

# Heritage Medical Research Centre attracting world renowned scientists

Story by: Lloyd Robertson

this objective, the Foundation provides grants and awards to research institutions for the purpose of hiring top quality medical scientists.

#### The Specifics of Funding and Structure

The dispersal of this funding by the Foundation takes various forms ranging from Establishment Grants (for the establishment of laboratories and clinical staff of those spending 75% of their time or more on medical research) to Student Internship Awards (encouraging undergraduate and graduate students to participate directly in medical research). In every case, the grants are subject to specific guidelines and regulations governing their use, and directing the activities of those who receive them.

The structure of the Foundation is globally unique in that it is a lump sum of money administered by prominent medical professionals at arms length from government. In other words, although the Foundation consists of public money, and regular reports of progress are supplied to the legislative assembly, it is an autonomous entity. The AHFMR makes its own decisions about who and what to fund, and for how much. More importantly, the Foundation determines the overall orientation of its efforts through the input of the scientific community at large. Because of this base-level researchers keep AHFMR directors aware of what is needed in the research field and the elements of large scale bureaucracy seldom emerge to tangile the efforts of the Foundation.

#### Early Skepticism Unfounded

For the most part, the Foundation has been extremely successful in its goals of attracting the very finest medical researchers to Alberta and ensuring a stable research environment, with substantial funding, in a period of economic downturn. Moreover, skepticism offered by early critics of the Foundation have proven to be unfounded. For example, there was a fear that if such a large sum of money were endowed by the provincial government, funding from national institutions (such as the Medical Research Council of Canada) would be diminished. Another concern was that the Foundation would not be able to attract the highest quality people, for a number of reasons, away from more prominent institutions, such as Harvard, Yale, or McGill University. But because the Foundation was able to attract high quality researchers, these people have, in turn, found the means to canvass even more support from funding institutions and thus federal assistance has not decreased, but increased.

From the AHFMR offices in Manulife Place, Edmonton, Dr. Lionel McCleod expresses concern for the continued effectiveness of the Foundation. As president of the fund, Dr. McCleod emphasizes that inflation is constantly eating away at the lump sum of money that the Foundation administers.

"We started with \$300 million dollars in 1979 and the foundation has since grown to just under \$500 million, in large part because we perceived a relatively small number of worthy investments and money was instead channelled back into the fund. However, the real value of the fund is always in danger of decreasing since the market dictates the return on our investments and we are always the target of inflation."

In light of this, Dr. McCleod emphasizes the importance of prudent, careful investment and adds "medical research is an extremely expensive field."

#### Broad Range of Research

The foundation facilitates research in an amazingly broad range of disciplines, but with the largest amount of researchers coming from the field of molecular biology. Here, basic characteristics and concepts relating to the cell are explored in the hope that findings can eventually be related and applied more practically. Other areas are also being addressed however, as Dr. McCleod suggests, "Although most of our money is going into basic molecular and cellular research we are not excluding other areas. We've got people working with the heart, the central nervous system, pediatrics and other fields that we call the clinical applications of medicine. We also have a substantial number of people working in behavioral aspects as well, such as the principles of learning, and the impact of sleep on mental health. We've even got some people looking into obesity and some others working on infant feeding. So we certainly are trying to cover a number of bases."

In particular, some very interesting research is being conducted in the Physiology Department at the University of Alberta. As a major recipient of funding from the AHFMR, a substantial expansion of research efforts has occurred within the field of physiology.

Physiology is the science that studies the functioning of all living things and their parts through the related disciplines of biochemistry, biophysics and molecular biology. The practical aspects of physiology affect patients in innumerable ways, notably in the areas of blood pressure, hormone functioning, and nerve ending functioning to name just a few. The exact figures on resources donated to the department are as follows:

| Department of Physiology - U of A |             |             |
|-----------------------------------|-------------|-------------|
| 1984-85                           | 1985-86     | 1986-87     |
| \$1,162,000                       | \$2,100,000 | \$2,260,400 |

