

# 2022 ANNUAL REPORT

FOSTERING AND SUPPORTING DENTAL RESEARCH FOR THE PURPOSE OF IMPROVING THE ORAL HEALTH OF THE COMMUNITY



AUSTRALIAN  
DENTAL  
RESEARCH  
FOUNDATION



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# CHAIR'S MESSAGE

It is my great pleasure to present this Annual Report of the Australian Dental Research Foundation (ADRF). This is my second year as Chair of the Foundation, having been involved with the Foundation and various subcommittees since 2016.

I feel privileged to have been given the opportunity to chair this important organisation, and work alongside colleagues from the Australian Dental Association (ADA) and the Australian Dental Industry Association (ADIA).

One of my highlights this year, through the support of the Australian Dental Industry Association and SDI Limited, was hosting our second annual research symposium at ADX Sydney. It was such a pleasure to be able to open the symposium alongside one of our founding chairs Dr Reginald Hession AM and Patron of the ADRF. Dr Julie Glover Executive Director, Research Foundations, National Health and Medical Research Council, Mr Leon Prentice Chief Research and Development Officer, SDI Limited and Dr Mihiri Silva Clinician-Scientist Fellow at the Murdoch Children shared their insights on the opportunities and challenges for funding dental research in Australia.

In early 2021, the ADRF Board came together to assess the future strategic direction of the Foundation. At that time, we agreed on a set of strategic priorities which have underpinned our focus as a Board. They focus on developing and implementing a comprehensive research strategy; developing a clear value proposition for our partners; continuing to enhance our governance structures; optimising our grants processes; and diversifying our income streams.

To progress our strategic review, in late 2021 we welcomed 2 new Board members and created a Board observer role. Associate Professor Munira Xaymardan, our Deputy Chair of the ADRF Research Advisory Committee, took on the newly created Board observer role, while we welcomed Associate Professor Deborah Cockrell AM and Dr Rachel Martin as Directors.

A/Prof Deborah Cockrell has been appointed with a specific responsibility as Chair of the Research Advisory Committee. This role oversees the allocation of the ADRF's research priorities and funds. An oral surgeon with a PhD in dental education, she has worked in both public and private practice, A/Prof Cockrell brings a wealth of skills and experience to her new role including teaching at undergraduate and postgraduate levels. Dr Rachel Martin is a registered dentist and specialist in Public Health Dentistry. Passionate about health equity, she is a Director and co-founder of the Network for the Integration of Oral Health (NIOH) - an organisation committed to improving the oral health of all Australians. A/Prof Xaymardan is a lecturer at Sydney University and a long serving member of our Research Advisory Committee.

As Chair, I feel particularly proud to have welcomed three new highly credentialed leaders in oral health to our Board, enhancing both our diversity and strategic capability.

I would also like to take the opportunity to acknowledge and deeply thank two of our outgoing Board members, Professor Saso Ivanovski, for his extensive and tireless service to ADRF. Prof Ivanovski served as an ADRF Director and Chair of our Research Advisory committee. His support and leadership of our research committee over many years has been invaluable. Last year we also farewelled long serving Director Trevor Martin. Trevor has been a passionate

advocate for the work of the ADRF. Trevor remains an active member of our marketing and fundraising committee.

Over the last twelve months as a Foundation, we have worked to better understand our value proposition. Not only our critical role in driving excellence in emerging Australian dental research, but how we work to build better financial partnerships across our industry. We continue to explore these opportunities to ensure we maximise our ability to provide funding for research into critical areas of public dentistry.

Whilst I wish to acknowledge the ongoing generosity of our many supporters who are noted throughout this report, I encourage further industry consideration of deeper support for the ADRF. Supporting a strong and vibrant research capability within our dental schools is critical to the strength of dentistry and oral health in Australia.

In 2023 as a Board, we look forward to completing our strategic review and working to enhance our governance structures so that we can position the ADRF as a strong voice for the profession, industry, academia, and the community.

*Louise McCann*

Sincerely  
Louise McCann

# BOARD OF DIRECTORS



**Ms Louise McCann**  
Chair, ADRF



**Associate Professor Deborah Cockrell**  
Chairman, Research Advisory Committee



**Dr F. Shane Fryer OAM**  
Honorary Treasurer  
Past President ADA Inc.



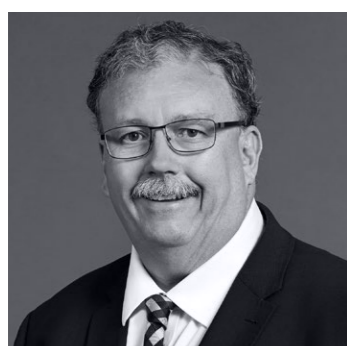
**Mr Damian Mitsch**  
Secretary, ADRF Chief Executive ADA Inc.



