



DRHEA Graduate Education

Plenary Conference

Thursday 29th April 2010

Conference Report

DRHEA Graduate Education Plenary Conference: Conference Report

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Strategic Innovation Fund (SIF): innovation, reform and quality enhancement





Councillor Emer Costello, Lord Mayor of Dublin and Professor Michael P. Ryan, UCD Dean of Graduate Studies and Postdoctoral Training



Strategic Innovation Fund (SIF): innovation, reform and quality enhancement



1. Introduction

The DRHEA Graduate Education Plenary Conference held on April 29th, 2010 was chaired by professor Michael P Ryan UCD Dean of Graduate studies and Postdoctoral training and Chair of the coordinating Committee of the of the DRHEA Graduate Education Strand. The DRHEA is funded under the Higher Education Authority's Strategic Innovation Fund Cycle II (SIF II) has been created to strengthen the Dublin region's higher education sector as an important contribution to the growth of Dublin's competitive advantage in a European and broader international context. In recognising the continuing, pivotal role of the region in the broader context of national development, the Dublin Region Higher Education Alliance will facilitate and catalyse the sector's contribution to achieving the high level goals set out in the National Development Plan 2007-2013, and other supporting strategies such as the Strategy for Science, Technology and Innovation 2006-2013 and Building Ireland's Smart Economy: A framework for Sustainable Economic Renewal. International trends identify that city-regions are becoming the focal points for knowledge creation and learning in the new age of global, knowledge-intensive economies.

Opening address by the Lord Mayor of Dublin

The conference was opened by the Lord Mayor of Dublin, Councillor Emer Costello. The Lord Mayor described how the DRHEA Graduate Education project fits very well with her own vision for Dublin and the draft Dublin City Development Plan 2011-2017. She outlined how the strategy to consolidate and strengthen the role of Dublin as the main economic engine in the state. She emphasised that education and innovation will be the key to the success strategy. International trends identify that city-regions are becoming the focal points for knowledge creation and learning in the new age of global, knowledge-intensive economies. The Dublin city-region has been Ireland's most dynamic economic zone and a principal source of the innovation which has underpinned the country's development of a knowledge-intensive economy in recent times. The diverse higher education sector in the region has been a core element of the infrastructure that has supported the emergence of the fastest growing region in Europe, measured along axes such as population, number of students, and economic output.

The DRHEA seeks to combine the strengths of its constituent member institutions in key areas, driving economies of scale and efficiencies that will enable both forward-planning and agile responses to national and international demands for high quality, accessible Higher Education that underpins sustainable socio-economic development.

The Lord Mayor congratulated the DRHEA Graduate Education Project on the success to date and wished for continued success in the future.

Contribution from Tom Boland, CEO of the Higher Education Authority

Mr Boland highlighted the success of the DRHEA to date and indicated that such cooperation among the Third Level Institutions in the Dublin Region was ground breaking initiative. He pointed out that the DRHEA was a flagship project funded under SIF 2. The project was very successful as indicated by the independent review of SIF projects undertaken for the HEA. He encouraged the participants in the



DRHEA to continue the good work but warned that due to the national economic situation, we may be entering very difficult waters in terms of future funding.

Contribution from Brendan Tuohy, Chair of the Board of the DRHEA

Mr Tuohy highlighted the importance of national competitiveness, location (and the concept of collaborating to get critical mass in a region), innovation (and its role in getting the economy moving) and education for the Smart Economy. He then explained why the DRHEA was so important for all these issues.

Introduction by the chairman Professor Michael P Ryan

Professor Ryan highlighted the aims and progress of the DRHEA Graduate Education Strand to date and outlined the format for the conference including presentations on the disciplines and the workshop sessions to review i) aims and progress, ii) added value of DRHEA, iii) challenges to success and iv) plans to mainstream activities.



Left to right: Prof Jim Walsh (NUIM), Chair of the DRHEA Management Committee, Mr Tom Boland, CEO, Higher Education Authority of Ireland, Councillor Emer Costello, Lord Mayor of Dublin, Professor Michael P. Ryan, UCD Dean of Graduate Studies and Postdoctoral Training, Mr Brendan Tuohy, Chairman of the Board of the DRHEA



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2. Presentations from Discipline Leaders

A representative from each discipline presented on the progress of their group. In some disciplines, a PhD student who had availed of a module or master class talked for 5 minutes on their personal experience of attending a DRHEA course:-

2.1 Physics Dr. Rebekah D'Arcy (UCD)

The physics graduate education group comprises five partners, UCD, TCD, DCU, DIT and Maynooth. The group is co-ordinated by Prof. Gerry O'Sullivan and Dr Rebekah D'Arcy from UCD and they work alongside each of the discipline leaders in the other partner institutes.

Since 2008 19 physics graduate courses covering numerous topics have been made available to students in all five institutes. However, while the courses are combining the strengths of the participating institutions and promoting inter-institutional collaboration, student mobility is of concern.

The first thing the Physics Group did to encourage student participation from all five partners was to ask the students what courses they needed and we set up an online questionnaire that was designed to get feedback on perceived needs for Physics research.

Working with the idea that along with providing the students with courses that were beneficial to their research they also needed to address the issue of student mobility. One way the group hope to solve this problem is highlighted in one of the new courses that was made available this year. The coordinators identified that a number of students in DCU, UCD and TCD were involved in atomic and plasma physics research and so designed an advanced module in atomic and plasma physics run jointly by DCU, TCD and UCD. As the course involves teaching from each of the three institutes students registered for the course are required to attend lectures in each of the campuses. There are 12 students registered for the course (6UCD, 5DCU and 1TCD).

A new course offered in 2009/10 was a masterclass in ultrafast physics. This was given by Prof. Khalil Hajim of the University of Baghdad. Prof. Hajim will visit UCD again later in 2010 and given that a number of physics departments are now in possession of femtosecond laser systems the discipline coordinators feel there is a strong need for a class of this calibre to run again.

