



The Elixir

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See also: www.tcd.ie/pharmacy/

Welcome Statement by the Chair

Dear Friends,

As the year is drawing to the close two major issues require our continuing attention. In June we celebrated the grand opening of our new research home the Trinity Biomedical Sciences Institute (TBSI). The Pharmacy & Pharmaceutical Sciences facility, which still requires touch-ups and careful snagging, should provide a spacious home for our research. I trust that we will move a large part of our research operations to TBSI in the next few weeks. I look forward to great pharmaceutical research-based discoveries coming from pharmacy labs in TBSI!! I would like to thank all involved in planning and designing our TBSI space; my special thanks to our Director of Research, Carsten Ehrhardt, for his tireless and tenacious efforts on behalf of our School. Thank you, Carsten!! I am also grateful to Ann Hannan, Brian O'Reilly and Trudy Smith who have agreed to be reassigned to the TBSI and support shared services of the Institute.

In the continuing saga of reforms of undergraduate pharmacy curriculum the centre stage is now occupied by The National Pharmacy Forum. The Forum, established by the PSI in the Spring to oversee the introduction of 5-year fully integrated pharmacy curriculum from September 2012, has

(cont. overleaf)



FACULTY

Head of School & Chair in Pharmacology

Prof. Marek Radomski

Dr. Catriona Bradley, Asst. Prof.

Dr. Deirdre D'Arcy, Asst. Prof.

Dr. Carsten Ehrhardt, Assoc. Prof.

Dr. David Finlay, Ussher Asst. Prof.

Dr. Neil Frankish, Asst. Prof.

Dr. John Gilmer, Asst. Prof.

Dr. Tamasine Grimes, Assoc. Prof.

Dr. Andrew Harkin, Assoc. Prof.

Dr. Anne Marie Healy, Assoc. Prof.

Dr. Martin Henman, Assoc. Prof.

Dr. Mariusz Kamionka, Asst. Prof.

(Merrion Pharmaceuticals, Ltd.)

Dr. Maria Jose Santos-Martinez, Ussher Asst. Prof.

Dr. Carlos Medina, Asst. Prof.

Prof. Mary Meegan

Dr. Lorraine O'Driscoll, Asst. Prof.

Dr. John Quigley, Asst. Prof.

Ms. Cicely Roche, Assoc. Prof.

Ms. Sheila Ryder, Asst. Prof.

Dr. Astrid Sasse, Asst. Prof.

Dr. Helen Sheridan, Asst. Prof.

Ms. Karen Sheridan, Boots Teacher Practitioner

Dr. Fabio Boylan, Asst. Prof.

Dr. Lidia Tajber, Asst. Prof.

Dr. John Walsh, Asst. Prof.

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(Welcome Statement by the Chair cont.)

focused on the development of new curriculum and the funding of the integrated year. The “full integration”, as understood by the PSI, would partition the internship year to smaller units and sandwich them into a 5-year-long undergraduate program. Of note, all 28 Schools of Pharmacy in the UK decided against introduction of a fully-integrated curriculum. Furthermore, there is no evidence that the integrated curriculum equips pharmacy students with superior skills when compared to 4 + 1 model. At Trinity, we feel that -in the current very restrictive financial climate- the cost of introduction of fully integrated curriculum is simply too high to be endured by the stake-holders. Instead, efforts should be directed into steady and effective improvement of the current, at times unsatisfactory (clinical tutor scheme!) internship year. We have presented our vision of improved pharmacy curriculum both to the College and Forum.

I would like to wish you all the very best for the forthcoming Christmas and the New Year. May all decision-makers (particularly those we depend upon in our every day and professional lives) show less dogmatism and more pragmatism! And, to all of us more comradeship, friendship and smile in the coming year!

Merry Christmas and Happy New Year!

Prof. Marek W. Radomski, MD, FTCD, DHC
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Additional Faculty Information *(cont. from p1)*

Directors**Director of Teaching & Learning
(Undergraduate)**

Dr. Anne Marie Healy

**Director of Teaching & Learning
(Postgraduate)**

Dr. Andrew Harkin

Director of Research

Dr. Carsten Ehrhardt

Disability Liaison Officer

Dr. Helen Sheridan

TAP Contact

Dr. John Walsh

**Undergraduate Research
Liaison Officer**

Dr. Carlos Medina

**Undergraduate Year
Coordinators****Junior Freshman**

Dr. John Walsh

Senior Freshman

Dr. John Quigley

Junior Sophister

Dr. Astrid Sasse

Senior Sophister

Dr. Deirdre D’Arcy

School & College Tutors

Dr. Andrew Harkin

Dr. John Quigley

Dr. Fabio Boylan

Dr. Astrid Sasse

Dr. John Walsh

Dr. Lorraine O’Driscoll

**Postgraduate Course
Coordinators****M.Sc. in Hospital Pharmacy**

Ms. Niamh McMahon

**Diploma/M.Sc.
Pharmaceutical Analysis**

Dr. John Gilmer

**Diploma/M.Sc. Pharmaceutical
Technology**

Dr. Lidia Tajber

**Diploma/M.Sc.
Community Pharmacy**

Ms. Sheila Ryder

**Diploma/M.Sc. in Pharmaceutical
Manufacturing Technology**

Ms. Lorna Loughrey

Welcoming our Junior Freshman Students on Orientation Day

Orientation Day for 2011 for Junior Freshman Students in the School of Pharmacy & Pharmaceutical Sciences was held on 21st September. This was a great opportunity for our new students to meet each other, to hear about their course, to meet and chat with members of academic, technical and administration staff, and to have a tour of our teaching and research facilities, including the state-of-the-art Boots Practice of Pharmacy facility.

It's our pleasure to welcome each and everyone of the 79 of you.

We very much look forward to our time with you over the next 5 years !