**Mr Kym De Britt**  
Chief Executive Officer, ADIA



**Associate Professor Rachel Martin**  
Director



**Dr P Hugo Sachs**  
Director  
Past President, ADA



**Ms Tanya McRae**  
Director, ADIA

## MEETINGS

The following meetings and teleconference of the Foundation were held during 2022.

### RESEARCH ADVISORY COMMITTEE

A/Prof Deborah Cockrell (Chair), A/Prof Munira Xaymardan, A/Prof Peter Zilm, A/Prof Robert Anthonappa, Dr Stephen Hamlet, A/Prof Nicola Cirillo, Dr Amr Fawzy, Prof Loc Do, Dr Christina Adler

June 2, 2022  
July 25, 2022  
August 5, 2022  
August 18, 2022  
August 26, 2022

### FINANCE COMMITTEE

Dr F. Shane Fryer, OAM (Treasurer), Ms Louise McCann, Mr Damian Mitsch, Mr Wayne Matthews

February 7, 2022  
May 2, 2022  
September 19, 2022

### BOARD OF DIRECTORS

Ms Louise McCann (Chair), Dr P. Hugo Sachs, Mr Damian Mitsch, Dr F. Shane Fryer OAM, Mr Kym De Britt, A/Prof Deborah Cockrell, Ms Tanya McRae, A/Prof Rachel Martin

February 14, 2022  
May 9, 2022  
October 10, 2022  
November 28, 2022

## APPRECIATION

The ADRF Board of Directors would like to particularly acknowledge and thank Prof Deborah Cockrell and members of the Research Advisory Committee who take on the detailed assessment of applications received annually for research grants, prizes and awards. Also, to the ADRF Treasurer and Chair of the Finance Committee, Dr F. Shane Fryer, and members of the Finance Committee, who ensure that fund

received by the ADRF are managed to maximise the financial support available for dental research. Each year the ADRF provides scholarships and research grants that support the work of post-doctoral students, early and mid-career researchers, and senior dental researchers whose work is focused on continuous improvement of oral health care and the critical role it plays in the well-being of all Australians.

# HISTORY

The ADRF is a joint project of the Australian Dental Association (ADA) and the Australian Dental Industry Association (ADIA), to support research in dentistry for the purpose of improving the dental health of the community.

The Foundation was established in 1970 on the initiative of Mr Colin Cormie, OBE, Chairman of the Australian Dental Trade Association (later ADIA). Mr Cormie, who was ADRF Chairman from 1974 to 1982, was inspired by the American Fund for Dental Health and the enthusiastic support of many people in the Australian Dental Association and the Australian Dental Trade Association. It came into being initially as the Australian Dental Research and Education Trust, which was an unincorporated body.

The Fund (as it was originally known) became an incorporated body in 1983 and adopted the name Australian Dental Research Fund. Annual Reports have been published since that date. In July 1996 a change of name from 'Fund' to 'Foundation' was approved by the Registrar of Associations.

In 2008 the Foundation was registered as a charity with the Australian Charities and Not for profits Commission. In 2020, the Foundation became a member of the Fundraising Institute Australia (FIA) and conducts its ongoing fundraising activities in line with the FIA's Code of Conduct.

# PRINCIPAL OBJECTIVES

The objects for which the Foundation is established is to promote dental and oral health research to improve the health of the community and without limitation to:

- accept, attract, receive, invest and use any bequest, legacy or other gift or income whatsoever to foster and assist dental and oral health research for the purpose of improving the health of the community;
- aid dentistry by assisting and encouraging all fields of dental and oral health research by means of research grants awarded to competent persons;
- encourage, develop and support research fellowships and seminars that stimulate a methodical and practical approach to dental and oral health research and foster the advancement of dental knowledge;
- provide for the publication or dissemination of the results of such research projects supported by the Foundation as the Board may consider appropriate;
- make grants to Dental Schools, approved Research Institutes and individuals for research programmes and to aid in the purchase of equipment for research;
- take or otherwise acquire and hold shares, units, debentures or other securities of any suitable company, fund or trust, in accordance with the Foundation's by laws;
- invest and deal with money of the Foundation not immediately required in such manner as may from time to time be thought fit; and
- provide accountable management and overseeing of dental and oral health research projects at the request of and using funds provided by other foundations, trusts or funding bodies.

Since its inception, the Foundation has funded well over 2000 Grants and Scholarships in accordance with the above objectives. In line with its objectives, and with the help of its generous donors, each year the ADRF can offer scholarships and grants that support the work of dental students, early and mid-career researchers, and senior dental researchers. Together we are building the future capability of Australian dental researchers, supporting innovation in dentistry, and offering the best possible oral health care to all Australians.

# 2022

## ADRF RESEARCH GRANTS

The Foundation remains the principal source of dental research funding in Australia. This year 114 applications for grants were received for consideration by the Research Advisory Committee. All grants were initially assessed by the Chairman of the Committee and referees were assigned to assist with their evaluation. A meeting of the Committee was held in July and August substantially to review referees' reports, rank the applications, and adjust budgets where necessary. The applications listed below were ultimately approved for funding.

