



Research in the School of Dental Science Trinity College Dublin

Gary Moran

Director of Research

Research Activity:

Academic Staff: 30 (19 research active)

Postdoctoral Researchers: 5

Graduate Students: 34 (Ph.D & D.Ch.Dent)

Metrics 2010-2014:

Journal Articles : 217 (~44 per annum)

Research Income : €3.5m

Citations: 10,289





Impact Factor 4.14



Impact Factor 5.68



Impact Factor 4.45



Impact Factor 8.17



Impact Factor 15.16



Research Themes:

1. Cancer
2. Next generation medical devices
3. Immunology and Infection
4. Genes & Society
5. Ageing
6. Inclusive Society





Head and neck cancer and oral mucosal disease



Head and neck cancer.

Pan-European study involving clinical data and biological tissue collection from cases and controls (14 centres) coordinated by IARC

Dr. Claire Healy

claire.healy@dental.tcd.ie



Oral leukoplakia: a high risk precancerous condition.

RAMAN spectroscopy as a tool for prediction those leukoplakias with high malignant potential

Prof. Stephen Flint

stephen.flint@dental.tcd.ie



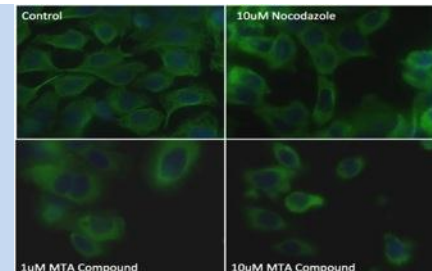
Candida Leukoplakia

Cell Biology of Oral Cancer.

Mechanisms and promotion of the transformation of normal oral mucosal cells to cancer cells to facilitate early detection and resolution.

Dr. Jeff O'Sullivan

Jeffrey.O'Sullivan@dental.tcd.ie



Disruption of microtubulin in oral squamous cell carcinoma cells after exposure to a novel microtubulin targeting agent (MTA) for 24 h.



Next generation medical devices

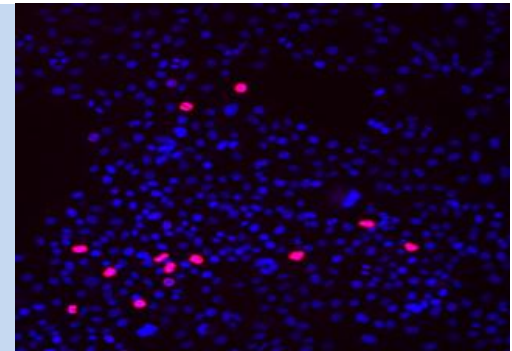


Pulp Biology

Developing 'targeted' biomaterials to promote tissue repair.
Use of epigenetic modifiers to reduce inflammation and stimulate mineralization response

Dr. Hal Duncan

Hal.duncan@dental.tcd.ie

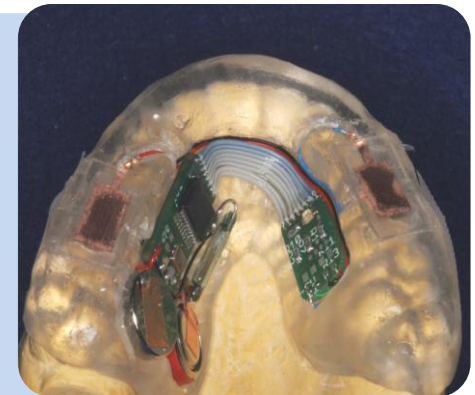


Remote monitoring of nocturnal bruxism (tooth grinding)

It is currently impossible to observe or measure bruxism activity. This project is developing a sensor-containing mouth guard that records and transmits bruxism activity.

Padraig McAuliffe, Richard Reilly, Brian O'Connell

Brian.O'Connell@dental.tcd.ie



Dental Materials & Implants



Dental Materials

Improving the longevity of all-ceramic restorations.

Strengthening of glass-ionomer restoratives.

Biocompatibility assessment of dental materials.

Dr. Garry Fleming

Garry.fleming@dental.tcd.ie



Dental Implants

Microbial decontamination of implant surfaces

Evaluation of novel bone substitute systems on hard tissue remodelling following immediate implant placement.

