school of Dentistry Research Report 2023-2024*



CREATE CHANGE

*1 July 2023 to 1 June 2024



Contents

Research streams	2
Research snapshot	4
Awards	6
News highlights	7
Highlighted events	8
Research groups	9
Highlighted projects	14
Research grants	20
Publications	22
Postgraduate research	28
Undergraduate research	31
Research staff	32



Foreword

Head of School

2024 continues to be a successful year for research output and engagement across a wide range of fields from our traditional strengths in dental public health, education and clinical practice, to exciting emerging capabilities in materials science, nanotechnology and bio-fabrication.

The school has a strong focus on translational research, emphasizing the importance of research impact on patient outcomes, as well as healthcare policy and practice.

Thanks to the hard work and commitment of our staff and students, together with the support of our local, national and international collaborators, as well as the generosity of our alumni and industry, that we are able to deliver life-changing programs that benefit the most vulnerable members of our community, support our students through their learning, and teach future dental professionals compassion and empathy.

Professor Sašo Ivanovski

Rooms 1 to 14



Director of Research

I am very pleased to see the School's growth and establishment across a variety of research fields in 2023 and 2024. The School has reinforced its position as one of the top dental schools in Australia, and one of the top 100 in the world. I am pleased to lead the next phase as we build on past success.

The School of Dentistry is at the forefront of innovation in regenerative dentistry, craniofacial reconstruction and orofacial rehabilitation, population oral health research, as well as clinical translation. Located within the Oral Health Centre at Herston, as part of the Oral Health Alliance with Metro North Hospital and Health Service, our research is intrinsically linked to both the education and training of our current and future dental health professionals, and patient care. Through the complementary strengths of our expertise, knowledge and resources, we hope to create a truly world class centre of excellence, leading the way in oral health. I look forward to building on recent successes to merge scientific and clinical knowledge to improve oral health and quality of life.

Professor Loc Do



Research streams

1000

The School of Dentistry's research is grouped under three main streams covering a wide range of areas from stem cell and tissue engineering and biological sciences through to technologies applied in clinical practice, dental public health and dental education. The School of Dentistry produces quality dental and oral health research that contributes to the advancement of scientific knowledge both locally and internationally. We encourage translational research with the importance of research impact on patient outcomes, as well as healthcare policy and practice.

Centre for Orofacial Regeneration, Reconstruction and Rehabilitation (COR3)

The Centre's purpose is to be a centre of excellence that advances orofacial regeneration, reconstruction and rehabilitation to improve patient outcomes through the highest quality research and education. We engage with society, industry and the profession to drive learning, innovation and discovery.

Population Oral Health at UQ (POHUQ)

The population oral health research stream broadly conducts research to understand the epidemiology of health and oral ill-health and improve and enhance the oral health of communities. The stream provides scientific evidence to inform public policies and practices aiming to improve oral health of the population.

Clinical Research Unit

The purpose of these Units is to promote and facilitate clinical research activities in the School of Dentistry, The University of Queensland, and Oral Health Centre, Queensland Health Metro-North Hospital and Health Service. This is achieved through:

- Interdisciplinary cooperation and collaboration to promote evidence based dental clinical research
- Translation of 'cutting edge' pre-clinical research for clinical application (e.g. diagnostic methodology, dental devices/materials







Research snapshot

Research funding



\$1,015,675 1 January to 1 June 2024

Research related staff

58

Grant income



Publications and citations



* Includes publications with the School of Dentistry listed as an affiliation, and publications where current staff were listed as an author not necessarily while they were a staff member at the school.)



Awards

2024

IADR John Clarkson Fellowship

Dr Diep Ha

The IADR John Clarkson Fellowship is to allow investigators to obtain training and experience in dental public health at a center of excellence. The Fellow will receive funding for accommodation, subsistence, and travel (up to \$15,000) following approval. The Fellowship is awarded every two years in honor of John Clarkson, who served as Executive Director of IADR/AADOCR from 1990-97.



IADR Distinguished Scientist Isaac Schour Memorial Award

Prof Sašo Ivanovski

IADR Distinguished Scientist Isaac Schour Memorial Award consists of a monetary prize and plaque and recognizes outstanding scientific contributions in the anatomical sciences, including tissue engineering, tissue regeneration and stem cell research as it relates to the oral, dental, or craniofacial complex. It is one of the 17 IADR Distinguished Scientist Awards and is one of the highest honors bestowed by IADR.



Member of the Order of Australia

Associate Professor David Thomson

Associate Professor David Thomson has been awarded the Member of the Order of Australia (AM) for 'significant service to dentistry, particularly in the field of prosthodontics.' This is wonderful and very well deserved recognition of David's contributions to the profession (Jan 2024). David has also been recognised in the Australia Day Honours, UQ Faculty of Health and Behavioural Sciences leaders, educators, researchers.



2023 International Association for Dental Research (IADR) Awards

Distinguished Service Award, IADR, Southeast Asian Division (SEA) Dr Jaya Seneviratne

Dr Seneviratne has made a substantial contribution to the IADR, serving in various leadership roles in the organization: Chair of the Annual Sessions Committee. Chairman of the IADR Constitution Committee, Member of the IADR Fellowship Committee, and IADR Membership Committee. This prestigious award states, "Many years of Dedication and Service," a testament to Dr Seneviratne's long-term service to the dental research community.

Alan Docking Award, IADR Australian & New Zealand Conference, Sydney

Professor Ove Peters

Professor Peters joined The University of Queensland, Brisbane, Australia, in 2020 after faculty positions in Heidelberg, Germany and Zurich, Switzerland, as well as at the University of California, San Francisco. Most recently, he was the founding director of the postgraduate endodontic program at the Arthur A. Dugoni School of Dentistry in San Francisco, a professor with tenure and the Chair of the Department of Endodontics at that school.

Joan Chong Award in Dental Materials, IADR Australian & New Zealand Conference, Sydney Dr Pinging Han

Dr Pingping Han is currently leading the Epigenetic Nanodiagnostics and Therapeutics Group within the Centre for Orofacial Regeneration, Reconstruction and Rehabilitation (COR3), at the UQ School of Dentistry. Dr Han's current research focuses on three themes: a) salivary diagnostics for periodontal disease, b) "cell-free" regenerative therapy for periodontal tissue engineering and c) cellular nano-mechanics on different modified biomaterial substrates.

Oral Biology Award, IADR Australian & New Zealand Conference, Sydney Dr Yinghong Zhou

Dr Yinghong Zhou leads the Translational ImmunoEngineering for Regenerative Dentistry research team at the School of Dentistry. Her research interests extend across several transdisciplinary research projects, all with the central theme of biomedical engineering and bone/periodontal tissue regeneration.

News highlights



Dr Arosha Weerakoon Curious Kids: what did people use before toothpaste was invented?



5 Dental TikTok trends you probably shouldn't try at home



The Conversation

Dr Chris Sexton

Fluoridated water research

Cover article of 'The Medical Journal of Australia' (MJA), Volume 220 Issue 2.



Dr See

Dentistry for people with special needs

has been a general dentist for over 10 years and has been inspired by experiences helping vulnerable and socially disadvantaged people and recently graduated from UQ's Doctor of Clinical Dentistry Special Needs Dentistry program. Special needs dentists treat patients with physical and intellectual disabilities, and those with complex medical, psychiatric, and social circumstances.



UQ News



Dr Sandra March Rural clinic treats over 800 patients

Student-led dental clinic improves oral health of rural Indigenous community. Approximately 800 Indigenous patients from Dalby and the Greater Western Downs region.



UQ News

33 Top Universities Global Ranking

School of Dentistry, UQ

"I would like to take this opportunity to congratulate everyone on this outstanding outcome. Rankings are by no means the 'be all and end all' measure of academic achievement, but nevertheless they are a broad indicator of international standing, and many aspects of the academic endeavour. This QS ranking is the most prestigious to feature Dentistry as an individual discipline, and measures several aspects linked to academic achievement and quality, including academic and employer reputation, as well as research quality.

To have moved up to #33 in the world from not being ranked 3 years ago is an indication of the positive trajectory that we are on and we should all be proud of this. Most importantly, I want to thank everyone for your efforts, across all aspects of our academic mission, that has contributed to us reaching this outcome."

Professor Sašo Ivanovski



Published work

Honorary Associate Professor Ram Prabhu

- Sexually Transmissible Oral Diseases.
 (Ed: S R Prabhu). Publisher: John Wiley & Sons (UK). 2023.
- Textbook of General Pathology for Dental Students. (Author: S R Prabhu). Publisher: Springer Nature. (Switzerland) 2023.
- Oral Medicine A Clinical Guide.
 (Ed: Ramesh Balasubramaniam, Sue-Ching Yeoh, Tami Yap, S R Prabhu).
 Publisher: Springer Nature (Switzerland).
 Expected date of publication, 2023.
- Oral Dermatology. (Ed: S R Prabhu, Amanda Oakley, Sue Ching Yeoh). Publisher: Scion Publishing (UK) 2024.

Highlighted events

School of Dentistry Seminar Series

Dr Karan Gulati, UQ School of Dentistry September 2023

Dr Gulati showcases the potential of advanced implant nano-engineering via electrochemical anodization to fabricate nanopores (like nanoscale test tubes) on Ti dental implants to achieve tailorable bioactivity and local drug release.

Poor osseo- and soft-tissue integration and the onset of bacterial infection are the leading causes of implant failure. As a result, nano-engineering of Ti dental implants is emerging to enable augmented integration and local therapy.

Prof Jonathan Broadbent, University of Otago October 2023

Professor Broadbent provided an overview of past findings and plans for our upcoming assessment for age 52 of the Dunedin Multidisciplinary Health and Development Study (a cohort born in Dunedin (NZ) from their birth in the early 1970 to the present day). He also discussed findings of the Next Generation Study (a study of the Dunedin Study members' children at age 15 years) and intergenerational continuity in oral health, oral health-related behaviours, and beliefs about oral health care.

Dr Jiao Jiao Li, University of Technology Sydney November 2023

Dr Jiao Jiao Li's research program based on tissue engineering and regenerative medicine has the broad aim of fulfilling unmet clinical needs in treating chronic bone and joint conditions. One aspect of their research involved the development of synthetic bioceramic grafts for bone repair and validating them in large animal models, in challenging scenarios replicating clinical cases. This work served as a cornerstone in developing world-first implants that help regrow natural bone, and in bringing Australian inventions to the global orthopaedic market.

Dr Xin Li, University of Hong Kong December 2023

Hydraulic calcium silicate cements are inorganic materials which hydrate in contact with water and also interact with environmental fluids. This presentation summarizes the most recent information regarding the use of hydraulic calcium silicate cements for vital pulp therapy, this in terms of dentin remineralization and pulp repair. In addition, some side projects for instance the development of a next generation of biosafe composite, the curing profile of bulk-fill composites and the gelatinolytic activity of dentin upon adhesive treatment will be introduced.

Auditorium Opening Ceremony 2015



Professor Belinda Nicolau, McGill University, Canada February 2024

Professor Nicolau presented research regarding Human papillomavirus (HPV) and it's potential to cause head & neck cancer. HPV is now established as the principal cause of an increase in the incidence of a subset of head and neck squamous cell cancers (HNC) in several countries. After giving a brief overview of the epidemiology of HPV-HNC, this seminar will show the findings of our research, drawing from a study conducted in India and Canada.

Professor Peter Reher, Director, Oral Health Alliance (OHA) May 2024

Professor Reher is the Director of the Oral Health Alliance, a partnership between Metro North Health and UQ's School of Dentistry. He is also a Professor of Oral Surgery at the School of Dentistry, University of Queensland. Prof Reher was previously Deputy Head of School and Clinical Director of the Griffith Dental Clinic. Professor Reher has chaired several committees and implemented the first clinic accreditation towards the Australian National Safety and Quality Health Service Standards.

Dr Sandleen Feroz, The University of Queensland, School of Dentistry June 2024

Topic: Biomaterials beyond boundaries: Integrating material science & technology

Dr Sandleen Feroz is a lecturer in restorative dentistry at UQ. She is an interdisciplinary researcher, and her expertise lies in translational research in cariology, biomaterials and regenerative medicine. Her background in clinical dentistry also persuaded her to work in close collaboration with materials scientists, clinicians and industry partners to promote industry linkages for biomaterial development and commercialization. She worked on several research projects related to improved formulations of oral care products for better health outcomes.

