

The Network for Oral and Bone Health Research: A Unique Canadian Research Model



The Network for Oral and Bone Health Research is a successful, oral health-related research organization. This model of uniting researchers in oral health across institutions is unique in Canada and an excellent example of how bringing together individuals and small groups can benefit both oral health research and the members of the network.

The network is funded principally through a grant from the Fonds de recherche en santé du Québec (the provincial health research funding agency), but it also receives significant financial support through partnerships with la Fondation de l'Ordre des dentistes du Québec (FODQ; a charitable foundation working with the Quebec dental licensing body), the Quebec Dental Surgeons Association (QDSA), Sogedent Assurances, the faculties of dentistry at Laval University, the University of Montreal and McGill University, and the faculty of medicine at McGill. Since its establishment over 10 years ago, the network's budget has increased from \$100,000 to approximately \$500,000 a year. This money is used for a wide variety of programs for members and their students.

What Does the Network Do?

The mission of the network is to develop and disseminate new knowledge in oral and bone-related health and, in so doing, reduce health inequalities and promote the quality of

life of the population of Quebec. To do this, the network focuses on 3 principal areas:

- training, recruitment and retention of outstanding researchers in oral and bone-related health in Quebec
- development and support of research infrastructure to facilitate the work of the network's members, making them highly competitive when they seek research grants elsewhere
- dissemination and exchange of knowledge, information and opinions on oral and bone-related health among researchers, health care practitioners, health service decision-makers and the general public.

During the network's 12 years of existence, it has made a major contribution to building Quebec's capacity in the field of oral and bone-related health research. It has helped train many research students and "kick-start" the careers of many young researchers in universities, hospitals and other institutions across the province. It does this through a range of programs:

- Scholarships for students doing research in a variety of fields: genetics, cell biology, microbiology, pathology, clinical and epidemiologic research and biomaterials. In 2002–2006, the network provided scholarships to 12 PhD or MSc students in Quebec's dental faculties, plus about 24 dental students doing summer research projects.
- Funding for students to attend conferences and present their work, allowing them to hear and interact with international experts in their fields. In 2002–2006, the network funded over 40 dental and graduate students.



Dr. Paul Allison, director of the Network for Oral and Bone Health Research

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Who is in the network?

The network is made up of 62 researchers working in universities, university hospitals and research institutes throughout Quebec, covering a wide variety of fields, including cell biology, oral microbiology, neurosciences, mineralized tissues, biomaterials, dental caries, periodontal diseases, tooth loss and dental prostheses, oral cancer, osteoporosis and access to health care.

The network is led by an executive committee with representatives from the faculties of dentistry at the University of Montreal (Dr. Arlette Kolta) and the faculty of medicine at McGill University (Dr. Janet Henderson) and 4 members from various research fields and institutions. The committee's chair is network director, Dr. Paul Allison (faculty of dentistry, McGill University), who is assisted by a coordinator, Ms. Marie-Claude Loignon, who is responsible for the day-to-day running of the organization.

Network members are organized into 4 groups, largely according to their training and areas of expertise: oral biology and ecology, neurosciences, clinical and public health research, and regenerative medicine and mineralized tissues. They are led by Dr. Mahmoud Rouabhia (Laval University), Dr. Pierre Blanchet (University of Montreal), Dr. Christophe Bedos (McGill University) and Dr. René St-Arnaud (Shriner's Hospital, Montreal), respectively.

- “Start-up” money to allow newly recruited researchers to set up projects and start work, rather than having to await the results of grant competitions. In today's increasingly competitive world, this helps Quebec's faculties of dentistry attract excellent researchers who may otherwise go elsewhere. In 2002–2006, the network supported recruitment of 12 new researchers to the province's 3 faculties of dentistry.
- Research grants for new researchers who have excellent ideas, but need help before they are eligible for large grants from the major research funding agencies. This is one of our most successful areas of investment. In 2002–2006, the network provided approximately \$777,500 in funding to its researchers, which in turn helped them successfully apply for ap-

proximately \$29 million in research grants from a variety of federal government and private research funding agencies.

- Funding to help maintain laboratories, equipment, research staff and other routine materials and services required to keep researchers performing excellent research.
- Funding for organizing meetings, conferences, symposia, etc. In 2002–2006, the network helped support 17 national and international scientific meetings in Canada, in addition to research/scientific days at the 3 dental faculties in Quebec.
- Funding for researchers to interact with health professionals, politicians and the public. In the last 3 years, the network has provided \$120,000 toward this work.
- A forum for interaction, debate, sharing of ideas, initiation of collaboration and promotion of oral health-related research.