Students registering; getting a chance to chat and make new friends; and tour the School of Pharmacy & Pharmaceutical Sciences.....



Photographs courtesy of Ms. Betty Daly: thank you!

United Drug sponsor laboratory coats for 2011 JF students

The School is very grateful to United Drug for sponsoring laboratory coats for all our incoming Junior Freshman Pharmacy students.

The students were measured up for their coats on the morning of their Orientation Session on 21st September and presented with their coats the following Wednesday in time for their first Pharmaceutical Chemistry laboratory class. Professor Meegan was dazzled by the pristine array of white coats in the lab! Let's hope they are as pristine by the end of the year.

Thank you United Drug!



(Below: L-R): Ciara Corrigan, Susie Farrell, Caitriona Reddy, Andrea Burke, Laura Farrell, Mim Alam, Jason Noctor



(Left: L-R): Zac Holmes, Dr. Anne-Marie Healy, Director of Teaching and Learning (Undergraduate), Sarah Kelly, Ciara Regan, Roisin Cahill, Muireann Kavanagh, Cecily Roche, Senior Lecturer in Practice of Pharmacy



(Above: L-R): Dermott Joyce, Paul Cody, Dara Gargan, Brian Barry, James Fahey, Aaron Andrews, Karl Smith



(Above: L-R): Brona Staunton, Kate Mulligan, Amy Giles, Hannah-May Morrissey, James Fahey

(Left: L-R): Veronica Carragher, Ciara Regan, Ingrid Davenport, Jean Tomkins, Adrienne Morley, Aoife Carr

Photographs courtesy of Ms. Betty Daly: thanks again!

Fond Farewell to Aileen Treacy, School Administrator

On 7th September, a farewell get-together was held in the Atrium to allow members of the School thank **Ms. Aileen Treacy** for all her work and help as School Administrator and to wish her every good wish for her retirement. A great time was had by all—who left envious from hearing about Aileen's plans to start her retirement by travelling through Europe for 3 months. We all wish Aileen the best of health & happiness for the many years to come and we hope she'll drop in again, from time-to-time, to tell us of her travels and adventures.

Thanks again Aileen & very best wishes for the future

Hasta La Vista: Trudy, Ann, Brian, Derek

Recently, **Ms. Trudy Smyth** (Senior Lab. Attendant), **Mr. Brian O'Reilly** (Senior Lab. Attendant) and **Ms. Ann Hannan** (Senior Technical Officer) departed our School to embark on new and exciting career opportunities in the recently opened Biomedical Sciences Institute (BSI) here in TCD, while **Mr. Derek Coss** (Senior Technical Officer) headed further afield to Australia for a 3 year sabbatical before returning to BSI also. Thank you all for your work and friendship. You will be missed.

Best wishes & keep in touch!

Welcome to Dr. Cecilia McAllister School Administrator



In September, we also had the opportunity to welcome **Dr. Cecilia McAllister**, our new School Administrator. Cecilia came from the position of School Administrator in the School of Drama, Film and Music. In her role in our School she assists the Head of School in strategic planning and implementation including financial planning and resource allocation, preparing data for inclusion in ARAM, liaising with the Treasurer's Office and other central offices on matters relating to financial planning. She liaises with the Staff Office and other College offices relating to recruitment matters. She also acts as Secretary to various School Committees.

Welcome Cecilia

...and a big welcome also to Dr. David Finlay Ussher Lecturer in Cancer Biology & Therapeutics

Dr. David Finlay graduated with a degree in Biochemistry from Trinity College Dublin in 2001 and went on to do a PhD in Biochemistry at the University of Dundee which he completed in 2006. During this period in Dundee, David developed a keen interest in studying the signal transduction pathways that control hepatic glucose synthesis (gluconeogenesis) and how these pathways are deregulated in Diabetes Mellitus. Following his interest in how deregulated signal transduction influences disease states, David joined the lab of Prof. Doreen Cantrell at the University of Dundee in 2006 to study some key signalling molecules that control T cell immune responses which are also deregulated in various malignancies such as T cell acute lymphoblastic leukaemia (T-ALL).

In 2011, David Finlay was recruited to the Ussher Lectureship in Cancer Biology and Therapeutics, jointly held between the School of Pharmacy and Pharmaceutical Sciences and the School of Biochemistry and Immunology. With his enthusiasm for scientific research, David aims to elucidate the mechanisms controlling the biology of various haematological malignancies and to discover new targets for novel therapeutics. Based on his background in biochemistry, David will contribute to various aspects of the undergraduate teaching in the School of Pharmacy and Pharmaceutical Sciences.



Delighted you've joined us David !

Belated congratulations to Conor Gillespie, SF

Conor Gillespie, Junior Freshman Pharmacy TCD (2010-2011), receives a medal from the Institute of Chemistry of Ireland on achieving the Highest Results in Leaving Certificate Honours Chemistry Course (2010). The award was presented to Conor at a function held in conjunction with the annual general meeting of the Institute of Chemistry of Ireland at the Royal College of Surgeons in Ireland, 28 May, 2011.

The Institute of Chemistry of Ireland is the professional body representing chemists in Ireland.



Fifty Years Apart

(Above: L-R): Prof. Seán Corish (TCD), top Leaving Cert student for 1960, and Conor Gillespie, top Leaving Cert student for 2010, with Dr Paraic James (Institute President)

(Left: L-R): Ailish O'Malley, Chemistry Teacher, St Columbas College Stranorlar, Co Donegal; Maeve Scully, School Principal; Dr Paraic James, Institute President; Conor Gillespie (Top Leaving Certificate Chemistry Student, 2010) with his parents, Chris and Kathy, and his sister, Zara

By Prof. Mary Meegan



Sincerest congratulations Conor !