Research groups

Population Oral Health at UQ (POHUQ)

Group leader Loc Do

Group members

Staff: Loc Do, Diep Ha, Helena Schuch, Thu Le, Nicole Walker, Lydia See, Laura Ferries, Michael Foley, Chris Sexton, Candy Fung, Ratilal Lalloo, Nicole Stormon, Manori

Halgamuwe Hewawasam

Students: An Dao, Nilesh Torwane, Man Bui Lyndal Pritchard, Angelique Zamora

Description

Oral health is an integral part of general health, affecting individuals, the health system and society. Oral diseases are some of the most prevalent chronic conditions and are preventable if evidence-based policies and practices are informed with guality and up-to-date data. Population Oral Health research is a major branch of dental research, producing the essential information used by the scientific community, policymakers and dental service providers, the profession, the industry, and the public to improve the oral health of communities at national, regional and global levels. Population Oral Health at UQ (POHUQ) is a leader in oral epidemiological and population oral health research, targeting the improvement of population oral health and reduction in inequalities in oral health. POHUQ aims to provide quality research data to inform policies and practices in improving population oral health. POHUQ is supported by four NHMRC/MRFF Grants, the Borrow Foundation, and a 5-year UQ VC Strategic Funding Support.

Examples of impact and translation

- Ha DH, Nguyen HV, Bell LK, Devenish-Coleman G, Golley RK, Thomson WM, Manton DJ, Leary SD, Scott JA, Spencer J, Do LG. Trajectories of child free sugars intake and dental caries – a population-based birth cohort study. J Dent. 2023 Jul;134:104559. doi: 10.1016/j.jdent.2023.104559.
- Sexton CT, Ha DH, Le T, Lalloo R, Ford P, Do LG, Stormon N. Socio-economic status and access to fluoridated water in Queensland: an ecological data linkage study. Med J Aust. 2024 Feb 5;220(2): 74-79. doi: 10.5694/mja2.52196.

Achievements

Loc Do and Diep Ha: Joint recipients of the IADR Aubrey Sheiham Award for Distinguished Research in Dental Public Health, Bogota 2023.



The Queensland Child Oral Health Study (QCOHS) team at the Yarrabah state school, Yarrabah Aboriginal Shire Council, Cairns and Hinterland. Photo courtesy: QCOHS team

Ongoing projects

- Project title: Determinants of inequality in child oral health at school age

 A prospective cohort study (The SMILE study)
 Project investigators: Loc Do, Diep Ha Project team: Thu Le
 Funding: NHMRC Project Grants # APP1046219 2013-17 and APP144595 2018-23

 Project title: Effect of early life
- Project title: Effect of early life exposure to fluoridated water and child psychological and intellectual development (Tooth for Health Study) Project investigators: Loc Do, Diep Ha. Project team: Thu Le Funding: NHMRC Project Grants # APP1161581 2019-22
- **3. Project title:** Contemporary evidence of the effectiveness and safety of water fluoridation (the Queensland Child Oral Health Study)

Project investigators: Loc Do, Pauline Ford, Ratilal Lalloo, Diep Ha, Michael Foley Project team: Thu Le, Chris Sexton Funding: NHMRC Ideas Grants # APP1181029 2021-25 4. Project title: Oral Health in Aged Care: Addressing Oral Health Inequity and Unmet Dental Care Needs in Vulnerable Populations
 Project investigators: Loc Do, Nicole Walker, Diep Ha, Chris Sexton, Helena Schuch
 Project team: Laura Ferris, Lydia See, Candy Fung
 Funding: MRFF grant # APP2024439

Example of media activities





UQOLA (UQ Oral Microbiomics for Learning and Application)

Vision

The vision of the UQOLA Research Group is to develop host-microbiome modulation therapy by unraveling the molecular mechanisms underpinning oral diseases and the oral-systemic link.

Research focus

The oral cavity harbors a multitude of microbial residents, both on teeth and oral mucosa. This symbiotic relationship between the host and microbiota is essential for maintaining oral health. However, microbial dysbiosis and a dysregulated immune-inflammatory response may lead to various oral diseases. Additionally, oral dysbiosis may also have implications in systemic diseases, such as diabetes, cardiovascular disease, and adverse pregnancy complications.

Recent technological advancements in OMICS biology and next-generation sequencing have uncovered previously unseen aspects of oral biofilm infections, new pathogenic species, and salivary biomarkers. At UQOLA, we aim to develop novel diagnostic platforms and therapeutic approaches to modulate the host-microbiota interaction to ensure optimal oral and systemic health.

Group leader

Dr Jaya Seneviratne is a Senior Lecturer in Periodontology affiliated with the School of Dentistry at The University of Queensland, Australia. Currently, he serves as the Director of Higher Degree Research.

Dr Seneviratne is an internationally recognized academic and researcher in the field of Dentistry. His track record encompasses over 100 publications in reputed international journals, including all Q1 journals in dental research (h-index=44, i10-index=86, 5777 citations, Google scholar), 12 book chapters, and an edited book titled "Microbial Biofilms: OMICS Biology, Antimicrobials and Clinical Implications" published by Taylor & Francis CRC Press in 2017.

He has successfully secured over AU\$ ten million from competitive grants for his research and development work.

Dr Seneviratne has been recognized by Stanford University as one of the world's top 2 per cent of the most-cited scientists in the field of dental research. He has held multiple leadership roles at the International Association for Dental and Craniofacial Research (IADR), including Secretary of the IADR-Asia Pacific Region (APR). Dr Seneviratne has been an editorial board member of the Journal of Dental Research and Critical Reviews in Microbiology. He has supervised both undergraduate and postgraduate students to achieve excellence in their research work. Notably, his research mentees have received 21 prestigious IADR awards. His key research interests include oral bacterial and fungal biofilms, oral microbiome and mycobiome, and oral-systemic links.

Group members

Nadeeka Udawatte, PhD student Sadaf Khan, Research Associate Amjad Almuqrin, PhD student Shu Hua, PhD student Yuzhang Li PhD student Junya Zeng, UQ Master's students Zhihe Yang, UQ Honours Research Student





Epigenetic Nanodiagnostics and Therapeutics

Group leader

Dr Pingping Han

Group members

Chun Liu (PhD), Dr Soojin Lim (MPhil)

Description

Extracellular vesicles (EVs) are lipid-based membrane vesicles, released by all cells, both healthy and diseased. They are emerging as a liquid biopsy for diagnostics and 'cell-free' therapeutics for various diseases, due to their molecular cargos' facilitation of cell-cell communication. There are two themes for EVs' application in periodontal disease management: a) salivary epigenetic nano-diagnostics using EVs; and b) EVs as 'cell-free' therapeutics for periodontal regeneration. Furthermore, our group is also working on cellular nano-mechanics on different modified titanium surfaces, by investigating how cells sense the surface via mechanotransduction pathway.

Key publications (2024)

Liaw, Andrew, Liu, Chun, Bartold, Mark, Ivanovski, Sašo and Han, Pingping (2024). Effect of non-surgical periodontal therapy on salivary histone deacetylases expression: a prospective clinical study. Journal of Clinical Periodontology. doi: 10.1111/jcpe.13973 (IF 6.7; Q1, rank 4/91 in Dentistry, oral surgery, and medicine)

Han, Pingping, Raveendran, Nimal, Liu, Chun, Basu, Saraswat, Jiao, Kexin, Johnson, Nigel, Moran, Corey S. and Ivanovski, Sašo (2024). 3D bioprinted small extracellular vesicles from periodontal cells enhance mesenchymal stromal cell function. Biomaterials Advances, 158 213770, 213770. doi: 10.1016/j.bioadv.2024.213770 (IF: 7.9)

Liu, Chun, Seneviratne, Chaminda Jayampath, Palma, Carlos, Rice, Greg, Salomon, Carlos, Khanabdali, Ramin, Ivanovski, Sašo and Han, Pingping (2023). Immunoaffinityenriched salivary small extracellular vesicles in periodontitis. Extracellular Vesicles and Circulating Nucleic Acids, 4 (4), 698-712. doi: 10.20517/evcna.2023.48

Huang, Baoxin, Liu, Chun, Yang, Jieting, Xiang, Enmao, Ivanovski, Sašo and Han, Pingping (2024). Saliva biofilm-derived outer membrane vesicles regulate biofilm formation and immune response of oral epithelial cells on titanium surfaces. Clinical Oral Investigations, 28 (1) 75, 75. doi: 10.1007/s00784-023-05454-9 (IF: 3.4)

Impact

The observed upregulation of specific HDACs post-treatment not only reinforces the clinical efficacy of NSPT but also opens new avenues for understanding the underlying epigenetic mechanisms associated with periodontitis. These findings hold the potential to revolutionize our comprehension of periodontal pathobiology and pave the way for novel biomarker discovery, offering prospects for more targeted and personalized therapeutic approaches in periodontal care.

The discovery that saliva biofilm-derived outer membrane vesicles play a pivotal role in orchestrating both biofilm formation and immune responses of oral epithelial cells on titanium surfaces represents a groundbreaking revelation in understanding the intricate interplay between microbial biofilms and host cells. This finding not only enhances our comprehension of the dynamics within the oral microenvironment but also provides valuable insights for developing targeted strategies to modulate biofilm-associated responses on dental implants, thus advancing the field of oral healthcare.

Immunoengineering for Regenerative Dentistry

Group leader

Dr Yinghong Zhou

Group members

Tian Xu, Cong Wang, Zi-Ming Huang, Dr Yuqing Mu

Funding

- UQ-Colgate Student Research Grant
- Australian Periodontology Research
- Foundation Research GrantInternational Team for Implantology
- Foundation Project Grant
- Osteology Foundation Advanced Researcher Grant

Description

Our research integrates stem cell technology, osteoimmunology, biomedical engineering, and biomaterial science to achieve physical and functional restoration of dental and oral tissues. Areas of interest include:

- Cells or cell derivatives to repair or regenerate oral tissues;
- Immunomodulation therapy harnessing immune response by biologically active molecules and biomaterials;
- In vitro modelling to mimic cellular crosstalk in periodontitis and systemic diseases

Key publications

W Jiang, Z Wang, Y Zhou, Y Shen, B Zou. Bioceramic micro-fillers reinforce antibiofilm and remineralization properties of clear aligner attachment materials. *Frontiers in Bioengineering and Biotechnology*, 2024. 11:1346959.

Z Li, Q Zhang, S Yang, Y Li, A Atrens, J Kanwar, W Zhong, B Lin, C Wen, Y Zhou*, Y Xiao. An optimized method for microcomputed tomography analysis of trabecular parameters of metal scaffolds for bone ingrowth. *Tissue Engineering Part C: Methods*, 2023. 6: 276-283. S Wang, P Wang, R Thompson, K Ostrikov, Y Xiao, Y Zhou*. Plasma-activated medium triggers immunomodulation and autophagic activity for periodontal regeneration. *Bioengineering & Translational Medicine*, 2023. 8(4):e10528.

L Ye, L Zhao, Z Mei, Y Zhou, T Yu. Association between periodontitis and uric acid levels in blood and oral fluids: a systematic review and meta-analysis. *BMC Oral Health*, 2023. 23:178.

T Xu, K Xie, C Wang, S Ivanovski, Y Zhou*. Immunomodulatory nanotherapeutic approaches for periodontal tissue regeneration. *Nanoscale*, 2023. 15(13):5992-6008.

F Wei, Y Mu, RP, Tan, SG Wise, MM Bilek, Y Zhou*, Y Xiao. Osteo-immunomodulatory role of interleukin-4-immobilized plasma immersion ion implantation membranes for bone regeneration. *ACS Applied Materials & Interfaces*, 2023. 15(2): 2590-2601. (*IF: 10.383*).





Anodized Therapies for Osseointegration, Regeneration & Stimulation (GATORs)

Leader

Dr Karan Gulati

Group members

Dr Anjana Jayasree, Divya Chopra

Description

Our research focuses on nano-engineering of dental implants to enable local drug release and enhanced bioactivity, targeting dental implant failure, especially associated with ongoing conditions (osteoporosis, diabetes, aged patients and smokers). Electrochemical anodization imparts controlled nanotopography to conventional dental implants to augment osseoand soft-tissue integration and achieve immunomodulation and antibacterial functions via tailored local therapies. The technology translates well into all metal implants (Ti, Zr, alloys, etc.) and orthopaedic implants. Dr Gulati's GATORs group aligns well with the vision of the COR3 group: novel dental solutions towards regeneration, reconstruction and rehabilitation. The technologies and strategies employed in the GATORs group are cost-effective and scalable, ensuring clinical translation.

