



Genetic Research the New Battleground in the Fight Against Heart Disease

University of Ottawa Heart Institute Leads a New Scientific Focus on Preventive Medicine Aimed at Eliminating Heart Disease

VANCOUVER – October 22, 2006 – Modern medicine has the technology and scientific tools to dramatically reduce and probably eliminate heart disease over the next 50 years, says Dr. Robert Roberts, CEO and President of the University of Ottawa Heart Institute (UOHI).

Significant research underway at the Heart Institute will soon enable scientists to isolate, understand and target the trail of genetic activity that causes Coronary Artery Disease (CAD) - the leading killer in North America, Dr. Roberts said in a keynote speech at the Canadian Cardiovascular Congress. This means that in the near future, patients with a predisposition to heart disease could be genetically assessed by a simple blood test and provided with a full preventive prescription to prevent the onset on heart disease.

"We are looking at an era somewhere in the not-too-distant future when a person's genetic makeup will be looked at for specific variances, then a preventive package can individualized and personalized," says Dr. Roberts. "I don't think there is any doubt that we must and will identify the appropriate genes, determine their function and get specific about targeting them."

The Heart Institute is the only research facility in Canada – and only one of a handful worldwide - equipped to bring medicine into this new age of preventive heart disease. Research at the Canadian Cardiovascular Genetics Research Centre™, located at the Heart Institute, involves interrogating genes that could lead to Coronary Artery Disease by allowing scientists to identify genetic differences between patients who have CAD and those who are free from heart disease.

The Heart Institute employs a variety of unique technologies, such as a highly advanced Affymetrix GeneChip®, to process massive amounts of miniature arrays, identify genes and allow researchers to determine patterns of genetic activity. To date, the Heart Institute has completed 700 million genotypes on 1,400 patients, Dr. Robert says. Patient controls are selected from the first high-volume, state-of-the-art 64-slice scanner in Canada dedicated to cardiac care. The Heart Institute's super-speed computerized tomography (CT) allows for detailed mapping of the vascular system and surrounding soft tissue with a series of data sets for the 3D visuals. The 'fast CT' serves both as a research tool and a diagnostic technology enabling cardiologist to determine the best treatment for heart disease patients.

The Heart Institute's highly advanced technology combined with its treatment of Canada's largest CAD patient population provides a strong research base on which to build a new medical focus dedicated exclusively to preventive heart disease in people with a predisposition to CAD.

"Until we know the genetic component of heart disease, we are not in a position to provide a truly comprehensive prevention program," said Dr. Roberts.

The Heart Institute is part of a global undertaking to create new methods, tools and research to improve patient care and defeat heart disease. The Institute's work in cardiovascular genetics is significant and varied. For example:

- The Institute recently announced a landmark discovery that one of the most common causes of heart disease – atrial fibrillation – stems from a genetic defect that develops while a baby is still in the womb. This surprising result is expected to fuel significant new therapies for treating atrial fibrillation.
- UOHI is currently undertaking a national multi-million dollar study involving 40,000 research volunteers that aims to identify common genetic variations that differentiate healthy people from those who suffer early heart disease.
- UOHI is providing genetic counseling to its patients to help them understand and cope with heart disease.
- The Heart Institute recently completed Canada's first genetic autopsy that has uncovered the cause of Sudden Cardiac Death (SCD), one of the most mysterious and deadly of cardiac diseases. The autopsy revealed a genetic mutation responsible for Long QT syndrome, a cause of potentially fatal irregular heartbeats (arrhythmia).

About UOHI

The University of Ottawa Heart Institute is Canada's largest and foremost cardiovascular health centre dedicated to understanding, treating and preventing heart disease. We deliver high-tech care with a personal touch, shape the way cardiovascular medicine is practiced, and revolutionize cardiac treatment and understanding. We build knowledge through research and translate discoveries into advanced care. We serve the local, national and international community, and are pioneering a new era in heart health. For more information, visit www.ottawaheart.ca.

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For further information please contact:

Jacques Guerette
Vice President, Communications
University of Ottawa Heart Institute
613 761-4850
jguerette@ottawaheart.ca