Dr. Ioannis Polyzois Ioannis.Polyzois@dental.tcd.ie



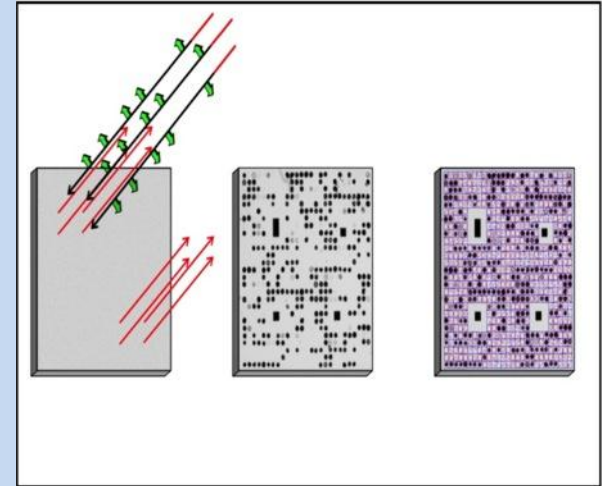
Applied Microbiology



Reducing the spread of MRSA

The application of high-throughput molecular screening systems for MRSA to inform patient treatment and trace sources and routes of transmission

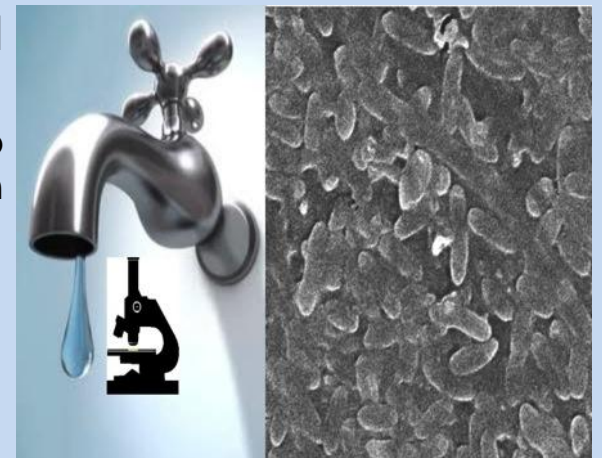
PIs: Prof. David Coleman & Dr. Anna Shore
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Minimising bacterial contamination in hospital water networks and medical devices

Development of automated water treatment systems using to effectively minimise microbial contamination in water distribution systems and medical devices

PIs: Prof. David Coleman & Dr. Mary O'Donnell
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Microbial Genetics

Virulence of the fungal Pathogen *Candida albicans*

Control of virulence traits by a novel family of telomeric transcription factors

PIs: Prof. Derek Sullivan & Dr. Gary Moran

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Microbiome Analysis

Characterisation of Microbial populations in the oral cavity associated with oral & systemic disease (leukoplakia, Crohn's disease).

PIs: Dr. Gary Moran & Dr Claire Healy

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Ageing & Inclusive Society



Oral Health and Quality of Life in the Ageing Population

Aims to establish an evidence-base for treatment, using a combination of patient-centered and objective measures

Ageing population has large but poorly-defined treatment needs

[Brian O' Connell, Michael O' Sullivan, Jacinta McLoughlin](#)

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Psychosocial and Behavioural determinants of Oral Health in the Irish Child Population

Establishing the relationship between psychosocial factors and reported dental problems in the Irish child population could assist in identifying causal pathways that could reduce inequalities in oral health.

Cross sectional and longitudinal analysis of 'Growing Up in Ireland' study

[Michael O' Sullivan, June Nunn, Colman McGrath \(Hong Kong\)](#)

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Special Care Dentistry (SCD)



Project SMILE Ireland

Mixed methods research programme which aims to initiate, design, evaluate and establish evidence based oral health service models for people with disabilities in Ireland.

[Dr Caoimhin Mac Giolla Phadraig, Professor June Nunn](#)
Caoimhin.MacGiollaPhadraig@dental.tcd.ie



Oral Health of the Ageing population with intellectual disabilities

Aims to establish an evidence-base for planning services for older adults with intellectual disabilities in Ireland. This research uses data from the IDS-TILDA study relating to Oral Health

[Dr. Caoimhin Mac Giolla Phadraig, Prof. June Nunn, Prof. Mary McCarron](#)
Caoimhin.MacGiollaPhadraig@dental.tcd.ie

Education in SCD to reduce inequalities in oral health

Growing body of evidence confirming that confidence of dentists to treat patients with disabilities is directly proportional to the training they receive as an undergraduate.

[Dr. Alison Dougall and Dr. Caoimhin Mac Giolla Phadraig](#)
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ACKNOWLEDGEMENTS



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