

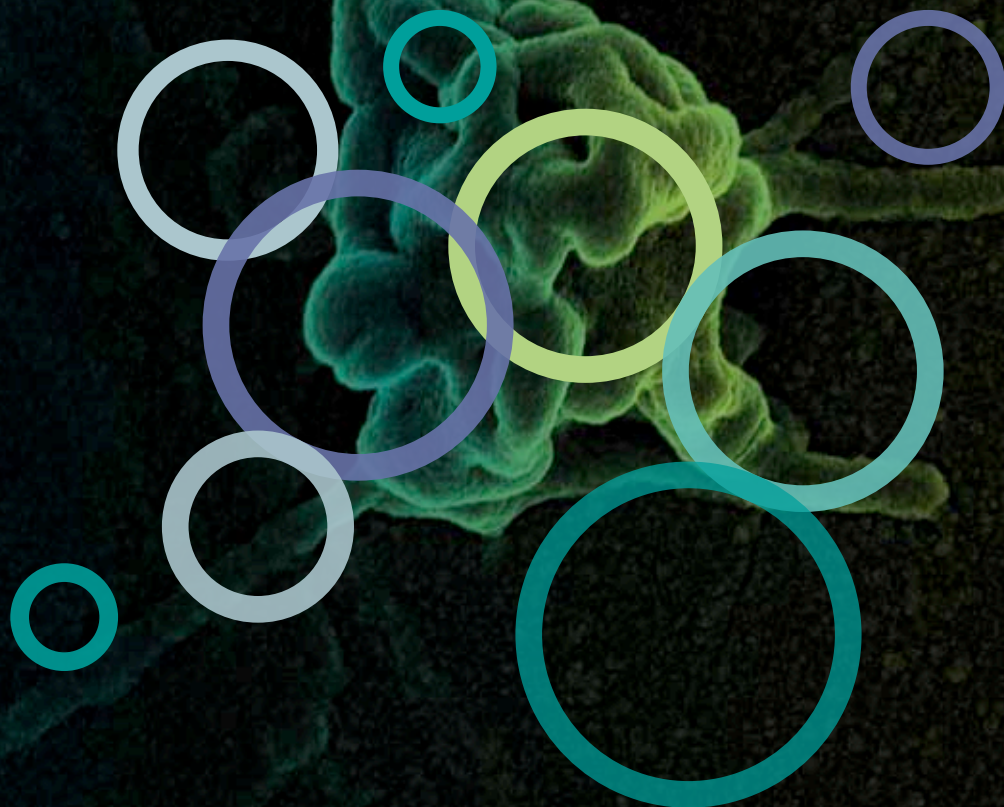
*School of
Pharmacy &
Pharmaceutical
Sciences*



TRINITY COLLEGE DUBLIN
COLÁISTE NA TRIÓNÓIDE, BAILE ÁTHA CLIATH

Research Day

*An open symposium event
for industry, academics,
clinicians and researchers
(students & post-docs)*



Schedule of Events

2.15pm Doors open

2.30pm Introduction

Prof Marek Radomski
MD, PhD, FTCD,
Doctor Honoris Causa (CUM)
Head of School of Pharmacy &
Pharmaceutical Sciences

2.35pm Welcome

Prof Linda Hogan Vice-Provost

2.40pm Keynote speaker

Prof Patrick Vallance
Clinical Pharmacologist and the President of
Pharmaceuticals R&D at Glaxo Smith Kline

3.10pm Festschrift

Prof Anne Marie Healy
BSc (Pharmacy) PhD MPSI FTCD
Professor of Pharmaceutics
& Pharmaceutical Technology

3.50pm Break

4.00pm

Prof Catriona O'Driscoll
Professor of Pharmaceutics,
University College Cork
Formulation and Delivery of Gene Medicines

Prof Healy and Prof O'Driscoll's
presentations form a Festschrift in
celebration of the life-long research
achievements of Prof Owen Corrigan
FTCD

4.45pm Flash research presentations from School of Pharmacy Principal Investigators:

Prof Marek Radomski
Asst Prof David Finlay
Prof Mary J Meegan
Asst Prof John Walsh
Assoc Prof Martin C. Henman
Assoc Prof Lorraine O'Driscoll
Asst Prof Sheila Ryder
Asst Prof Carlos Medina
Asst Prof John Gilmer
Asst Prof Maria Jose Santos-Martinez
Asst Prof Lidia Tajber

5.45pm Tour of the Biomedical Sciences Institute

Dear Colleagues and Friends

I am delighted to invite you to the School of Pharmacy and Pharmaceutical Sciences Research Day. As we have now become a fully-fledged occupant of the flagship Trinity Biomedical Sciences Institute, we would like to mark this occasion by celebrating our research achievements to date and by sharing, with you, our plans for the future.

As you may know, our School runs an extensive research programme including academic, clinical and industry partners and graduating many PhD and MSc students every year. Our research has resulted in >1,000 peer-reviewed papers and has attracted more than >22,000 citations in the literature. We are proud to say that our School has also nurtured and spun-off two budding pharmaceutical companies.