## ADRF RESEARCH GRANTS

| RESEARCHERS                                                                                                                      | PROJECT TITLES                                                                                                                                                                                             |
|----------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Dr. Rishi Ramani<br>Dr. Tami Ya<br>Dr. Antonio Celentano<br>Professor Michael McCullough                                         | Deep learning convolutional neural networks in in vivo micrographical diagnosis of oral cancer and oral potentially malignant disorders                                                                    |
| Mr Bede van Schaijik<br>Dr Omar Kujan<br>Ms Zeidri Rasmussen<br>Ms Yashupreet Kaur                                               | Epithelial-Mesenchymal Transition Biomarkers in Oral Epithelial Dysplasia                                                                                                                                  |
| Miss Grace La<br>Vanessa Cho<br>Miss Belinda Lu<br>Miss Stacey Teo<br>A/Prof Robert Anthonappa                                   | Correlating spacing in the primary dentition and ectopic first permanent molars                                                                                                                            |
| Dr Suhaib Alqudah<br>Professor Michael McCullough<br>Dr Tami Yap<br>Dr Antonio Celentan<br>Dr Holly Anderto                      | The role of apoptosis in Oral Lichen Planus and the effect of SMAC mimetics on Oral Keratinocytes, a comprehensive in vitro study                                                                          |
| Dr Antonio Celentano<br>Ms Rita Paolin<br>Prof Camile Farah<br>Dr Huda Moutaz Asmael<br>Dr Zichen Lin<br>Prof Michael McCullough | Assessing the in vivo effects of traditional anticoagulants in oral squamous cell carcinoma                                                                                                                |
| Dr Elizabeth Lam<br>Associate Professor<br>Leticia Algarves Miranda                                                              | A semi-quantitative analysis of soft tissue healing in tooth extraction sockets with alveolar ridge preservation                                                                                           |
| Dr Peivand Bastani<br>Professor Loc Do<br>Dr Diep Ha<br>Dr Nithin Manchery                                                       | Developing a Policymaking framework for Integration of oral health within Primary healthcare in Australia                                                                                                  |
| Dr Georgina Marshall<br>Professor Ove Peters                                                                                     | Mineralisation patterns of dental pulps: A multimodular ex vivo Analysis                                                                                                                                   |
| Ms Sheetal Maria Rajan<br>Associate Professor Amr Fawzy<br>Dr Omar Kujan                                                         | The synergistic effect of Low Intensity Pulsed Focussed Ultrasound (LIPUS) and hyaluronic acid hydrogel containing GSK-3 antagonist on bio-stimulation, and regenerative potential of dentin-pulp complex. |
| Dr Barsha Shrestha<br>Associate Prof. Amr Fawzy<br>A/Prof. Martin Saunder                                                        | The synergistic effect of High Intensity Focused Ultrasound (HIFU) and amorphous calcium phosphate nanoparticles for biomimetic remineralization of enamel                                                 |

# ADRF RESEARCH GRANTS

| RESEARCHERS                                                                                                                      | PROJECT TITLES                                                                                                                                                                                                                        |
|----------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Dr. Syed<br>Ms Sheetal Maria Rajan<br>Dr. Barsha Shrestha<br>Associate Professor Amr Fawzy                                       | Development of experimental restorative composite modified with doxycycline - loaded mesoporous silica nanoparticles having superior antibiofilm properties                                                                           |
| Dr Manal Masood<br>Dr Sobia Zafar<br>Professor Laurence J. Walsh AO                                                              | The impact of oral piercings: An investigation into the rate of metal dissolution and metal ion release under acidic challenge                                                                                                        |
| Ms Xiao Wen Chen<br>Mr Guan Hong Lee<br>Ms Jia Yi Ho<br>Dr Himanshu Aror                                                         | Evaluation of the impact of repeated sterilisation on the accuracy of digital scan bodies for implant impressions                                                                                                                     |
| Dr Sai Pabbati<br>Peter Thomson                                                                                                  | Oral and Maxillofacial injuries: comparing the incidence and aetiologies in regional and metropolitan Australian cities                                                                                                               |
| Reuben Staples                                                                                                                   | A fibre guiding scaffold functionalised with Emdogain® for periodontal regeneration                                                                                                                                                   |
| Chun Xu,<br>Yi Wang<br>Ruirui Qiao                                                                                               | Nano-engineered “bacteriobot” for the treatment of biofilms infection on dental implants                                                                                                                                              |
| Dr Stefan Danylak<br>Dr Sobia Zafar<br>Professor Laurie Walsh                                                                    | Motion sensor and haptic technologies in evaluating and training postural habits for optimum ergonomic clinical practice                                                                                                              |
| Himanshu Aarora                                                                                                                  | Standard vs Customised healing abutments for the development of a harmonious soft tissue profile around single implants placed with a Type2/Early placement protocol in the anterior maxilla: A randomized controlled clinical trial. |
| Bindusmita Paul<br>Xi Ye<br>Paul Veith<br>Debnath Ghosal<br>Eric Reynold                                                         | Characterisation of the structure and dynamics of oral polymicrobial biofilms using confocal microscopy and cryo-electron tomography.                                                                                                 |
| Dr Tulio Fernandez-Medina                                                                                                        | Reprogramming innate inflammatory response on dental implants towards advance osseointegration                                                                                                                                        |
| Mr Jiankun Yang<br>Dr Anitha Sudheesh Kumar<br>Professor Lisbeth Grondahl                                                        | Dental pulp tissue regeneration using protein delivery from injectable antimicrobial sub-micron gel particles                                                                                                                         |
| Claudia Patricia Lopez Silva<br>Professor Laurie Walsh<br>Professor Fiona Coyer<br>Dr Kelsey Pateman<br>Professor Saso Ivanovski | Assessing the level of adherence to the new developed work-based oral care bundles for critical care patients to ensure service quality                                                                                               |