Grants/awards

2024 BridgeTech Program

- Dean's Award for Outstanding HDR Theses [Dr Anjana Jayasree, 2023]
- Dean's Award for Outstanding HDR Theses [Dr Tianqi Guo, 2023]
- Best HDR Supervision Award

 Runner Up. School of Dentistry Research Day, July 2023
- The University of Queensland Amplify Scheme
- International Team for Implantology (ITI) Research Grants
- Australian Dental Research Foundation (ADRF) Research Grants

Collaborations

- University of Manchester, UK
- University of Nantes, France
- Kyoto University, Japan
- University of Paris, France
- Peking University, China
- Indian Institute of Technology, Delhi, India

Recent publications

D. Chopra, T. Guo, A. Jayasree, K. Gulati* and S. Ivanovski*. Bioinspired, Bioactive and Bactericidal: Anodized Nanotextured Dental Implants. *Advanced Functional Materials 2024*, 2314031. doi.org/10.1002/adfm.202314031

A. Jayasree, S. Cartmell, S. Ivanovski and K. Gulati*. Electrically Stimulated Dental Implants Triggers Soft-Tissue Integration and Bactericidal Functions. *Advanced Functional Materials 2024*, 2311027. doi.org/10.1002/adfm.202311027

D. Chopra, T. Guo, K. Gulati^{*} and S. Ivanovski^{*}. *Load, Unload and Repeat: Understanding the Mechanical Characteristics of Zirconia in Dentistry.* Dental Materials 2024, 40, e1-e17. doi.org/10.1016/j.dental.2023.10.007 Book 'Surface Modification of Titanium Dental Implants' in *Springer Nature* Switzerland AG. 2023. ed. by K. Gulati. doi.org/10.1007/978-3-031-21565-0

A. Jayasree, C. Liu, C. Salomon, S. Ivanovski*, K. Gulati* and P. Han*. Microvesicle-Eluting Nano-Engineered Implants Influence Inflammatory Response of Keratinocytes. *Drug Delivery and Translational Research* 2023. doi.org/10.1007/s13346-023-01457-x

K. Gulati* and T. Adachi. Profiling to Probing: Atomic Force Microscopy to Characterize Nano-Engineered Implants. *Acta Biomaterialia* 2023, 170, 15-38. doi.org/10.1016/j.actbio.2023.08.006

K. Gulati*, D. Chopra, N.A. Kocak-Oztug and E. Verron. Fit and Forget: The Future of Dental Implant Therapy Via Nanotechnology. *Advanced Drug Delivery Reviews* 2023, 199, 114900. doi.org/10.1016/j.addr.2023.114900

D. Chopra, A. Jayasree, T. Guo, K. Gulati* and S. Ivanovski*. Random, Aligned and Grassy: Bioactivity and Biofilm Analysis of Zirconia Nanostructures as Dental Implant Modification. *Composites Part B: Engineering* 2023, 259, 110725. doi.org/10.1016/j.compositesb.2023.110725

K. Gulati[#], C. Ding[#], T. Guo, H. Guo, H. Yu' and Y. Liu'. Craniofacial Therapy: Advanced Local Therapies from Nano-Engineered Titanium Implants to Treat Craniofacial Conditions. *International Journal of Oral Science* 2023, 15, 15. doi.org/10.1038/s41368-023-00220-9

Highlighted projects

The effect of non-surgical periodontal treatment in saliva HDACs expression: a longitudinal clinical study

Project investigators

Andrew Liaw, Chun Liu, Mark Bartold, Sašo Ivanovski, Pingping Han

Research output

Liaw, Andrew, Liu, Chun, Bartold, Mark Ivanovski, Sašo and Han, Pingping (2024). Effect of non-surgical periodontal therapy on salivary histone deacetylases expression: a prospective clinical study. Journal of Clinical Periodontology. doi: 10.1111/jcpe.13973 (IF 6.7; Q1, rank 4/91 in Dentistry, Oral Surgery, and Medicine).

Funding

Australian Dental Research Foundation (ADRF; grant number: 0036-2021) and The Australian Periodontology Research Foundation (APRF).

Project description

To date, there is no data describing the influence of non-surgical periodontal therapy (NSPT) on salivary histone deacetylases (HDACs) gene expression levels in Stage III/IV periodontitis patients. At 6 months post-NSPT, the salivary expression of HDAC4, 6 and 9 was increased compared to baseline.

Impactand translation

Non-surgical treatment of periodontitis influences the salivary epigenetics profile, which may have implications in deepening our understanding of periodontitis pathogenesis and biomarker discovery.





Determinants of inequality in child oral health at school age – a prospective cohort study (SMILE)

Investigators

Loc Do and Diep Ha

Project team Thu Le

Funding

NHMRC Project Grant APP1144595

Chief Investigators Loc Do and Diep Ha, in collaboration with dental researchers, dietitians, from University of Adelaide, Flinders University and Curtin University and Otago University.

SMILE is a large population-based birth cohort study of child dental health (the SMILE study), which has been running for over 10 years. With seven waves of data collection of over 2000 mother/child dyads over ten years, SMILE is arguably one of the largest and most comprehensive independent birth cohort studies internationally.

The study aims to:

1. Understanding early life determinants of oral health to tackle socioeconomic inequalities in oral health over the lifecourse

The first years of life are a critical period in childhood development and health, including oral health. Recent research has suggested that the roots of chronic conditions need to be traced back to as early in life as possible. There exist variations in health and development in the early years of life, Socioeconomic variations in early childhood seem small in comparison with those among adults, but those small differences can lead to substantially widening health trajectories later in life. Targeting the sources of variation in health and development in early life is important for health and financial benefit for both individuals and society. To do so, it is important to understand early life determinants of oral health and how those determinants influence oral health over the lifecourse.

Our research, the SMILE population-based birth cohort study (Ha et al, J Dentistry 2022), has collected comprehensive prospective data for over ten years. The data allow for in-depth investigation of early life determinants of oral and general health, and its effects over the lifecourse.

Causal inference approach in understanding determinants of oral health

Observational data collected in longitudinal research such as birth cohort play an increasingly important role in understanding determinants of health, particularly when randomised controlled trials are not feasible, unethical, or very costly. Given the high risk of bias in observational data, sophisticated causal inference approaches need to be applied correctly to answer important questions about determinants of health.

Our SMILE birth cohort data are capable to answer questions about determinants of oral health and socioeconomic inequalities in oral health.

Impact and translation

The SMILE study has contributed significantly to the body of knowledge by providing the evidence on the impact of early life socioeconomic factors, health behaviours, dietary patterns, use of dental services, oral health-related quality of life, physical activities, and oral and anthropometric assessments on dental caries, overweight and obesity.

Decontamination of titanium implant surface using novel nanoparticle activated by NIR laser

Investigators

A/Prof Ryan Lee and Jackie Wui Yiu

Objectives

Decontamination of dental titanium implant surface is clinically challenging and often unpredictable. Pphotodynamic/ photothermal therapies may provide unique advantages over conventional decontamination methods, due to their ability to reach bacteria sheltered in irregular implant surfaces. A novel layered double hydroxide based nanoparticle with indocyanine green could offer unique advantages as a photodynamic agent. The aim of this study was to evaluate the decontamination efficiency of adjunctive photodynamic therapy using NIR-activated LDH-ICG nanoparticles and compare it to mechanical and chemical decontamination methods on biofilm contaminated SLA titanium surface.

Material and methods

Titanium discs with SLA surfaces were contaminated with saliva-derived biofilm. Contaminated discs were first treated mechanically using a chitosan fiber brush. This is followed by adjunctive decontamination with chemical (EDTA), or photodynamic therapy using LDH-ICG nanoparticles of different durations. Decontamination outcome in terms of residual biofilm, changes in surface characteristics, and influence on inflammatory cytokine expression by macrophage were evaluated by crystal violet, XTT assay, SEM, live/dead staining, dispersive X-ray spectroscopy, macrophage cell culturing and quantitative polymerase chain reaction.

Results

Adjunctive chemical and photodynamic therapy using LDH-ICG nanoparticles further reduced residual biofilm when compared to mechanical decontamination alone. No treatment modality, however, resulted in the complete elimination of biofilm. Organic contaminants remained at high levels irrespective of the decontamination method. The application of LDH-ICG photodynamic therapy may result in a more favourable anti-inflammatory cytokine expression by murine macrophages.

Conclusion

Photodynamic therapy using LDH-ICG nanoparticles resulted in more efficacious removal of biofilm when compared to mechanical instrumentation alone and had comparable outcomes when compared to adjunctive chemical decontamination.



Electrically stimulated dental implants, GATOR Group

Project investigators

Anjana Jayasree, Sarah Cartmell, Sašo Ivanovski and Karan Gulati

Funding

- NHMRC Early Career Fellowship
- The University of Queensland Amplify Scheme
- International Team for Implantology (ITI)
- Australian Dental Research
 Foundation (ADRF)

Project highlights

We fabricate electrically conducting nanoporous Ti dental implants to stimulate enhanced integration and antibacterial functions. Electrical stimulation therapy (EST) is utilized to achieve superior soft-tissue integration and antibiofilm activity against human fibroblasts and salivary biofilm. These advanced 'on-demand therapeutic' nanoporous implants are proposed as the next generation to achieve the long-term success of dental implants.

Suggested reading

A. Jayasree, S. Cartmell, S. Ivanovski and K. Gulati^{*}. Electrically Stimulated Dental Implants Triggers Soft-Tissue Integration and Bactericidal Functions. *Advanced Functional Materials* 2024, 2311027. doi.org/10.1002/adfm.202311027



Bioinspired, bioactive, and bactericidal: anodized nanotextured dental implants, GATOR Group

Project investigators

Divya Chopra, Tianqi Guo, Anjana Jayasree, Karan Gulati and Sašo Ivanovski

Funding

- NHMRC Early Career Fellowship
- The University of Queensland
 Amplify Scheme
- International Team for Implantology (ITI)
- Australian Dental Research
 Foundation (ADRF)

Project highlights

Nanotextured titanium implants combat poor integration and infection, the primary causes of dental implant failure. This pioneering study utilizes anodization to create diverse nanotopographies, including Spinules, Daggers, Papillae, Spikes, and Flames. These bioinspired nanotextures enhance surface roughness, promote human osteoblast functions and exhibit superior efficacy against oral salivary biofilm.

Suggested reading

D. Chopra, T. Guo, A. Jayasree, K. Gulati* and S. Ivanovski*. Bioinspired, Bioactive and Bactericidal: Anodized Nanotextured Dental Implants. *Advanced Functional Materials* 2024, 2314031. doi.org/10.1002/adfm.202314031





Addressing infection risks in dental clinics: UQOLA researchers developing innovative disinfection strategies

Project investigators

Sadaf Khan, Jessica Zachar, Laurence Walsh, Jaya Seneviratne

Project funding

Industry funded project with Novapharm Pty Ltd

Project description

The risk of transmitting infectious diseases is inherent in clinical dental practice. Modern scientific understanding and the application of standard infection control procedures have significantly reduced this risk. Dental procedures involve contact with various body surfaces, tissues, and biological fluids such as saliva and blood. Given the expense and number of dental instruments that are reused after standard decontamination-sterilization protocols, ensuring their thorough sterilization is crucial. Insufficient sterilization increases the risk of transmitting various pathogens. Despite adherence to comprehensive infection control guidelines, dental clinics continue to face persistent challenges.

Additionally, surfaces such as dental chair peripherals and dental unit waterlines, if not adequately disinfected, are highly susceptible to microbial biofilm formation. Biofilms in the dental clinic can lead to cross-contamination and the spread of infections.

Therefore, evaluating the efficacy of current disinfection strategies in dental settings is important. Researchers at UQOLA (UQ Oral Microbiomics for Learning and Application) are addressing these concerns by developing innovative disinfection solutions to combat microbial biofilms and understand the behaviour of pathogenic proteins in dental settings. These new findings will help improve infection control protocols in dentistry.



