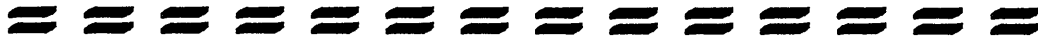




# Dental Research News

Research Development Office

(902) 424-1675



### The sober Truth

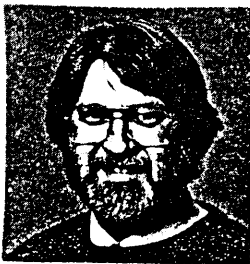
For the members of the successful MRC Programme Grant application it is a sobering thought that research funds do not create research data or innovative thinking, the words of Langley et al. come to mind "There is no powerful factory method- no assembly line- for the manufacture of scientific truth". Research success is not measured in dollars but in the quality of the original thinking, the dedicated observations and innovative conclusions and discovery. Newton did not receive an MRC grant to help him discover the laws of gravity, and after 301 years his deductions may not even be correct.

Derek Jones.

### PUBLICATION POLICY

President Clark has announced a new policy regarding non-academic publications originating within the University. The policy aims to try to ensure that such publications reflect the nature and identity of Dalhousie University and attain a high quality and standard.

While the Dental Research News is intended for an in house Dental Faculty audience it may well come under the new policy. The Dental Research Development Office welcomes any suggestions from the new Editorial Board which will be reviewing publications, and will give full cooperation in following the new policy.



A winning team with a \$712,591 dollar smile. Top left inset Robin Howell, top right inset Bruce Graham, seated left Derek Jones, Barbara Harsanyi, standing Choong Foong, seated Michael Mezei(Pharmacy) Jan Kwak (Chemistry) and Elliott Sutow.

UK STUDENT VISITORS

This year has seen a record number of five students from the UK spending the summer involved in laboratory research as part of their elective programmes. The first to arrive on the 25th June were Rhona Liston and Diedre Barrett from the University of Dundee. On the 25th July Sean Daley and Andrew Wright also from the University of Dundee and Philip Tangri from the University of Birmingham arrived. The four from Dundee are working on research projects dealing with analysis of composition of glass ionomer cements, as well as evaluating the tensile bond strength of freshly mixed glass ionomer bonded to an aged glass ionomer surface.

Philip Tangrie is involved with a project dealing with the evaluation of modulus of elasticity of various dental restorative materials. These elective research programmes provide a most interesting experience for the British students, in addition to the research experience they also have contact with the North American way of life and have opportunities to meet and work with students and exchange ideas and compare and contrast the Canadian and British dental programmes.

=====

Preventing Bacteriodes gingivalis

A new composition which contains gamma globulin as an effective ingredient has been patented. It is claimed to prevent Bacteriodes gingivalis from colonising the mouth. The object of the use of the compound is suppression of bacterial colonisation. The compound may be incorporated into tooth pastes along with conventional ingredients or it may just be as some form of paste to apply to the oral tissues. Inventions such as this call for clinical trials, why not plan to get involved with a project of this type? (US Patent No. 4,714,612(22.12.1987)).

=====

DATES TO REMEMBER

- 1) Deadline for AADS abstracts to be submitted is August 31st 1988. Meeting to be held March 11-15th 1988 in San Francisco CA. USA.
  - 2) Deadline for the AADR abstracts to be in Washington is September 30th 1988. Meeting to be held March 15-19th 1989 in San Francisco CA. USA.
  - 3) Deadline for IADR abstracts to be in Washington is 2nd January 1989. Meeting to be held in Dublin Ireland, June 28th-July 1st 1989.
  - 4) Deadline closing date for receipt of applications for NEW PROJECTS to NHRDP is the 1st December.
  - 5) Deadlines for MRC applications are:
    - a) New Operating grants Sept. 15th.
    - b) Renewal grants November 1st.
    - c) Equipment grants September 15th and November 1st.
    - c) History of Health Sciences Oct.1st
    - d) Dental Fellowships Dec. 1st
- =====

Reducing the Use of Test Animals for Oral and Dermal Toxicity

The Council of Ministers of the European Economic Community have received a report from the European Community Commission which calls for greater co-ordination of the development of new biological testing techniques which will reduce the use of test animals. Some of the toxicological tests which are required under EEC laws, can only be carried out using animals.

