



Trinity College Dublin
Coláiste na Tríonóide, Baile Átha Cliath
The University of Dublin

Faculty of Health Sciences

Dean's Award for Innovation in Teaching 2015-16 Award Winners

Neurophysiological Measures: Interactive Animation of the Principles and Mathematics

Bahman Nasserolelami, Academic Unit of Neurology, School of Medicine; John S. Butler, Edmund C. Lalor & Richard B. Reilly, Trinity Centre for Bioengineering; Richard G. Carson, Trinity College Institute of Neuroscience; Orla Hardiman, Trinity Biomedical Sciences Institute

The application of mathematical principles to real-life clinical situations is not always communicated in a manner that engages students. It is crucial that the underpinning principles of these methods are presented in a format that is clinically relevant and accessible to the students, before and after graduation. This project proposes a new approach, suitable for undergraduates in Medicine, Human Health and Disease, Occupational Therapy and Engineering, and for multi-disciplinary graduate courses in Neuroscience and Neural Engineering. This teaching aid is based on using interactive computer animations of the working principles of neural engineering and applied neurophysiology. The schematics for these interactive animations are drawn with reference to seminal review papers and allow the student to see the mathematical principles in action and to interactively test and experience the effect of using different model parameters. These interactive animations, programmed in MATLAB®, can run on PC/Mac/Linux, and will be portable to web-browsers and mobile devices in near future, providing wide usability at work and on-the-go. The learning materials are expected to supplement in-classroom and online courses and may be made available publicly online if applicable.

Clinically Approved Microtubule Disrupting Agents: From Bench to Bedside

John J. Walsh, , Heng Mak, Haaris A. Shiwani, Lyndon Low, Michael McKenna and Reane Macarulay

School of Pharmacy and Pharmaceutical Sciences

Virtually all microtubule disrupting agents in clinical use for the treatment of many forms of cancer are naturally occurring or semi-synthetic derivatives of nature-derived substances. The purpose of this online module is to present under one umbrella all aspects relating to their development "from bench to bedside" in an evidence-based format suitable for research-led teaching at University level. The unique feature of this module will be its multidisciplinary content spanning the chemical, biological to the clinical sciences. The presentation will place particular emphasis on the utilisation of interactive illustrations (e.g. click and reveal or mouseover) to display details for explanatory diagrams, case studies, interactive problem based exercises, branching scenarios and reflection. This approach will serve as a platform to allow the student cohort to understand the complex chemical/biochemical pathways, pharmacological and clinical aspects relating to the origin, mode of action and uses of these substances in cancer chemotherapy.



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Welcome

Professor Mary McCarron,
Dean of the Faculty of Health Sciences

In 2015 I launched the Dean's Awards for Innovation in Teaching. I was heartened to see just how many teaching innovations were proposed for these awards, there is obviously a strong culture of ideas and innovation throughout the Faculty of Health Sciences. I hope that these awards will help to develop, grow and embed this culture of innovation. The selection panel was pleased to award seven innovations in 2015-16, amounting to €39,355 in funding. It is with great pleasure that I present the winning innovations of 2015-16

Online Quiz for Academic Integrity

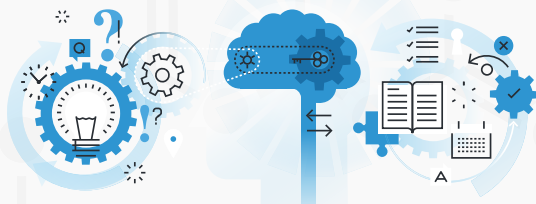
Sylvia Huntley-Moore, Paul Costello, Patricia Cronin
School of Nursing & Midwifery

Accuracy in citing and referencing the work of others is fundamental to academic integrity. Information about academic integrity and academic dishonesty in the form of plagiarism is disseminated to undergraduate and postgraduate nursing and midwifery students at TCD through a range of traditional and largely didactic sources (the calendar, course handbooks, orientation programmes). This online quiz assists students to understand and apply academic integrity to their work by learning to document their sources appropriately. To give students more ways to access the quiz, it has been published in HTML5 for mobile browsers, Flash for desktops and laptops, and the Articulate Mobile Player for native iPad and Android. An external link to the plagiarism quiz can be created on the Blackboard landing pages of the Schools to efficiently reach students in the place they already visit on a regular basis and reminders to complete the quiz can be given using the Blackboard announcement tool.

The Trinity Research Education Environment (TREE)

Laure Marignol
School of Medicine, Discipline of Radiation Therapy

Excellence in research and technology-enhanced learning are key pillars of Trinity's strategic plan. This project utilized the instructional design of the online education team to create a virtual interactive student-oriented learning environment for research skills development called The Trinity Research Education Environment or the TREE. The long term aim of the TREE is to enhance quality and dissemination outcomes of students' research at undergraduate and postgraduate level. The specific objective is to use innovative interactive teaching methodologies to develop a customizable online research education environment. The TREE consists of a core (trunk) composed of 5 key consecutive research steps and a series of interactive and customizable teaching material emerging from each of these steps (branches). This project is innovative because it addresses the gaps of traditional research training programmes that can compromise the quality and dissemination potential of student research.



Multimedia Resource for Dental Professionals

Peter Harrison
School of Dental Science

The objective of this innovation is to create a multimedia resource for training dental professionals relating to the diagnosis and treatment of periodontal gum disease. The resource will involve a combination of video, still imagery, audio and text content presented in short video format. Each video will address a single aspect of diagnostic skills or treatment approaches. Epidemiologic data indicates that periodontal disease may affect almost half of the adult population; however evidence suggests that practitioners may struggle to identify signs of disease and to provide appropriate treatment. Consequently, diagnosis and referral to specialist care may happen at an advanced stage of the disease. It is hoped that creation of this educational resource will improve student learning outcomes and contribute to improved performance of students during their training and subsequent careers.

Alternative Clinical Examination (ACE)

Marie Morris
School of Medicine, Education Division

Clinical skills are required of most health science professionals practicing healthcare today. For the past 40 years the Objective Structured Clinical Examination (OSCE) has been the assessment method of choice however the limitation of this method is in the isolated and fragmented way in which skills are assessed. The ACE innovation in assessment tests the Irish Medical Council's eight domains of professional practice in an integrative way that incorporates the competencies within one exam, more reflective of the real life setting. This holistic assessment method will be used as a reference grid for defining the skill level of a trainee and to better identify those requiring remediation. This model can be developed to assess Irish graduates, those arriving into the Irish system from abroad and for re-accreditation of those in practice. The ACE format can also be utilised by other disciplines where competence assessment is a pre-requisite of licensure.

Enhancement of Distance Learning Pilot for Dental Nursing

Karen Dinneen, Pascaline Fresneau
School of Dental Science, Nursing Education

During the successful pilot of distance learning for the Dental Nursing programme it became apparent that student engagement with the online tools was not as active as anticipated. To increase online engagement and socialisation, this project will introduce additional online teaching and learning activities on Blackboard Learn. These include additional discussion forums, quizzes and group work. These activities will be based on gamification pedagogy where learning is made more appealing (Apostol et al., 2013) by using game-based online activities to further promote learning and online social interaction in a fun and entertaining way. We also endeavour to maximise students' engagement and participation with the programme content by building a comprehensive and innovative online reward system on Blackboard Learn. In order to receive digital badges, students would be required to successfully complete core online learning activities and competences e.g. CPR. If developed and implemented adequately, gamification and badgification have the potential to recognise the practical and soft skills that students have acquired throughout the programme but which written examinations do not capture. Acquisition of badges will afford students the opportunity to show potential employers that they have acquired these specific skills.