Research grants

2023-2024

* active & awarded up to June 2024

Project title	Granting scheme	Investigator string	Total amount approved
Contemporary evidence for water fluoridation program – a before-and-after population-based study	NHMRC IDEAS Grants	*DO, Loc; Spencer, J.; *FORD, Pauline; Brown, M.; Whelton, H.; Broadbent, J.; Roberts- Thomson, K.; *LALLOO, Ratilal & others	\$1,678,455
Oral Health in Aged Care: Addressing Oral Health Inequity and Unmet Dental Care Needs of Vulnerable Population	NHMRC MRFF Dementia, Ageing and Aged Care Mission	*DO, Loc; *NANGLE, Matthew R; LUDLOW, Kristiana C; Georgiou, A.; WALKER, Nicole A; HENRY, Julie D; *LOPEZ SILVA, Claudia P; *HA, Diep & others	\$1,425,890
PRIDE: Promoting queer-inclusive professional identities for diversity in primary healthcare	MRFF Models of Care for Sexuality and Gender Diverse People	ROSS, Megan; FERRIS, Laura J; NISSEN, Lisa M; Chipchase, L.; Glass, B.; Williams, C.; Edwards, C.; SPINKS, Jean M & others	\$997,825
3D bioprinted oral tissue models	Colgate-Palmolive Company	*IVANOVSKI, Sašo	\$679,864
Resorbable metals, tissue biofabrication and dentistry – Joint Fellowship appointment	Metro North Hospital and Health Service	*IVANOVSKI, Sašo	\$651,000
Determinants of inequality in child oral health at school age – A prospective cohort study	NHMRC Project Grant	*DO, Loc; Golley, R.; *HA, Diep; Leary, S.; Manton, D.; Scott, J.; Thomson, W. & Spencer, J.	\$533,547
The National OralHealth Survey of Vietnam 2024-25 – national policy development toward the Global Oral Health Action Plan 2030	The Borrows Foundation	DO, Loc; HA, Diep; FOLEY, Michael	\$252,364
Treg-derived extracellular vesicles reprogram local immune response for enhanced periodontal regeneration	Osteology Foundation Young/ Advanced Researcher Grant	*ZHOU, Yinghong; *IVANOVSKI, Sašo & *HAN, Pingping	\$167,227
Novel multi-enzyme decontamination-disinfection formulation targeting prion-proteins and microbial biofilms in dental instruments for the prevention of infections and transmissible spongiform encephalopathies; laboratory to clinical settings	Novapharm	Seniviratne, Jaya	\$147,482
3D-printed customised Bio-Oss/Polydioxanone scaffold for vertical bone regeneration	Osteology Foundation Young/ Advanced Researcher Grant	*IVANOVSKI, Sašo & *VAQUETTE, Cedryck	\$145,484
A randomized controlled clinical pilot trial evaluating the efficacy of a custom 3D-printed resorbable polycaprolactone mesh versus a barrier membrane in guided bone regeneration	Oral Reconstruction Foundation Research Grant	*IVANOVSKI, Sašo; Sanz, M.; *ALAYAN, Jamil & *STAPLES, Reuben	\$126,448
Testing of a cannabinoid, botanical-based formulation for oral pain relief applications	Innovation Connections	*XU, Chun	\$108,490
A Phase 1b Randomised, Open-Label, Dose Comparison Study Examining the Safety, Tolerability, and Efficacy of KB001 Antibody Mediated Oral Clearance of Porphyromonas gingivalis in Periodontitis	Beyond Drug Development	*IVANOVSKI, Sašo & *LEE, Sang B	\$104,314
Osseo- and soft-tissue integration using treated periodontal implants in a sheep (BioMedTech Horizons funding through Anisop Holdings)	Anisop Holdings Pty Ltd	*IVANOVSKI, Sašo & *MORAN, Corey S	\$79,999
The effects of novel photosensitising nanocomposite gel on oral biofilm contaminated SLA titanium surface	International Team for Implantology Foundation	*LEE, Sang B; *ZHOU, Yinghong & LI, Li	\$72,298
Immunoengineered Nanocomposite Surface Coatings towards Soft Tissue Regeneration	International Team for Implantology Foundation	*ZHOU, Yinghong; HOU, Jingwei; *IVANOVSKI, Sašo & *HAN, Pingping	\$71,910
Small extracellular vesicles-loaded titanium nanopores for gingival peri-implant soft tissue barrier	International Team for Implantology Foundation	*HAN, Pingping; *GULATI, Karan & *IVANOVSKI, Sašo	\$70,382
Dual Micro-Nano Dental Abutments towards Enhanced Soft-Tissue Integration and Triggered Antibacterial Functions	International Team for Implantology Foundation	*GULATI, Karan & *IVANOVSKI, Sašo	\$70,300
Understanding resorption patterns in vertically augmented bone	International Team for Implantology Foundation	*VAQUETTE, Cedryck; *IVANOVSKI, Sašo; *HAN, Pingping & Batstone, M.	\$69,813

Project title	Granting scheme	Investigator string	Total amount approved
Determining the accuracy of interproximal enamel reduction performed in aligner treatment using a three-dimensional model system	Align Technology Research Grants	*FREER, Elissa M; *KERR, Brett; *WEIR, Anthony P & *SHAILENDRAN, Arun V	\$35,079
Assessing the clinical effectiveness of silver fluoride products in adult special needs population for dental caries management	CPL Inclusion Impact Fund	*SEE, Lydia & *LOPEZ SILVA, Claudia P	\$22,000
Next Generation Biomaterials for Endodontics: Immunomodulatory Effects of Functionalized Compounds	Australian Society of Endo- dontology Inc, Federal Branch	*HOSSEINPOURDOUGOLSAR, Sepanta & *PETERS, Ove A	\$20,347
Human osteoblast cell-derived small extracellular vesicles for in vivo periodontal wound healing in a rat model	Australian Dental Research Fund Inc	*HAN, Pingping; Jiao, K.; *RAVEENDRAN, Nimal & *IVANOVSKI, Sašo	\$16,469
Nano-engineered bacteriobot for the treatment of biofilms infection on dental implants	Australian Dental Research Fund Inc	*XU, Chun; *WANG, Yi & QIAO, Ruirui	\$16,251
Next Generation Biomaterials for Endodontics: Immunomodulatory Effects of Functionalized Compounds	Australian Society of Endo- dontology Inc, Federal Branch	*HOSSEINPOURDOUGOLSAR, Sepanta & *PETERS, Ove A	\$15,723
Dimensionally stable vertical bone augmentation using release bone morphogenetic protein 2 loaded 3D-printed Gelatine Methacrylate/mesoporous bioglass	Australian Dental Research Fund Inc	*VAQUETTE, Cedryck & *GOMEZ CEREZO, Maria N	\$14,146
Bridging the gap: Providing oral care to children from culturally and linguistically diverse communities	ADHF Community Service Grants	*ZAFAR, Sobia	\$12,528
Retrospective review of the surgical management of benign aggressive intra-osseous pathology of the jaws and investigation of prognostic indicators	ANZAOMS Research and Education Fund	*JOHNSON, Nigel; Chen, C.; TAHERI, Touraj & BATSTONE, Martin D	\$12,000
Developing a Policymaking Framework for Integration of Oral Health within Primary Healthcare in Australia	Australian Dental Research Fund Inc	*DO, Loc; Bastani, P.; *HA, Diep & *MANCHERY GOPINATHAN, Nithin	\$11,000
A Fibre guiding scaffold functionalised with Emdogain for periodontal regeneration	Australian Dental Research Fund Inc	*STAPLES, Reuben & *VAQUETTE, Cedryck	\$9,130
Reprograming innate inflammatory response on dental implants towards advance osseointegration	Australian Dental Research Fund Inc	*IVANOVSKI, Sašo; *FERNANDEZ MEDINA, Tulio E & *RAVEENDRAN, Nimal	\$8,703
Motion sensor and haptic technologies in evaluating and training postural habits for optimum ergonomic clinical practice	Australian Dental Research Fund Inc	*ZAFAR, Sobia; DANYLAK, Stefan & *WALSH, Laurence J	\$8,234
The impact of oral piercings: An investigation into the rate of metal dissolution and metal ion release under acidic challenge	Australian Dental Research Fund Inc	*ZAFAR, Sobia; MASOOD, Manal & *WALSH, Laurence J	\$7,060
Evaluation of the Structural Features and Elemental Composition of Calcium Silicate Cements during the Setting Process: A Micro XRD Study	Australian Society of Endo- dontology Inc, Federal Branch	*PETERS, Ove A & Chakravarty, K.	\$6,741
Evaluation of the Structural Features and Elemental Composition of Calcium Silicate Cements during the Setting Process: A Micro XRD Study	Australian Society of Endo- dontology Inc, Federal Branch	*PETERS, Ove A & Chakravarty, K.	\$6,740
A Non-Profit Software System for Facilitating Dental 3D surface Comparison in Routine Forensic Identification and Disaster Victim Identification Incidents	Queensland Health Forensic and Scientific Services	*PETERS, Ove A; *PETERS, Christine I & *ALQAHTANI, Sakher	\$6,600
Assessing the level of adherence to the new developed work-based oral care bundles for critical care patients to ensure service quality	Australian Dental Research Fund Inc	*LOPEZ SILVA, Claudia P; *WALSH, Laurence J; COYER, Fiona; *PATEMAN, Kelsey A; LIPMAN, Jeffrey & *IVANOVSKI, Sašo	\$6,000
Mineralisation patterns of dental pulps: A multimodular ex vivo Analysis	Australian Dental Research Fund Inc	*PETERS, Ove A; Marshall, G. & *PETERS, Christine I	\$3,740
Evaluation of the impact of repeated sterilisation on the accuracy of digital scan bodies for implant impressions	Australian Dental Research Fund Inc	*ARORA, Himanshu; CHEN, Xiao; HO, JiaYi & LEE, Guan	\$2,303

Publications

2023

selection from July 2023 to June 2024

Authors	Туре	Link		Authors	Туре	Link
Izadi, R., Bahrami, M., Sarikhani, Y. and Bastani, P.* (2023) Qualitative document analysis on Iranian contents and trends of population policies: Lessons learned and avenues for future. Heliyon, 9(6): 1-15.	Article	UQ:272590b		Hansen, M., Ross, A., Meyer, T., Knold, C., Meyers, I.* and Peek, K. (2023) Incidence, characteristics and cost of head, neck and dental injuries in non-professional football (soccer) using 3 years of sports injury insurance data. Dental Traumatology	Article	UQ:27686ec
Afkhami, F.*, Rostami, G., Peters, O.* and Kamalian, F. (2023) Pulpal anesthesia of maxillary first molars using 4% articaine infiltration in patients with symptomatic irreversible pulpitis: a randomized controlled clinical trial. Clinical Oral Investigations, 27(7): 3999-4006.	Article	UQ:7597834		Nawar, N., Elkholy, M., Ha, W., Bürklein, S. and Saber, S. (2023) Parallel endodontic education via social media: an exploratory survey study. Australian Endodontic Journal, 49(3): 512-523.	Article	UQ:50c8fb7
Han, P.*, Jiao, K.*, Moran, C.*, Liaw, A.*, Zhou, Y.*, Salomon, C.*, et al. (2023) TNF-a and OSX mRNA of salivary small extracellular vesicles in periodontitis: a pilot study. Tissue Engineering. Part C. Methods, 29(7): 298-306.	Article	UQ:80596af		Farajollahi, M., Safarian, M., Hatami, M., Esmaeil Nejad, A. and Peters, O.* (2023) Applying artificial intelligence to detect and analyse oral and maxillofacial bone loss—A scoping review. Australian Endodontic Journal, 49(3): 720-734.	Critical review of research	UQ:8936d52
Xiang, E.*, Moran, C.*, Ivanovski, S.* and Abdal-hay, A.* (2023) Nanosurface texturing for enhancing the antibacterial effect of biodegradable metal zinc: surface modifications. Nanomaterials, 13(13).	Article	UQ:be30565		Falcão, M., Passos-Soares, J., Machado, P., Gomes-Filho, I., de Carvalho, L., de Campos, E., et al. (2023) The leprosy reaction is associated with salivary anti- Porphyromonas gingivalis IgA antibodies. AMB Express. 13(1)	Article	UQ:98952b3
Ong, D.*, Goh, P.* and Dance, G. (2023) Anterior tooth autotransplantation: a case series. Australian Dental Journal, 68(3): 202-215.	Article	UQ:60acfc1	Blaudez, F.*, Ivanovski, S.*, Fernandez, T.* and Vaquette, C.* (2023) Effect of in vitro culture length on the bone-forming capacity of osteoblast-	Article	UQ:e82b3e0	
Haddad, Y., Chan, W., Ha, W., Conde, A., Estevez, R., Lopez, A., et al. (2023) The effect of a preparation containing glycocholic acid on the biocidal efficacy of sodium	A., Article UQ:3440fae he effect blic im		derived decellularized extracellular matrix melt electrowritten scaffolds. Biomacromolecules, 24(8): 3450-3462.			
hypochlorite in a biofilm laboratory model. Australian Endodontic Journal, 49(3): 503-511.		Flav K., F	Flaws, D., Patterson, S.*, Bags K., Kenardy, J.*, Sellers, D., et	Flaws, D., Patterson, S.*, Bagshaw, T., Boon, K., Kenardy, J.*, Sellers, D., et al. (2023)	Article	UQ:c68a81e
Stormon, N.* and Sowa, M.* (2023) Child dental benefits schedule subsidised existing utilisation of dental care over addressing unmet needs. Health and Social Care in the Community, 2023: 1-10.	Article	UQ:19c801e		Caring for critically ill patients with a mental illness: a discursive paper providing an overview and case exploration of the delivery of intensive care to people with psychiatric comorbidity. Nursing Open, 10(11): 7106-7117		
Abdal-hay, A.*, Bartnikowski, M.*, Blaudez, F.*, Vaquette, C.*, Hutmacher, D. and Ivanovski, S.* (2023) Unique uniformity of calcium phosphate nanoparticle distribution in polymer substrates for additive manufacturing. Composites Part A: Applied Science and Manufacturing, 173	Article	UQ:8f8e339		Dhanapriyanka, M.*, RDFC, K. and Jayasekara, P. (2023) Effectiveness of health promotion intervention on the knowledge and selected practices related with oral cancer among a group of vulnerable youth in Sri Lanka. BMC Public Health, 23(1)	Article	UQ:e752296
Gudipaneni, R., Alsirhani, M., Alruwaili, M., Alharbi, A., Alftaikhah, S., Almaeen, S., et al. (2024) Socio-behavioural determinants associated with the first dental visit in Saudi children: a cross- sectional study. International Journal of Paediatric Dentistry, 34(1): 85-93.	Article	UQ:d64e36a		McCullagh, I., Salas, B., Teodorczuk, A.* and Callaghan, M. (2023) Modifiable risk factors for post-operative delirium in older adults undergoing major non-cardiac elective surgery: a multi-centre, trainee delivered observational cohort feasibility study and trainee survey. BMC Geriatrics, 23(1).	Article	UQ:21f3505
Kosgallana, S.*, Jayasekara, P., Abeysinghe, P. and Lalloo, R.* (2023) Health related quality of life of oral cancer patients who receive radiotherapy with or without chemotherapy in Sri Lanka. Journal of Multidisciplinary Dental Research, 9(1): 1-9.	Article	UQ:855026c		Arora, S., Ramachandra, S., Cooper, P. and Hussaini, H. (2023) Prospects of passive immunotherapy to treat pulpal inflammation. In (Eds.), Immunology for dentistry (pp. 202-214). Hoboken, NJ, United States: Wiley.	Research book chapter	UQ:bbea04a