A number of workshops have also been run. The first took place in UCD in September 2009. This was a graduate workshop on EUV lithography, optics and sources and was organised jointly with the EUV research group of Prof. Larissa Juschkin of RWTH Germany (29 students from UCD, DCU, TCD and RWTH). The second workshop took place in April 2010 and was organised jointly with and funded by the Atlantic Centre for Atomistic Modelling (20 students from UCD, DCU and TCD).

With regard to future plans, the discipline coordinators will continue to offer courses and workshops that are tailored to student needs that provide the students from each of the five partner institutes with the opportunity to interact and share ideas, something that is a very important part of the PhD



experience. As highlighted by the workshops and masterclasses the group are setting a platform for attracting high quality international lecturers and experts.

In 2009 a meeting took place in the Royal Irish Academy on the future of graduate education in physics and chemistry. All indications are that the sector are moving toward a national framework for structured PhDs in physics and one of the recommendations from this meeting was that the taught modules should be organised and shared jointly between institutes. Thus the DRHEA Physics Group are, in essence, laying the foundations for the future of physics graduate education.

2.2 Chemistry Prof David Grayson (TCD)

Six centres of Chemistry collaborating to provide high quality graduate courses

- School of Chemistry, TCD (Drs Carola Schulzke and Eoin Scanlan, Prof David Grayson)
- School of Chemical Sciences, DCU (Dr Blanaid White)
- School of Chemistry and Chemical Biology, UCD (Dr Susan Quinn)
- Department of Chemistry, NUI Maynooth (Drs John Colleran, Denise Rooney and Carmel Breslin)
- School of Chemical and Pharmaceutical Sciences, DIT (Dr Declan McCormack)
- Chemistry Group within Applied Sciences, ITT (Dr Mary Deasy)

Invited International Contributors 2009-2010:

- Prof. Dr. Josef Havel, PhD, DrSc (School of Chemical Sciences, Masaryk University, Czech Republic)
- Prof. Thomas J. Meyer, North Carolina Chapel Hill, USA
- Prof. Anders Hagfeldt, Uppsala University, Sweden
- Dr. Martyn G. Boutelle, Department of Bioengineering, Imperial College, London
- Prof Ben Davis, University of Oxford, UK
- Dr. Henrik Jensen, Assistant Professor, University of Aarhus, Denmark
- Prof. Rodolphe Cl rac University of Bordeaux, CNRS, France
- Dr. Corine Mathoniere University of Bordeaux, CNRS, France
- Prof. Billy Kerr, University of Strathclyde, UK
- Professor Steve Marsden, University of Leeds, UK
- Dr Chris Braddock, Imperial College London, UK

Highlights 2009-2010

- A number of meetings held to coordinate activities were held
- A common course format with assessment mechanisms was agreed
- Structured credit allocation was introduced
- Courses were advertised in all centres
- 10 new graduate courses, including 7 Master Classes with International speakers, were delivered
- Participation of over 260 students from all centres



Projection 2010-2011

- A further 6 courses have already been committed for next year (2010-2011)
- Currently negotiating a new Master Class, sponsored by a global industrial company
- Opportunity/challenge to work with professional Chemistry organizations to fund invited international speakers to enable continuation of Master Classes in absence of continuing SIF funding
- SIF-funded postgraduate students continue to make excellent progress
- Mainstreaming of SIF-funded Lectureship to be targeted during the year

2.3 Economics Dr Tuvana Pastine (NUIM) and Mr Robert Gillanders (UCD)

Within the DRHEA initiative, NUIM, UCD and TCD Economics Departments have signed an agreement on PhD Co-Operation (Oct 15, 2008). Following the agreement:

- There is a minimum requirement for course work (6 taught modules) within first 18 months of the PhD Program.
- All PhD level modules are open to all students from three institutions.
- There are co-ordinated skill sessions and workshops.

The total number of PhD students and PhD students in their first year of their studies are given in the table below:

	UCD	TCD	NUIM
Total	23	42	17
First Year	5	11	8

The following PhD modules were offered in the 2009-10 academic year within the DRHEA initiative. The number of guest students gives the flow of students between the three institutions.

Host	Module (12 weeksx2 hours)	Guest Students
UCD	Public Policy Evaluation Using Structural Models	NUIM (1) + TCD (6)
UCD	Time Series Econometrics	NUIM (2)+TCD (6)
UCD	History of Economic Development	TCD (1)
UCD	International Trade	NUIM (1)+TCD (5)
NUIM	Industrial Organization	TCD(7)
NUIM	Economics of Education	TCD(2)+UCD(2)
NUIM	Financial Risk Analysis	TCD(1)
NUIM	Economics of Inequality	
TCD	Decision Making Under Uncertainty	NUIM (1)+UCD (2)
TCD	Reading Seminar in Applied Economics	NUIM(1)+UCD(4)
TCD	Advanced International Macroeconomics	NUIM (3) +UCD (2)
TCD	Financial Crises and Regulation	NUIM (4) + UCD (5)



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The following research skill sessions and workshops were organized within DRHEA initiative:

- Data Sources . Full-day event, Oct, 2009. Hosted by UCD. Presenters included faculty from UCD and NUIM. About 80 PhD and MA students attended the event..
- Software Seminar. Full-afternoon event, Nov, 2009. Presenters were from UCD, TCD and NUIM. Approximately 60 PhD and MA students attended the event.
- International Capital Markets, Dec, 2008, NUIM. In this three-day event, Prof. Guibaud from LSE presented recent research on capital markets. About 60 students attended.
- Applied Causal Analysis. Scheduled for June 2010. Hosted by UCD. A four-day event. Presenters will be Dan Akerberg from UCLA and Manuela Angellucci from U. Arizona.

Synopsis: Most all of the top 25 Economics PhD programs in the world have two years of formal in-class training following the undergraduate program. The DRHEA initiative allows the students in the Dublin region to receive this much needed formal training. Following the MA program which builds foundations of microeconomics, macroeconomics and econometrics, students are now able to take advanced PhD level modules in their field of interest. The flow of students between institutions for course work and the participation in the coordinated workshops and skill sessions are indications of the need for and success of the DRHEA initiative in Economics. All three institutions have full commitment to the coordination of their PhD Programs to provide a world class PhD training by making use of scale economies.