# ADRF RESEARCH GRANTS

| RESEARCHERS                                                                 | PROJECT TITLES                                                                                                    |
|-----------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
| Kexin Jiao<br>N. Thattaruparambil Raveendran<br>S. Ivanovski<br>Pingping Ha | Human osteoblast cell-derived small extracellular vesicles for in vivo periodontal wound healing in a rat model   |
| Dr Lyndon Abbot<br>A/Prof Robert Anthonappa                                 | Deep learning using convolutional neural networks for caries detection in children                                |
| Victor Lagunov<br>Professor Roy George<br>Dr Maksym Rybachuk                | Modification of enamel and dentin surfaces by a non-thermal ultra-fast femtosecond laser ablation                 |
| Dr Lisa Jamieson<br>Dr. Sneha Sethi                                         | Incidence and prevalence trends for oral and oropharyngeal cancer among Indigenous and non-Indigenous Australians |



# 2022

## RESEARCH AWARDS

## RESEARCH AWARDS

### AUSTRALIAN DENTAL INDUSTRY ASSOCIATION (ADIA) RESEARCH GRANT

The Australian Dental Industry Association (ADIA) Research Grant will provide up to \$25,000 for a single grant. As part of the conditions, the Researchers of the Award must agree to work with the ADIA to raise Awareness of the Grant, the ADRF and the research it is funding.

The following researchers are the recipients of this Award for 2022:

| AWARD WINNER                                                                                                                     | PROJECT                                                                                     |
|----------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|
| Dr Antonio Celentano<br>Ms Rita Paolin<br>Prof Camile Farah<br>Dr Huda Moutaz Asmael<br>Dr Zichen Lin<br>Prof Michael McCullough | Assessing the in vivo effects of traditional anticoagulants in oral squamous cell carcinoma |

### GC AUSTRALASIA DENTAL PTY LTD

Established in 2012 by GC Australasia Dental, this award is made available to promote research in the field of minimum intervention dentistry. The GC Australasia Award provides \$5,000 annually for the promotion of research in Minimum Intervention Dentistry.

Awarded (part payment) to:

| AWARD WINNER                                                              | PROJECT                                                                                                                                                    |
|---------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Dr Barsha Shrestha<br>Associate Prof. Amr Fawzy<br>A/Prof. Martin Saunder | The synergistic effect of High Intensity Focused Ultrasound (HIFU) and amorphous calcium phosphate nanoparticles for biomimetic remineralization of enamel |

### INTERNATIONAL COLLEGE OF DENTISTS-AUSTRALASIAN SECTION & THE ICD SYD DOBBIN AM GRANT

This award, previously known as the International College of Dentists (ICD) Award, was established in memory of Dr Syd Dobbin AM. Dr Dobbin was the Past President of the Australasian Section of ICD and an international President of the College. He played a significant role in the implementation of water fluoridation in Australia. The Award supports community oral health research.

The International College of Dentists - Australasian Section - ICD Award provides up to \$5,000 annually towards community oral health. In 2019, the International College of Dentists established the ICD Syd Dobbin AM Grant which is a \$5,000 Award in memory of Dr Dobbin. In 2022 this has increased to \$7,500.

Awarded (part payment) to:

| AWARD WINNER                                                                               | PROJECT                                                                                                                                                     |
|--------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Dr. Syed<br>Ms Sheetal Maria Rajan<br>Dr. Barsha Shrestha<br>Associate Professor Amr Fawzy | Development of experimental restorative composite modified with doxycycline - loaded mesoporous silica nanoparticles having superior antibiofilm properties |

# RESEARCH AWARDS

## ORAL MEDICINE ACADEMY OF AUSTRALASIA RESEARCH AWARD

The Oral Medicine Academy of Australasia Research Award provides funding to support research in Oral Medicine. The Oral Medicine Academy of Australasia Research Award dispenses \$2,000 annually to supplement the highest-ranked application in oral medicine research.