European Society of Clinical Pharmacy comes to Dublin 2012

Connecting care to outcomes is not easy. Pharmacists, and other health care professionals care for patients to the best of their ability, but this does not automatically lead to optimal outcomes for the patients. Why? Because the complex interacting factors of the patient, their condition(s) and their medicine(s) often requires a multiplicity of clinical and humanistic approaches, used in judiciously selected combinations, which are applied in a carefully timed and monitored sequence, to produce the desired outcome. As Martin Schulz comments in the opening plenary lecture, *"Pharmacists do not think or act in indication-related, disease-specific categories, but have an integrated, disease-independent approach. Scientifically, the effects of disease-independent interventions such as, for example, a medication review for patients with polypharmacy are difficult to evaluate."* The 40th Symposium of the European Society of Clinical Pharmacy will try to unravel some of the interactions and to clarify some of the complexities of connecting care to outcomes.



From Tuesday 18th until Friday 21st of October in the Burlington Hotel, ESCP will offer 24 lectures, 21 workshops, around 300 poster and oral communications, one mini-symposium and one Masterclass, to interest, provoke and inform. As I write, there are already over 400 participants registered which is above expectations at this stage of the preparations. On Thursday evening (20th), the symposium dinner will be held in the Dining Hall in Trinity with fine food, wines and entertainment. So, the scene is set for 4 days of meeting friends and making contacts, for productive work and good fun.

By Dr. Martin Henman,
Chair of the Scientific Committee and Local Organising Committee

Postgraduate Teaching and Learning News: Reports on Recent Events....

DR. ANDREW HARKIN, DIRECTOR OF POST-GRADUATE TEACHING & LEARNING REPORTS ON.....

New opportunities for postgraduate students in School of Pharmacy & Pharmaceutical Sciences

The School is committed to the ongoing development of graduate education in Pharmacy & Pharmaceutical Sciences and encourages all of our students to engage in new College initiatives which include training in innovation & entrepreneurship, advanced discipline specific modules, and teacher training to enhance and support our research. In addition, our recent move to the Biosciences Institute in TCD will foster interdisciplinary research and enable the attainment of critical mass in key areas of research activity.

School researchers prepare to move to Trinity Biosciences Institute (BSI)

Trinity Biosciences Institute (BSI) launched in June this year. This Institute will house a number of graduate research programmes with a strong focus on the multidisciplinary aspects and a broad range of options offered under the one roof. The School of Pharmacy & Pharmaceutical Sciences in TCD is one of many Schools being accommodated in Trinity BSI.

Our growth strategy is linked to our involvement in the BSI. In this regard the School will work in partnership with other stakeholders to develop and deliver graduate programmes relating to pharmaceutical research and development (R&D). Such programmes will play a key role in developing the Irish pharmaceutical sector and attracting future investment in pharmaceutical R&D.

A key research focus for investigators in the School is on cancer drug discovery and development - from initial discovery to clinical trials, which is led by a unique multi-disciplinary team including pharmacologists, pharmacists, clinicians, pharmacognosists and medicinal chemists in the state of the art BSI. This translational research cluster engages in all steps from basic discovery through to clinical trials, in collaboration with a number of national and international hospitals, as well as industry in Ireland and abroad including 9 major international pharmaceutical companies. The mission is to advance output from basic discovery and development through the pipeline to clinical application in addition to training the next generation of post-doctoral fellows, PhD and MD students.

A further research area in the School aligned with the BSI involves the inflammatory bowel disease research group who are working to elucidate molecular mechanisms involved in the pathophysiology of inflammatory bowel diseases, with a view to the development of new drug treatment that will address current unmet clinical need. Additional research areas with opportunities for graduate students include drug targeting/transport, advanced drug delivery and Pharmaceutical Nanoscience.

Research within the School has led to the development of spin-off pharmaceutical companies. Pharmatrin Ltd. is a campus company of Trinity College Dublin which specialises in developing small molecule New Chemical Entities (NCEs), with potential therapeutic application in the areas of inflammation and autoimmune diseases. Solvotrin Therapeutics Limited is a privately held pharmaceutical company with a portfolio of innovative products, including bio-activated medicines for the treatment of cardiovascular diseases.

Further details of postgraduate opportunities in the BSI and School of Pharmacy & Pharmaceutical Sciences, TCD may be obtained from our website: www.pharmacy.tcd.ie/postgraduate/

Postgraduate Teaching and Learning News: Reports on Recent Events (*cont.*)

Innovation & Entrepreneurship

Designed to be a dynamic community of researchers, the Innovation Academy brings together postgraduate students from the arts, humanities, business, sciences and engineering to introduce them to creative thinking and the basic concepts of entrepreneurship. Students take part in workshops, seminars, practical challenges and industry projects. The projects are fun, thought-provoking and intensive. The Innovation Academy recruited registered PhD students for the next module in Creative Thinking and Innovation. The module was offered full-time from 10-28th October, with final presentations at "The Pitch", a plenary session of research projects undertaken.

See [www.tcd.ie/Graduate Studies/InnovationAcademy/](http://www.tcd.ie/Graduate_Studies/InnovationAcademy/) for complete course outline and application

Advanced discipline-specific modules

The Dublin Region Higher Education Alliance (DRHEA) is a strategic alliance of the Higher Education sector in the wider Dublin city-region. It includes four Universities and their linked Colleges (TCD, UCD, DCU and NUIM) and four Institutes of Technology (DIT, IADT, ITB and ITT Dublin). Members of the Alliance have identified strands of activity where collaborative action will lead to efficiencies and increased capacity for research & development that includes graduate education. The Graduate Education Strand has established an inter-institutional network in the disciplines of Biomedical Science; Chemistry; Economics; Engineering; Physics and Politics/Sociology and Public Policy. Disciplinary Leaders have been working together and have already provided some advanced discipline-specific taught modules and master classes available to all doctoral students in the alliance. In 2011/12, the DRHEA are providing a comprehensive suite of modules and master classes for PhD students and postdoctoral researchers across the alliance. It is envisaged that researchers from Industry will also be invited to attend relevant modules and master classes.