To show-case our School's success in R&D, we are thrilled to announce the Festschrift celebrating life-long research achievements by Prof Owen Corrigan, FTCD. Owen's pioneering work in the area of pharmaceutics and pharmaceutical technology is a shining example of contributions that our School has made to both Irish and international R&D.

Looking to the future, our Research Day will also include a state-of-the-art lecture by Professor Patrick Vallance. Patrick is a world-renowned Clinical Pharmacologist and the President of Pharmaceuticals R&D at Glaxo Smith Kline (GSK). Patrick will talk to us about the role of discovery in modern R&D. Patrick's lecture will be followed by brief presentations by academics from our School, highlighting our present and future research interests. There will, of course, be plenty of time for discussion, networking and a tour of our new facilities.

Please join us to mark this exciting occasion at the Trinity Biomedical Sciences Institute (TBSI), 152-160 Pearse Street, a new home for Trinity Pharmacy R&D.
www.tcd.ie/biosciences

With kind regards,

**Prof Marek Radomski,
MD, PhD, FTCD,
Doctor Honoris Causa (CUM)
Head of School of Pharmacy
& Pharmaceutical Sciences**

Keynote address

The role of Discovery in Drug Development

Prof Patrick Vallance
President, Pharmaceuticals R&D,
Glaxo Smith Kline.



Poor productivity has plagued the pharmaceutical industry and just over five years ago GlaxoSmithKline (GSK) set about fixing that problem. Following the redesign of its R&D model it now believes it is making progress. Industry pundits talk about GSK having one of the strongest pipelines in the industry. Patrick Vallance describes that journey and where the company is heading.

Patrick was appointed President, Pharmaceuticals R&D, in January 2012. Prior to his appointment he was Senior Vice President, Medicines Discovery and Development. He is a member of the Corporate Executive Team. As president of R&D he is responsible for ensuring that GSK maintains a flow of potential new medicines through the R&D pipeline from early discovery through to approval.

Patrick joined the company in May 2006 as Head of Drug Discovery. He transformed GSK's discovery engine to focus on therapy areas that are underpinned by the most promising and mature science, and which offer fresh insights into diseases. Patrick has also re-personalised Drug Discovery by setting up small, empowered teams, called Discovery Performance Units, to drive success of potential new medicines in the pipeline. This new approach has led to a number of potential new medicines progressing into late-stage development.

Prior to joining GSK Patrick was a clinical academic and led the Division of Medicine at University College London. He has over 20 years' experience of clinical medicine, general internal medicine, cardiovascular medicine and clinical pharmacology. He also has an international reputation as a vascular biologist and clinician scientist. Patrick's research has been translational, spanning structural and molecular studies, in vitro and in vivo experimental pharmacology and clinical studies including the use of large scale patient databases. He was elected to the Academy of Medical Sciences in 1999 and subsequently became its Registrar before leaving to join GSK.

Patrick is a member of the Board of the Agency for Science, Technology & Research (A*STAR) and is a director of Genome Research Limited. He is also a member of the International Scientific Advisory Board of the Cambridge Institute for Medical Research.

Festschrift

Celebrating the life-long research achievements by Prof Owen Corrigan, FTCD.

The amorphous state – friend or foe of the formulation scientist?

Prof Anne Marie Healy
PhD, FTCD

Professor Anne Marie Healy's main areas of research are: pharmaceutical materials science and pulmonary drug delivery. Her work is focused on developing an increased understanding of the physicochemical properties of active and excipient materials used in a variety of different dosage forms and making use of that knowledge to improve product design in terms of in vitro and subsequently in vivo performance.

Professor Healy is co-Principal Investigator of the Science Foundation Ireland-funded Solid State Pharmaceutical Cluster. The research question addressed by this cluster is the mechanisms whereby pharmaceutical solids can be produced with predefined characteristics. The objective is to rationally design solid-state pharmaceutical materials in the required physical and chemical forms to meet the demands of advanced formulation and drug delivery systems.

Formulation and Delivery of Gene Medicines

Prof Catriona O'Driscoll
BSc (Pharmacy) PhD, MPSI
Professor of Pharmaceutics,
University College Cork

The therapeutic potential of nucleic acids including siRNA is now well established. However, the major barrier to producing a safe and effective gene medicine is the lack of an efficient and stable delivery system. The physicochemical properties of these macromolecules, compared to traditional small molecular weight drugs, demand a different approach to delivery. This presentation will focus on the challenges and opportunities for non-viral delivery technologies to translate these concepts into advanced therapies.

Flash research presentations from School of Pharmacy Principal Investigators

Nanobloodsurf or how to tame blood surface interactions

Prof Marek Radomski
MD, PhD, FTCD, Doctor
Honoris Causa (CUM)

Over the past 30 years my research has been focused on understanding haemostatic and non-haemostatic functions of blood platelets. We now study novel nano-enabled approaches for surface modification and the design of new nanostructured materials with improved blood and platelet compatibility to be used in blood-facing medical devices.