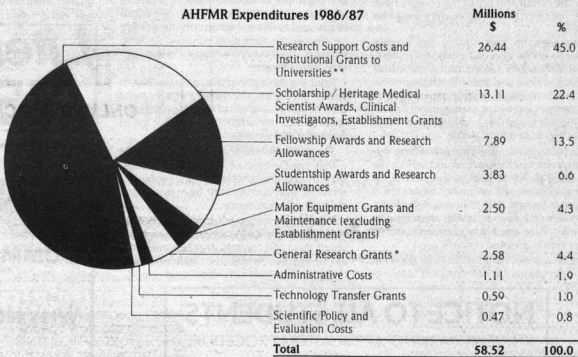
The money includes provisions for Establishment Grants, two-year, non-renewable awards that provide funds necessary for laboratory facilities, the hiring of research assistants, clerical staff, and, of course, salaries for the researchers themselves. The Foundation does not, however, provide operating grants. Once the two year term expires, the researchers are responsible for obtaining funding from the necessary federal agencies, a task they must do by demonstrating the practicality or potential practicality of the research they conducted under their Establishment Grant. Since the Foundation actively canvasses for the very finest researchers, whether they be located half-way around the world or right here in Alberta, the percentage of Establishment Grant recipients who graduate to other methods of funding is very high. Once this funding has been

Also, Dr. Pang was able to recruit significant support from a major pharmaceutical firm, after it was learned that his research had some very practical applications. This support, in turn, encouraged even more research which, in its turn, attracted even more support. An additional advantage was the improvement of the physiology department as a whole due to the influx of highly qualified researchers and the enthusiasm they brought to their positions.

Dr. Pang's work is now close to commercial development. He has only to purify and synthesize the active ingredients of the herbs so that their pharmacological and clinical effectiveness can be determined. When completed, his tabulated research will help herbal medicine gain acceptance among the scientific community as well as providing a new therapeutic anti-hypertensive agent to the health-care profession. The main benefit to society will be an effective treatment for high blood pressure that is more easily administered than Western medication since, in addition to being clinically effective, the herbs have no serious side effects. As Dr. Pang concludes "The herbal medicines act directly upon the blood vessels and do not affect the nervous system." This is encouraging news for obvious reasons.

In strictly laissez-faire terms, once the initial endowment is distributed by the fund the concept of the invisible hand takes over. This is evidenced in Dr.

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established further research can be conducted, this time from the angle of practical application to the health care profession. A perfect example of this scenario is the use of Dr. Peter Pang, Chairman of the Physiology Department and his work with Chinese herbal medicine.

A Professor of Pharmacology at Texas Tech. University, Dr. Pang did research on the evolution and control of epithelial transport and parathyroid hormones as they relate to uterine contraction, blood vessels and cardiovascular responses. He also began some very interesting work with Chinese herbal medicine. However, funding for more in-depth research was not always sufficient or consistent. Sometimes it was altogether unavailable. The Yale graduate was attracted to the position at the University of Alberta mainly because, as he puts it, "the promise of funding from the AHFMR."

#### After Receipt of Establishment Grant

In the spring of 1986, Dr. Pang received an \$820,000 Establishment Grant from the AH FMR to further develop his research with herbal medicine. Specifically, he planned to study antihypertensive agents of herbs and basic vasodilatory peptides. With this money he was able to purchase the necessary laboratory apparatus, hire research assistants and clerical staff, and grant post doctoral fellowships to qualified researchers interested in the field.

The results of the \$820,000 grant were astounding. The research of Dr. Pang took directionists agents that he had never been able to explore before. The department was able to establish links with Jinan University in the People's Republic of China, where specialists involved in the knowledge of herbal medicine are employed.

Pang's case by the increased funding from outside sources, increased faculty capability, and increased research capacity all ultimately contributing to improved medical care for patients afflicted with blood pressure disorders. Yet, as Dr. Pang observes, the chain would not stop simply at physiological research and its spin-offs. "If funding is available for the hiring of quality faculty members, then it only stands to reason that students pursuing their education in the faculty would receive better instruction." Dr. C.R. James, V.P. Research, emphasizes the non-academic implications as well: "If the research at the U of A reaches a practical level, the pharmaceutical companies will be likely to invest money to set up operations in Alberta, in order to maintain proximity with the researchers. This not only means jobs for U of A graduates, but other Albertans too."

While it is exciting to ponder the subsequent effects of the Foundation on Alberta's economy and educational sectors, it is most important to realize that the Foundation's ultimate goal is improved medical care for mankind. The mandate of the Foundation indicates that this can be achieved through the funding of scientific research, and they are right. Dr. Pang's research is an excellent example of this.

Although critics would deal with the rationale of spending such an enormous amount of money on theoretical research at a time when Alberta's economy is at an extremely low ebb, the results obtained by the Foundation are encouraging and beneficial. This would lend one to conclude that the interests of mankind are being best served by the present expenditures of the Fund.