

# Dental Research News

Research Development Office, (902) 424-1675

## JOURNAL OF DENTAL RESEARCH

Did you know that the JDR has accepted more clinical science manuscripts for publication than papers dealing with dental materials science. The total of clinical papers is 39.3 %whilst that for dental materials science is 38.0%. (Statistics compiled by Colin Dawes, Editor of JDR).

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## CHANGING TRENDS

"Never has there been an era as frustrating, yet as challenging, as that of today, particularly as it relates to an avalanche of new materials for all phases of dental practice and dramatic changes in the mode of usage".

Ralph W. Phillips .

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## KELLOGG LIBRARY

Did you know that the Kellogg library spent \$63,664 on books and \$442,734 on journals last year. The total spent by the Kellogg Library on books and journals has increased by almost 15% between 1984-85 and 1986-87.

However, the total number of books and journals has decreased.

## Myxococcus Xantbus

A new antibiotic substance has been developed by Professor Eugene Rosenberg in Tel Aviv University. The antibiotic is said to be effective against gingivitis. Antibiotic TA is produced from a strain of myxobacteria called *Myxococcus Xantbus*; it is a colourless substance which is highly soluble in ethanol, but only sparingly soluble in water. Unlike other antibiotics, it binds tightly to a large variety of body tissues, and retains its bacterial potency while so bound. A very strong bond is seen when applied to teeth and gingival tissue.

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## HOPE

The Research Development Office was set up with the hope that we would be able to develop a computer data base for research and scholarly information. Due to lack of funding this has not been possible to-date. However, the idea has not been forgotten and we have hope for the future.

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**1st Research Development Seminar is on Tues. Oct 4th**

## AN ABSTRACT PROBLEM

The instructions for the preparation of abstracts for the AADR meeting caused quite a panic for those preparing their last minute research submissions for the meeting to be held next March in San Francisco. The problem centered upon the interpretation of the size of the typeface to be used. The sample abstract provided in the instructions on page 4 did not help since it did not comply with the specified ten characters per inch indicated on page 8 of the instructions. Initial attempts using the Macintosh proved to be difficult in terms of complying with the regulations. A telephone call to the IADR Central Office confirmed that the 10 characters to the inch was firm and that a maximum of six lines to the inch was also required. Some switched to the use of the old fashioned typewriter others used the HP 150 system. Heated discussions took place over coffee about the specific definitions of "point" and "typeface" Robin Howell provided a Websters dictionary definition of "point" as a unit of about 1/72 of an inch used to measure the belly-to-back dimensions of printing type. Websters dictionary also defined the term "pica" as a 12 point type which was said to be a unit of about 1/6 inch used to measure typographical material. This was said to be a typewriter type which provides 10 characters to the

linear inch and six lines to the vertical inch.

Finally, Amid Ismail came to the rescue of the Mac lovers by calculating that the #12 font using Courier complied with the requirements. For those who would like to use the Macintosh to produce their IADR abstract Amid Ismail has also provided the settings using Mac Word as follows: top 0.75 inch, left 0.55 inch, right 1.25 inch, text type shifted 0.1 inch, title type shifted one inch.

It is likely that these same regulations of 10 characters to the inch will also apply to the abstracts for the IADR meeting next June. The experience of the last minute panic and final solution provided by Amid will serve us well for the next meeting. A total of eight papers were submitted for the meeting, the expectation would be that a larger number of papers will be submitted to the IADR meeting in Dublin. The deadline for the IADR abstracts to be in Washington is 2nd January 1989. The meeting will be held in Dublin Ireland, June 28th-July 1st 1989. You should note that the format for abstracts has changed, the title should be placed first followed by the authors names. Proof read before mailing since there is now a \$50 fee for all replacement abstracts.

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## IN SEARCH OF EXCELLENCE

The long awaited form and regulations for the final submission of the application for the federal National Centres of Excellence competition has been produced. The letters of intent have been submitted to Ottawa. The deadline for the final detailed proposal submission is November 30th 1988.

This competition provides us with an opportunity to develop new relationships between institutions and enhance relationships within and between the various university departments, and above all to institute and develop interactions between university faculty and industrial companies.

We all recognize that the increasing complexity of science and technology dictates that individual scientists are unlikely to have the breadth of knowledge necessary to provide all of the answers and solutions to specific problems. A team of multi-disciplinary scientists have a much greater chance of success.

