



IADR
International Association
for Dental Research
Australia & New Zealand Division

Translational dentistry: from the laboratory to the clinic




THE UNIVERSITY OF MELBOURNE

Translating basic and clinical research


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MELBOURNE DENTAL SCHOOL

What is happening at Melbourne Dental School regarding basic and translational research?

Metrics



MELBOURNE DENTAL SCHOOL

Melbourne Dental School only Australian dental school to receive an ERA rating of 5 in both 2010 and 2012


2010 and 2012 Excellence in Research for Australia - Go8 Results

Biomedical and Clinical Health Sciences Cluster

FoR Code 1105 - Dentistry	UMelb	Aust. Av.	Go8 Av.
2010	5	3.8	3.6
2012	5	4	4.2

5 (well above world standard)
4 (above world standard)
3 (world standard)
2 (below world standard)
1 (well below world standard)

Major strengths of School are:
1. Oral microbiology and immunology (*Porphyromonas gingivalis*)
2. Cariology (Recalcent – CPP-ACP technology)



MELBOURNE DENTAL SCHOOL

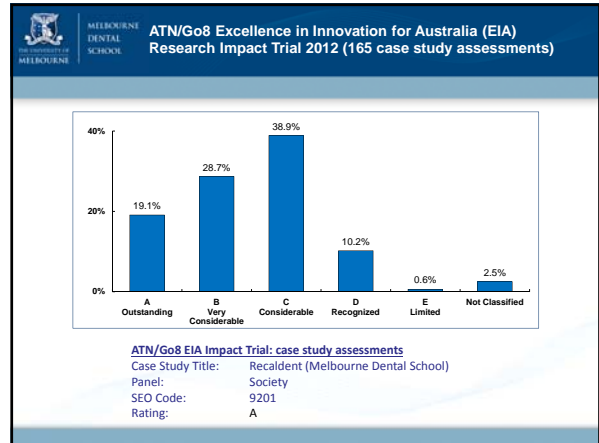
Benchmarking by the Melbourne Institute of the Melbourne Dental School with other national and international dental schools including two leading dental schools, Toronto and Harvard

Pubs	Cites	Cites/Pub
100 Melb	100 Melb	3.22 Melb
72 Adelaide	55 Q'ld	2.78 Q'ld
63 Q'ld	38 Adelaide	1.87 Sydney
124 Harvard	103 Harvard	2.69 Harvard
141 Toronto	147 Toronto	3.33 Toronto

MELBOURNE DENTAL SCHOOL

2014 Publications - MDS

Category	Accepted
Other	1
Book	0
Book chapter	1
Conference Proceedings	1
Journal article	98
Total	101



MELBOURNE DENTAL SCHOOL

Award winning research

- Innovation Award for Tooth Mousse Plus (Recalcent plus Fluoride)
 
- Innovation Award for a novel antibiofilm agent, Oxantel (*Porphyromonas gingivalis*)
 
- Innovation Award for Early Career Scientist Dr Nathan Cochrane
 

Translational Research



Mellor, Nature 2008



Definition

It is the process which leads from evidence based medicine to sustainable solutions for public health problems

Lean MEJ, Mann JI, Hoek JA, Elliot RM and Schofield G. Translational Research: from evidence-based medicine to sustainable solutions for public health problems. *British Medical Journal* 2008;337:a863



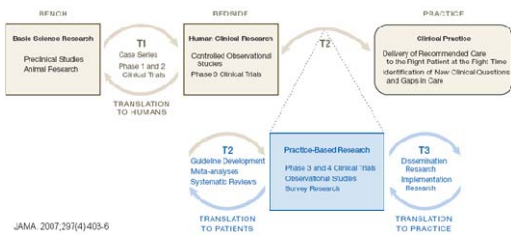
This all sounds easy

“At no other time has the need for a robust, bidirectional information flow between basic and translational scientists been so necessary”

Translational and Clinical Science – Time for a New Vision



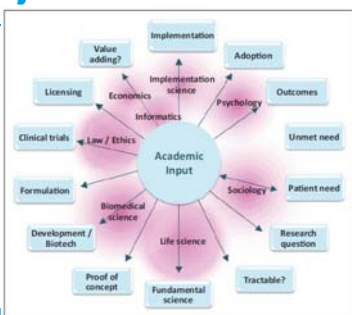
Translational Research



JAMA 2007;297(4):403-6



Is it just clinical scientists?



The Life Sciences Translational Challenge:
The European Perspective

Richard W. Busby, PhD¹ and Jack W. Simons, PhD²



Collaboration is the foundation

- First - identify all of the potential partners necessary to undertake research and its clinical implementation.
- Next – Engage patients, clinicians, clinical facilities, academia, industry and the government

Collaboration as a foundation for advancing research in personalized medicine in cancer care

Personalized Medicine (2010) 7(6): 660-675



Collaboration is the foundation

- To be successful, the partners must work collaboratively.
- This will allow easier access to new technology, more streamlined and efficient implementation of clinical research, facilitation of necessary government review, and finally, allow for the delivery of these technologies to the patients and their clinicians.

Collaboration as a foundation for advancing research in personalized medicine in cancer care

Personalized Medicine (2010) 7(6): 660-675



So you have a good idea!

Supportive science – *in vitro* to RCT

Protection of IP - \$ split with University?

When do I start speaking to possible industry partners?

Do I run a Dutch auction re licencing?



Translational Research - options

Engagement of the community re the 'problem'???

Do I involve 'consumers' from the beginning

What do they see as important?

Consumer driven research

Funding?? Commercial and collegiate partners



Staff, Facilities and Funding



Funding

- CRC
- NHMRC
- ADRF



Australian Government
Department of Innovation, Industry, Science and Research



- **The CRC Program commenced in 1991. The objective of the Program is:**
- To deliver significant economic, environmental and social benefits to Australia by supporting end-user driven research partnerships between publicly funded researchers and end-users.....
- Link researchers with industry to focus R&D efforts on progress towards utilisation and commercialisation. The close interaction between researchers and the users of research is a key feature of the Program.





<http://www.crcoralhealthscience.org.au/>



Main Research Areas

- Periodontal disease – Vaccine
- CPP-ACP



Recaldent



Industry Considerations

- Support of existing products
- Development of new products
- They don't think like us!
- Control of IP / competing interests
- Management of 'users' re scientific rigour



Translational Research & Industry

Commercial reality and commercial competitiveness

Support of commercial partners

Loss of 'ownership'

Contractual limitations / failure to act



Not all good ideas go forth!

Original Paper

Caries Research

Caries Res 2010;44:33-40
DOI: 10.1159/000272522

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Casein Phosphopeptide-Amorphous Calcium Phosphate Incorporated into Sugar Confections Inhibits the Progression of Enamel Subsurface Lesions in situ

G.D. Walker F. Cai P. Shen G.G. Adams C. Reynolds E.C. Reynolds

Cooperative Research Centre for Oral Health Science, Melbourne Dental School, Bio21 Molecular Science and Biotechnology Institute, University of Melbourne, Melbourne, Vic., Australia



Practice – based Research

evident

Dental Practice Based Research Network

<http://www.evident.net.au/>



Lobby at any opportunity



Conclusions

Its not just the research!

Evidence-based education of students and clinicians

Engagement of the community

Engagement & support of 'commercial' partners

Development of new partners & keeping old ones

