

IBM world community grid squeezes decades of cancer research into 2 years

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Canadian researchers expect to accelerate the war on cancer by tapping into a global network of hundreds of thousands of people who volunteer their idle computer time to tackle some of the world's most complex problems.

The research team, led by Dr. Igor Jurisica at the Ontario Cancer Institute (OCI), and scientists at Princess Margaret Hospital and University Health Network, are the first from Canada to use the World Community Grid, a network of PCs and laptops with the power equivalent to one of the globe's top five fastest supercomputers.

The team will use World Community Grid to analyze the results of experiments on proteins using data collected by scientists at the Hauptman-Woodward Medical Research Institute in Buffalo, New York. This analysis would take conventional computer systems 162 years to complete. However, using World Community Grid, Dr. Jurisica anticipates the analysis could be finished in one to two years, and will provide researchers with a better way to study how proteins function, insight that could lead to the development of more effective cancer-fighting drugs.

“We know that most cancers are caused by defective proteins in our bodies, but we need to better understand the specific function of those proteins and how they interact in the body,” said Dr. Jurisica. “We also have to find proteins that will enable us to diagnose cancer earlier, before symptoms appear, to have the best chance of treating the disease

-- or potentially stopping it completely.”

The research team now has more than 86 million images of 9,400 unique proteins that could be linked to cancer, captured in the course of more than 14.5 million experiments by colleagues at Hauptman-Woodward.

This comprises the most comprehensive database on the chemistry of a large number of proteins, a resource that will help researchers around the world unlock the mystery of how many cancers, such as breast, prostate or childhood leukemia, grow.

Approximately 150,000 Canadians will be diagnosed with cancer and more than 70,000 will die of the disease in 2007 alone.

Individuals can donate their computers for this project by registering on www.worldcommunitygrid.org, and installing a free, secure, small software program on their computers. The computer requests data from World Community Grid's server when it is idle, for example a user is at lunch, and performs the cancer-related protein computations. A screen saver will tell individuals when their computers are being used.

World Community Grid, the largest public humanitarian grid with more than 333,000-plus members and links to more than 780,000 computers. However, it's estimated that there are one billion computers worldwide, underscoring the potential for the grid and its computational power to significantly expand. Eight projects have been run on World Community Grid to date, including protein folding and FightAIDS@Home, which completed five years of HIV/AIDS research in just six months. Additional projects are in the pipeline.

Source: Hauptman-Woodward Medical Research Institute

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