Awarded (part payment) to:

| AWARD WINNER                                                                             | PROJECT                                                                                                                                 |
|------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|
| Dr. Rishi Ramani<br>Dr. Tami Ya<br>Dr. Antonio Celentano<br>Professor Michael McCullough | Deep learning convolutional neural networks in in vivo micrographical diagnosis of oral cancer and oral potentially malignant disorders |

## AUSTRALIAN DENTAL ASSOCIATION WESTERN AUSTRALIAN BRANCH AWARDS

The Australian Dental Association WA Branch Inc. (ADAWA) provides funding to support research consistent with the Australian Dental Research Foundation's objectives. These grants are available annually for research projects undertaken within the University of Western Australia (UWA). The ADA WA Branch support three grants, as follows for up to \$5,000 each to the University of Western Australia:

- ADAWA DMD Student Grant
- ADAWA DClin Dent Student Grant
- ADAWA Clinical Dentistry Student Grant
- In 2019, the Australian Dental Association Western Australian Branch advised they would fund a second ranked UWA Doctor of Dental Medicine student applicant to receive a grant of \$3,000.

| AWARD WINNER                                                                                   | PROJECT                                                                                                          |
|------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Mr Bede van Schaijik<br>Dr Omar Kujan<br>Ms Zeidri Rasmussen<br>Ms Yashupreet Kaur             | Epithelial-Mesenchymal Transition Biomarkers in Oral Epithelial Dysplasia                                        |
| Miss Grace La<br>Vanessa Cho<br>Miss Belinda Lu<br>Miss Stacey Teo<br>A/Prof Robert Anthonappa | Correlating spacing in the primary dentition and ectopic first permanent molars                                  |
| Dr Elizabeth Lam<br>Associate Professor<br>Leticia Algarves Miranda                            | A semi-quantitative analysis of soft tissue healing in tooth extraction sockets with alveolar ridge preservation |
| Dr Lyndon Abbot<br>A/Prof Robert Anthonappa                                                    | Deep learning using convolutional neural networks for caries detection in children                               |

# RESEARCH AWARDS

## THE CLARK FAMILY AWARD

The annual Clark Family Award was established by Mr William and Mrs Pam Clark, and Ms Allison Clark. It is awarded to the highest ranked application in the area of clinical dentistry with a sole focus on sustainability, or an area of research where sustainability in dentistry is either a major focus or a significant by-product of the project. Sustainability is imperative to dentistry, and it is most thoughtful and fitting that the Clark Family have proposed to support this important area of research.

| AWARD WINNER   | PROJECT                                                                             |
|----------------|-------------------------------------------------------------------------------------|
| Reuben Staples | A fibre guiding scaffold functionalised with Emdogain® for periodontal regeneration |

The below awards were not awarded in 2022:

## REGINALD AND PAMELA HESSION AWARD

The ADRF acknowledges the generous and ongoing support of its Patron, Dr Reginald Hession AM OMLJ KLJ. The Reginald and Pamela Hession Award was established by Dr Reginald Hession in 2008. It reflects Dr Hession's ongoing support of dental research, and also acknowledges his late wife, Pamela's interest, involvement and support of this Award. The award makes available bi-annual funding for a travel grant supporting a research program of surpassing merit. Due to COVID travel restrictions, it has not been possible to make this award. Applications for this award will be considered again for research projects commencing in 2023.

## DR JIM POYNER RESEARCH AWARD

This annual award was established by Dr Jill Poyner in memory of her late husband, Dr Jim Poyner. The Award specifically supports research in head and neck cancer research.