Further details on the DRHEA alliance are available from www.drhea.ie/about_us.php

A full list of advanced modules are available from www.drhea.ie/disciplines.php?page=59&modules=on and www.drhea.ie/disciplines.php?page=62

Former student claims the Ussher Postgraduate Fellowship awarded by the Faculty of Health Sciences

Congratulations to **Jason Gavin** who was recently awarded the Ussher postgraduate Fellowship by the Dean of the Faculty of Health Sciences, Professor Colm O'Morain. Jason graduated with a B.Sc. (Pharm.) from the School of Pharmacy & Pharmaceutical Sciences in 2006 and completed his pre-registration training in 2007. Over the period of his undergraduate course, he was at the top of his Pharmacy class in each year, serving as class representative and vice-president of the Dublin University Pharmaceutical Students Association. In his final year, Jason obtained a first class honours overall. Since his time in TCD, he has worked in clinical Pharmacy and has performed with distinction in postgraduate clinical pharmacy in Queen's University Belfast and obtained a Diploma in Business Studies with the Dublin Business School.

More recently Jason approached the School with a view to undertaking a PhD in Pharmaceutical Science. Through regular on-going consultation with members of staff he has developed an interest in undertaking research in drug targeting for colorectal disease. Jason's PhD project is concerned with approaches to drug targeting for treatment of colon cancer. He will work under the supervision of Dr. John Gilmer, Asst. Professor in Pharmaceutical Chemistry in collaboration with Dr Carlos Medina, a specialist in gastroenterology and SFI Stokes Lecturer in the School. The role will require a researcher with strong technical abilities in pharmaceutical chemistry and pharmacology. Jason's recent clinical experience will also be a very important asset to the project. Jason was awarded the Ussher Fellowship in recognition of his academic achievements and experience to date and we wish him every success with his PhD project.

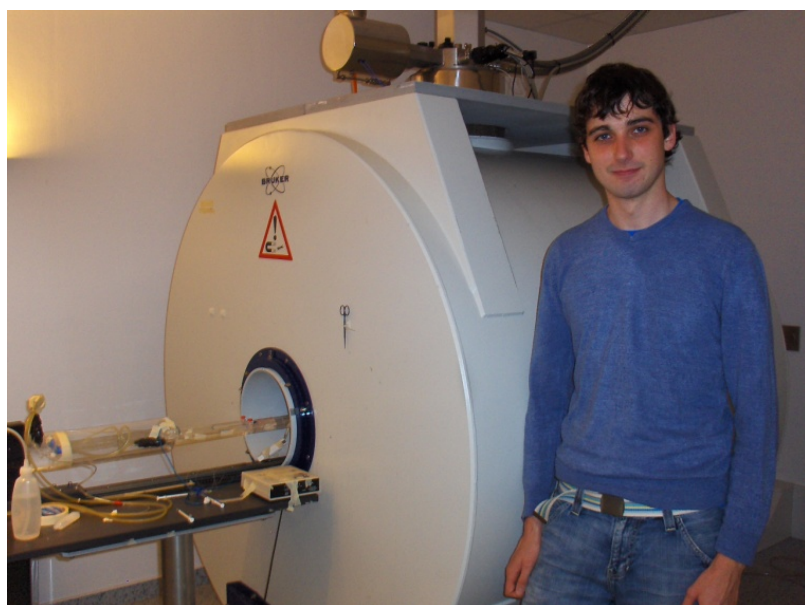
Postgraduate Teaching and Learning News: Reports on Recent Events (*cont.*)

Recruitment of Pharmacy Graduates into School Research Programmes

The School welcomes former student **Shane Gormley** who is undertaking a drug development project with Magnetic Resonance Neuroimaging. Shane completed his primary degree in the School of Pharmacy, TCD, in 2007. After completing his pre-registration training year in 2008, he practiced as a pharmacist with Unicare for two years. Although he enjoyed working in the community pharmacy setting, he wanted a greater challenge and looked for research opportunities in academic environments. "During my undergraduate studies the area that interested me most was pharmacology and specifically neuropharmacology. I contacted members of staff for advice on pursuing post-graduate studies in this field and having looked into the routes open to me, I decided to apply for a postgraduate research position under the supervision of Dr. Andrew Harkin. With funding in place from the Health Research Board, Trinity College Institute of Neuroscience and support from the School of Pharmacy & Pharmaceutical Sciences, I embarked on my PhD in June of this year".

My project is entitled: "*In vivo* mechanisms of new glutamatergic antidepressants in animal models of depression". Conventional (Monoamine-based) antidepressants have a lag time of up to three weeks before taking effect and up to 40% of patients do not achieve remission with these agents. Hence development of new faster acting and more effective agents is vital to help reduce morbidity and mortality associated with major depressive disease. We will use a glial ablation-based animal model of depression to test novel rapid acting glutamatergic antidepressants and attempt to elucidate their methods of action *via* MRI imaging techniques. This will allow us to monitor their effect on regional blood flow as well as any gross structural changes elicited by these agents *in vivo*. Finally we will also investigate if these agents affect localized inflammation within brain structures associated with depression".

Shane's undergraduate training in Pharmacy is highly relevant to the multidisciplinary project in translational imaging proposed. He will be trained in MR imaging and animal models in the Trinity College Institute of Neuroscience under the supervision of Dr. Andrew Harkin. Shane will engage with Dr. Christian Kerskens, lead physicist in TCIN, with respect to the development of MR imaging protocols. In addition, the opportunity to work clinically, under the supervision of Professor Thomas Frodl (Dept. Psychiatry, School of Medicine), will form an important element of the project. Shane is set to benefit greatly from these interactions and will be well placed to contribute to emerging translational research bridging basic research to the clinic in Ireland in the future.