The estimate of the number of groups across the country planning to submit applications for the Networks of Centres of Excellence varies between 270 and 400, since it is anticipated that only 10 to 15 of these centres will be funded out of the \$240 million budget it is clear that the competition will be very severe indeed. Dalhousie faculty

members are involved in preparing five or six separate submissions in different areas.

Our own Faculty have been intensively involved with the Centre of Excellence programme for the past 5 or 6 months. Considerable planning has gone into this initiative and we believe that our programme in "Biomaterials" has a well focused theme of national importance. We have held meetings with individuals at other institutions from across Canada. Our proposal involves 14 principal investigators together with a large number of co-investigators from 12 universities in five provinces. In Nova Scotia we have five universities collaborating, four of the principal investigators are from Dalhousie and one from St Francis of Xavier.

The arguments in favour of a Centre for Biomaterials are quite strong, since some \$2 billion is spent each year by Canada on biomaterials and devices, with 80% of this being imported. In addition we also have an aging population which implies that the costs are going to be increasing in future years. We have stated in our letter of intent that Canada has an obligation in terms of both social and economic benefits, to support this programme with the research, technological innovation and industrial development in the  
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area of biomaterials which our health care system requires.

We have stated that the overall objective of the programme of the Biomaterials Networks of Centres of Excellence is to build on the existing expertise and ongoing basic and applied research work of our university-industry programmes. The Network will bring together a multi-university inter-disciplinary team of investigators and co-investigators of diverse backgrounds and disciplines. One important aspect is that the programme will link together the only two research groups in Canada (at Toronto and Dalhousie) with MRC Programme Grants in the area of Biomaterials. The estimated proposed four year budget for the Biomaterials Networks of Centres of Excellence is just in excess of \$15 million. This funding could improve health care and reduce costs as well as providing some industrial growth due to technology transfer and development of spin off companies.

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Do you have any **"RESEARCH NEWS ITEMS"** which you would like to share with your colleagues?. If so, please forward such items to the ResearchDevelopment Office, or call 1675

## **A FAT TOME OR PUBLISHED PAPERS?**

An interesting paper by Bernard Dixon (The Scientist 2(5):13,88) dealt with the purpose of doctoral research. It was pointed out that such research is treated very differently in different institutions. The question was asked is the purpose to train candidates in research methods, and to assess their understanding of methods and material or phenomena studied? or must the student actually solve a given problem or at least make significant advances in understanding?. The question was asked is publishing of a doctoral work an essential test?. Dixon was particularly scathing about "Traditional Doctoral Theses" which he described as being "prefaced by immense literature surveys, weighed down by descriptions of methods that can be found in the relevant hand-books, and recording the minutiae of at least three years' effort (plus self indulgent, undisciplined discussion)" Dixon asks the question should papers be published before the degree is awarded?. He suggests that peer-reviewed papers could form part of the thesis. In support of this viewpoint he quotes the distinguished British ecologist Kenneth Mellanby who has stated that his own doctoral thesis was a reprint of a paper in the Proceedings of the Royal Society.

**GRANT TO AID CENTRE OF EXCELLENCE**

We are pleased to announce that a grant valued at \$20,000 has been obtained from ACOA and the Department of Industry Trade and Technology. The funding is to support the cost related to the preparation of a proposal for the National Centres of Excellence in Biomaterials.

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**SIGNIFICANT STATISTICS**

"As far as many statistical series relating to activities of mankind are concerned, the date that divides human history into two equal parts is well within living memory.. Almost as much has happened since I was born as happened before"

Kenneth Boulding.

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**FAITH IN STATISTICS**

"Do not put your faith in what statistics say until you have carefully considered what they do not say"

William W. Watt.

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**RESEARCH PLAN**

"A good problem statement often includes:

- a) What is known,
- b) what is unknown, and
- c) what is sought".

Edward Hodnett.

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**NEW MEMBER FOR RESEARCH TEAM**

The Department of Applied Oral Sciences is pleased to announce the appointment of Dr.Borowy-Borowski as a member of the research team working on the Biomaterials MRC Programme .

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**THE ROLE OF CHEMISTRY**

The American Chemical Society sponsored a day-long conference in Washington last June in which it highlighted the central role of chemistry in biotechnology and in materials science. All participants of the blue-ribbon panels stressed the common theme: that it is the ability to understand and manipulate matter at the molecular level that is behind the revolution taking place today in both biotechnology and materials science. In our own biomaterials laboratory we are involved with synthesis of both polymers and glasses in which we are manipulating matter at the molecular level.