Rob Gillanders (PhD Student)

The co-operation with the other main economics departments has allowed students to choose from a larger pool of courses. In addition, the large number of PhD students means it is feasible to teach PhD level courses as opposed to Masters level courses. These two factors enable students to get on the road to being experts more easily and quickly. In terms of attracting students, the three institutions combined have a highly competitive ranking.

2.4 Biomedical Science Prof. Veronica Campbell on behalf of Dr Tom Connor (TCD) and Mr Ronan Kelly (TCD)

Six partner institutions are involved in this strand, with the objective of enhancing graduate training in Biomedical Sciences by combining the strengths of the participating institutions. The participating institutions are Trinity College Dublin (TCD), University College Dublin (UCD), NUI, Maynooth (NUIM), Dublin City University (DCU), Dublin Institute of Technology (DIT) and Institute of Technology Tallaght (ITT).



Four major thematic areas are represented;

- Immunology, Infection & Immunity;
- Neurosciences;
- Cancer Biology;
- Research Methodologies /Advanced Technologies in Biomedical Sciences.

10 modules and 3 master classes were offered across the Alliance in the 2008/2009 academic year and 16 modules were offered in the 2009/2010 academic year. It is planned to further increase these offerings in the 2011/2012 academic year. Student mobility was variable with some modules attracting many external students and other modules failing to attract any external students at all.

In order to increase student mobility there is a need to increase awareness of DRHEA Graduate programmes in each of the participating institutions. This could be achieved by introducing links to the DRHEA website from Departmental postgraduate webpages, and also by highlighting DRHEA graduate activities in postgraduate student handbooks. Conducting a survey the student body could also be a useful way to determine what types of modules and masterclasses are in demand to explore what other factors determine whether students will attend another college to take a module/masterclass

It is suggested that a portal on the DRHEA website should be developed whereby students could register for modules, their results be tracked centrally and feedback on modules could be collected online. Currently this all done locally in individual institutions and is unsatisfactory particularly as the project scales up

Finally it is suggested that development of an e-learning platform for the DRHEA would be very beneficial to further develop the activities of the alliance.

Ronan Kelly (PhD Student)

My background is primarily in psychology and magnetic resonance imaging (MRI), however my PhD research has looked at animal models of disease and inflammation. To fill in the obvious gaps in physiology and neuroscience that I had, I attended two courses that have had a profound impact on my research to date; the neuroimmunology course and cell culture course. To date, my PhD has investigated using MRI as a surrogate marker for inflammation in a disease model of ageing, that correlates with more prominent lab-based techniques for studying inflammation. These include looking at activated microglial cells which are the resident immune cells of the central nervous system. It goes without saying that using a multi-pronged approach to studying animal models of disease can only increase our understanding of the underlying dynamics of the disease process. These courses have provided me with the necessary understanding of physiological processes to enable me to carry out an investigation like this.

2.5 Politics, Sociology and Public Policy Dr John Doyle (DCU) and James Fitzgerald (DCU)

Participating Institutions DCU, NUIM, TCD, UCD

The starting point in each of the four participating institutions was one of a limited and inconsistent range of formal supports, combined with good individual supervision – a quality we did not wish to weaken as we strengthen the formal supports and transferable skills. There was a high demand for PhD programmes, fed by large and growing MA / MSc programmes in these areas not just in Ireland but internationally. There were however limited scholarships to attract high quality international students and increase Ireland’s profile for graduate education.

The key objectives were

- Strengthened Student Experience
- Growth in student numbers
- Shift towards more structured GREPs
- Internal efficiencies through sharing skills based modules
- Inter-university sharing of modules
- Collaborative Master Classes with International Guests

Progress to date – internally and through Regional Collaboration

- The vast majority of students are now on structured GREPs
 - Core modules on research design, quantitative and qualitative methods, professional development
 - Supported by new staff appointments
 - Substantive discipline/topic focused modules
 - Optional modules such as languages
- Where possible PhD level modules are made available to other structured GREPs to maximise cost effectiveness
- There has been significant growth in PhD numbers and the international mix of the student body
- Each partner offers modules to the whole consortium
- Eight Master classes, open to students in all campuses and have been offered with international scholars – usually on a 2 day intensive workshop basis with pre readings and post workshop follow up.
- Best practice and experience sharing has been facilitated

There are however real challenges to these positive developments from reduced staffing levels, threats to new positions and reduced per student funding from HEA as overall student body grows. Even

successful GREPs will need longer transitional funding before full mainstreaming and further cuts in the block grant may see reverses of recent gains.

Sustainability and mainstreaming is possible however and is in progress. All partners are maximising internal efficiencies by offering modules across disciplinary boundaries when relevant. There have been changes to staff workload models to incorporate GREPs and the improved programmes are enhancing international recruitment.

James Fitzgerald (PhD Student School of Law and Government ,Dublin City University)

As a first year PhD student during the 2007/2008 academic year, I was a unique position to experience the structured PhD programme during its first year of operation in DCU. Subsequent to this, I have also partaken in some modules during the second year of my PhD study (2008/2009). From my experience certain key benefits have been afforded to PhD students. Firstly, the clear structure of the modules helps to provide the incumbent PhD student with a general sense of direction during the first year of study. Anecdotal and, indeed, published accounts of a tendency of wide ranging, and sometimes irrelevant (in the context of the completed PhD thesis) research during the first year of study is somewhat offset by a clear structure on what should be studied in the context of all PhD theses—for example, a clear exploration of methodology, issues of philosophy of social science, etc. Furthermore, wide-ranging classes on important topics such as International Relations and quantitative and qualitative research methods provides the student with a greater sense of positionality with regard to their project in the context of the broader academic environment. Whilst some modules may be more relevant to one individual PhD student over another, a clear understanding of the other ‘side’, as it were, is essential in understanding the context within which one’s project is based. For example, I do not use quantitative methods in my thesis, but the mandatory module of quantitative analysis provided me with hands-on experience of these methods and provided a more contextualized basis from which to reject the incorporation of quantitative techniques into my thesis.