Shane with the Bruker 7T dedicated animal Scanner located in Trinity College Institute of Neuroscience

Postgraduate Teaching and Learning News: Reports on Recent Events (*cont.*)

MSc Pharmaceutical Technology revamps for up-skilling graduates in Pharmaceutical Research & Development

PROGRAMME CO-ORDINATOR DR. LIDIA TAJBER PROVIDES AN UPDATE

The taught Diploma/M.Sc. course in Pharmaceutical Technology was initially developed in the School to train pharmaceutical science graduates for the new product (i.e. formulation/drug delivery system design) research and development sectors of the Irish pharmaceutical industry. Indeed, with nine of the top ten global pharmaceutical companies located in Ireland and the pharmaceutical industry being the largest exporter, there is a need for an adaptive and innovative workforce with a high level of technical skills. The course is also known abroad, attracting excellent quality candidates from around the globe, including countries such as Saudi Arabia, India and China as it since evolved into an internationally-recognised programme.

The objective of the Pharmaceutical Technology course is to equip science graduates with the appropriate formulation skills required for the pharmaceutical industries. In addition to successful research programmes in the area, individual staff members have given advanced courses to industrial personnel and have developed close collaboration with many Pharmaceutical companies. The course has been designed to give students a broad appreciation of the fundamentals of pharmaceutical technology relevant to product formulation, development, production and quality assurance including conventional, advanced and biotech drug delivery systems as well as providing them with a good understanding of biopharmaceutical and pharmacokinetics aspects of drug delivery systems. The curriculum has recently been updated and a new elective module on Pharmaceutical and Medical Nanotechnology has been added to equip students with knowledge in this “very hot” topic of pharmaceutical development.

Students who successfully complete the postgraduate diploma have the option of continuing on to obtain the M.Sc. degree upon completion and submission of a research dissertation. Preference for the research project area can be indicated by the student and the Course Coordinator does her best to organise a suitable Project Coordinator.

The Course Coordinator welcomes all queries from prospective candidates and if you are thinking of updating your skills and knowledge or embarking on a new career in the field of pharmaceutical technology – this course may be a good way to move forward!

Further details about the course and application procedures may be obtained from the following link: www.pharmacy.tcd.ie/postgraduate/msc_pharmtech.php

New Postgraduate Student Committee and Postgraduate Reception 2011

The Postgraduate Research Committee was set up in 2008 to represent the interests of all postgraduate students in the school of pharmacy. The current committee consists of five members: **Gary Stack** (Postgraduate representative), **Andrew Byrne** (Pharmaceutical Chemistry representative), **Shane O’Sullivan** (Pharmacology representative), **Evelyn O’Shea** (Pharmaceutics representative) and **Cathal Cadogan** (Practice of Pharmacy representative). The committee, together with the postgraduate representative and with the assistance of the Director of Postgraduate Teaching and Learning, Dr. Andrew Harkin, ensure that the postgraduate student body has a voice in the running of the School and it helps to foster a sense of community within the School.

The first social event of the academic year was the Postgraduate Committee Reception which was held on Thursday 3rd November in the School atrium. The reception was well attended by staff and students and afforded an opportunity for the new postgraduate students to get to know their colleagues in a social setting. The nibbles and refreshments seemed to go down well and I think it is fair to say that a good night was had by all.

New postgraduate Student Committee and Postgraduate Reception 2011 (*cont.*)

The next event on the calendar is the Postgraduate Research Symposium. Following on from that the Annual Joint Schools of Pharmacy Meeting will also take place in early 2012. The Postgraduate Committee will be playing an active part in the organisation of these events and others throughout the year.

The Postgraduate Committee and the Postgraduate Representatives exist to ensure that the postgraduate students have their say when it comes to various school boards and committees. All students are encouraged to make use of their representatives and to feel free to bring any issues of concern or interest to their attention throughout the year.

After the success of the Postgraduate Committee Reception, we all hope that we can continue in that vein and help to make this academic year a productive and enjoyable one for all postgraduate students within the School of Pharmacy & Pharmaceutical Sciences.

By Gary, Evelyn, Shane, Cathal and Andrew

The new Postgraduate Student Committee



(L-R): Shane O'Sullivan, Cathal Cadogan, Andrew Byrne and Gary Stack.

Pictured at the postgraduate reception are new PhD entrants to the School of Pharmacy & Pharmaceutical Sciences, together with Head of School Prof. Marek Radomski



(L-R): Jason Gavin, Vilmar Banderó, Maire O'Dwyer, Professor Marek Radomski, Susan Breslin, Robert Wallace, Francis Quilty. Absent: Shane Gormley and Eimear O'Dwyer

Collaborations strengthened with Brigham Young University, US

In August Dr. Maria Jose Santos-Martinez and Dr. Carsten Ehrhardt were hosts to a visitor from the USA.

Dr. Paul Reynolds received his graduate training at the Cincinnati Children's Medical Center and the University of Utah Medical School. He currently has an appointment in the Department of Physiology and Developmental Biology at Brigham Young University. Owned and operated by the Church of Jesus Christ of Latter Day Saints, the 34,000 students make BYU one of the largest private institutions in the United States.

Drs. Ehrhardt and Reynolds met several years ago at a research conference and knew almost immediately that they needed to work together. They have similar research interests in pulmonary biology and have been focused on understanding the biology of an important cell surface receptor in the lung called RAGE. This recent visit, for a few weeks during August, was made possible by a Research Career Enhancement Award to Dr. Reynolds by the American Physiological Society.

Dr. Reynolds was impressed with the collegiality and intellectual environment on campus. We see these interactions as the beginning of a fruitful collaborative relationship and are looking forward to the great work we will be able to do together!

Students who are interested in carrying out a 3-months research project in Dr. Reynold's lab at BYU should contact Dr. Carlos Medina or Dr. Carsten Ehrhardt for further information.