Authors	Туре	Link	Authors	Туре	Link
Bahmaei, J., Ravangard, R., Bahrami, M., Asadollahi, A. and Bastani, P. (2023) Policy requirements in promoting older people health care in Iran: a qualitative study. Journal of Education and Health Promotion, 12(1).	Article	UQ:1aa59d7	Marsh, N.*, Larsen, E.*, O'Brien, C., Peach, H., Keogh, S., Davies, K.*, et al. (2023) Controlling peripheral intravenous catheter failure by needleless connector design: A pilot randomised controlled trial. Journal of Clinical Nursing, 32(21-22): 7909-7919.	Article	UQ:3b1de28
Abdal-hay, A.*, Ramachandra, S.*, Alali, A.*, Han, P.*, Sheikh, F., Hashem, M., et al. (2023) Vertically aligned calcium phosphate nanoplates coated onto melt electrowritten 3D poly(ɛ-caprolactone) fibrous scaffolds for inhibiting biofilm formation. Journal of Alloys and Compounds, 966: 1-13.	Article	UQ:b976258	Biun, J., Dudhia, R.* and Arora, H.* (2023) The in-vitro accuracy of fiducial marker-based versus markerless registration of an intraoral scan with a cone-beam computed tomography scan in the presence of restoration artifact. Clinical Oral Implants Research, 34(11): 1257-1266.	Article	UQ:b186a43
Lalloo, R.* (2023) Gender diversity of the oral health leadership in Australia. Australian Dental Journal, 68(3): 197-201.	Article	UQ:60668e5	Han, P.*, Johnson, N.*, Abdal-Hay, A., Moran, C.*, Salomon, C. and Ivanovski, S.* (2023) Effects of periodontal cells-derived extracellular vesicles on mesenchymal	Article	UQ:074a155
GBD 2019 Australia Collaborators, Lalloo, R.*, Uddin, R.*, Khan, A.*, Anderlini, D.*,	Article	UQ:f9f6187	Periodontal Research, 58(6): 1188-1200.		
Endalamaw, A.*, et al. (2023) The burden and trend of diseases and their risk factors in Australia, 1990-2019: a systematic analysis for the Global Burden of Disease Study 2019. The Lancet Public Health, 8(8): e585-e599.			Pateman, K.*, Christoffersen, A., Hanly-Platz, A., Williams, C., Heffernan, D., Alexander, A., et al. (2023) Partnering with consumers to co-design a person- centred coding framework for qualitative patient experience data. Patient Education	Article	UQ:70be2d2
Arabkermani, Z., Sharifian, R., Aryanian, Z., Bastani, P., Esmaeli, N., Bashiri, A., et al. (2023) Design, implementation, and usability evaluation of the Iranian primary vitiligo patient registry. Journal of the Dermatology Nurses' Association, 15(4): 196-205	Article	UQ:03331eb	and Counseling, 116: 1-6. Bastani, P.*, Sadeghkhani, O., Bikine, P., Mehralian, G., Samadbeik, M. and Ravangard, R. (2023) Medication supply chain resilience during disasters: exploration of causes, strategies, and consequences applying Strauss and	Article	UQ:ba8c01d
Zhou, Y.*, Xu, T.*, Wang, C.*, Han, P.* and Ivanovski, S.* (2023) Clinical usage of dental stem cells and their derived	Research book chapter	UQ:291fa0d	Corbin's approach to the grounded theory. Journal of Pharmaceutical Policy and Practice, 16(1): 1-10.		
extracellular vesicles. In (Eds.), Stem cell in medicine (pp. 297-326). San Diego, CA, United States: Academic Press.			Ramachandra, S.*, Wright, P.*, Han, P.*, Abdal-Hay, A.*, Lee, R.* and Ivanovski, S.* (2023) Evaluating models and assessment	Critical review of research	UQ:8a3da12
Han, P.*, Moran, C.*, Liu, C.*, Griffiths, R., Zhou, Y.* and Ivanovski, S.* (2023)	Research book	UQ:515458a	techniques for understanding oral biofilm complexity. MicrobiologyOpen, 12(4)		
Engineered adult stem cells: current clinical trials status of disease treatment. In (Eds.), Stem Cell in Medicine (pp. 33-62). San Diego, CA United States: Academic Press.	chapter		Pretorius, N., Forrest, A.* and Walsh, K. (2023) A review of near infrared spectroscopic features of teeth, bone and artificial hydroxyapatite. Journal of Near	Critical review of research	UQ:40c4845
Ramachandra, S., Gupta, V., Woodford, V. and Malhotra, N. (2023) Isolated periodontal pockets: a clinical review.	Critical review of research	UQ:2120c7c	Infrared Spectroscopy, 31(5): 227-240. Hedari, D., Kukreja, B., Ramachandra, S., Boddy, S., Disouza, L. and Abdelmagyd, H.	Critical	UQ:fa79b26
Dental Update, 50(7): 618-624.	Article	UQ:65e3736	(2023) Dental implant treatment in medically compromised patients:	research	
to probing: atomic force microscopy to characterize nano-engineered implants. Acta Biomaterialia, 170: 15-38.	, include	0 4100 607 00	a narrative review. Open Dentistry Journal, 17(1).	Anticle	110:1- 10070
Masood, M., Walsh, L.* and Zafar, S.* (2023) Oral complications associated with metal ion release from oral piercings: a systematic review. European Archives of Paediatric Dentistry, 24(6): 1-14.	Article	UQ:e847429	Karajizadeh, M. and Ravangard, R. (2023) Predicting readmission of cardiovascular patients admitted to the CCU using data mining techniques. Open Cardiovascular Medicine Journal, 17(1).	Article	06.1603023

Authors	Туре	Link		Authors	Туре	Link		
Selvaprithiviraj, V.*, Yegappan, R.* and Muthuswamy, S.* (2023) Carrageenan in tissue engineering and biomedical applications. In (Eds.), Natural biopolymers in drug delivery and tissue engineering	Research book chapter	UQ:7af48dc		Afkhami, F.*, Rostami, G., Xu, C.*, Walsh, L.* and Peters, O.* (2023) The application of lasers in vital pulp therapy: a review of histological effects. Lasers in Medical Science, 38(1): 1-18.	Critical review of research	UQ:ce8fac9		
(pp. 449-480). Cambridge, MA United States: Woodhead Publishing.				Blaudez, F.*, Ivanovski, S.* and Vaquette, C. (2023) Harpessing the native extracellular	Article	UQ:e7a587d		
Jayasree, A.*, Ammanath, A. and Thomas, J. (2023) Hyaluronic acid in tissue engineering. In (Eds.), Natural biopolymers	Research book chapter	UQ:c6ad0bf		matrix for periodontal regeneration using a melt electrowritten biphasic scaffold. Journal of Functional Biomaterials, 14(9).				
(pp. 585-607). Cambridge, MA United States: Woodhead Publishing.				Duncan, H., Kirkevang, L., Peters, O.*, El-Karim, I., Krastl, G., Del Fabbro, M., et al. (2023) Treatment of pulpal and	Article	UQ:0e3ef15		
Welti, R., Chinotti, M., Walsh, O., Arcus, M., Asgari, J., Phillips, K., et al. (2023) Oral health messages for Australia: A national consensus statement. Australian Dental	Critical review of research	UQ:ee1713f	UQ:ee1713f	apical disease: The European Society of Endodontology (ESE) S3-level clinical practice guideline. International Endodontic Journal, 56(S3): 238-295.				
Gomes-Filho, I., Freitas, T., Cruz, S., Trindade, S., Figueiredo, A., Couto Souza, P., et al. (2023) Periodontitis in individuals with few remaining teeth and a high gingival bleeding index increases the probability of dyslipidemia.	Article	UQ:58d5cad		Ding, F., Liu, J., Ai, K., Xu, C.*, Mao, X., Liu, Z., et al. (2023) Simultaneous Activation of Pyroptosis and cGAS-STING Pathway with Epigenetic/ Photodynamic Nanotheranostic for Enhanced Tumor Photoimmunotherapy. Advanced Materials, 36(7): 1-14.	Article	UQ:05ef430		
Journal of Periodontology, 94(10): 1243-1253.		UQ:9fbc8c3	Cheung, M., Peters, O.* and Parashos, P. (2023) Global survey of endodontic	Article	UQ:37e6a13			
Ghanbari-Jahromi, M., Bastani, P., Jalali, F. and Delavari, S. (2023) Factors affecting oral and dental services` utilization among Elderly: a scoping review. BMC Oral Health,	Article			practice and adoption of newer technologies. International Endodontic Journal, 56(12): 1517-1533.				
23(1): 1-12.		UQ:0db62a7				Ivanovski, S.*, Breik, O., Carluccio, D., Alayan, J.*, Staples, R.* and Vaguette, C.* (2023) 3D	Critical review of	UQ:e0c1695
Ren, F., Wang, F., Baghdasaryan, A., Li, Y., Liu, H., Hsu, R., et al. (2023) Shortwave- infrared-light-emitting probes for the in vivo tracking of cancer vaccines and	Article			printing for bone regeneration: challenges and opportunities for achieving predictability. Periodontology 2000, 93(1): 358-384.	research			
the elicited immune responses. Nature Biomedical Engineering: 1-14.				Stormon, N.*, Do, L.*, Hopcraft, M. and Sexton, C.* (2023) Geographic patterns	Article	UQ:697ed1e		
Biun, J., Dudhia, R.* and Arora, H.* (2023) The influence of metal artifact reduction on the trueness of registration of a cone-beam computed tomography scan with an intraoral	Article	UQ:2d7819c	of o Ber Lor Hea	of dental service use in the Child Dental Benefits Schedule: 6 years of claims in the Longitudinal Study of Australian Children. Health Promotion Journal of Australia.				
scan in the presence of severe restoration artifact. Journal of Prosthodontics.				Yusefi, A., Bordbar, S., Mehralian, G., Lankarani, K., Khammarnia, M., Kavosi, Z.,	Article	UQ:5c23721		
Ramachandra, S.*, Sime, F.*, Naicker, S.*, Han, P.*, Lee, R.*, Wallis, S.*, et al. (2023)	Article	UQ:700726d		et al. (2023) Ranking and prioritizing risk factors for gastric cancer. Open Public Health Journal, 16(1): 1-13.				
An in vitro dynamic bioreactor model for evaluating antimicrobial effectiveness on periodontal polymicrobial biofilms: a proof-of-concept study. Journal of Periodontology, 95(4): 384-396.				Danylak, S.*, Walsh, L.* and Zafar, S.* (2024) Measuring ergonomic interventions and prevention programs for reducing musculoskeletal injury risk in the dental	Critical review of research	UQ:05d73dc		
Davies, K., McGowan, K., Dover, T., McGowan, T.* and Tadakamadla, S. (2023)	Article	UQ:8a5503a		Dental Education, 88(2): 128-141.				
Dental referrals for patients with diabetes: survey of barriers and enablers for medical and health professionals. Australian Dental Journal, 68(4): 273-281.				Selvaprithiviraj, V.*, Vaquette, C.* and Ivanovski, S.* (2023) Hydrogel based soft tissue expanders for orodental recon- struction. Acta Biomaterialia, 172: 53-66.	Critical review of research	UQ:a0a25b8		
Yang, K., Zhu, G., Sun, Y., Hu, Y., Lv, Y., Li, Y., et al. (2023) Prognostic significance of cyclin D1 expression pattern in HPV- negative oral and oropharyngeal carcinoma: a deep-learning approach. Journal of Oral Pathology and Medicine, 52(10): 919-929.	Article	UQ:ae6b62c		Ali, M.*, He, Y., Chang, A.*, Wu, A., Liu, J., Cao, Y.*, et al. (2023) Osteoimmune- modulating and BMP-2-eluting anodised 3D printed titanium for accelerated bone regeneration. Journal of Materials Chemistry B, 12(1): 97-111.	Article	UQ:7f00330		