Another key aspect which may also be popularly overlooked—but which is nonetheless essential to the PhD experience—is the social aspect. It is well known that PhD study can form a relatively isolated venture, and indeed, can be quite daunting in this respect. By facilitating a relative commune of PhD students who interact in class, however, this provides a strong basis to build social bonds, which may, in my view, offset the strong capacity for isolation with the benefit of a healthy social environment.

The PhD programme at DCU also allows for PhD students to ‘sit-in’ on MA modules—with the permission of their supervisor. This can provide new students with an opportunity to experience many of the specialized disciplines as provided by the School of Law and Government, such as Political Terrorism, Political Islam, the Politics of South America , or many language modules such as Arabic. For me, personally, although I had taken the Terrorism module at MA level, being able to sit in and experience the discussions provided an excellent opportunity to engage with core material from a perspective of



subsequent expertise. This was highly beneficial given that my PhD research is entrenched within this academic field also.

Overall, some students may fear that taking structured modules for an academic term may negatively impact on the time that they can dedicate directly to the PhD thesis. It is my experience, however, that this year provides an excellent opportunity to contextualize one's own research, and which ultimately stimulates oneself to think intently about how one's own project and concomitant theoretical and methodological approaches align in the context of relevant academic topography. This structured programme has benefited my PhD experience both on an academic and a social level; I feel privileged to have been afforded these opportunities, and I would implore that these opportunities be afforded to the many PhD student to come.

2.6 Engineering Dr Simos Oxizidis (UCD) and Aisling Ní Annaidh (UCD)

Progress: To date four meetings were held by the Engineering group. The next meeting is to be held on June 2010.

Regarding the specific activities of the group there was a large number of modules at Masters Level shared from the participating institutes to all DRHEA graduate students but with very poor mobility of students. A graduate course for PhD or postdoctoral level researchers (between December 2009 and June 2010) organised by UCD was shared with significant participation from students of the other institutes. A very successful scheme was a summer school in 2009 (Network Mathematics Graduate Programme) by NUIM and TCD that was offered to all DRHEA graduate students. The summer school will be held this year (summer 2010) and is open to all DRHEA graduate students.

Barriers: The most important barriers were related to the logistics infrastructure amongst the participating institutes. Particularly, the most profound barriers were the low awareness between academics and PhD students about DRHEA activities and administrative obstacles. Transportation of students between specific institutes and the differences in time schedules of each institute producing time overlaps were also discouraging the students' mobility.

Methodological approach: The most important part of the project will be organising and implementing successful master courses for the engineering graduate students of the participating institutes. Directly in the framework of DRHEA a winter school should be ready for later January 2011.

- A Strategy Document is being prepared to outline the appropriate set of actions and initiatives for organising and delivering advanced modules for graduate students. The document will articulate the course of actions and the appropriate management scheme to ease the mobility and collaboration of graduate students among the institutes. The goal is to serve as a roadmap to develop a permanent management scheme for future collaboration of the institutes.
- In order for the master classes to attract PhD students should include advanced modules targeted to the core of their interests. There should be a climax of objectives from the more general ones to discipline specific and in certain cases even more specialized. Detailed surveys among PhD students and supervisors are being prepared to identify the most interesting scientific fields for the preparation of master courses. An important feature for the most efficient delivery of modules is video conferencing that can boost the participation of graduate



students and address the most important issues of transportation and mobility of both students and lecturers.

Aisling Ni Annaidh PhD Student

I am in the second year of my PhD in Mechanical Engineering at UCD. I participated recently in a course offered at UCD called Non-linear Elasticity with application in Biomechanics. This course was taught by Prof. Ray Ogden, a renowned academic in the field of biomechanics who is currently on a Walton Fellowship here at UCD. An open invitation was sent to students in every Irish University who might be interested in the course. The course was organised as three, two day sessions over a period of a number of months to facilitate those travelling from outside of Dublin. The course provided both an opportunity to discuss our research with Prof. Ogden and to meet with other researchers in the field. A mini-symposium was arranged for the students to present the relevant aspects of their work to each other.



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3. Workshop Outputs

In the afternoon, delegates broke up into their disciplinary groups to discuss the aims and the progress of their group, the added value of the DRHEA Graduate Education Strand to their discipline, the hurdles to success and their plans to mainstream DRHEA Graduate Education activities. In each case, the discussion was facilitated by a member of the DRHEA Graduate Education Coordination Committee and outputs were captured by a rapporteur. After these sessions, the Coordination Committee drew together all the outputs and brought back the common issues to the full conference for discussion.

The purpose of the sessions was to build a framework for the DRHEA Graduate Education Strand to realise its objectives in the timeframe of the funding.

To introduce structure to the workshops, each group was asked to answer four specific questions:

- Q1. What are the specific aims and progress of the Disciplinary Group?
- Q2. What is the added value of the DRHEA to the Discipline?
- Q3. What are the challenges to success?
- Q4. What are the plans to mainstream activities?

3.1 What are the specific aims and progress of the disciplinary groups?

3.1.1 Aims

It was agreed that the ambition of the DRHEA Graduate Education Strand is to enhance the quality of graduate education in the Dublin Region by establishing a scale-able model for collaborative delivery of modules and master classes that can be applied in all institutions that can be built upon in the future.

Integral to this, is the provision of solutions to the logistical and administrative procedures in tracking and monitoring student participation. The DRHEA website was envisaged as best providing a portal to facilitate this process.

Another aim of this initiative is to assist in the generation of a critical mass of researchers in specific disciplinary areas where this would not be possible within one institution. In addition, it is expected that the networking of the disciplines would encourage interdisciplinarity between the Alliance partners.

3.1.2 Progress

There is varied progress between the disciplines due to the fact that some DRHEA discipline groups are built on existing affiliations whereas others are interacting for the first time. Overall, there has been a real enhancement of the cooperation between participating institutions. While the progress has been in



the provision of discipline specific training the activities have also facilitated student access to particular expertise and equipment.