By Dr. Carsten Ehrhardt



...while Olivia Gallagher tells us about her Senior Sophister project in Montpellier

Having heedlessly applied for the summer placement one rushed afternoon in the computer rooms, quite happily thinking it would end up with Santa's letters and the pointless computer 'error reports' you don't even bother sending, I was more than a little taken aback when Dr. Medina emailed back with 8 weeks of my Senior Freshman summer planned out for me in the Pharmacology Department of the University of Montpellier taking part in 'Preclinical development of imidazo[1,2- α]quinoxaline derivatives for use against melanoma'!!! After an initial intimidated period of 'How on earth do I get out of this now?!', I decided it was 8 weeks in the sunny South of France, a chance to improve my French and -some might say- a bit of lab practice would do me no harm at all; so I took the plunge. Little did I suspect that I would return as white as if my 8 weeks had been in the 'sunny' South of Ireland, less understanding of French than when I left as a result of the indecipherable accent in Montpellier and that the experience in the lab would end up being the most memorable and enjoyable part of the whole thing!

From the very outset, everyone in the lab could not have been more welcoming and helpful. I was working with two young post-graduate students and one other French undergraduate student, so there was a really relaxed and enjoyable atmosphere in the lab even though the work was constant. They were very willing to explain everything fully and answer any questions; of which I had many!

I was lucky to be working on a subject which I found very interesting and on the quiet days I helped on pre-clinical trials of an anti-malarial drug which was further advanced in its testing making it very interesting.



(Above) Olivia in the laboratory in the University of Montpellier

Olivia Gallagher tells us about her Senior Sophister project in Montpellier (*cont.*)

The lab work was not as difficult as I expected, but was intense in terms of the accuracy and precision needed in every step taken. This was rewarded however when results came back as hoped and the project could move a step further. The co-ordinator of the trials was very involved and constantly held meetings to discuss progress and explain new ideas which were very interesting to be part of-she even held them in English for my benefit!

Overall, I couldn't recommend the experience highly enough. It gave me such a great insight into what working in a lab is really like and how different it is to our undergraduate lab experience in that you are involved in an honestly useful project which you really care about and the results of which actually

*"Overall, I couldn't
recommend the experience
highly enough "*

make a difference.

Montpellier was a fabulous city to live in for the summer and even with very long hours in the lab I still managed to travel a lot around the South of France and made loads of friends along the way. The sun was out every day and with some style of festival on almost every weekend it would be impossible not to have enjoyed it. It didn't hurt also that I was able to use the experience for my Senior Sophister Project taking the pressure off the beginning of final year!

It's just a pity that all that lab experience didn't make six hours of Junior Sophister labs on a Tuesday any less dismal

By Olivia Gallagher

Dr. Ruchika Sharma updates us on her many achievements since leaving the School.....

As my Pharmacy undergraduate degree was drawing to a close I realised that I was not yet ready to leave university life! I also realised that my main interests during my degree had been in understanding the biological effects of small molecules from a structural point of view and that this was something I wanted to develop further. Hence deciding to pursue a PhD was the perfect choice. My PhD research was in medicinal chemistry and cellular biology and involved investigations into the effects of natural and synthetic bile acid analogues on esophageal cells.

Upon completion of my PhD studies, I felt that after spending eight years as an undergraduate and post-graduate in the School of Pharmacy and Pharmaceutical Sciences, it was time for me to experience academic life in another country. This is why I was delighted when Prof. Jia-huai Wang invited me to work as a visiting post-doctoral researcher in his lab in the Dana-Farber Cancer Institute, Harvard Medical School.

The Dana-Farber Cancer Institute is one of the

world's leading institutions for cancer research. Prof. Wang is a structural biologist who is interested in cell surface receptor interactions of immune and neural cells. Some of the highlights in his career include solving the structures of the co-receptors CD8 and CD4 in complex with MHC molecules.

I was naturally excited by the opportunity of working in Harvard Medical School and also by the prospect of living in Boston, one of my favourite cities! Nevertheless, beginning my project was quite a daunting task, particularly because I was moving into a completely different scientific area. My project was a protein crystallography based immunology project where I was expected to clone, express and purify a member of the integrin family of immune receptors in order to investigate protein-protein interactions. Thankfully I was given fantastic support by Prof. Wang and his post-doctoral team who helped me to quickly adapt to my new working environment.



Dr. Ruchika Sharma updates us on her many achievements since leaving the School (*cont.*).....

During my time in Boston I learned a range of novel techniques which I am sure will be useful in any of my future studies of protein-ligand interactions. I also feel that I learned a great deal of basic immunology which has applications in almost every field in the biomedical sciences. Although I was busy in the lab, Prof. Wang made sure I had sufficient time to attend meetings and seminars where I could learn about scientific developments in the greater Dana-Farber community. The scientific output, both in terms of quantity and quality, was truly outstanding. In the United States, it is common for people to start their PhD in their mid-twenties, after having spent a few years as a research technician. PhD programmes generally last 5-7 years; therefore post-graduate students finish up with a high level of academic training and scientific insight. The whole experience was invaluable and was a fantastic way to start off my post-doctoral career.

While in Boston I found out that I had been selected for a Fulbright Research Scholar Award. The Fulbright program was established by Senator J. William Fulbright in 1946 as a means to encourage exchange of educational and cultural ideas between people in the United States and those in other countries. The Fulbright Research Scholar award enables academics and post-doctoral researchers to conduct a period of research in the United States. My chosen project was under the supervision of Prof. Ming Zhou in Columbia University, New York.

I was sad to be leaving Boston. I had grown close to the city and had gained invaluable career experience there. However my sadness was quickly replaced by excitement at the thought of living and working in Manhattan.....

I am currently working in the Department of Physiology and Cellular Biophysics in Columbia University Medical Center.