Authors	Туре	Link		Authors	Туре	Link
Marshall, G., Verdelis, K. and Peters, O.* (2023) Morphology of pulpal mineralizations: a scoping review. Journal of Dentistry, 139: 1-8.	Critical review of research	UQ:79dbb29		Ghabraei, S., Afkhami, F., Shamshiri, A. and Mohammadi, Z. (2023) Comparison of cytotoxicity between mineral trioxide aggregate mixed with chlorhexidine	Article	UQ:8b92f2f
Badar, F.*, Vandi, L.*, Carluccio, D.*, Redmond, M.* and Novak, J.* (2023) Preliminary colour characterisation of a Stratasys J750 digital anatomy printer with different fillings and face orientations.	Article	UQ:b04b84d		and common endodontic regeneration medicaments on periodontal ligament stem cells: An in vitro study. Frontiers in Dentistry, 20: 1-8.		
Progress in Additive Manufacturing. Guo, D., Dong, W., Cong, Y., Liu, Y., Liang, Y., Ye, Z., et al. (2023) LIF aggravates pulpitis by promoting inflammatory response in	Article	UQ:d3a59a3		Chrisopoulos, S., AlKhtib, A., Al Darwish, M., Mohamed, H., Mathew, T., Al Mannai, G., et al. (2024) Correlates of childhood caries: a study in Qatar. International Journal of Paediatric Dentistry, 34(2): 179-189.	Article	UQ:5580c23
Wu, L., Ha, W., Decurcio, D., Estrela, C. and Rossi-Fedele, G. (2023) Comparison of curvature severity between sagittal and coronal planes of mesiobuccal canals in permanent maxillary first molars using multiple complexity-risk criteria: a CBCT cross-sectional study of a Brazilian	Article	UQ:a91aceb		GBD 2019 Australia Collaborators, Islam, S., Islam, M., Uddin, R., Khan, A., Anderlini, D., et al. (2023) The burden and trend of diseases and their risk factors in Australia, 1990-2019: a systematic analysis for the Global Burden of Disease Study 2019. Lancet Public Health, 8(8): E585-E599.	Article	UQ:bb4c560
subpopulation. Journal of Endodontics, 49(12): 1682-1689.e4. Chang, V., See, L., Griffin, A., Breik, O., Batstone, M. and Liu, T.* (2024) The impact of dental state and surgical factors	Article	UQ:8afb001		Wei, M.*, Weir, T.*, Kerr, B.* and Freer, E.* (2023) Comparison of labio-palatal incisor movement between two wear protocols: a retrospective cohort study. The Angle Orthodontist, 94(2): 151-158.	Article	UQ:176889a
on post-operative neck infection in oral cancer patients. British Journal of Oral and Maxillofacial Surgery, 62(1): 51-57.	ost-operative neck infection in oral er patients. British Journal of Oral and Ilofacial Surgery, 62(1): 51-57.		Cheung, M., Peters, O.* and Parashos, P. (2024) Global cone-beam computed	Article	UQ:1a50700	
McGowan, T.*, Han, P.* and Ivanovski, S.* (2023) Biomarkers for implant dentistry studies. In (Eds.), Surgical research in implant dentistry (pp. 399-412). Cham, Switzerland: Springer International Publishing	Research book chapter	UQ:bc4ead3	Q:bc4ead3	interpretation preferences of dentists and endodontists. International Endodontic Journal, 57(2): 133-145.		
Salimi, M., Bastani, P.*, Nasiri, M., Karajizadeh, M. and Ravangard, R. (2023) Factors associated with readmission of cardiovascular patients: a cross-sectional study in Iran. Open Public Health Journal, 16(1): 1-8.	Article	UQ:0fa2252		Koster, M., Dias, D., Zimiani, G., Santos, R., de Oliveira, R., Araujo, M., et al. (2023) Four single implant-supported crowns replacing the maxillary incisors: a retrospective report of 10 cases with 2-9 years of follow- up. Clinical Oral Implants Research, 34(12):	Article	UQ:289b81f
Feroz, S.*, Cathro, P., Ivanovski, S.* and Muhammad, N. (2023) Biomimetic bone grafts and substitutes: a review of recent advancements and applications. Biomedical Engineering Advances, 6.	Critical review of research	UQ:2860367		1438-1449. Ghafari, M., Hosseinpour, S.*, Rezaee-Zavareh, M., Dascalu, S., Rostamian, S., Aramesh, K., et al. (2023) A quantitative evaluation	Article	UQ:4a00232
Bell, L., Leemaqz, S., Devenish-Coleman, G., Do, L.*, Ha, D.*, Scott, J., et al. (2023) Development and internal validation of	Article	UQ:52b6d93		coverage on reducing deaths: insights from the first 2 years of COVID-19 epidemic in Iran. BMC Medicine, 21(1): 1-9.		
the SMILE-FSS - A Free Sugars Screener for Australian children aged 2 and 5 years. Public Health Nutrition, 26(12): 1-30.				Jayasree, A.*, Liu, C.*, Salomon, C.*, Ivanovski, S.*, Gulati, K.* and Han, P.* (2023) Microvocicle oluting pape, oppipeored	Article	UQ:3b0bb4d
Ghoncheh, Z., Kaviani, H., Soleimani, S., Nasri, S., Malekpour, F. and Afkhami, F. (2023) Assessment of the diagnostic accuracy of strip and furcal perforations in different	Article	UQ:1ac1bb2		implants influence inflammatory response of keratinocytes. Drug Delivery and Translational Research: 1-14.		
sizes by cone beam computed tomography. Oral Radiology, 39(4): 654-660.				Brewer, M., Jackson, E. and Bartle, E. (2024) How do universities support	Critical review of	UQ:7c7a129
Afkhami, F., Forghan, P., Gutmann, J. and Kishen, A. (2023) Silver nanoparticles and their therapeutic applications in endodontics: a narrative review. Pharmaceutics, 15(3): 1-20.	Critical review of research	UQ:c288ec8		communication skills for clinical placements with culturally and linguistically diverse students? A scoping review. Nurse Education in Practice, 74	research	

Authors	Туре	Link	Authors Type	Link	
McHugh, H., Wright, P.*, Peters, C.* and Peters, O.* (2023) Diagnostic and prognostic predictors for the success of pulpotomy in permanent mature posterior teeth with moderate to severe pulpitis: a scoping review. Oral, 3(4): 545-571.	Critical review of research	UQ:84b2411	Liu, C.*, Seneviratne, C.*, Palma, C., Rice, G.*, Salomon, C.*, Khanabdali, R., et al. (2023) Immunoaffinity-enriched salivary small extracellular vesicles in periodontitis. Extracellular Vesicles and Circulating Nucleic Acids, 4(4): 698-712.	UQ:e1a5095	
Rapp, L., Madden, S., Brand, J., Maximova, K., Walsh, L.*, Spallek, H., et al. (2023) Investigation of laser wavelength effect on the ablation of enamel and dentin using femtosecond laser pulses. Scientific Reports, 13(1): 1-10.	Article	UQ:392dcd7	Ghanbari-Jahromi, M., Kharazmi, E., Bastani, Article P., Shams, M., Aryaie, M. and Bahrami, M. (2023) Effects of delay in visiting a specialist doctor in type 2 diabetic patients on glycemic control: a retrospective cohort study with a 4-year follow-up. Family Medicine and Primary Care Review, 25(4): 393-398.	UQ:e0e50c6	
Mu, Y., Gao, W., Zhou, Y.*, Xiao, L. and Xiao, Y. (2023) Physiological and pathological/ ectopic mineralization: from composition to microstructure. Microstructures, 3(4).	Critical review of research	UQ:b02332f	Huang, B.*, Liu, C.*, Yang, J., Xiang, E.*, Ivanovski, S.* and Han, P.* (2024) Saliva biofilm-derived outer membrane vesicles regulate biofilm formation and immune	UQ:573ceff	
Uppal, N., Breik, O., Higginson, J., Goodrum, H., Koria, H., Edmondson, S., et al. (2023)	Article	UQ:043c11f	response of oral epithelial cells on titanium surfaces. Clinical Oral Investigations, 28(1)		
Prosthetic condyle with concurrent microvascular reconstruction for mandibular disarticulation defects: a retrospective series. Journal of Maxillofacial and Oral Surgery.			Zhang, H., Cui, M., Tang, D., Wang, B., Liang, G., Xu, C.*, et al. (2024) Localization of cancer cells for subsequent robust photodynamic therapy by ROS responsive polymeric	UQ:0f255eb	
Hopcraft, M., McGrath, R., Stormon, N.*, Tavella, G. and Parker, G. (2023) Australian	Article	UQ:8bef909	nanoparticles with anti-metastasis complexes NAMI-A. Advanced Materials, 36(14): 1-15.		
dental practitioners experience of burnout. Journal of Public Health Dentistry, 83(4): 397-407.			Alajaji, S., Khoury, Z., Elgharib, M., Saeed, M., Ahmed, A., Khan, M., et al. (2024)Critical reviewGenerative adversarial networks in digitalof	UQ:1c3104a	
Bastani, P.*, Yusefi, A., Ahmadidarrehsima, S. and Mashayekhi, M. (2023) Association between the purses, productivity and	Article	UQ:9640662	UQ:9640662	limitations, ethical considerations, and future directions. Modern Pathology, 37(1): 1-14.	
quality of work life in Covid-19 referral hospital: Evidence from Iran. Open Public Health Journal, 16(1): 1-9.			Han, P.*, Raveendran, N.*, Liu, C.*, Basu, S.*, Jiao, K.*, Johnson, N.*, et al. (2024) 3D bioprinted small extracellular vesicles from periodontal cells aphance mescaphymal stremal call function	UQ:630e3da	
Ren, K., Vickers, R.*, Murillo, J. and Ruparel, N. (2023) Revolutionizing orofacial pain	Critical review of	UQ:d74d832	Biomaterials Advances, 158: 1-13.		
management: the promising potential of stem cell therapy. Frontiers in Pain Research, 4.	research		Stormon, N.*, Lawrenson, P.*, Rahmann, A., Article Eames, S. and Gavin, N. (2024) Exploring strengths and weaknesses in health services	UQ:be97e8c	
Feroz, S.*, Muhammad, N., Ullah, R., Nishan, U., Cathro, P. and Dias, G. (2023)	Article	UQ:9f9757e	research culture and capacity. Australian Health Review, 48(1): 82-90.		
biocompatibility assessment of biomimetic dual layered keratin/ hydroxyapatite scaffolds. Frontiers in Bioengineering and Biotechnology, 11			Jiang, W., Wang, Z., Zhou, Y.*, Shen, Y. and Zou, B. (2023) Bioceramic micro-fillers reinforce antibiofilm and remineralization properties of clear aligner attachment materials. Frontiers in Bioengineering and Biotechnology, 11: 1-11.	UQ:f85fd5c	
Wei, D., Fan, J., Yan, J., Liu, C., Cao, J., Xu, C.*, et al. (2023) Nuclear- targeting lipid PtIV prodrug amphiphile cooperates with siRNA for enhanced cancer immunochemotherapy by	Article	UQ:2eaaa92	Flaws, D., Fraser, J.*, Laupland, K., Lavana, J., Patterson, S.*, Tabah, A., et al. (2024) Time in ICU and post-intensive care syndrome: how long is long enough?. Critical Care, 28(1): 1-4.	UQ:7d247e6	
amplifying Pt-DNA adducts and reducing phosphatidylserine exposure. Journal of the American Chemical Society, 146(1): 1185-1195.			Rabiei, R., Bastani, P., Ahmadi, H., Dehghan, S. and Almasi, S. (2024) Developing public health surveillance dashboards: a scoping review on the design principles. BMC Public Health 24(1): 1-15	UQ:6552f27	
Sexton, C.*, Ha, D.*, Le, T.*, Lalloo, R.*, Ford, P.*, Do, L.*, et al. (2024) Socio-economic status and access to fluoridated water in Queensland: an ecological data linkage study. Medical Journal of Australia, 220(2): 74-79.	Article	UQ:90d16a6	Henry, J.*, Coundouris, S.* and Nangle, M.* Article (2024) Breaking the links between ageism and health: an integrated perspective. Ageing Research Reviews, 95: 1-8.	UQ:ba9de4d	