3.2 What is the added value of the DRHEA to the discipline?

A broad range of high-level modules have been provided to PhD students in the alliance that were not available before. Some of the courses have been advanced specialised courses others have been at a foundation level to up-skill students in a research area in which that did not have undergraduate training e.g. 'Bioinformatics for the Biologist'. These types of courses are essential to support students on interdisciplinary PhD programmes.

Across the Alliance, synergies between the institutions have been identified. The complementarity of expertise, resources, facilities as meant that PhD students have access to a wider range of expertise. The DRHEA is providing a steady stream of higher skilled PhD graduates with more transferable skills that can be applied to a greater number of careers outside academia. As an indicator of success, 'industry' had expressed an interest in participating in a number of the groups

Master classes are providing PhD students' access to national and international experts. Delegates reported that working together in choosing a speaker and sharing the costs associated with the visit provided real sectoral and structural economies of scope. Furthermore, visiting speakers welcomed the opportunity to interact with a wider audience. Ultimately these classes enhance the positive reputation of graduate training in Dublin on an international level in turn attract more international speakers to the region.

The DRHEA Graduate Education Strand is perceived as a strong unit when individual institutions or researchers are seeking funding. Applicants find it helpful being a part of an existing collaboration. In addition the student body in the Dublin region are benefiting from the socialisation and networking opportunities afforded by the DRHEA Graduate Education Strand. Furthermore, dedicated staff posts in some of the institutions have allowed DRHEA activities to gain support locally as there was no opportunity cost to other university activities.

3.3 What are the challenges to success?

One of the main challenges to the success of the DRHEA Graduate Education strand is effective communication of the activities of the alliance to both students and supervisors. Delegates reported that there was very little awareness amongst students and academic staff about what was on offer. In addition, some courses that are available are not sufficiently 'branded' as DRHEA modules. It was agreed that the DRHEA website needed improvement in communicating activities. A real advantage would be to include a registration portal in the website. – students would feel they are registered not just in one institution but in the region. Furthermore, social networking sites such as Facebook should be exploited as a means of recruiting more PhD students to the courses.



In some disciplines, DRHEA modules have been offered on an *ad hoc* basis to date, the choice of the modules has been dictated by the available expertise and student demand. Improved planning of the programme of work from the beginning of the year would be advantageous. It was recognized that planning the programme of courses can be difficult in some disciplines where the subject area is very broad such as Engineering. In a number of instances discussions evolved around choosing core discipline modules versus specialist modules. Some Students need initial training in some cases which can impede the progress of the group. It was highlighted that planning modules has also been hampered in the past by the instability of the disciplinary group, although this should not be a problem from now on.

It was agreed that managing inter-institutional courses requires high levels of co-ordination in institutional systems, processes, etc. Currently there is no formal mechanism for registering students, recording the results of the modules and transferring the student data back to their home institutions. Administration of student results is very labour intensive for staff and the relatively small scale of the operation limits the progress of a systemic solution since it is not seen as a resource efficient pursuit by some institutional Administration Managers.

Another hurdle to be overcome is the timetabling of modules. Terms dates are not aligned in the partner institutions leading to difficulty in finding compatible slots, room bookings etc.

An issue reported by delegates was that there is little uniformity of credit acknowledgement across the participating institutions. Some institutions are very strict on the credits as a tool to achieve the research award whereas other institutions seem to be more flexible.

There were a number of discussions regarding funding and lack thereof. Lack of funding for student transport has hindered student mobility across the alliance. Furthermore, lack of capital to invest in video conferencing has hindered student participation in some disciplines. There is a limited number of funded studentships in some disciplines and this reduces the number of students available to participate in some areas.

There has also been a low level of academic mobility. This is being addressed by a number of disciplines by designing courses where each partner provides a portion of the course according to the institutional expertise.

The DRHEA Graduate Education programme is expected to continue provided all partners are prepared to continue on a good-will basis. However, there are limits to how much can be asked of individuals who already have a large number of commitments.

3.4 What are the plans to mainstream activities?

It was agreed that to sustain the network there is a need to consistently engage new academics in DRHEA activities. Incentives to enhance academic engagement were considered on the day. It was suggested that academic engagement could be harnessed by the introduction of a 'distinguished lecture series'. This would give some cachet to the academic's participation. It was also suggested that student



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participation could be incentivised similarly, through academic prizes. Such recognition of achievements which could be added to students transcripts and CV. There was agreement that providing students with a 'Certificate of Attendance' would also encourage participation. Making a proportion of modules compulsory was also considered as a tactic to facilitate mainstreaming was considered by a number of the groups. Joint delivery of modules and Master Classes has been used successfully by a number of groups to encourage student take up and will be continued into the future

Some groups expressed an intention to expand their network to include other partners such as industry. The Biomedical Science Group indicated that they would benefit from the integration of RCSI modules and expertise. Possibilities to network with "city" were discussed.

While SIF II funding has been reduced from the original allocation, each disciplinary group has at least one SIFII-funded DRHEA lecturer to contribute to the provision of courses and master classes. There are also other methods of maximizing the activities of the DRHEA Graduate Education Strand at very little cost by linking with existing funded summer schools. Through improved coordination and communication between the disciplines there can be elimination of duplication of effort and identification of gaps in module provision. Furthermore, modules could be shared across disciplines (e.g. something in Physics may be of interest to Chemistry, etc.).