The Commission accepts that there is little immediate prospect of modifying the tests required under Community law but points out that it will soon be publishing a directive to introduce the latest testing guidelines for oral and dermal toxicity and eye irritation.

=====

THE HISTORY OF OUR MRC GRANT FUNDING

The total of all MRC Operating and Major equipment funds received by the Faculty of Dentistry amount to \$1,261,013. In reviewing the total MRC funding of the Faculty of Dentistry we can see that in spite of severe competition there has been a steady growth in the modest research funding received by the Faculty of Dentistry from the Medical Research Council in the form of Operating funds and Major Equipment Grants since 1969. While the external funding is not essential in order to conduct research it does significantly improve the chances of producing some worthwhile results. Some research topics do not require large amounts of funding in order to conduct a project, we should not therefore measure research success in terms of dollars. However, some indication of the level of research activity can be gained by looking at the external MRC funding awarded to our Dental Faculty.

Total MRC Funding Obtained by the Faculty Of Dentistry

1969-71	\$ 14,000	Oral Biology
1972-74	15,000	Oral Biology
1976-78	60,043	Biomaterials
1979-81	55,042	Biomaterials
1982-84	108,433	Biomaterials
1985-88	170,802	Biomaterials
1986-89	125,102	Oral Biology
1988-91	712,591	Programme Grant

ANNUAL RESEARCH REPORT

Please make sure that you forward to the Research Development Office details of your publications and abstracts of papers presented at meetings for inclusion in the Annual Research Report.

GOOD INTENTIONS

The National Health Research and Development Programme has recently put out a notice encouraging researchers to get in contact with the programme staff before making a formal application for research funding. The notice suggests that researchers are to be encouraged to send in a short two or three page letter of intent prior to preparing a full research application. This allows the researcher to sound out the interest in the project by Health and Welfare Canada well in advance of the deadline of December 1st. Not only can the researcher obtain useful feedback but it can also save valuable time in the review process. NHRDP say that letters of intent which are not mandatory must be sent no later than August 15th in the year in which the proposal is to be submitted for the formal competition.

For further information call the Research Development Office 424-1675, or call Sheena Lee of the NHRDP, (613) 954-8543.

A TAXING THOUGHT

Mr. Gladstone when he was Chancellor of the Exchequer in Victorian England, once asked Michael Faraday what was the use of his discovery of electromagnetic induction? Faraday replied "I know not sir, but I'll warrant one day you'll tax it."

RESEARCH??

"Every scientist, having inherited a large body of knowledge, including theories, searches for additional regularities within that knowledge and confronts the knowledge with new laws that are discovered" Langley et al.

TO SEARCH AGAIN

Our primitive forefathers studied objects and phenomena around them and endeavored to understand what they saw, they tried to make useful statements about what they saw. No doubt they would make statements which they considered illuminating when relating unknown observations to that which was already known. Modern scientists use the same methods of careful observation and comparison with previously established facts.

Last week it was reported that a group of scientists at the Oak Ridge Observatory in Massachusetts had discovered a new solar system when making routine measurements on a star. The planet is said to be 30,000 times the size of Earth but probably lifeless since the surface temperature is several hundreds of degrees. This is the first confirmed evidence of a planet orbiting a star other than our own sun. Last week also saw a report that geophysicists at the University of California may have discovered a force that strengthens the pull of gravity. This discovery would suggest that Sir Isaac Newton's 301-year old law of gravity might be wrong since the data cannot be explained by Newtonian gravity laws.

The scientific methods which lead to such discoveries as new planets, or that the 301 year old law of gravity may be incorrect are the same as those used by our early ancestors careful observation and recording of data followed by an attempt to make useful statements about what they saw based upon comparison with previous observations.