Authors	Туре	Link	Authors	Туре	Link
Jayasree, A.*, Cartmell, S., Ivanovski, S.* and Gulati, K.* (2024) Electrically stimulated dental implants triggers soft-tissue integration and bactericidal functions. Advanced Functional Materials.	Article	UQ:eb89401	Han, P., Han, Y., Shen, X., Gao, Z. and Bi, X. (2023) Enriched environment-induced neuroplasticity in ischemic stroke and its underlying mechanisms. Frontiers in Cellular Neuroscience, 17: 1-12.	Critical review of research	UQ:83ad48e
Welsh, J., Goberdhan, D., O'Driscoll, L., Buzas, E., Blenkiron, C., Bussolati, B., et al. (2024) Minimal information for studies of extracellular vesicles (MISEV2023): from basic to advanced approaches: Position	Article	UQ:a3bf423	Guo, S., Tang, D., Zhang, M., Yang, H., Zhang, T., Hu, B., et al. (2024) Spatiotemporal- controlled NIR-II immune agonist sensitizes cancer immunotherapy. Advanced Materials.	Article	UQ:7f9de1e
paper. Journal of Extracellular Vesicles, 13(2). Chopra, D.*, Guo, T.*, Jayasree, A.*, Gulati, K.* and Ivanovski, S.* (2024) Bioinspired, bioactive, and bactericidal: anodized nanotextured dental implants. Advanced Functional Materials.	Article	UQ:0245e7a	and Lalloo, R.* (2023) Health related quality of life of oral cancer patients who receive radiotherapy with or without chemotherapy in Sri Lanka. Journal of Multidisciplinary Dental Research, 9(1).	Article	09:0114307
Zhang, C., Lu, T., Wang, L., Wen, J., Huang, Z., Lin, S., et al. (2024) Three-dimensional analysis of hard and soft tissue changes in skeletal class II patients with high	Article	UQ:91269ad	Afkhami, F.*, Chen, Y., Walsh, L.*, Peters, O.* and Xu, C.* (2024) Application of nanomaterials in endodontics. BME Frontiers, 5.	Critical review of research	UQ:6c0d991
mandibular plane angle undergoing surgery. Scientific Reports, 14(1): 1-11. Liaw, A.*, Liu, C.*, Bartold, M.*, Ivanovski, S.* and Han, P.* (2024) Effect of non-surgical periodontal therapy on salivary histone deacetylases expression: a prospective clinical study. Journal of Clinical Periodontology.	Article	UQ:fc4f741	GBD 2021 Causes of Death Collaborators, Kanmiki, E., Maravilla, J., Lalloo, R., Mamun, A. and Kelly, J. (2024) Global burden of 288 causes of death and life expectancy decomposition in 204 countries and territories and 811 subnational locations, 1990-2021: a systematic analysis for the Global Burden of Disease Study 2021. The Lancet.	Article	UQ:1603809
Li, X., Cai, J., Zhang, H., Sun, S., Zhao, S., Wang, Z., et al. (2023) A trisulfide bond containing biodegradable polymer delivering pt(iv) prodrugs to deplete glutathione and donate H2S to boost chemotherapy and antitumor immunity. ACS Nano. 18(11): 7852-7867.	Article	UQ:e50151c	Hogerheyde, T.*, Coates, D., Walsh, L.* and Zafar, S.* (2024) Biocompatibility and acid resistance of preformed crowns in children: an in vitro study. European Archives of Paediatric Dentistry.	Article	UQ:188aacO
Pritchard, L.*, Keshoor, S., Eley, D., Beckett, D., Bromage, A., Knevel, R., et al. (2024) Oral health students' perceptions of the learning environment in Australia and New Zealand: a DREEM study. European Journal	Article	UQ:93e84ae	Ivanovski, S.*, Lee, R.*, Fernandez-Medina, T.*, Pinto, N., Andrade, C. and Quirynen, M. (2024) Impact of autologous platelet concentrates on the osseointegration of dental implants. Periodontology 2000.	Critical review of research	UQ:1e7a108
of Dental Education. Kuzekanani, M., Sardoei, M. and Walsh, L.* (2023) The prevalence of middle mesial canals in the second mandibular molars of an Iranian subpopulation: a cross-sectional CBCT study. Curaus of Medical Science 15(12)	Article	UQ:841cbe3	Dhanapriyanka, M.*, Kosgallana, S.*, Kanthi, R., Jayasekara, P., Dao, T.*, Ha, D.*, et al. (2024) Professionally applied fluorides for preventing and arresting dental caries in low- and middle-income countries: Systematic review. Journal of Public Health Dentistry: 1-15.	Article	UQ:1ffc188
Wang, B., Zhou, J., Li, R., Tang, D., Cao, Z., Xu, C.*, et al. (2024) Activating CD8+ T cells by Pt(IV) prodrug-based nanomedicine and aPD-L1 antibody for enhanced cancer immunotherapy. Advanced Materials.	Article	UQ:23ddfc9	Ferrari, A., Santomauro, D., Aali, A., Abate, Y., Abbafati, C., Abbastabar, H., et al. (2024) Global incidence, prevalence, years lived with disability (YLDs), disability-adjusted life-years (DALYs), and healthy life expectancy (HALE) for 371 diseases and injuries in 204 countries	Article	UQ:5a12e3c
GBD 2021 Demographics Collaborators, Begum, T., Kanmiki, E., Maravilla, J., Khan, A., Moni, M., et al. (2024) Global age-sex-	Article	UQ:55b8ff8	and territories and 811 subnational locations, 1990–2021: a systematic analysis for the Global Burden of Disease Study 2021. The Lancet.		
specific mortality, life expectancy, and population estimates in 204 countries and territories and 811 subnational locations, 1950-2021, and the impact of the COVID-19 pandemic: a comprehensive demographic analysis for the Global Burden of Disease			Afkhami, F.*, Wright, P.*, Chien, P.*, Chun, X.*, Walsh, L.* and Peters, O.* (2024) Exploring approaches to pulp vitality assessment: A scoping review of nontraditional methods. International Endodontic Journal: 1-34.	Critical review of research	UQ:63b2df7
Study 2021. The Lancet. Masood, M.*, Walsh, L.* and Zafar, S.* (2024) Awareness of dental complications with oral piercings. Oral Diseases.	Article	UQ:71b8947	Bhole, S. and Hayen, A. (2024) A study of the relationship between diet and obesity with dental caries in children. Annals of Dental Specialty, 12(2): 20-24.	Article	

Postgraduate research

Higher Degree by Research (HDR): PhD and MPhil – Active students in 2023 & 2024

Name	Program	Project title	Supervisor
Farzaneh Afkhami Jeddi	PhD	Point-of-Service Pulp Testing: Molecular and Optical Approaches	Prof Ove A Peters
Yasmen Alfaisal	MPhil	Vital Pulp Treatment: Are treatment decisions related to dentist experiences and patients' socioeconomic class?	Dr Christine Inge Peters
Amjad Almuqrin	PhD	Assessment of the effects of professionally applied Silver Diamine Fluoride on early childhood caries	Dr Sobia Zafar
Omar Breik	PhD	Bioresorbable metals as an alternative to titanium for intraoperative vessel ligation	Prof Sašo Ivanovski
Thi Ngoc Man Bui	PhD	Inequalities in child oral health & related factors over a decade in Queensland	Prof Loc Do
William Carlson-Jones	PhD	The evolution of the oral health workforce	Dr Nicole Lauren Stormon
Cheryl Chen	MPhil	Epidemiology, Surgical Management and Prognostic Indicators of Benign Intraosseous Jaw Pathology	Dr Nigel R Johnson
Divya Chopra	PhD	Therapeutic Potential of Nano-Engineered Zirconium Dental Implants	Prof Sašo Ivanovski
Stefan Danylak	PhD	Ergonomics in Dentistry	Dr Sobia Zafar
Thi Minh An Dao	PhD	Predictors of Early Childhood Caries in South Australian Children	Prof Loc Do
Bilal El Masoud	PhD	Improving the Survival of Cylindrical Stud Attachment retained Complete Overdentures	A/Prof Sang Lee
Ryan Goh	MPhil	Assessment of mandibular bone deposition over a subperiosteal implant: conversion of a subperiosteal implant into an endosteal implant	Dr Cedryck Vaquette
Shu Hua	PhD	Multifunctional nanoparticles with targeting and controlled release ability for the management of osteoarthritis	Dr Chaminda Athukoralaarachchi Seneviratne
Nicolie Jenkins	PhD	Oral Health Workforce	A/Prof Ratilal Lalloo
Yvonne Lai	PhD	Evaluating oral health and its impacts in Rett syndrome-stepping-stones to achieving a better quality of life	Dr Sobia Zafar
Miriam Lee	PhD	Periodontal pathogenic bacterial enzymes as a potential diagnostic marker for the development of Rheumatoid Arthritis.	A/Prof r Sang Lee
Soo Jin Lim	MPhil	The effect of probiotics in oral biofilm	Dr Pingping Han
Chun Liu	PhD	The emerging role of outer membrane vesicles in periodontitis	Dr Pingping Han
Claudia Lopez Silva	PhD	The dental-systemic interface and respiratory infections in Intensive Care Unit	E/Prof Laurence James Walsh
Alison Nation	PhD	Does early access to public oral health services from 6 months of age prevent caries experience in children?	A/Prof Ratilal Lalloo
Marisca Pereira	PhD	Melt electrowritten (MEW) fibrous scaffold for oral soft tissue augmentation	Prof Sašo Ivanovski
Lyndal Pritchard	PhD	Improving the Oral Health for Older Australians	Prof Loc Do
Christopher Sexton	PhD	Population oral health interventions and water fluoridation for the prevention of dental caries	Prof Loc Do
Nilesh Torwane	PhD	Impact of Water Fluoridation as A Marker for Social Inequalities, possible Perceived Safety, Benefit and risks With Relation to Parental Support in Queensland, Australia	Prof Loc Do
Madugalle Gedara Nadeeka Udawatte	PhD	Novel holobiont modulation strategy in oral microbiome disease modulation	Dr Chaminda Athukoralaarachchi Seneviratne
Cong Wang	PhD	Development of an oral biofilm-oral epithelial cells co-culture model based on jammed-packed microgel	Dr Yinghong Zhou
Juan Wen	PhD	Promoting periodontal regeneration through 3D printed nano-engineered membrane delivering lithium and VEGF	Prof Sašo Ivanovski
Enmao Xiang	PhD	Zn based Biodegradable metals for Biomedical application	Prof Sašo Ivanovski
Tian Xu	PhD	Novel nanomaterials of cerium-doped ZIF-62 periodontal tissue regeneration	Dr Yinghong Zhou
Angelique Alexis Zamora	PhD	Oral Health in Aged Care: Addressing Oral Health Inequity and Unmet Dental Care Needs in Vulnerable Populations	Prof Loc Do