Recommendations from the groups included

- Establishing a coordinated 'summer school' conference involving all six disciplines which would circulate between the institutions and each have a cross disciplinary theme e.g. Energy
- Academics should be encouraged to include 'training funding' to be associated with any PhD student brought into a research programme.
- Existing funded staff members such as Stokes Professors within institutions could be encouraged to participate
- The website could also be used as a central repository for data such as recordings, podcasts etc which could be shared with the partners using Moodle and National Digital Learning Resources(NDLR)
- Maintain voluntary contribution of academics by mainstreaming academic positions



4. Closing Address from Professor John Coolahan

“First of all, I wish to congratulate warmly the co-ordinating Committee of the DRHEA Graduate Education Strand, the academics involved, and the doctoral student participants on the success of their pioneering initiative. This is the first time ever that such a level of collaboration in Doctoral Studies has been achieved in Ireland. It is, indeed, breaking new ground. As such, it is part of a changing and evolving culture in Irish higher education. Over recent years inter-institutional research collaboration has been nurtured by the applications for EU funding, and here in Ireland by the PRTL1 and SFI research funding agencies.



Professor John Coolahan, Emeritus
Professor of Education (NUIM)

The whole area of research and the development of doctoral studies has become an international concern among developed countries. In Ireland, it forms very much part of the debate on the role of HEIs in promoting the SMART economy, and nurturing strategic innovation towards economic and social progress. When the OECD reviewed the Irish higher education system in 2004, it reported that the number of Ph. D students per 1000 population, aged 25-29 in Ireland, was well below the OECD average and, particularly, far below countries such as Sweden, Finland and Germany. The report stated;

“There is an urgent need to increase rapidly the numbers of doctoral studentsWe recommend that immediate and comprehensive steps be taken to address the problem.”

In the view of the review team the number of postgraduates needed to be doubled between then and 2010. Pointedly, the OECD team remarked, “We strongly support the moves reported to us to establish inter-university ‘graduate colleges’ around particular research strengths to provide advanced training and intellectual support for Ph.D students.” It is gratifying that the Graduate Education Strand of DRHEA is fulfilling this role well by 2010. It is also gratifying that the initiative was so warmly endorsed by Dr. Davies in his recent evaluation of the Strategic Innovation Fund.

Such an approach is also promoted by the OECD major review “Tertiary Education for the Knowledge Society” (2008) when it recommends;

“Improve and widen channels of interaction and encourage inter-institutional collaboration for post-graduate research.”

It also urged that the financing of tertiary education “should support and facilitate intra and inter-institutional collaboration among regional partners.”

The DRHEA is very much in line with the authoritative thinking as a regional entity. One surmises that this concept of “regional clusters” of HEIs collaborating for postgraduate and research work will be recommended by the Strategy Review Group for Irish Higher Education. Such co-operation should be incentivised by appropriate funding mechanisms.



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A range of reports from other agencies have been putting forward similar thinking – such as those of The Task Force on Innovation and the Competitiveness Authority. The DRHEA is swimming with the current of progressive thinking in this area.

Irish higher education has been seeking to respond to two stimuli which might at first sight seem to be in opposition – Competition and Collaboration. However, when viewed more maturely, there need not be inimical opposition between them, and Irish Education has been demonstrating how it can respond effectively to both. An agency such as The National Academy for the Integration of Research, Teaching and Learning (NAIRTL) has been contributing effectively to new approaches to Ph.D. studies. Institutions have been co-operating in the shaping up of the Structured Doctorate.

The Graduates strand has been demonstrating the wisdom of the old Irish proverb – “Ar scáth a chéile a mhaireann na daoine” – we can live productively in each other’s shadow. The pooling of expertise, the high levels of interaction, the exchanges of perspective between a larger group, the think-tank dimension of group-work – all serve to enrich the experience of doctoral students. The great advantage of being able to invite expert international speakers for the clustered groups is of real added value. For staff involved, the greater sense of solidarity in action, of broadening perspectives, of learning from new initiatives and experiments, with motivated, highly intelligent and creative students, which the coming together of the Doctoral Education Strand allows for, provide an added value of professional stimulation. In some cases, the critical mass allows for more productive outcomes than cellular, or individual engagement would. Student mobility also allows for enriched experience from a variety of locations.

It seems to me that the regional cluster approach also allows for greater collaboration with external stakeholders in an economical fashion. Here the engagement with elected councils in the greater Dublin area, and with progressive multinational and metropolitan corporations has the potential to create a new, energising dynamic leading to ground-breaking outcomes. It is possible that in, say, twenty years time, commentators will look back and recognise the personnel involved in the DRHEA as pioneers and true shapers of history. To Dublin’s fame as an architectural, and literary metropolis will be added its reputation as a world centre for academic learning and research. A vision for the Dublin region in the twenty first century, would be very enriched by this dimension. Nor does it mean that the DRHEA becomes completely pre-occupied as a metropolitan entity. It also can have links with other clusters within Ireland as a whole. To date, a great deal of very valuable work has been achieved. The groundwork has been well laid. Course design has been achieved, credit systems co-ordinated, a host of logistical issues resolved, successful timetabling has been worked out, many arrangements for involved parties successfully realised. Above all, the reality has been delivered, and added value and enhanced doctoral experiences have been achieved for participants. Capacity-building for collaboration has been nurtured. Challenges remain, but the success achieved so far should engender confidence. It is amazing to learn that over 500 Ph. D. students have been benefiting. The combined resources of the six co-operating institutions can deliver a great deal more than if each were acting in isolation.

Tasks ahead include moves towards including inputs of generic, transferable skills. Moves towards a National Inter-Institution Agreement to enable graduate student mobility and credit exchange across the university sector are in sight.



It is very regrettable that the inauguration of the DRHEA has coincided with the economic recession and its impact on higher education, as on society at large. We live in an age of anxiety, following an age of plenty. Living in an age of anxiety is not a pleasant place to be. It has given rise to an unhealthy level of negativity in the public media. It is a tribute to all involved that the DRHEA has not been thrown off-course. Now that so much ground work has been laid, it is essential that resources for its sustainability will be available. The added value involved makes the investment worthwhile. However, while finance is an essential component of the initiative, it is not the only one – the vision, leadership, energy and commitment of key personnel are also crucial. Likewise, it is important that the inputs of such key personnel are recognised and affirmed in the general academic and public arena. If a steady nerve can be held during these difficult circumstances, there is a strong prospect of the DRHEA (and the Graduate Strand) being an even better and more durable entity when times are more propitious again.