The future of dentistry depends upon research (ie. to search again?). Without the research which is necessary in order to provide knowledge, the professional application of new and/or improved materials and techniques will come to a halt. We will not discover a new solar system or disprove the laws of gravity in our clinic or research laboratory, however, the implications of our research observations and conclusions may be very significant for the future of dentistry and the biomedical field.

=====

Dental Research News from the UK.

Gloomy news that two dental schools will close in the UK is linked to changes in the method to be used to fund universities. The University Grants Committee which makes recommendations on the funding of universities is to be replaced by the University Funding Council and the universities will no longer be funded as they have been in the past.

A new element in the funding procedure for deciding on the recurrent grant will involve payment of up to 25% of the funds based on the research achievements. This will result in those dental schools with substantial research activity being granted extra funding. One suggestion has been that in future there will be Teaching and Research Dental Schools and others which will only be designated as Teaching only Schools; the latter being funded at a much lower level.

=====

The Laws of Science

"All successful sciences have laws, and without them research tends to be dissipated into simple measurement of what is already known"

R.D.Bagnall

=====

"If you don't research at a fairly high level, you can't assess other people's technology and you're at the mercy of any salesman".

Allan Sharp, Prof. Physics, UNB.

=====

SCIENCE CRISIS

In 1985, Canada spent only 1.4% of its gross domestic product on research and development, compared to 2.5% in Japan, West Germany, and the United States. Canada employs about a quarter as many scientists and engineers as its major competitors.

=====

### A STAINLESS REPUTATION

The first students enrolled in our dental programme in Halifax did not have to deal with any questions involving stainless steel in their "biomaterials curriculum". Five years after the founding of the Maritime College of Dentistry in Halifax in 1908, a metallurgist in Sheffield England by the name of Harry Brearley was conducting some research on gun barrels. Being a good scientist who always had a sharp eye with a dedication for keen observation he noticed some discarded samples on a scrap heap, which had not rusted like the rest. From this chance observation of discarded samples containing about 14% chromium, Brearley pioneered so called "rustless" steel which became known as stainless steel.

From this event on August the 20th 1913 75 years ago, Harry Brearley had little thought at the time that his discovery of an improved gun barrel alloy would have an impact on dentistry. Stainless steel was once extensively used in prosthodontics as a denture base material in which it was swaged between die and counter die. The use of stainless steel as needles and various dental and surgical instruments and in orthodontics in the form of wire and bands have had a major impact on dentistry. In all of our research we should remember that observation and analysis are the key to success. We should aim to develop intellectual curiosity, since very many important discoveries are arrived at by chance, as was the case with Harry Brearley in 1913.

=====

### RESEARCH STIMULUS

"Successful sciences progress by the overthrowing of cherished beliefs, and it is the beliefs themselves that provide the stimulus for this overthrow"  
R.D.Bagnall

=====

### VIRUS CAN MUTATE TO BLOCK ANTI-VIRAL DRUGS

Research published in the June issue of Proceedings of the National Academy of Sciences by Dr Michael Rossmann of Purdue University and colleagues at the University of Wisconsin and the Sterling Winthrop Research Institute at Rensselaer N.Y., identifies one of the changes that occurs in the common cold-causing rhinovirus 14 when it is treated with an anti-viral drug.

Rossmann's team was the first to map the chemical structure of the protein sheath that surrounds the rhinovirus 14. They identified a unique pocket or fold on the sheath to which the anti-viral drug binds. When the drug binds to the sheath the virus is prevented from releasing its primitive genetic material into the host cell. This procedure would allow it access to the genetic material of the host cell which is vital in order for the virus to reproduce.

However, some virus when treated with the drug undergo a very simple chemical mutation which allows them to block the effect of the drug. An understanding of the mechanism of molecular mutation which allows the blocking of the drug is a crucial step in the search for a cure for the common cold.

=====

Do you have any "RESEARCH NEWS ITEMS" which you would like to share with your colleagues?. If so, please forward such items to the Research Development Office, or call (902) 424-1675