Cancer Biomarkers & New Therapeutic Targets

Assoc Prof Lorraine
O'Driscoll, BSc, MSc, MA,
PhD, FTCD

Here we will exemplify our cancer research focused on biomarkers for earlier diagnosis, prognosis and treatment response-prediction; new therapeutic targets; cancer spread via exosomes and microvesicles; elucidation and circumvention of resistance to targeted agents and classical chemotherapy; and translational clinical trials.

Novel β -lactams with interesting antitumour properties

Prof Mary J Meegan PhD,
FTCD

My research interests are in design and synthesis of anticancer drugs leading to the discovery of novel bioactive molecules, such as β -lactams as antitumour vascular targeting agents, nuclear receptor antagonists, tubulin targeting agents and multidrug resistance modulators.

Balancing physicochemical and biological properties of medicines - formulating for performance

Asst Prof Lidia Tajber, PhD

Due to unfavourable properties of many bioactives, further treatment/processing is often needed. Conversion of "badly performing" pharmaceutical substances into salts, cocrystals, amorphous (disordered) forms or nanocrystals/nanoparticles can result in enhancement of their physicochemical properties, such as solubility, as well as improvement of therapeutically relevant characteristics, such as bioavailability or potentiation of pharmacological response.

Understanding nanoparticles interactions

Asst Prof of
Nanopharmaceutical Drug
Discovery (Ussher), Maria
Jose Santos-Martinez, MD,
PhD

My research interests are focused on nanomedicine (nanotechnology applied to cancer and platelet biology) and nanotoxicology, particularly on understanding nanoparticles-cells and nanoparticles-platelets interactions and investigating the interactions between nanoparticles developed for drug delivery, their targets and the potential barriers that they have to overcome to exert their action

Pharmacy: Putting research into practice

Asst Prof Sheila Ryder,
BSc(Pharm), MSc, MPSI

The care of patients, and pharmacists' role in meeting their health needs, are constantly evolving. Our research investigates how the benefit of such changes can be maximised. Projects include optimising inhaler use, determining the best antibiotic regimen for patients with blood disorders, and liaising with GPs to improve benzodiazepine use.

Targeting Tumour Vasculature

Asst Prof John Walsh, PhD

Tumour angiogenesis and tumour vasculature have recently emerged as important targets in cancer treatment as they are applicable to multiple tumour types. The research I conduct is multidisciplinary, translational in concept involving drug design, synthesis and both in vitro and in vivo evaluation of newly synthesised tumour vasculature targeting agents.

Advancing the understanding of inflammatory bowel disease

Asst Prof Carlos Medina, MD PhD

As Gastroenterologist, my research interest is focused on molecular biology of different gastrointestinal disorders, particularly inflammatory bowel disease (IBD). My primary research objective is the identification and characterization of different molecular targets involved in IBD. The secondary research objective is to design new effective therapeutic strategies for IBD. And finally, I'm also interested in novel nanoparticle-based drug delivery systems relevant to the therapy of IBD

Therapeutic manipulation of immune responses – What is the link between cellular metabolism and immune cell function?

Asst Prof David Finlay, PhD

Manipulating immune responses has the potential to provide therapy for a wide range of diseases from autoimmunity to cancer. The mammalian Target of Rapamycin (mTORC1) is a key regulator of immune cell function. To develop novel therapeutic strategies our research studies the mechanisms underlying mTORC1 controlled immune cell function.

Optimising Medicines Use

Assoc Prof Martin C Henman BPharm, MA, PhD

Medicines must be used appropriately by all stakeholders if their potential for benefit and harm is to be managed effectively. Research methods in policy analysis, pharmacoepidemiology, pharmacoeconomic and qualitative investigations with prescribers, patients and pharmacists are applied to vulnerable patient groups and critical circumstances to this end.

New tricks for old drugs

Asst Prof John Gilmer, PhD

Modern medicinal chemistry is concerned with identifying efficacious new compounds through screening and optimisation against specific protein targets. The cost of this approach and its associated clinical validation is now out of proportion to therapeutic impact. Existing drugs possess chemical and biological properties that are not fully understood and they may have untapped potential. This presentation will show how we apply various medicinal chemistry tactics to older drugs, with surprising effects.

About Trinity College Dublin
School of Pharmacy
& Pharmaceutical Sciences

Trinity College Dublin School of Pharmacy is the premiere and oldest School of Pharmacy in Ireland. It has graduated more than 2000 pharmacists to date. Presently, 40% of Irish pharmacy graduates are trained at Trinity.

The School offers a unique research-led curriculum that prepares its graduates for a variety of careers in community, hospital pharmacy as well as in the pharmaceutical industry. We also run acclaimed post-graduate courses to cater for the needs of pharmacy profession and the industry. Finally, our School excels in preclinical research and development of novel pharmaceuticals.

If you would like to learn more about our research please contact:

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