As Professor Michael Ryan indicated, it is hoped that the Graduate Education Strand can be scaled up to a wider range of disciplines. The success attending the six disciplines already in operation should be an encouragement for other disciplines to engage.

Michael also pointed up the aim of creating a framework for joint strategic planning across cognate departments/schools. In this way, a process could become embedded in Irish higher education resulting in worthwhile synergies for the future.

In just two years the Graduate Strand has achieved a great deal. As part of the DRHEA it has been a catalyst, a pathfinder, and we wish it continuing success into the future.”

John Coolahan



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Appendix 1: Notes from the breakout sessions

Biomedical Science

Facilitated by Prof. Carol O’Sullivan

Q1. What are the specific aims and progress of the Disciplinary Group?

- Enhance graduate education in Biomedical Science
- Improve collaboration in teaching
- Add value to PhD experience
- Improve interdisciplinarity between institutions

Q2. What is the added value of the DRHEA to the Discipline?

- Broad range of high-level modules that are not available in Masters programmes
- Biomedical sciences gain from interaction with other disciplines
- Approach research from different perspectives
- Up-skilling for students
- Provision of two levels of instruction – advanced and specialised
- Access to experts in Biomedical field

Q3. What are the challenges to success?

- Supervisors lack awareness of courses
- Lack of funding for distance delivery
- Administrative difficulties in registering students on courses, recording results
- Lack of advertising to students
- Need for increased branding of DRHEA, especially funded academic positions
- Roles and responsibilities of supervisors to be made clearer
- Not a lot of academic mobility – each institution focuses primarily on their own aspect
- Biomedical science would benefit from integration of RCSI modules and expertise in structured programmes



Q4. What are the plans to mainstream activities?

- Eliminate duplication between institutions and look for gaps
- Engage new academics in process. Present idea of 'distinguished lecture series' to senior academics, give some kudos to their participation
- Biomedical science and Chemistry strands have lots of overlap – could have more formal linkage, e.g. cross-discipline members on each panel.
- Attach claim for training funding to each student brought into programme (use GREPS model for this)
- Incentivise students through academic prizes and recognition of achievements that can be added to their transcripts and CV
- Provide students with timely feedback and certificate of attendance
- Short, focused modules are easier for students to engage with



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Engineering

Facilitated by: Mr John Vickery

Engineers in attendance from: UCD, DCU, TCD, DIT, NUIM

Q1. What are the specific aims and progress of the Disciplinary Group?

- Long discussion on aims and many different opinions
- Mix of personnel impending progress, some attended meetings and some did not
- Membership of group not stable => changes happened midstream
- Still struggling on aims for discipline GREP
- Need to think about much broader modules to capture all areas of engineering which are very diverse
- Can be difficult to find common approach to cross the many areas of engineering
- Tapped into PRTL masterclasses that were broad based
- Postgrads very interested in advanced numerical modelling
- Investigate need for specific modules – survey supervisors and postgrads
- In 2009/10 made a start but poor mobility thought to be due to the type of courses on offer – not suiting all
- Those teaching want to deliver courses in their own area – a barrier to progress
- In 2010 – look at genuine mobility and have more generic courses
- Assess where students are at
- Look at courses in professional development, multicultural team training and skills, career options
- Link with employers a gap at present
- Work closer with industry in particular multinationals and use modules as training for their employees, particularly in the area of ENERGY
- Colleagues in industry now doing PhDs and so need to have relevant modules for them
- Proposed format for a course - teaching in the morning (academic content) and invite application specialist speakers in the afternoon session
- Also consider 1 week long approach
- Improve socialisation aspect and networking – compare notes and help each other
- Environment spans many engineering areas, could this be used as one common theme?
- Aim to develop a range of modules that would accommodate different groups within engineering
- Incorporate employability and industry link for delivery as well, e.g. in engineering tools at the high end that are specific
- Need strategy on number of modules/masterclasses going forward
- Progress to date: 2 modules run in each of the 4 universities



- Plan to the same for 2010 but with right mobility

What is the added value to the Engineering Discipline?

- Socialisation and inter institutional rapport for students
- Staff always willing to support GREP and DRHEA – spurred action on module development
- Also transfer of credits very positive and added to crucial mass
- International aspect of great benefit, bringing in experts from abroad
- Sharing the cost, knowledge for a speaker – also speaker glad to be interacting with a wider audience
- DRHEA perceived as a strong unit when one is looking for funding, e.g. EU who want to see evidence of existing collaboration
- Discussion groups post training a positive

What are the challenges to success?

- Scheduling of events in busy time frames – address in questionnaire
- Improve mobility – encourage joint delivery to address this, e.g. in ENERGY
- Stability of the group in maintaining strategy
- Administration – who will take the lead? What are the hours allocation in some institutions?
- Uses Stokes Professors within institutions
- Communication – suggest using DRHEA website, facebook, blogging ... get students to register online and do this centrally
- Access of data post delivery on assessment – currently very staff intensive in terms of administration
- Mechanisms not there for communication at present and no official mechanism for transferring data back to institutions
- Identification of core discipline modules – need supervisor and postgrad input on this
- How to find students in the future

What are the plans to mainstream activities?

- Web registration – students would feel they are registered not just in one institution but in the region
- Video conferencing and challenge will be to get students to attend
- Management scheme for GREP with regard to sharing of information, e.g. availability of recording, podcasts – need a central repository for data - could use moodle and NDLR
- Make certain modules etc. obligatory to ensure sustainability – issue of running costs here
- Would facilitate mainstreaming if modules were compulsory and if they were to be completed by a certain date



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Chemistry

Facilitated by Dr Mary McNamara

Q1. What are the specific aims and progress of the Disciplinary Group?

- Aims
 - i. Deliver in a more efficient way what you cannot deliver on your own
 - ii. Create critical mass within an area or discipline
 - iii. Enhance Quality of postgraduate education and set benchmarking
- Progress
 - i. Enhance cooperation between participating institutions
 - ii. Great attendance for all modules

Q2. What is the added value of the DRHEA to the Discipline?