# RESEARCH PROJECTS COMPLETED

| RESEARCHER                                                                                                      | PROJECT TITLE                                                                                                                                                  |
|-----------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Dr Amro Farag<br>Prof Saso Ivanovski<br>Dr Saeed M Hashimi (no longer on project)                               | Development of novel 3D printed denture-base resin modified with drug-loaded mesoporous silica nanoparticles: Antimicrobial activity and biological evaluation |
| Dr Jilen Patel, A/Prof Robert ANTHONAPPA, Prof Nigel King,                                                      | Enamel microstructure of teeth with amelogenesis imperfecta: a Micro-CT and SEM study                                                                          |
| Dr Stephen Kidd, Dr Claus Christopherson, Dr Peter Zilm                                                         | Is the dysbiosis of the gut microbiome and subsequent inflammation caused by changes in the gut metabolome of pregnant mice with periodontitis?                |
| Dr Jilen Patel<br>A/Prof Robert Anthonappa<br>Prof Nigel King                                                   | Performance and validity of fluorescence systems in detecting caries in primary teeth                                                                          |
| Dr Yun Young (Vanessa) Cho<br>A/Prof Robert Anthonappa<br>Prof Nigel King                                       | Proximal caries experience in primary molars                                                                                                                   |
| Dr Jilen Patel /A/Prof Robert Anthonappa/ Prof Nigel King                                                       | A comparison of the remineralising potential of Australian toothpastes on primary tooth enamel using Micro-CT and Raman Spectroscopy                           |
| Miss Cheryl Fu, Mr Samuel Deng, Miss Irena Koneski, Dr Amr Fawzy Moussa                                         | The effect of photo-activated riboflavin on the bond durability of a universal adhesive to dentin                                                              |
| Mr Gareth Huang, Miss Monisha Vijayan, Miss Ashwati Ravindran, Dr Omar Kujan, Prof Camile Farah                 | Expression of NOTCH1, Cyclin D1, CDK4, and CDK6 in oral potentially malignant disorders using brush liquid-based cytology                                      |
| Dr Jinlong Gao<br>Dr Ky-Anh Nguyen<br>Prof Neil Hunter                                                          | Explore the role of gingipain adhesin domains in mediating porphyromonas gingivalis host cell invasion                                                         |
| Dr Jennifer Chantler<br>A/Prof Roy Judge<br>Dr Jaafar Abduo<br>A/Prof Joseph E A Palamara                       | CAD designed surface augmentations for endocrowns with different CAD/CAM Materials                                                                             |
| Mr Elton Sie Haw Wong<br>Mr Neeraj Anand<br>Mr Brandon Kah Kit Soh<br>Dr Omar Kujan<br>Professor Camile S Farah | Expression of immunomodulatory biomarkers in oral potentially malignant disorders                                                                              |
| Dr Kate Shearston<br>Dr Simon Andrew Fox<br>Prof Camile Farah                                                   | Comparative molecular profiling of oral potentially malignant diseases                                                                                         |

# RESEARCH PROJECTS COMPLETED

| RESEARCHER                                                                                                                                       | PROJECT TITLE                                                                                                                                                                                                                                                                                                 |
|--------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Dr Christine Seers Abu Sayeed<br>Mohammad Mahmud                                                                                                 | The effect of gingipain propeptides on P. gingivalis biofilm formation and the effect of gingipain propeptides on P. gingivalis host cell interactions Revised title: The Effect of Gingipain Propeptides on Porphyromonas gingivalis Biofilm Formation and the Effect of Gingipain Propeptides on Host Cells |
| Dr Dhana Govind Gorasia<br>A/Prof Paul Veith<br>Prof Stuart Dashper                                                                              | To characterise the interactome of the type IX secretion system protein components in Porphyromonas gingivalis                                                                                                                                                                                                |
| Dr Nada Slakeski<br>Prof Stuart Dashper<br>Prof Victoria Korolik ADIA Grant 2018                                                                 | Characterisation of Treponema denticola chemoreceptors                                                                                                                                                                                                                                                        |
| Dr Wisam Kamil (left project and replaced by Mr Sultan Aati)<br>Mr Sultan Aati (replacement)<br>Dr Amr Fawzy Moussa<br>Dr Victor Haruo Matsubara | Development of an injectable naturally-derived polysaccharide for regeneration of tooth supporting structure                                                                                                                                                                                                  |
| Mr Samuel Michael Bereza<br>Dr Sarbin Ranjitkar<br>Dr Robin Chi-Weng Yong<br>Dr Agnieszka Arthur<br>Prof Peter John Anderson                     | Phenotyping the craniofacial and dental features in a murine model of craniofrontonasal dysplasia (CFND)                                                                                                                                                                                                      |
| Dr Miriam Lee<br>Dr Cedryck Vaquette<br>Prof Saso Ivanovski                                                                                      | Application of a commercially available xenograft impregnated with Azithromycin for peri-implantitis treatment                                                                                                                                                                                                |
| Mr Jainish Patel<br>Mr Benjamin Shih<br>Dr Amr Fawzy Moussa                                                                                      | The in-vitro effect of artificial ageing and post-curing time on the physicochemical properties of 3D printed denture-base materials                                                                                                                                                                          |
| Miss Yashasvi Vaishnav<br>Mr Muhamed Agag<br>Miss Monika Smaga<br>Dr Omar Kujan<br>Prof Camile Farah                                             | Expression of immunomodulatory biomarkers in oral potentially malignant disorders                                                                                                                                                                                                                             |
| Dr Dhana Gorasia<br>A/Prof Paul Veith                                                                                                            | To understand the role of PorG in the assembly of the type IX secretion system of Porphyromonas gingivalis                                                                                                                                                                                                    |
| Dr Tami Yap<br>Prof Michael McCullough                                                                                                           | Specificity of a non-invasive oral cancer test in patients with cancers beyond the oral cavity                                                                                                                                                                                                                |
| Ms Emma Turner<br>Dr Kate Shearston<br>Dr Simon Fox<br>Prof Camile Farah                                                                         | Identifying novel diagnostic biomarkers in the proliferative verrucous leukoplakia transcriptome                                                                                                                                                                                                              |