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**SOFTWARE COLLECTIONS**

Did you know that Computing Services is storing several large microcomputer software collections on the VAX 8800 for easy access by the Dalhousie community. Microcomputer users may use KERMIT or other file transfer programmes to transfer from the VAX to their microcomputer.

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**DRAWING THE LINE, A GRAPHIC STORY**

Practically anything imaginable can be created by computer graphics on the screen. The International Standards Organization (ISO) issued an important standard in 1985 (ISO 7942) which gave a set of functions for computer graphics known as the Graphic Kernel System. The standard aims to solve some of the problems of interchangeability of graphics programmes.

Whilst standards cannot improve on the ingenuity of the original graphic artist it can solve some of the problems. The ISO Graphic Kernel System (GKS) provides a set of functions for two-dimensional pictures. The Standard (ISO 7942) describes a set of operations for producing and manipulating lines, polygons and text, it does not bind these concepts to any particular language. In fact the introduction to the ISO Standard describes the system as an interface "at such a level of abstraction that hardware peculiarities are shielded from the application programme". The fundamental functions are known as "primitives" such as *polyline* which is intended to describe instructions for a set of connecting lines, when the instructions have been written on one computer and transferred to another with a different coordinate system. Other

primitive functions are known as *fill area* which deals with a polygon filled with colour or hatching, another is called *polymarker* which refers to some marked point without stating how it is marked. A further primitive is called *text*, which deals with putting characters at a given position, this is said to be the most complex due to the variety of fonts which can be applied to any one character. A graphic account of this system has been written by David Biggs (Information Technology, published by the British Standards Institution.)

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**EDUCATIONAL RESEARCH**

An educational research study club is being set up within the faculty. Any faculty members who would like to participate should contact Nancy Prowse (8861).

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**DATES TO REMEMBER**

The 18th Annual Session of the American Association for Dental Research will be held in San Francisco, California March 15th-19th 1989.

Society for Biomaterials 15th Annual meeting Lake Buena Vista, Florida, April 28th-May 2nd.1989.

The 12th Congress of the International Association for Dentistry for Children, Athens ,Greece, June 1st-5th 1989.

The 67th General Session IADR Dublin, Ireland. June 28th-July 1st.

The IADR /AADR in 1990, is in Cincinnati, (March 7th-11th).

## **EUROPEAN & CANADIAN RESEARCH STIMULATION**

The Canadian Advanced Materials Forum held in Toronto in July was attended by Derek Jones. Dr. Joseph Wurm Director of the European Research on Advanced Materials was one of the keynote speakers, he outlined the process by which the European Community has identified and funded cooperative research between member countries. The programme will receive \$117 million over the next four years, industrial partners are to provide the matching funds. This message sounds very familiar to Canadian ears. The EURAM programme is focusing its research efforts on five specific areas: light metal alloys, superconductors, engineering ceramics, and polymers and organic matrix composites.

The luncheon speaker at the meeting was Elizabeth Shaver Director of the Council of Science and Technology Ministers of MOSST. Ms. Shaver spoke about the Federal Government initiative to fund Networks of Centres of Excellence within the Canadian National Science and Technology Programme.

The \$240 million programme has been created to: stimulate leading-edge, fundamental, and long term applied research of importance to Canada. The aim will be to;

1) develop and retain world class scientists and engineers in

technologies critical to future industrial competitiveness;  
2) integrate Canadian research technology and development into national networks with participation from across Canada based on recognized excellence;  
3) accelerate the diffusion of advanced technological knowledge to industry. Ms Shaver stressed that the key to this programme is excellence recognized internationally. It is a programme with specific objectives and selection criteria the key however is the development of excellence both of the researchers and the research programme. The National Centres of Excellence programme is a major component of Innovaction.

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### **WHERE IS IT ?**

Founded by Spanish colonizers in the same year as the Declaration of Independence in a move to block Russian settlers from occupying New Spain!. The place is the location of the 1988 AADR and AADS meetings next March.

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### **KNOWLEDGE**

"Knowledge is of two kinds. We know a subject ourselves, or we know where we can find information upon it".

Samuel Johnson (1709-1784)

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### **HELP**

"I can evade questions without help; what I need is answers".  
John F.Kennedy.