- Building great reputation and recognition abroad which in turn attracts more international speakers (leading experts in a particular research field)
- Building a reputation for the Greater Dublin Area as a whole
- Avoiding overlapping of courses and therefore waste of resources
- Complementarity of expertise, resources, facilities as students can have access to a wider range of those

Q3. What are the challenges to success?

- Maintain voluntary contribution of academics by mainstreaming academic positions
- Tracking of students
- Transport and mobility of students
- Timetabling of modules
- No uniformity of credits acknowledgement across the participating institutions (some institutions are very strict on the credits as a tool to achieve the research award whereas other institutions seem to be more flexible)
- No uniformity of assessment measures/control/structure across the participating institutions
- Access to certain facilities may require internal student cards
- Some students are wary of the assessment weight on their overall project work and therefore do not attend the modules for fear of failing it and adding extra work to their schedule
- The validity of the assessment method as the only system to monitor the acquisition of knowledge should be further explored
- Selection of modules and master classes should be more relevant to students work and their future employability
- No lab based module on offer at present



Q4. What are the plans to mainstream activities?

- Include industry
- Students should be able to attend the modules even without being enrolled on a structured programme
- Mainstreaming of academic positions by acknowledging teaching hours
- Creating introductory courses that could then lead to an advanced course
- Release of a certificate for the attendance of a specific discipline programme/module
- Modules should be shared across disciplines (something in Physics may be of interest to Chemistry, etc.) and the student's background and knowledge base should then be taken into account when preparing the module's content



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Economics

Facilitated by Dr Honor Fagan

Q1. What are the specific aims and progress of the Disciplinary Group?

Aims

- To produce an International Competitive PhD Programme - collaboration allows for greater strength in the programme where graduates are the strongest within Europe
- To make it a scale-able model that can be applied in all insts but can be built on later.
- To figure out logistics and administrative mechanics determining tracking and monitoring of student participation
- To have a stronger link to research capacities of the school.
- To produce a website for "Dublin Economics" (e.g. e-core)

Progress

- Modules thus far have been offered ad hoc based on skills and demand. Need to determine what modules a joint programme should offer from the off-set
- GREP has been an additional benefit to the group as it has been determined from the outset how many students could be funded
- Making great progress! Still a way to go, but progressing nicely. Students need initial training in some cases which can impede the progress of the group

Q2. What is the added value of the DRHEA to the Discipline?

- Will upskill the labour force as those entering work force will have higher qualification
- Steadier stream of higher skilled PhD graduates with more transferable skills that can be applied to a greater number of careers outside academia (e.g. media, financial sector, regulatory sector)
- Increasing home-grown talent in the area
- Increase in positive reputation on an international level in terms of graduate training
- expanding the pool of international students

Q3. What are the Challenges to success?

- Process is being tested at present -
- Scale limits the progress as is not seen as a resource efficient pursuit.
- Difficulty obtaining funding for students, particularly if trying to base figures on external non-discipline specific funding allocations.
- Students registering or applying are dwindling - quite possibly due to funding.

Q4. What are the plans to mainstream activities?



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- The programme will continue provided all partners are prepared to continue on a good-will basis.
- Modules will be left open for PhD students to take on if they wish - which will be dependent on co-ordination.
- Would pick scholarships over retaining staff.



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Politics/Sociology/Public Policy

Facilitated by Professor Gary Murphy

Q1. What are the specific aims and progress of the Disciplinary Group?

- The opening up of available modules (which has no cost in the short-term).
- To develop a strategy around advertising/promotion between the institutions.
- Consider a 'summer school' approach to delivering the offering.
-

Q2. What is the added value of the DRHEA to the Discipline?

- Created synergies between the institutions, e.g. MOU, credits, etc. and real sectoral and structural economies of scope (we are all learning from each other through the DRHEA mechanism).
- Dedicated staff posts have allowed these activities to gain support locally as there was no opportunity cost to other university activities.
- In politics in particular, the training on offer is truly cross-disciplinary, less narrowly defined than the sciences, say.
- Networking opportunity for student body.
- Increased capacity for some students to access NFQ Level 10 modules.

Q3. What are the Challenges to success?

- Managing inter-institutional compatibility (requires high levels of co-ordination in systems, processes, etc.)
- Lack of student mobility (due to poor communication/lack of funding).
- Limited number of studentships.
- Video-conferencing does not suit all disciplines, e.g. visual texts.

Q4. What are the plans to mainstream activities?

- Exploit volunteerism, e.g. have a 'distinguished lecturer' series of free, intensive masterclasses (academics like to talk about their own, individual areas of research!)
- Rolling out modules nationally (similar to an existing Chemistry inter-institutional annual event - could deliver a masterclass).
- Continuation of structural and sectoral synergies.
- Increase participation in master classes by offering to publish student papers on DRHEA website, for example.



Physics

Facilitated by Professor Michael P. Ryan

Q1. What are the specific aims and progress of the Disciplinary Group?

- High level courses availing of resources not able to be provided individually
- Pooling resources
- Access to expertise and equipment
- Scalable model

Q2. What is the added value of the DRHEA to the discipline?

- Interaction of students
- Generation of critical mass
- Building awareness of issues
- Increased professionalism
- Students at the same level
- Industry are expressing an interest in contributing
- Internationalisation

Q3. What are the Challenges to success?

- Different levels of funding therefore commitment
- There is a limit !!!
- Administration-student records
- Communication (with supervisors and students).
- Mobility
- Reduced funding for PhD Students
- Time tabling
- Improve website
- Still work in progress
- Stability of coordinating group

Q4. Plans to mainstream activities?

- Continuing need for High level PhD “courses” especially “core knowledge”
- Co-ordination between institutions
- Master Classes: requires regularity
- Build a profile
- Network with “city” and “industry”
- Network with funded “summer schools”
- DRHEA summer schools 5 year cycle on a theme
- Cross Discipline
- Coordinated ‘summer school’ conference involving 6 disciplines



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- Communication with newer modes e.g. Facebook, You Tube etc



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