Prof. Zhou is a structural biologist and is part of the New York Consortium of Membrane Protein Structures. My work here involves investigating the interactions between bile acid binding proteins and natural bile acids. The project is the perfect natural progression for me, as I am drawing on the knowledge and skills I gained during my PhD in the School of Pharmacy & Pharmaceutical Sciences and my time in the Dana-Farber, whilst at the same time furthering my understanding of protein-ligand interactions and methods used to investigate the same. I have already learned a great deal from Prof. Zhou and the other postdoctoral researchers in the lab and I hope that I will be able to put this knowledge to good use when I return home next year.

Living in New York is certainly an experience like no other. The city is hectic, but I am enjoying running around with the millions of residents and commuters to Manhattan. There are countless things to do and numerous cuisines to try. I miss Ireland 'though and I am looking forward to going back home where I hope to continue my post-doctoral work. I would like to continue to carry out research investigating protein-ligand interactions using my experiences in medicinal chemistry, molecular and cell biology and biophysics. Before I return home, I hope to present my work at the Biophysical Society Meeting which fortunately happens to be in San Diego. At that stage, Sunny California will be a welcome change from the snow covered streets of New York.

By Dr. Ruchika Sharma

Congratulations to Dr. Sweta Rani on winning the Barcroft medal



Congratulations to **Dr. Sweta Rani** who won the Barcroft Medal + €500 cash prize, at the Royal Academy of Medicine in Ireland Biomedical Sciences Annual Meeting (RAMI) for her oral presentation entitled *Investigating clinical and functional relevance of MAGE-D4B in breast cancer*.

Sweta (supervisor: Dr. Lorraine O'Driscoll) is funded by Science Foundation Ireland as part of Molecular therapeutics for Cancer Ireland.



Well done Sweta !

PUBLICATIONS FROM OUR SCHOOL

(March 2011—September 2011)

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- D'Arcy DM, Persoons T.** Mechanistic modelling and mechanistic monitoring: simulation and shadow-graph imaging of particulate dissolution in the flow-through apparatus. *J Pharm Sci* 100(3):1102-15, 2011 (3.031)
- Caron V, Tajber L, Corrigan OI, Healy AM.** A comparison of spray drying and milling in the production of amorphous dispersions of sulfathiazole/ polyvinylpyrrolidone and sulfadimidine/ polyvinylpyrrolidone. *Mol Pharm* 8(2):532-42, 2011 (5.400)
- de Souza PA, Palumbo A Jr, Alves LM, de Souza VP, Cabral LM, Fernandes PD, Takiya CM, Menezes FS, Nasciutti LE.** Effects of a nanocomposite containing *Orbignya speciosa* lipophilic extract on benign prostatic hyperplasia. *J Ethnopharmacol* 135(1):135-46, 2011 (2.466)
- Ruiz JF, Kedziora K, Windle H, Kelleher DP, Gilmer JF.** Investigation into drug release from colon-specific azoreductase-activated steroid prodrugs using in-vitro models. *J Pharm Pharmacol* 63(6):806-16, 2011 (1.918)
- Barlow JW, McHugh AP, Woods O, Walsh JJ.** Synthesis of novel mast cell-stabilising and anti-allergic 1,2,3,4-tetrahydro-1-naphthalenols and related compounds. *Eur J Med Chem* 46(5):1545-54, 2011 (3.193)
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- McCarthy J, Gong X, Nahirney D, Duszyk M, Radomski M.** Polystyrene nanoparticles activate ion transport in human airway epithelial cells. *Int J Nanomedicine* 6:1343-56, 2011 (4.976)
- Spooner AM, Deegan C, D'Arcy DM, Gowing CM, Donnelly MB, Corrigan OI.** An evaluation of ciprofloxacin pharmacokinetics in critically ill patients undergoing continuous veno-venous haemodiafiltration. *BMC Clin Pharmacol* 11:11, 2011 (n/a)
- Paluch KJ, Tajber L, Elcoate CJ, Corrigan OI, Lawrence SE, Healy AM.** Solid-state characterization of novel active pharmaceutical ingredients: cocrystal of a salbutamol hemiadipate salt with adipic acid (2:1:1) and salbutamol hemisuccinate salt. *J Pharm Sci* 100(8):3268-83, 2011 (3.031)
- Wang J, Medina C, Radomski MW, Gilmer JF.** N-Substituted homopiperazine barbiturates as gelatinase inhibitors. *Bioorg Med Chem* 19(16):4985-99, 2011 (2.978)
- Medina C, Santos-Martinez MJ, Santana A, Paz-Cabrera MC, Johnston MJ, Mourelle M, Salas A, Guarner F.** Transforming growth factor-beta type 1 receptor (ALK5) and Smad proteins mediate TIMP-1 and collagen synthesis in experimental intestinal fibrosis. *J Pathol* 224(4):461-72, 2011 (7.274)
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Kelly OM, McNamara YM, Manzke LH, Meegan MJ, Porter RK. The preservation of in vivo phosphorylated and activated uncoupling protein 3 (UCP3) in isolated skeletal muscle mitochondria following administration of 3,4-methylenedioxymethamphetamine (MDMA aka ecstasy) to rats/mice. *Mitochondrion* DOI: 10.1016/j.mito.2011.03.011 [ePub ahead of print] **(3.238)**

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J Pharm Sci DOI: 10.1002/jps.22707 [ePub ahead of print] **(3.031)**

Jenkins G, Blanchard A, Borok Z, Bradding P, Ehrhardt C, Fisher A, Hirani N, Johnson S, Königshoff M, Maher TM, Millar A, Parfrey H, Scotton C, Tetley T, Wolters P. In search of the fibrotic epithelial cell: opportunities for a collaborative network *Thorax* DOI: 10.1136/thoraxjnl-2011-200195 [ePub ahead of print] **(6.525)**

