENTRY LEVEL | RESEARCH COLLABORATIVE OPTIONS |
|---|---|
| UNDERGRADUATE | UG student work placements ~ 6 months |
| POSTGRADUATE | PhD Scholarships<br>PhD Industrial Internships |
| RESEARCH COLLABORATIONS < 2 YEARS | Access to equipment & facilities<br>Innovation Vouchers<br>Feasibility studies<br>Short-term R&D projects<br>Innovation Partnerships |
| LARGE-SCALE COLLABORATIONS 2-5 YEARS | Bi-lateral collaborative programmes<br>Multi-party collaborative programmes (universities/ industry/international partners e.g. SFI CSETs, EU FP7, IDA Ireland) |
| KNOWLEDGE TRANSFER | IP licensing/assignment<br>Consultancy<br>Training & recruitment<br>Professional Doctorates |

ECONOMIC & SOCIAL IMPACT

# Faculties/Schools Contact Numbers

## Dublin City University Business School

Tel: +353 (0) 1 700 5265

### DCUBS Centre for Executive Programmes

Tel: +353 (0) 1 700 8829

## Faculty of Humanities and Social Sciences

### Communications

Tel: +353 (0) 1 700 5220

### Applied Language and Intercultural Studies (SALIS)

Tel: +353 (0) 1 700 5194

### Law and Government

Tel: +353 (0) 1 700 7720

### FIONTAR

Tel: +353 (0) 1 700 5614

### Education Studies

Tel: +353 (0) 1 700 5223

## Faculty of Science and Health

### Physical Sciences

Tel: +353 (0) 1 700 5306

### Biotechnology

Tel: +353 (0) 1 700 5284

### Chemical Sciences

Tel: +353 (0) 1 700 5309

### Health and Human Performance

Tel: +353 (0) 1 700 8881

### Mathematical Sciences

Tel: +353 (0) 1 700 5293

### Nursing

Tel: +353 (0) 1 700 5947

## Faculty of Engineering and Computing

### Electronic Engineering

Tel: +353 (0) 1 700 5131

### Mechanical and Manufacturing Engineering

Tel: +353 (0) 1 700 5104

### Computing

Tel: +353 (0) 1 700 8980

## Oscail: National Distance Education Centre

Tel: +353 (0) 1 700 5481

# Disclaimer

The information given in this publication is intended as a guide to persons seeking admission to Dublin City University and shall not be deemed to constitute a contract or the terms thereof between the University and an applicant or any third party, or representations concerning same.

Dublin City University is not responsible and shall not be bound by errors in or omissions from this publication; the University reserves the right to revise, amend, alter or delete programmes of study and academic regulations at any time by giving such notice as may be determined by Academic Council in relation to any such change.

# Contact Details

### Dublin City University, Dublin 9, Ireland

Tel. +353 (0) 1 700 5000
Fax. +353 (0) 1 836 0830

For further details on the researchers, schools and centres featured in this brochure, please access the DCU website: *http://www.dcu.ie/*

### Office of the Vice President for Research, DCU

Tel. +353 (0) 1 700 8000
Fax. +353 (0) 1 700 8002

*http://www.dcu.ie/research*

### Graduate Research Office

Tel: +353 (0) 1 700 5136
Fax: +353 (0) 1 700 8002

*http://www.dcu.ie/graduate_research/index.shtml*

### Academic Theme Leaders Office

Tel. +353 (0) 1 700 6858
Fax. +353 (0) 1 700 7977

*http://www.dcu.ie/themes*

### INVENT

Tel. +353 (0) 1 700 7777
Fax. +353 (0) 1 700 7555

*http://www.invent.dcu.ie*

### International Office

Tel. +353 (0) 1 700 7411
Fax. +353 (0) 1 700 8698

*http://www.dcu.ie/international*

### DCU Main Reception

Dublin 9, Ireland

Tel: +353 (0) 1 700 5000

For admission enquiries to all courses, please contact:

### Registry

Tel: +353 (0) 1 700 5338
Fax: +353 (0) 1 700 5504

email: *registry@dcu.ie*
Website: *www.dcu.ie*

Ollscoil Chathair Bhaile Átha Cliath
Dublin City University

DCU Main Reception
Dublin 9, Ireland
Tel: +353 (0) 1 700 5000

**For admission enquiries to all courses, please contact:**

Registry
Tel: +353 (0) 1 700 5338
Fax: +353 (0) 1 700 5504
email: registry@dcu.ie
Website: www.dcu.ie

NDP
National Development Plan 2007 - 2013
EUROPEAN UNION
STRUCTURAL FUNDS