# RESEARCH PROJECTS COMPLETED

| RESEARCHER                                                                                              | PROJECT TITLE                                                                                                                                                      |
|---------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Mr Peter Varga<br>Dr Laura Weyrich<br>Dr Peter Zilm                                                     | Development of an in vitro model of the supragingival microbiome                                                                                                   |
| Ms Fatemeh Zolghadr<br>Ms Maha Naeem Aman<br>Mr Nigel Tse<br>Dr Naisana Seyedasli<br>Prof Hans Zoellner | The molecular dynamics of radiation-induced tumour remodelling in human oral squamous cell carcinoma: focusing on the radiation-induced EMT in 3D tumour spheroids |
| Dr Jilen Patel<br>Prof Linda Slack-Smith<br>Dr Angela Durey<br>Dr Steven Naoum                          | Dental volunteering in remote Aboriginal communities                                                                                                               |
| Miss Alexandra Mutch<br>Dr Cedryck Vaquette<br>A/Prof Lisbeth Grondahl                                  | Growth factor eluting scaffolds for alveolar ridge preservation                                                                                                    |
| Mr Reuben John Staples<br>Dr Cedryck Vaquette<br>Professor Saso Ivanovski                               | A comparison of various melt electrospinning fibre arrangements for the promotion of functional periodontal ligament attachment                                    |
| Jenny Tan<br>Sarbin Ranjitkar<br>Warwick Teague<br>Peter J Anderson                                     | Dental phenomics associated with a Fibroblast Growth Factor 10 gene (FGF10+/-) mutation [                                                                          |
| Dr Karan Gulati<br>Prof Saso Ivanovski                                                                  | Dual-action titanium abutments: micro-nano scale topography and local protein release towards augmented soft-tissue integration                                    |
| Dr Tulio Fernandez-Medina<br>Dr Cedryck Vaquette<br>Dr Saso Ivanovski                                   | Immunomodulatory properties of three different chairside autologous blood preparations for the functionalization of PCL-3D printed constructs                      |
| Dr Kanika Jain (no longer on project)<br>Dr Cedryck Vaquette<br>Prof Saso Ivanovski                     | Chairside isolation and application of buccal fat pad derived mesenchymal stem cells for dental tissue regeneration: Thinking beyond drills                        |
| Dr Peiyan Shen<br>Dr Glenn Walker<br>Dr James Fernando<br>Prof Eric Reynolds                            | Erosive potential of caffeinated high energy drinks and probiotic drinks                                                                                           |
| Dr Sepanta Hosseinpour Dougolsar<br>Prof Laurence Walsh<br>Dr Chun Xu                                   | Comparative analysis of immunomodulatory impact of plasmid DNA-BMP-2 delivered by core-cone mesoporous silica nanoparticle versus recombinant BMP-2 to macrophages |

# RESEARCH PROJECTS COMPLETED

| RESEARCHER                                                                                              | PROJECT TITLE                                                                                                                    |
|---------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| Ms Zoe Kiriyan Lilli Stuckings<br>Dr Ian Musgrave<br>Dr Stephen Kidd<br>Dr Peter Zilm                   | Inhibition of dental biofilms using natural Quorum Sensing Inhibitors investigated with the xCELLigence® Real Time Cell Analyser |
| Dr Dragica Damjanovic<br>A/Prof Wallace Bridge<br>Dr Jinlong Gao<br>Dr Melissa Lowick Harvey            | Isolation and characterisation of bacteriophages for the biocontrol of Porphyromonas gingivalis                                  |
| Dr Joao Martins de Mello Neto<br>A/Prof Carlos Marcelo da Silva Figueredo<br>Dr Deepak Ipe              | Experimental periodontitis in rats with inflammatory bowel disease: an immunological and histopathology study                    |
| Dr Annika Wilson<br>Dr Ha Hoang<br>A/Prof Leonard Crocombe<br>Dr Silvana Bettiol<br>Dr Heather Bridgman | General practitioners' barriers and facilitators to implementing clinical practice guidelines on oral health during pregnancy    |
| Ms Xin Yuan Liu<br>M David Jian Liu<br>Mr Yun Hwan Lim<br>Prof Saso Ivanovski<br>Dr Pingping Han        | Periodontal bone changes in a genetic mouse model of hereditary hemochromatosis                                                  |
| Dr Antonio Celentano<br>Prof Camile Farah                                                               | The effect of anticoagulants on OSCC treatment: a comprehensive in vitro study                                                   |
| Dr Shwetha Hegde<br>Dr Stephen Cox<br>Dr Jinlong Gao                                                    | Errors of interpretation of dental radiographs among dental professionals: a survey                                              |

# RESEARCH PRIZES AND SCHOLARSHIPS

## TREBITSCH GRANT

In addition to the Dental Student Research Grants, the Foundation also offers an annual single grant known as the Trebitsch Research Grant. This was made possible by a generous donation from the late Prof Fred Trebitsch of the University of Sydney who, having undertaken some bacteriological research early in his career, had gained much satisfaction and knowledge from the experience. Prof Trebitsch proposed the Grant bearing his name to give others a similar opportunity. Recipients are also eligible for consideration for the Leonard Hansen Prize if their final report is submitted by the due date.