Corcoran C, Rani S, O'Brien K, Crown J, O'Driscoll L. Establishing and characterising new in vitro models of docetaxel-resistance in prostate cancer. *Eur J Cancer* 47: [ePub ahead of print] **(4.944)**

Germano S, Kennedy S, Rani S, Gleeson G, Clynes M, Doolan P, McDonnell S, Hughes L, Crown J, O'Driscoll L. MAGE-D4B is a novel marker of poor prognosis and potential therapeutic target involved in breast cancer tumorigenesis. *Int J Cancer* DOI: 10.1002/ijc.26200 [ePub ahead of print] **(4.926)**

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Sharma R, Long A, Gilmer JF. Advances in bile acid medicinal chemistry. *Curr Med Chem* DOI: 10.2174/092986711796957266 [ePub ahead of print] **(4.630)**

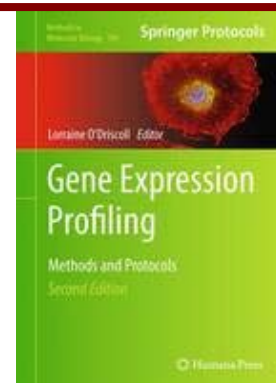
Thanks to Dr. Carsten Ehrhardt who collated this list of our recent publications

Book published including Research Methods developed in our School

Our School recent contributed 4 chapters (of a total of 14 chapters) to a book entitled *Gene Expression Profiling* and detailing state-of-the-art research methods and protocols which we have developed and optimised at the School of Pharmacy & Pharmaceutical Sciences.

Authors from our School included Prof. Marek Radomski, Dr. Carsten Ehrhardt, Dr. Stephen Buckley (now employed by NovoNordisk, Copenhagen), Dr. Lorraine O'Driscoll, Dr. Sweta Rani, Claire Corcoran, Keith O'Brien.

(Invited Editor: L. O'Driscoll; commissioned by published Spring/Humana Press).



Yoga leads the way.....



Yoga is not merely stretching the limbs or holding a headstand for 30 minutes. Yoga is often taken up by those seeking pain relief, weight loss, increased flexibility, general fitness, a way to de-stress. And yes, in practicing all aspects of Yoga regularly one can accomplish all this – and much, much more!

Nowadays, many forms of Yoga are being practiced and taught following various traditions and modern approaches, be it in an Ashram in the Himalayas or the Fitness Center down the road. In many modern approaches, the term 'Yoga Class' is synonymous to physical exercise in a particular way. However, what 'Yoga' really means is 'union' – a union of body, mind and spirit. In this union one can find physical health, happiness, and peace deep within ones' being.

This is achieved by

yogic exercise – the 'asanas', which are physical postures that should be comfortable and steady at any time;

proper breathing – deep full yogic breaths and 'pranayama', which are breathing exercises;

proper relaxation – complete and regular relaxation of body and mind;

healthy diet – lots of fruit and vegetables, avoiding caffeine, meat, alcohol,;

positive thinking and meditation – for a positive and peaceful outlook and a quiet mind.

"An ounce of practice is worth a ton of preaching"
(Mahatma Ghandi)

One of our Assistant Professors, Dr. Astrid Sasse, is a highly-trained, certified and registered Yoga Teacher (Yoga Siromani). Dr. Sasse recently held a 2-hour workshop for all of our Senior Sophister students in the Sports Center. Students were introduced to the various aspects of Yoga, exploring asanas, pranayama, and proper relaxation.

"You can have calmness of mind at all times by the practice of Yoga. You can have restful sleep. You can have increased energy, vigour, vitality, longevity and a high standard of health. You can turn out efficient work within a short space of time. You can have success in every walk of life." (Swami Sivananda)

By Dr. Astrid Sasse



Sincere congratulations to Shu & Jeff Wang

Sincerest congratulations to **Shu** and **Jeff** who were recently married in Shenyang, China.

Shu (who works with Prof. Mary Meegan) and Jeff (studying for his MSc in DIT) both looked radiant.

A fantastic time was had by all !



Very best wishes for a great future Shu & Jeff



.... And even more happy events to celebrate

Sincere congratulations to Fabio and Ken on their recent nuptials.

Dr. Fabio Boylan –formerly Dr. de Sousa Menezes– is Asst. Professor in Pharmacognosy in our School.

The official wedding took place as a small intimate ceremony in Portugal on 7th June. This was followed, on the 24th June, by a more extensive ceremony and party at the Residence Club in St. Stephen Green with 50 close family & friends. A fantastic time was had by all and the icing ...on the icing... on the cake was the special bless given by Rev. Darren McCallig, TCD, Anita Boylan's beautiful singing and exquisite piano playing by Dr. Neville Cox (School of Law, TCD).

(Right): The dashing Fabio & his handsome spouse, Ken;

(Far right): the happy couple receiving a blessing from Rev. Darren McCallig;

(Right, top): a beaming Fabio and Ken, with their very pretty wedding day assistants



Very best wishes Fabio & Ken for a long, healthy & happy life together



Welcome Baby Toby

Sincere congratulations to **Dr. Tamasine Grimes** and her husband Marcus Cosgrove on the arrival of baby Toby.

Tamasine (Tami) is a part-time Senior Lecturer in Practice of Pharmacy in our School and a research pharmacist in Tallaght hospital.

The...oh so very cute...Toby



Congratulations and very best wishes to the 3 of you

....and finally.....

I hope you have enjoyed reading this issue of The Elixir.

A special word of thanks is due to the **many contributors** of articles for inclusion in this issue and also to those who contributed suggestions along the way.

As always, if you have any suggestions of what you would like to see included, class photographs taken over the years, etc., please do let me know by sending your comments/articles/photographs by post or e-mail to the editor, **Lorraine O'Driscoll (lodrisc@tcd.ie)**.

Thank you !