HDR thesis completions in 2023–2024

Amelia Carr (PhD)

Development of a 3D printed bone-ligament-bone construct for scapholunate interosseous ligament reconstruction

Michael Foley (PhD)

Contextual and compositional factors associated with clinical and subjective oral health in Australian children

Arosha Weerakoon (PhD)

Dentine, Adhesive Interfaces & Physiological Ageing

Dean's Award for Outstanding HDR Theses

This award gives formal recognition to outstanding graduates who have been commended by their thesis examiners:

Tianqi Guo (PhD)

Fabrication Optimization of Bioactive Nano-Engineered Titanium Dental Implants

Thomas Hogerheyde (MPhil)

The effects of decontamination practices and diet on preformed paediatric crowns, and their biocompatibility in the oral cavity

Sepanta Hosseinpourdougolsar (PhD)

Mesoporous silica nanoparticle-based non-viral gene delivery systems for bone regeneration

Anjana Jayasree (PhD)

Nano-Engineered Titanium Dental Implants for Tailored Therapy and Bioactivity

Vignesh Selvaprithiviraj (PhD)

Injectable hydrogels for orodental reconstruction

Doctor of Clinical Dentistry - Enrolled students 2024

Name	Discipline area
Philip Chien	Endodontics
Richard Huynh	Endodontics
Graham Wong	Endodontics
William Aung	Orthodontics
Deborah Du	Orthodontics
Matthew Nangle	Orthodontics
Alexander Marino	Periodontics
Binhphuong (Peter) Pham	Periodontics
Roya Safi	Periodontics
Tafadzwa Mabheju	Prosthodontics
Camelia Maris	Prosthodontics
David Yu	Prosthodontics
Sadaf Rizwan	Dentomaxillofacial
Konna Chakravarty	Endodontics
Sepanta Hosseinpourdougolsar	Endodontics
Benjamin Gad	Oral Medicine
Jared Marks	Orthodontics
Joyce Wu Ai Wong	Orthodontics
Sae Mi Bok	Periodontics
An-Lun (Alun) Cheng	Periodontics
Jenny Wang	Periodontics
Rashid Al Shereiqi	Prosthodontics
George Jiang	Prosthodontics
Oleg Pushkarev	Prosthodontics
Georgina Marshall	Endodontics
Helen McHugh	Endodontics
Kathryn Briggs	Orthodontics
Keith Chan	Orthodontics
Annabel Hoe	Orthodontics
Laura Truong	Orthodontics
Denise Hsueh	Periodontics
Daniel McKenzie	Periodontics
Wui Kit (Jackie) Yiu	Periodontics
Thanh (Justin) Le	Prosthodontics
Soo Hee Lim	Prosthodontics
Casey Walsh	Prosthodontics

Doctor of Clinical Dentistry – Graduated students 2023

Name
John Biun
Wai-Sze (Cece) Chan
Jasmine Holgate
Kushagra Ohri
Lanit Anand
James English
Matthew Moore
Max Wei
Su Sheng Quachw
Alan Zhu
Himanshu Arora
Yong Hoon (Jimmy) Gim
Gloria Hsu
Cheuk Kee (Candy) Fung
Lydia See

Congratulations to our 2023 graduates and 2024 enrolled students

Doctor of Dental Medicine

New program offering from 2024, UQ's Doctor of Dental Medicine is a 3.5 year full-time graduate-entry program intended for those with a background in health, allied health, or physical or biological sciences.

This innovative curriculum is designed to condense studies and provide students with all the training, skills, and knowledge to be able to prevent, diagnose and treat oral conditions.

Name

Abdulla Al-Ghabban
Andrew Attaalla
Leana Cartas
Jordan Chan
Joey Cheok
Veronica Francis
Bob Gao
Laura Gu
Audrey Gumanti
Alicia Hutabarat
Christine Jang
Meghan Kong
Angel Leong
Yit Chiun Lim
Mina Liu
Ziyang Liu
Shreya Nair
Kevin Nguyen
Jordon Patti
Yuelin Qin
Hannah Qu
Samuel Reid
Daniella Salib
Tara Samaranayake
Abdullah Shiraz
Jessica Sim
Yathavan Sriharan
Chranise Traianou
Jessica Tran
Danny Truong
Desmond Wong



Undergraduate research

Year 5 Bachelor of Dental Science (BDSc) – Enrolled students and research projects

Project title	Students	Supervisor/s
Evaluation of self-reported confidence levels of final year dentistry students at The University of Queensland in oral surgery and general medicine	Yujia Wang, Hsin Chen Lee, Sasha Vladimirova	Jessica Zachar, Sowmya Shetty
A Global Review of Antibiotic Prescription for Endodontic Infection	Diphuka Reafiwa Tladi, Sehaj Narwan, Oluwatoni Ajani	Sepanta Hosseinpour
Describing the caries prevalence of South-East Queensland prisoners	Rosella Goh, Shamitran Prabakaran, Percy Hsu	Nicole Stormon, Christopher Sexton
UQ Indigenous Australian Students' Perspectives Towards Free Public Dental Care: An Observational Cross-Sectional Study	Savannah Kanters Danielle Lim, Siqi Jin	Ratilal Lalloo
Efficacy of novel multi-enzyme detergent compared with current detergents used with dental ultrasonic cleaners on the removal of oral biofilms: An in-vitro study	Hosanna Chan, Sherryn Hu, Seungyeon Moon	Jaya Seneviratne
Evaluating the effectiveness of occlusense in determining the preferred chewing side	Conal Lee, Park Eunjee, Brandon Koh	Ove Peters, Christine Peters, David Thomson
The Association Between Exposures To ACEs In The First 5 Years Of Life And Caries Experience In Australian Children	Anna Zhuang, Trisha Harijatna, Christopher Cheung	Nicole Stormon, Christopher Sexton
Pre-clinical VPT simulation using 3d-printed tooth models	Liam Cassidy, Ji Wan-William Ki, Sung-ho Lee	Christine Peters, Sobia Zafar, Jessica Zachar
The effect of calcium silicate-based endodontic biomaterials on osteogenesis: A systematic review	Reza Hassaniaza, Andrew Almasraf, Noor Alshabboot	Sepanta Hosseinpour
Paediatric dentists' experience of an app-based social story for the dental management of children with autism spectrum disorder	Andie Malawkin, Emily Harfiel, Mim Griffiths	Sobia Zafar, Claudia Lopez-Silva
The effects of dietary patterns on children with early childhood caries undergoing general anaesthesia	Imaanjot Bassi, Prabdeep Mann, Georgina Kay Wen Wong	Sobia Zafar
Reliability of YouTube videos on clinical use of silver diamine fluoride for early childhood caries	Kavvner Yong Hong Low, Wei Yi The, Suen Hong Chan	Sobia Zafar
Perception of consumers and clinicians on saliva diagnosis for periodontal disease	Sarina Amidi, Ruiyi Sun, Jiaying Yee	Pingping Han, Sašo Ivanovski, Jaya Seneviratne, Sepanta Hosseinpour
Clinical and aesthetic outcomes of single implant-supported 2-unit cantilevers fixed dental prostheses in the anterior maxilla: a 5-year retrospective case series	Reuben Looi, Jasper Tan Zheng Wei, Koen Sim	Himanshu Arora
Epidemiological Evaluation: Prevalence of C-shaped canal morphology using Cone Beam Computed Tomography (CBCT) – Study of patients' profiles	Derek Liu, Young Jun Euh, Justin Lim	Sepanta Hosseinpour
Evaluating Pre-clinical Endodontic Education in Australian Dental Schools	Simran Chhabra, Jeevyn Dhaliwal, Nicole Chin	Sepanta Hosseinpour
Systematic Review Proposal: Retreatability of Bioceramic Sealers	Jney Khanna, Jason Ju, Eugene Ngoi	Unni Pillai
A Linguistic and Discourse Analysis of Paediatric Behaviour Management in Dentistry	Josephine Lam, Joanne Sun, Alison Tran	Nicole Stormon, Kumar Raghav
Myths and Misconceptions in Endodontics – the use of calcium hydroxide for root canal treatment	Kiara Johnston, Jasmehar Randhawa, Armaan Dhillon	Ove Peters, Christine Peters
Diagnostic Accuracy of Methods Used to Detect Cracked Teeth	Huon Molland, Sara Shirbegi, Veronica Kindaro	Unni Pillai
Has the bridge to quality dental research eroded, or is it sound?	Jason Li, Soroush Amidi, Ved Vora	Christopher Sexton
What are dental students' perceptions and confidence levels in managing dental anxiety in their patients?	Shi Ling Sim, Marcus Ng, Michelle Ho	Kumar Raghav, Ratilal Lalloo
Candida albicans biofilm formation on 3D-printed dentures	Jack Wingrave, Max Woodcock, George He	Jaya Seneviratne, Himanshu Arora
Perceptions of medical doctors on medication-related osteonecrosis of the jaw (MRONJ): a qualitative focus group study	David Dongyoung Lee, William Lake, Mingi Jang	Nigel Johnson
The association between periodontal disease and oral HPV prevalence in student dental clinics: A cross sectional study	Daniel Chao, Aaron Tsui, Yingyu Yong	Jaya Seneviratne
How does exposure to dental AI technology change one's perception of AI? A Pilot Qualitative Study	Students: Saeeun An, Kyra Mok, Xue Ann Sarah Ong	Tushaan Bhindi, Laurie Walsh

Research staff

Academic and research staff

Name
Dr Himanshu Arora
Dr Luna Banks
Mr Saraswat Basu
Dr Shekhar Bhatia
Ms Alison Brodie
Dr Sarah Chaw
Prof Loc Do
Dr Raahib Dudhia
Dr Sandleen Feroz
Dr Laura Ferris
Dr Elissa Freer
Dr Candy Fung
Dr Meark Gervais
Dr Karan Gulati
Dr Diep Ha
Dr Manori Halgamuwe Hewawasam
Dr Pingping Han
Ms Patrice Harald
Dr Sepanta Hosseinpour

Ms Zi-Ming Huang
Prof Sašo Ivanovski
Dr Anjana Jayasree
Dr Maryam Jessri
Dr Nigel Johnson
Dr Brett Kerr
Dr Asli Kocak
Ms Carmen Ricarda Koster
Dr Unni Kunjukrishna Pillai
A/Prof Ratilal Lalloo
A/Prof Ryan Lee
Dr Claudia Lopez Silva
Dr Corey Moran
Miss Yuqing Mu
Dr Ellie Nadian
Dr Matthew Nangle
Dr Reena Ohm
Dr Desmond Ong
Dr Marisca Pereira
Dr Christine Peters

Prof Ove Peters Ms Kirrily Phillips Mrs Lyndal Pritchard Dr Sheng Quach Dr Sadaf Rizwan Dr Lydia See Dr Jaya Seneviratne Dr Arun Shailendran **Dr Reuben Staples** Dr Nicole Stormon A/Prof David Thomson Dr Cedryck Vaquette Dr Areti Dimitra Vrochari Dr Chris Wang Mr Cong Wang Dr Arosha Weerakoon Dr Jessica Zachar Dr Sobia Zafar Dr Yinghong Zhou

Adjunct and honorary appointments

Name
Terence Alexander
Abdalla Ali
Robert Ashman
Peter Bartold
Peivand Bastani
Danilo Carluccio
Withanage Cooray
Mary Cullinan
Nikolaos Donos
Tulio Fernandez Medina
Norman Firth
Michael Foley
Alex Forrest

Terry Freer
Margaret Herzig
Dietmar Hutmacher
William Kahler
Inder Kaur
Brian Kruger,
Danielle Layton
Xi Li
Joachim Maartens
Nithin Manchery Gopinathan
Mohammed Mansour
Roderick Marshall
Tess Matias
Ian Meyers

Paul Monsour Alexander Moule **Richard Olive** Kelsey Pateman Rafael Pereira Da Mata Santos Soorebettu Prabhu Wan Seow Greg Seymour Anne Symons Edward Vickers Laurence Walsh Patricia Wright





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Oral Health Centre 288 Herston Road, Corner Bramston Terrace and Herston Road Herston QLD 4006, Australia Email: dentistry.research@uq.edu.au Phone: (07) 3365 8022 dentistry.uq.edu.au