Dental students from the nine dental schools who wish to undertake a limited research project in microbiology, biochemistry, immunology or molecular biology are nominated to compete for this grant.

The 2022/2023 Trebitsch Research Grant was awarded to:

| AWARD WINNER                                                             | PROJECT                                                                                                           |
|--------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
| Ms Xiao Wen Chen<br>Mr Guan Hong Lee<br>Ms Jia Yi Ho<br>Dr Himanshu Aror | Evaluation of the impact of repeated sterilisation on the accuracy of digital scan bodies for implant impressions |

## COLIN CORMIE GRANTS

This scholarship was established by the ADRF Board of Directors in recognition of the significant role played by the late Colin Cormie OBE in the early history of the ADRF. This scholarship offers candidates who are willing to interrupt the undergraduate dental course for one year to undertake an intercalate degree, or part thereof, or who within three years after graduating as a dentist undertake a suitable one-year research-based program leading to a further degree, or part thereof.

Applications are made through dental schools.

A major force in the establishment of the Foundation, Colin Cormie's contribution is acknowledged through these grants which annually provide \$8,600 per grant at each of Australia's dental schools who can each nominate one applicant.

Participating universities

- The University of Adelaide
- Charles Sturt University
- Griffith University
- James Cook University
- La Trobe University
- The University of Melbourne
- The University of Queensland
- The University of Sydney
- The University of Western Australia

The Colin Cormie Scholarship was awarded to:

| AWARD WINNER                    | PROJECT                                                                                                                 |
|---------------------------------|-------------------------------------------------------------------------------------------------------------------------|
| Dr Sai Pabbati<br>Peter Thomson | Oral and Maxillofacial injuries: comparing the incidence and aetiologies in regional and metropolitan Australian cities |

# RESEARCH PRIZES AND SCHOLARSHIPS

## STRAUMANN GROUP AWARD

The Straumann Group Award is offered to research to improve knowledge in the area of implantology and tooth replacement solutions. The award is offered as an annual \$5,000 award. The Foundation is extremely proud to administer this award on behalf of the Straumann Group.

The 2022/2023 Straumann Group Award was awarded to:

| AWARD WINNER              | PROJECT                                                                                        |
|---------------------------|------------------------------------------------------------------------------------------------|
| Dr Tulio Fernandez-Medina | Reprogramming innate inflammatory response on dental implants towards advance osseointegration |

## DENTAL STUDENT RESEARCH GRANTS

A valuable function of the Australian Dental Research Foundation has been the provision of research grants for dental and oral health students. Such grants are offered annually to all Australian dental and oral health schools. Dental Student Research Grants changed from the name Undergraduate Student Grants to reflect that many Dental Schools were moving away from Undergraduate Programs. Oral health students would not be excluded from the Dental Student Research Grant. Up to two students each may be selected by:

- The University of Adelaide
- The Charles Sturt University
- Griffith University
- James Cook University
- La Trobe University
- The University of Melbourne
- The University of Queensland
- The University of Sydney
- The University of Western Australia
- The University of Newcastle
- University of Central Queensland
- Curtin University of Technology

Recipients receive the sum of \$2,200.00 each to support research and comprehensive reporting thereof. Each becomes eligible for the Leonard Hansen prize of \$500.00 if the requisite report is delivered by 31st July of the following year. A further \$500.00 is made available to the department in which the research is conducted for expenditure on consumables.

# BOOK OF LIVING MEMORIALS

The Foundation's Book of Living Memorials is a unique medium specifically designed for the purpose of perpetuating the memory of a colleague, friend or loved one.

The name of the deceased is inscribed, together with the name of the donor(s), in an elegant leather-bound book as a tribute.

The Book of Living Memorials is permanently displayed in the Secretariat of the Australian Dental Research Foundation, which is based in the Australian Dental Association headquarters at St Leonards. A letter acknowledging each memorial donation is forwarded to the bereaved family. All contributions are promptly acknowledged.

The Foundation acknowledges with grateful thanks, the assistance of Sydney oral and maxillofacial surgeon, Dr Bruce Edelman, who inscribes the Book of Living Memorials.

There are no Book of Living Memorial for this year.

# DONORS & SUPPORTERS

The Foundation is grateful for the donations that were received during the 2021/22 financial year. In addition to our annual donors who fund specific research grants, scholarships and prizes, we would like to acknowledge the following individual donors who collectively also enhance our ability to support dental research

|                     |                    |                           |
|---------------------|--------------------|---------------------------|
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The ADRF also gratefully acknowledges our donors who wish to remain anonymous

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