What Are Network Members Investigating?

To build research capacity and retain excellent researchers, the network has found that concentrating on a few areas and encouraging its members to work together in those areas is a more successful strategy than spreading ourselves thinly and widely. Currently, members are focusing on 3 areas of research that require cooperation among people from a variety of backgrounds to successfully address the problems. Here are some examples of the amazing projects currently being carried out by members of the network.

- **Links between oral and general health** — Drs. Belinda Nicolau and Simon Tran are investigating the link between dental caries and periodontal disease and obesity in adolescents; Drs. Jocelyne Feine and Jose Morais are investigating the link between the use of dental prostheses and nutritional status.
- **Determinants of health and disease** — Drs. Geoffrey Hendy, René St-Arnaud, Florina Moldovan and Alain Moreau are investigating the genetic determinants of bone disorders; Drs. Paul Allison, Belinda Nicolau and Eduardo Franco are investigating the interplay of genetic, microbiologic and psychosocial factors in the etiology of oral cancer.
- **Regenerative and rehabilitative means to restore oral and bone health** — Drs. Mahmoud Rouabhia and Simon Tran are investigating means to regenerate salivary gland and other oral cellular tissues; Drs. Pierre Blanchet and Pierre de



Roozbeh Khosravi (left), a graduate student and member of the network, discusses his research with Dr. James Lund, dean of McGill University's faculty of dentistry, while Dr. Christophe Bedos judges other posters.

Grandmont are investigating the use of dental prostheses to treat orofacial dyskinesia; Drs. Jake Barralet, Tim Head, Edward Harvey and Janet Henderson are developing new osseointegrative materials; Drs. Paul Allison, Jocelyne Feine, Belinda Nicolau and Eduardo Franco are testing a treatment to help rehabilitate people with head and neck cancers; and Drs. Jean-Marc Brodeur, Christophe Bedos and Paul Allison are investigating issues concerning access to dental care among the poor.

How Does the Network Interact with the Dental Profession?

In many fields of health and health care, researchers do not work together with clinicians and patients. Most researchers' approach to an issue is through fundamental scientific understanding rather than by trying to understand the problems dentists and their patients experience on a day-to-day basis. In our network, we are fortunate to have a significant number of members (about a third) who are dentists and several who are physicians or other health professionals. Nevertheless, this issue of the separation of research from health care is increasingly recognized as a problem and many research funding agencies are demanding improved knowledge translation, i.e., "the exchange, synthesis and ethically sound application of knowledge — within a complex system of interactions among researchers and users — to accelerate the capture of the benefits of research for Canadians through improved health, more effective services and products, and a strengthened

health care system."¹ People who fund health-related research want to see the knowledge generated translated into improved health and health care. They also want to see clinicians, the public and politicians informing researchers of areas of interest for research projects.

Responding to this movement and, indeed, in its vanguard, the network has established relations with organized dentistry in Quebec, has encouraged the participation of dentists in research, has established a program offering funding for knowledge translation projects and is partnering with a program to train health professionals in research techniques. In addition to partnering with the FODQ and QDSA, our members make regular contributions to *The Contact Point* (the journal of the QDSA), we have funded projects to develop training videos for dental students on issues of access to dental care and we are supporting the training of dentists in how to transfer research findings into daily dental practice.

In addition, we have recently struck a working group to suggest other avenues to improve the link between research and its application and vice versa. For example, we are exploring the training of medical journalists, bringing more scientific literacy training into dental curricula, involving health professionals and the public in advising the network on its work and creating health care professional and lay public sections on our website. Although much remains to be done, we are looking at many different ways to create interaction between the worlds of health care and health research to benefit society.

In summary, the Network for Oral and Bone Health Research is a dynamic group of researchers constantly expanding, stretching and seeking new challenges, with a view to improving oral and bone-related research in Quebec and translating this into improved oral and osseous health for the population. ♦

THE AUTHOR

Dr. Paul Allison is the director of the Network for Oral and Bone Health Research (www.rsbo.ca). Email: paul.allison@mcgill.ca

Reference

1. Canadian Institutes of Health Research. About knowledge translation. [Website of CIHR]. Available from: www.irsc.gc.ca/e/29418.html (accessed 2007 Oct 1).